Submission to the
Australia Energy Markets Commission

Reallocations

August 2006

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Tarong. Level 10, 10 Eagle Street, Brisbane, QLD 3000. Contact: Andrew Burge (Acting GM Marketing and Trading)

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Energy One. Level 17, 2 Market Street, Sydney, NSW 2000. Contact: Vaughn Busby (Chief Executive Officer)

Jack Green. Level 16, 100 William Street, Sydney, NSW 2000 Contact: Geoff Pollard (Chief Operating Officer)

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2. Financial Traders and Intermediaries

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AttungaCapital. Level 25, 2 Chifley Square, Sydney, NSW 2000. Contact: Mark Roberts (Portfolio Manager and Head of Investments)

BGC Partners. Level 50, 19-29 Martin Place, Sydney, NSW 2000. Contact: James Beck (Manager Energy Desk)

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3. Industry Association[1]

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4. Large energy users

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Coles Myer Limited. 745 Springvale Road Mulgrave, VIC 3170. Contact: David Eastwood (Vendor Manager Utilities).

5. Licensed Market Operator

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2. Enhancements to the reallocation rule change proposal

This paper proposes Rule changes to lower prudential costs and reduce circular cash flows and settlement risks for market participants in the NEM. The proposed Rule changes can be incorporated into the determination of Maximum Credit Limit as set out in NEMMCO's Rule proposing improvements to the settlement reallocation process. As a result, market participants will have more available alternatives for the management of credit support costs.

The proposed Rule changes define Futures Offset Arrangements (FOAs). FOAs will enable NEM Participants to avoid posting duplicated collateral support (and avoid incurring unnecessary transaction costs) for both their spot market purchases and their (offsetting) financial market hedges.

FOAs will be voluntary arrangements and will involve:

1. A SFE Clearing Participant submitting a Notice of Futures Offset Arrangement to NEMMCO on behalf of a NEM Participant;
2. Upon registration of the FOA by NEMMCO, the SFE Clearing Participant being bound to pay to NEMMCO cash amounts equivalent to positive futures variation margins attributable to nominated electricity futures contracts held by the SFE Clearing Participant on behalf of the NEM Participant;
3. NEMMCO applies amounts received under the FOA to the NEM Participant's Security Deposit Arrangement or as otherwise agreed between NEMMCO and the NEM Participant.
4. NEMMCO reducing the spot market collateral support required from the Market Participant via a reduced Maximum Credit Limit (MCL) in consideration of the FOA.
5. The extent of the MCL reduction being commensurate to the proportional difference between:
    a. NEMMCO's volatility-adjusted MCL price expectation (in $/MWh) upon which spot market collateral support requirements are calculated; and

[1] See also separate letter of support from the Australian Financial Markets Association (AFMA) /AFMA Electricity Committee dated 8th August 2006.

b. The price of the electricity futures contracts (in $/MWh) as stipulated in the Notice of Futures Offset Arrangement, above which positive futures variation margins are to be paid by the SFE Clearing Participant to NEMMCO.

6. The NEM Participant continues to make spot market settlement payments to NEMMCO as per existing settlement arrangements, while benefiting from a reduced MCL.

Statement of the issues concerning the existing (reallocation) Rules that are to be addressed by the proposed Rules supporting Futures Offset Arrangements

Issues concerning the existing Rules (specifically existing Rules which relate to ex-ante and ex-post reallocation transactions, which exclude futures based offset arrangements) include the following: [2]

1. The existing Rules create significant counterparty credit risk for generators because the risk of retailer default is merely transferred from NEMMCO to reallocating generators. Generators pass the cost associated with this credit default risk on to reallocating retailers via high reallocation transaction costs. The limited pool of bank guarantee providers which provide support to NEMMCO on behalf of NEM retailers creates unnecessary concentration risk, which will become exacerbated as Government owned retailers privatise and government guarantees to NEMMCO must be replaced via increased reliance on the non-government support providers;

2. Interstate ex-ante reallocation trading is prohibited, regionalising the supply of reallocations and reducing competitive choices for retailers seeking reallocations.[3] Bank and non-bank specialist derivative traders (other than NEM participants) are prohibited from participating in the reallocation hedge market, severely limiting competition in the supply of reallocation offset arrangements;[4]

3. Vertical integration (VI) of retailers and generators is encouraged by the current Rules because vertically integrated retailers are unfairly advantaged by being able to avoid reallocation credit risk costs through reallocation between related entities in the same NEM region. Non-integrated retailers are disadvantaged by being subject to more expensive transaction costs and/or exclusion from access to reallocation hedges with non-related generators;

4. The lack of support among NEM Participants for financial offset arrangements under the current Rules has limited the extent of efficiency gains achieved by NEM participants;

5. Reallocation arrangements are completely non-transparent and threaten to crowd out transparent financial electricity markets and mute investment signals;

6. The existing Rules allow generators to sell ex-ante reallocation derivatives via NEMMCO without providing NEMMCO with any prudential support other than potential future generation receipts. This can create substantial risk to all NEMMCO creditors in the event of an unforeseen outage of a reallocated generator;

7. Under normal arrangements, prudential support in the form of bank guarantees provided to NEMMCO by retailers in accordance with the MCL formula provides only limited prudential

2 See also AFMA Electricity Committee, minutes to the 1 July 2005 meeting. For the purposes of this submission, "reallocation" refers to ex-ante reallocation unless otherwise stated.

3 Interstate trading is prohibited from ex-ante energy reallocations, limiting any reallocation market to participants in a single state region.

4 Financial trading entities such as hedge funds, banks and other financial liquidity providers are excluded from supplying reallocation hedges unless they own physical generation assets or are a retailer or market customer.

support. These bank guarantee arrangements have proven to be inadequate during periods of higher than expected pool prices; [5]

8. Peaking generation technology is (practically) excluded from competing in the supply of ex-ante reallocation derivatives;
9. Parties to reallocation transactions are forced to reveal the identities of their hedge counterparties to NEMMCO; and
10. A NEM retailer requires permission from a same-region generator in order to enter into a reallocation transaction. Either party to a reallocation transaction requires the permission of the original reallocation counterparty in order to unwind a reallocation transaction. This further limits the flexibility and supply of reallocation offsets and increases transaction costs.

4. Explanation of how Rules supporting Futures Offset Arrangements would address the issues concerning the existing Rules

Rule changes supporting FOAs would address the issues concerning the existing Rules in the following ways:

1. Rule supported FOAs will reduce MCL related collateral requirements (and associated transaction costs) to retailers by up to 69% (see Appendix 1 for MCL collateral reductions that could have been achieved if FOAs had been supported by the Rules since Q2 2005). Through FOAs, payment risks (and related transaction costs) are reduced and borne by SFE Clearing Participants rather than being transferred (in gross amounts) to generators. FOAs would therefore deliver improved netting of physical and financial market collateral exposures and associated cost reductions for NEM participants. The substantial collateral efficiency advantage inherent in futures markets arises from the margining process facilitated by the futures clearing house – SFE Clearing Corporation (SFECC), which requires collateral to cover a one day worst case[6] price movement. SFECC achieves this efficiency through daily mark to market revaluation of the futures contract, contract netting and strictly regulated prudential arrangements[7]. NEMMCO ex-ante reallocations require much larger collateral amounts (e.g. bank guarantees) to cover much larger potential price movements over much longer terms because daily mark to market cash margining is not utilised by NEMMCO. Further transaction cost reductions are delivered by futures because they are facilitated on behalf of NEM participants by a diverse pool of competing SFE Clearing Participants;

2. Electricity futures contracts (in all listed state regions) are actively traded by both domestic and international trading entities including bank and non-bank specialist financial traders, local and interstate generators, retailers and privately funded individuals. Any spot quarter electricity futures contract held by a NEM retailer can be applied to a FOA, regardless of whether the original seller was an international bank, a local generator or a hedge fund.

[5] E.g. Q1 2006 where NEMMCO's MCL methodology predicted a worst case 33.57/MWh pool price average (approx) for Victoria and the actual Q1 2006 pool price average was $43.88, resulting in guarantee support being inadequate, creating collateral shortfalls.

[6] To within a 99% confidence level.

[7] The SFECC is a licensed Clearing and Settlement Facility under Corporations Law, supervised by the Reserve Bank of Australia, ASIC and the ACCC. Additional prudential safeguards are applied to SFE Clearing Participants (see www.sfe.com.au for more details of the SFECC risk management framework).

3. The electricity futures market provides open and transparent trading access to all futures market participants regardless of size or geographic location (without preferential treatment of vertically integrated NEM participants over independent NEM participants or other futures traders);
4. Electricity futures trading volumes and futures open positions are growing rapidly. Existing spot quarter futures contracts could be applied immediately (at negligible cost) to FOAs to immediately deliver collateral offset benefits to NEM retailers. The SFE's Exchange for Physical mechanism will enable a large proportion of total physical energy (and resultant spot market collateral requirements) to be offset through FOAs, in addition to the existing futures hedge positions of NEM participants;
5. The SFE futures market is transparent. FOAs will stimulate additional futures trading, resulting in improved price and volume information (electricity futures bids, offers and trades) being broadcast in real time via existing data vendors and by the free intra-day web based market data service provided by d-cyphaTrade[8]. This information is publicly available to all market participants and interested observers including potential new investors in generation and transmission assets;
6. The prudential support provided by FOAs is not compromised by unforeseen generation outages, regardless of whether a generator was the original seller of the futures contract. The buyer of the futures contract is indifferent as to the credit strength or reliability of the original seller. Generation outages may increase the value of bought futures contracts, creating positive cash flows for NEMMCO under the FOA, rather than triggering a collateral shortfall when a reallocated generator fails. FOAs are supported by a residual component of the MCL held as bank guarantees, a degree of prudential security not provided by the existing Rules which support ex-ante reallocation;
7. Prudential coverage provided by FOAs is not limited to MCL price predictions as in the case of bank guarantee support under normal settlement arrangements (i.e. without reallocation).[9] Futures prices move in accordance with real time market-consensus of future pool price outcomes and create positive cash flows for buyers of futures contracts (via daily variation margins) when futures prices increase. The final cash settlement value of a futures contract is equal to the pool price average of the relevant quarter;
8. Peaking generation can more readily sell futures contracts and thereby contribute to the supply of offset arrangements (FOAs) for retailers, because futures contracts do not require a commitment for peaking generators to dispatch (at potentially uneconomical prices);
9. The parties to a futures contract remain anonymous. The identities of futures sellers are not revealed to NEMMCO; and
10. FOAs provide improved collateral management flexibility to retailers with lower transaction costs because the retailer does not require another NEM participant's permission to initiate or unwind a FOA.

[8] www.d-cyphaTrade.com.au. Other data providers include Reuters, Bloomberg, Futures Source etc.

[9] See appendix 2 for further details of how FOAs could have avoided bank guarantee collateral shortfalls to NEMMCO during Q1 2006.

5. Explanation of how Rules supporting Futures Offset Arrangements would or would be likely to contribute to the achievement of the national electricity market objective

The objective of the National Electricity Market, as stated in the National Electricity Law is:

To promote efficient investment in, and efficient use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality, reliability, and security of supply of electricity and the reliability, safety and security of the national electricity system.

The Rules supporting FOAs would contribute to the achievement of the national electricity market objective in the following ways:

Relevant component of NEM Objective	How Rules supporting FOAs would contribute to achievement of NEM Objective
Promote investment in electricity services	▪ Futures Offsets would be supported by, and would support transparent futures trading which provides more efficient signals for new investment in generation and transmission. ▪ Investment in peaking generation is not unfairly discriminated against via FOAs. In the absence of Rule supported FOAs, retailers would be less likely to seek futures hedges with peaking generators due to discriminatory exclusion of futures contracts from NEMMCO collateral offset benefits. ▪ FOAs would not encourage or reward vertical integration. Vertical integration reduces hedge market transparency and liquidity and mutes investment signals.
Price of supply of electricity	▪ FOAs would deliver immediate and substantial cost reductions to retailers and market customers by reducing the duplication of spot market and financial market collateral.[10] ▪ Costs of collateral offset arrangements would be lower under FOAs due to: i. Increased competition from a larger and more diverse pool of offset providers (futures sellers such as bank and non-bank financial traders and energy companies); and ii. Providing an international pool of offset providers (futures sellers), competing to supply offsets to retailers in any listed state region at transparent and competitive prices. ▪ Cheaper operating costs will reduce the barriers to entry for new retailers which can then more readily compete with incumbent retailers (on price) for consumers. ▪ FOAs would provide Market customers with greater ability to self-hedge (at potentially more competitive hedge contract prices) with reduced spot market collateral costs, as an alternative to energy supply arrangements with existing retailers. ▪ Monopolistic price outcomes caused by vertical integration are avoided through FOAs. New entrants are able to provide competition to incumbent retailers (and generators) without being crowded out as vertically integrated retailers and generators withhold access to contract hedge cover.

[10] See Appendix 1: Efficiency improvement – reduced collateral burden using Futures Offsets

Quality of supply of electricity	▪ FOAs would reduce costs and barriers to entry for new entrant retailers which would support improved product choice (and quality) for consumers.
Security of the national electricity system	▪ The prudential security of the NEM is supported by FOAs because FOAs: i. introduce a larger and more diverse pool of collateral support providers (including four major banks which are not currently providing NEMMCO guarantee support on behalf of NEM retailers); ii. reduce same-sector concentration risk, as compared to that which contributed to the California ISO defaulting on payments to market participants, and the failure of the California Power Exchange in 2001. Electricity futures represent less than 6% of cleared positions at the SFECC; iii. introduce the prudential security of a daily margining framework facilitated by a Central Counterparty Clearer (which earns a zero credit risk charge under Basel II). The prudential integrity of the SFECC is supported by regulatory supervision by the Reserve Bank of Australia and ASIC; iv. automatically deliver ex-post reallocation benefits to NEM participants, thereby reducing the size (and default risk) of outstanding settlement obligations between participants; v. are not limited (in their price protection benefits) to NEMMCO's MCL price prediction methodology or reliance on a limited level of bank guarantees under normal NEMMCO settlement arrangements; vi. preserve a residual component of bank guarantees which provide additional protection in comparison to ex-ante reallocations; vii. do not expose NEMMCO to a collateral shortfall as a result of a reallocated generator suffering an unforeseen outage. The performance of futures contracts under a FOA is not compromised (but may provide additional cash flow benefit to NEMMCO) if a generator has an outage. ▪ The physical security of the national electricity system would be supported by FOAs because FOAs would deliver financial market transparency, critical to investment signalling.

Appendix 1: Efficiency improvement – reduced collateral burden using Futures Offsets

Efficiency improvements (reductions) in the MCL-based bank guarantee burden[11] are shown as a percentage reduction in collateral requirements, on a regional basis. The efficiency improvement is based on NEMMCO's volatility-adjusted MCL price estimate (in $/MWh) minus the futures price (in $/MWh) at which Futures Offsets could have been established one day prior to the start of each calendar quarter. Initial margins on futures contracts have been incorporated in the workings.

Table 1. MCL collateral efficiency improvement using futures - up to 69% (NSW and SA Q2 2006).

Region	Qtr 2 2005	Qtr 3 2005	Qtr 4 2005	Qtr 1 2006	Qtr 2 2006
SA	50%	47%	43%	14%	69%
QLD	54%	45%	30%	0%	59%
VIC	35%	30%	32%	0%	57%
NSW	68%	66%	65%	57%	69%

Workings (all figures in $/MWh)

= [Letter of Credit requirement prior to Futures Offset - (Futures Settlement Price + Futures Initial Margin)] / Letter of Credit requirement prior to Futures Offset

Letter of Credit requirement prior to Futures Offset i.e. NEMMCO's Volatility-adjusted MCL Price Estimate (VF x P)

Region	Qtr 2 2005	Qtr 3 2005	Qtr 4 2005	Qtr 1 2006	Qtr 2 2006
SA	66.47	65.39	65.20	63.38	103.19
QLD	60.00	50.64	51.48	42.66	69.05
VIC	42.01	42.00	42.05	33.58	66.57
NSW	98.90	102.20	105.64	106.37	107.38

MCL Volatility Factor (VF)

Region	Qtr 2 2005	Qtr 3 2005	Qtr 4 2005	Qtr 1 2006	Qtr 2 2006
SA	1.80	1.80	1.80	2.00	2.70
QLD	1.90	1.70	1.80	1.90	2.40
VIC	1.40	1.50	1.50	1.30	2.20
NSW	2.30	2.50	2.60	3.20	2.70

Futures settlement price (1 day prior to QTR start)

Region	Qtr 2 2005	Qtr 3 2005	Qtr 4 2005	Qtr 1 2006	Qtr 2 2006
SA	32.00	33.75	36.50	52.00	31.25
QLD	26.50	27.50	35.25	43.00	27.50
VIC	26.15	28.25	27.50	37.75	28.00
NSW	31.00	33.35	36.50	44.65	32.00

MCL Average Price (P) Prediction

Region	Qtr 2 2005	Qtr 3 2005	Qtr 4 2005	Qtr 1 2006	Qtr 2 2006
SA	36.93	36.33	36.22	31.69	38.22
QLD	31.58	29.79	28.60	22.45	28.77
VIC	30.01	28.00	28.03	25.83	30.26
NSW	43.00	40.88	40.63	33.24	39.77

Futures Initial Margin (deposit earns interest)

Region	Qtr 2 2005	Qtr 3 2005	Qtr 4 2005	Qtr 1 2006	Qtr 2 2006
SA	0.92	1.04	0.91	2.41	0.64
QLD	1.01	0.54	0.91	1.11	0.82
VIC	1.14	1.00	0.91	1.39	0.64
NSW	1.01	0.91	0.95	1.44	0.92

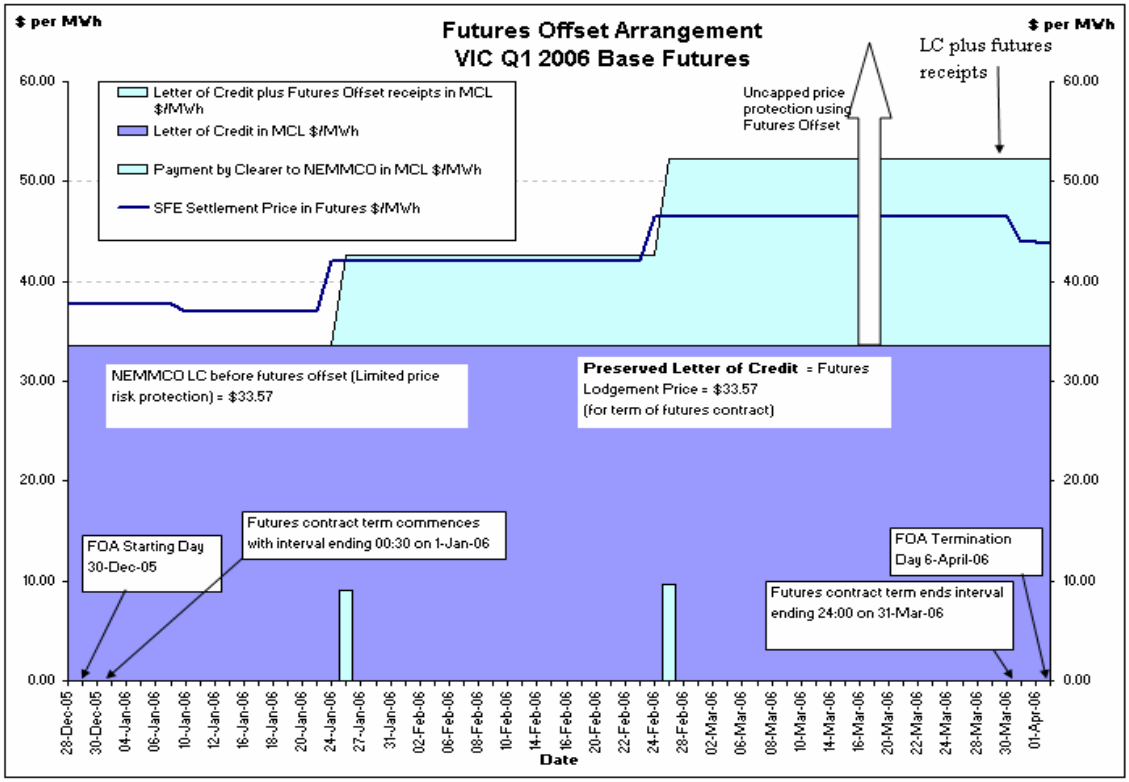
[11] The MCL collateral burden on retailers prior to Futures Offset is assumed to be met with bank or state government backed letters of credit or guarantees.

Appendix 2: Case study of price risk mitigation delivered by Futures Offsets

Futures contracts provide risk mitigation at any price outcome. This compares favourably to the existing NEMMCO collateral support arrangements where guarantee support is limited to NEMMCO's MCL price assumption. Under normal MCL conditions (without reallocation) when higher than anticipated prices necessitate additional protection beyond the "capped" level of letters of credit NEMMCO may be forced to rely on unsecured demands (collateral calls) on retailers. When a retailer receives a call notice from NEMMCO, the retailer has a defined amount of time in which to source additional collateral. The risk to NEM creditors is that a retailer may not be able to raise additional cover in this time.[12]

The following diagram illustrates the additional risk mitigation benefit of receiving the positive cash flows associated with futures contracts held by retailers during periods of high pool prices. It demonstrates how Futures Offset Arrangements would have provided additional protection to NEMMCO during Q1 2006 in Victoria, where NEMMCO's worst case volatility-adjusted average price estimate of $33.57/MWh (which determined guarantee levels) was inadequate during that quarter where prices ultimately averaged $43.88/MWh. If NEMMCO had allowed a Futures Offset Arrangement to be registered, NEMMCO would have been automatically credited with total futures cash flows equivalent to $18.75/MWh in additional to bank guarantees equivalent to $33.57/MWh (creating a combined collateral level of $52.32/MWh). The SFE Clearing Participants would have made such payments to NEMMCO on the 25th of Jan and the 24th of Feb, well before the end of Q1 2006.

Diagram 1. Without futures protection, the limited nature of letters of credit may leave NEMMCO (and creditors) partially unsecured at times of high pool prices and at risk of a retailer not meeting a margin call during times of financial stress. Futures protection is not "capped" to a notional level like a rigid bank guarantee, and as such, NEMMCO automatically receives futures cash flow benefits at any potential price outcome.



[12] National Electricity Code s3.15.22 and s3.15.23

6. Draft amendments to National Electricity Rules - Futures Offset Arrangements

Amendments to existing Rules denoted in bold.

NB. 3.3.8 amended to introduce Futures Offset Arrangements, and other Market Participant transactions (s 3.3.19) for inclusion in the determination of the Maximum Credit Limit (MCL) of NEM Participants.

3.3.8 Maximum credit limit (amended)

(a) *NEMMCO* must determine for each *Market Participant* a *maximum credit limit*.

(b) The *maximum credit limit* for a *Market Participant* is a dollar amount to be determined by *NEMMCO* in accordance with this clause 3.3.8 on the basis of a "reasonable worst case" estimate by *NEMMCO* of the aggregate payments (after **Futures Offset Arrangements,** reallocation **and other *Market Participant* transactions supported by s 3.3.19**) to be made by the *Market Participant* to *NEMMCO* for the *credit period* applicable to that *Market Participant*, to a probability level that the estimate would not be exceeded more than once in 48 months.

NB. 3.3.19 amended to clarify NEMMCO's obligation to consider other Market Participant transactions other than those conducted through the market (reallocations or Futures Offset Arrangements). 3.3.19 (a) is designed to ensure a high standard of prudential integrity and regulatory compliance among facilitators of other Market Participant transactions by defining a set of criteria for market operators and clearing and settlement facilities (including the requirement for clearing and settlement facilities to be a licensed clearing and settlement facility as defined in the Corporations Act of 2001, and in turn regulated by ASIC and the Reserve Bank of Australia).

3.3.19 Consideration of other Market Participant transactions (amended)

(a) For the purposes of determining the *prudential requirements* to be satisfied by *Market Participants* in accordance with this clause 3.3, *NEMMCO* must consult with *Market Participants* and any other person NEMMCO considers appropriate and use its reasonable endeavours to establish procedures to enable *Market Participants* to create *reallocation transactions* and~~/or~~ to establish **market risk offset arrangements and** mutual indemnification arrangements **involving** ~~with other~~ operators **and clearing participants** of **other** markets for electricity-based trading in respect of electricity trading transactions other than those conducted through the *market*. **Such arrangements include electricity futures and options products listed on a licensed 'financial market', as defined in the Corporations Act of 2001, regulated by the Australian Securities and Investment Commission (ASIC) and cleared by a licensed clearing and settlement facility as**

defined in the Corporations Act of 2001, regulated by ASIC and the Reserve Bank of Australia.

NB: 3.3.13 amended to enable participants to lodge Futures Offset Arrangements to meet Call Notices in a similar way to which reallocations may be applied for that purpose.

3.3.13 Response to Call Notices (amended)

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

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

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

(3) lodge a *reallocation request* ***or notice of Futures Offset Arrangement*** of an amount which is not less than the *call amount* and which is accepted by *NEMMCO*; or

(4) provide to *NEMMCO* any combination of clauses 3.3.13(a)(1), (2) and

(3) such that the aggregate of the amount which can be drawn under the additional *credit support* provided and the amount of the security deposit paid and the amount of the *reallocation request* accepted by NEMMCO is not less than the *call amount.*

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

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

3.15.1 Settlements management by NEMMCO (amended)

(a) *NEMMCO* must facilitate the billing and settlement of payments due in respect

of *transactions* ***and Futures Offset Arrangements*** under this Chapter 3, including:

(1) *spot market transactions*;

(2) *reallocation transactions* ***and Futures Offset Arrangements***; and

(3) ancillary services transactions under clause 3.15.6A.

NB: New part of Schedule 3.3 added to introduce the consideration of Futures Offset Arrangements within the Principles for Determination of Maximum Credit Limit.

Schedule 3.3 - Principles for Determination of Maximum Credit Limit (amended)

The MCL should be set on the principle of imposing a guarantee of payment being made to *NEMMCO* to a level of a "reasonable worst case" - a position which, while not being impossible, is likely to happen only once in a few years.

When calculating the MCL *NEMMCO* should have regard to:

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

II. the average level and volatility of the *regional reference price* for the *region* for which the MCL is being calculated, measured over a period of time comparable to the frequency of breaches of the MCL (about four years);

III. the pattern of the quantity of electricity recorded in the *metering data* for the participant;

NB: re-numbering required

IV. **(i)** the quantity and pattern of the *reallocation transactions* in the immediate future;

NB: New part IV (ii) of Schedule 3.3 defines the calculation of the size of MCL reduction created by Futures Offset Arrangements. The MCL reduction is commensurate with the quantity, term and lodgement price of the relevant futures contracts in comparison to the volatility adjusted price assumption used by NEMMCO to calculate the MCL, before reallocations and Futures Offset Arrangements.[13]

IV (ii) the quantity of Futures Offset Arrangements involving futures contracts with contract terms that include the immediate future. Futures Offset Arrangements will give rise to a reduction in MCL for the Market Participant that is a party to a Futures Offset Arrangement commensurate with the quantity and the term of the futures contracts which are the subject of a Futures Offset Arrangement and the difference between:

1. The expected worst case volatility-adjusted price outcome assumed by NEMMCO for MCL calculation purposes in accordance with part II of this section; and

[13] Suggested formula to calculate the reduction in MCL as a result of FOA:

Max [(PR x VFR – FLP) x FLR x T, 0]

Where for each Futures Offset Arrangement:

1. FLP represents the futures lodgement price covering each Market Region R;
2. FLR represents the associated average daily energy of Futures Offset Arrangements for the Market Participant where the offset is to be calculated with reference to the spot electricity price of Region R.
3. PR represents NEMMCO's estimate of the average future pool price for each Market Region R;
4. 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 which coincide with days in the term of the futures contracts which are the subject of the Futures Offset Arrangement. See worked example at Appendix 5.

2. The Futures Lodgement Price of the Futures Offset Arrangement.

NB: New schedule 3.15.11B to define Futures Offset Arrangements. s 1 defines entities which may facilitate Futures Offset Arrangements, to require appropriate prudential integrity and regulatory oversight of such entities.

3.15.11B Futures Offset Arrangements (new)

1. Facilitators of Futures Offset Arrangements

A Futures Offset Arrangement 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 Market Participant to facilitate the cash payment to NEMMCO of amounts equivalent to 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.

NB: s 2 specifies the required specifications of a Notice of Futures Offset Arrangement to be made to NEMMCO. Worked examples are provided in appendix 3.

2. Notice of Futures Offset Arrangement

In order to be valid, a notice of Futures Offset Arrangement must be lodged with NEMMCO by or on behalf of a *Market Participant* and a Clearing Participant and include:

2.1 The term of the Futures Offset Arrangement, including:

a. The Starting Day being the first day on which a Futures Offset Arrangement is to commence effect;

b. The Termination Day being the last day that a Futures Offset Arrangement is to be in effect;

2.2 Specification of the futures contracts nominated to become subject to the Futures Offset Arrangement including:

a. The futures contract Region;

b. The futures product code as referenced by the relevant exchange;

c. 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);

d. The quantity of futures contracts;

e. The MWhs incorporated in one futures contract;

f. The futures contract cash settlement day;

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

h. The Futures Lodgement Price

2.3 Notification from the Clearing Participant and the *Market Participant* to NEMMCO that the Clearing Participant and the *Market Participant* agree to be bound by the terms and conditions of Futures Offset Arrangements as specified in this s 3.15.11B.

NB: s 3 details registration of FOAs by NEMMCO

3. Registration of Futures Offset Arrangements

3.1 NEMMCO will register a Futures Offset Arrangement within 1 hour of receipt of a valid notice of Futures Offset Arrangement where such notice is received between 9 am to 4 pm on business days. NEMMCO will register a Futures Offset Arrangement by 9 am on the business day following the receipt of a valid notice of Futures Offset Arrangement where such notice is received at any time other than between 9 am to 4 pm on business days. NEMMCO will immediately inform the *Market Participant* and the Clearing Participant of such registration.

3.2 NEMMCO will nominate an Austraclear account to the Clearing Participant for the purpose of NEMMCO receiving payments arising from the Futures Offset Arrangement.

NB: s 4 requires the Clearing Participant to segregate the variation margins associated with relevant futures contracts from being netted down against other futures contracts held by the Clearing Participant on behalf of the Market Participant.

4 Futures contracts to be held by the Clearing Participant in a segregated futures account.

4.1 The Clearing Participant warrants to hold the *Market Participant's* futures contracts which are the subject of a Futures Offset Arrangement in a segregated futures account.

4.2 Positive futures variation margins attributable to futures contracts which are the subject of a Futures Offset Arrangement cannot be netted down or offset against futures variation margins attributable to other futures contracts held by the Clearing Participant on behalf of the Market Participant.

NB: s 5 defines the formula for the calculation of cash flows arising from positive movements in the value of relevant futures contracts (above the futures lodgement price) to be paid to NEMMCO by the Clearing Participant. Cash flows will be calculated on Calculation Days (defined) being futures exchange business days. The formula accommodates four types of calculation days being either the Starting Day of the Futures Offset Arrangement, subsequent calculation days, calculation days occurring on a termination day or calculation days occurring on a close out of futures positions by the Clearing Participant.

NEMMCO receives cash flow amounts equivalent to the positive moves in the relevant futures contracts to the extent that such moves occur above the Futures Lodgement Price and the value of the futures contracts is higher than the previous highest value of the futures contracts during the term of the Futures Offset Arrangement. 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. See worked cash flow examples and diagrams in Appendix 4.

5. Calculation of payment to NEMMCO of futures variation margins above the Futures Lodgement Price.

5.1 The Clearing Participant will make payment to NEMMCO amounts calculated on Calculation Days being business days of the relevant exchange that occur during the term of the Futures Offset Agreement in relation to futures contracts which are the subject of a Futures Offset Arrangement equivalent to:

Max [(DSP $_t$ – Max [DSP $_{t-1}$, FLP, DSP $_h$]) x FQ, 0]

Where, subject to s 5.2:

FLP = the Futures Lodgement Price;

DSP $_h$ = the previous highest official daily settlement price that has occurred during the term of the FOA;

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

5.1.1 For the first Calculation Day of a Futures Offset Arrangement:

DSP $_t$ = the official daily settlement price as at close of business on the Starting Day (unless the Starting Day is not a business day of the relevant exchange, in which case DSP $_t$ = the official daily settlement price as at close of business on the next business day of the relevant exchange); and

DSP $_{t-1}$ = FLP;

5.1.2 For a Calculation Day that occurs after the first Calculation Day but excludes any day after the last trading day of the relevant futures contract:

DSP $_t$ = the official daily settlement price as at close of business on the Calculation Day.

DSP $_{t-1}$ = the most recent official daily settlement price prior to DSP $_t$

5.1.3 Where the Termination Day occurs after the last trading day of the relevant futures contract only one Calculation Day will occur after the last trading day of the relevant futures contract. That Calculation Day will occur on the cash settlement day of the relevant futures contract. For a Calculation Day that occurs on the cash settlement day of the relevant futures contract:

DSP $_t$ = the official cash settlement price of the relevant futures contract.

DSP $_{t-1}$ = the official daily settlement price as at close of business on the last exchange trading day of the relevant futures contract.

5.2 In relation to a close out of futures contracts which are the subject of a Futures Offset Arrangement by the Clearing Participant on any Calculation Day on or after the Starting Day:

DSP $_t$ = the volume weighted average price at which the relevant futures contracts were closed out by the Clearing Participant on the date of close out. The Clearing Participant will provide NEMMCO with notification of the price and volume of each

futures contract that is closed out no later than 11 am on the next Business Day of the relevant exchange following the date of the close out.

DSP_{t-1} = the most recent official daily settlement price prior to the date of close out unless the close out occurs on the Starting Day in which case DSP_{t-1} = FLP.

NB: s 6 defines form and timing of payments to NEMMCO

6. Form and Timing of payments to NEMMCO arising from Futures Offset Arrangements.

The Clearing Participant will make cash payment to an Austraclear account nominated by NEMMCO no later than 11 am on the next Business Day of the relevant exchange following the relevant Calculation Day on which a payment obligation arises. NEMMCO will accept such payments.

7. Clearing Participant to provide daily Futures Clearing Statements to NEMMCO.

The Clearing Participant will provide NEMMCO with a daily clearing statement detailing the volume and official daily settlement price of futures contracts which are the subject of Futures Offset Arrangements by 11 am on the exchange business day following the exchange business day to which the official daily settlement price relates.

NB: s 8 requires NEMMCO to deposit payments received from Clearing Participant into the Security Deposit account of the Market Participant unless otherwise agreed between NEMMCO and Market participant.

8. Application of monies received by NEMMCO from Futures Offset Arrangements.

NEMMCO will credit the Security Deposit of the *Market Participant* with an amount equivalent to monies received from the Clearing Participant, unless otherwise agreed to by NEMMCO and the Market Participant.

NB: s 9 defines the notification procedure and obligations for early termination of Futures Offset Arrangements by the Clearing Participant or by NEMMCO.

9. Termination of Futures Offset Arrangements

9.1 A Futures Offset Arrangement may be wholly or partially terminated on a date earlier than that specified on the Notice of Futures Offset Arrangement, by notification to NEMMCO and the *Market Participant* from the Clearing Participant specifying:

a) a new termination day being the last day that the Futures Offset Arrangement 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 In the event of a close out by the Clearing Participant of futures contracts that are subject to a Futures Offset Arrangement, the Clearing Participant will:

a) immediately notify NEMMCO and the *Market Participant* of the termination of the Futures Offset Arrangement in relation to the futures contracts that have been closed out, specifying a new termination day for the Futures Offset Arrangement, being the day that notice is given.

b) immediately inform NEMMCO of the reason for closeout; and

c) make such payments to NEMMCO as required under clause 3.15.11B 5.2.

9.3 If a *default event* occurs in relation to the *Market Participant* which is a party to a Futures Offset Arrangement prior to the Termination Day of a Futures Offset Arrangement, *NEMMCO* may terminate the Futures Offset Arrangement by notice given to the Clearing Participant and the *Market Participant* at any time whilst the *default event* is subsisting. The termination is effective forthwith upon *NEMMCO* notifying the *Market Participant* and the Clearing Participant that lodged the Notice of Futures Offset Arrangement of the fact of termination, notwithstanding that the *default event* may be subsequently cured. The obligation for the Clearing Participant to make payments to NEMMCO in accordance with this section 3.15.11B will cease upon payment by the Clearing Participant to NEMMCO of all amounts owing in relation to Calculation Days which predate the time of notification of termination of the Futures Offset Arrangement by NEMMCO.

9.4 In addition to any other right which *NEMMCO* may exercise in relation to a *default event*, upon termination of a Futures Offset Arrangement *NEMMCO* may redetermine the *maximum credit limit* and *trading limit* for the *Market Participant* which lodged the Notice of Futures Offset Arrangement having regard to the termination which has occurred.

Appendix 3. Examples of Notice of Futures Offset Arrangement

Notice of Futures Offset Arrangement (Example 1)

Retailer A Pty Ltd (Market Participant); and

Clearing Company Pty Ltd (Clearing Participant) hereby request NEMMCO to register a Futures Offset Agreement (FOA) in relation to the electricity futures contracts described below. Upon registration of the FOA by NEMMCO, the Market Participant and the Clearing Participant agree to be bound by the terms and conditions of Futures Offset Arrangements as specified in s3.15.11B of the National Electricity Rules.

Term of the FOA:

Starting Day: 30-Dec-2005

Termination Day: 6-April-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 contract cash settlement day: Thursday 6-April-2006

The Futures Lodgement Price ($/MWh): 37.75

Notice of Futures Offset Arrangement (Example 2)

Retailer B Pty Ltd (Market Participant); and

Clearing Company Pty Ltd (Clearing Participant) hereby request NEMMCO to register a Futures Offset Agreement (FOA) in relation to the electricity futures contracts described below. Upon registration of the FOA by NEMMCO, the Market Participant and the Clearing Participant agree to be bound by the terms and conditions of Futures Offset Arrangements as specified in s3.15.11B of the National Electricity Rules.

Term of the FOA:

Starting Day: 30-Sep-2005

Termination Day: 6-Jan-2006

The futures contracts nominated to become subject to a FOA:

Contract Region: NSW

Futures product code: BNZ5

The futures contract term: Q4 2005

Commencing with the half hour ending: 00:30 1-Oct-2005

Ending with the half hour ending: 24:00 31-Dec-2005

Futures contract load shape: BASE

Quantity of futures contracts: 1

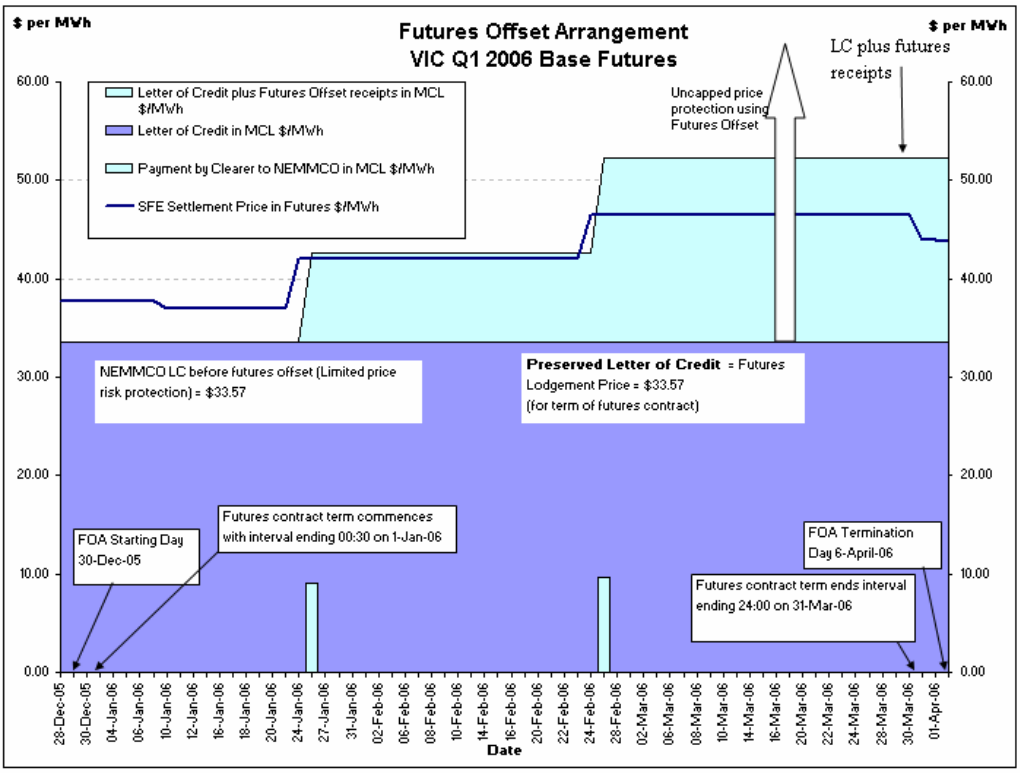
MWhs incorporated in each futures contract: 2,208

The futures contract cash settlement day: Friday 6-Jan-2006

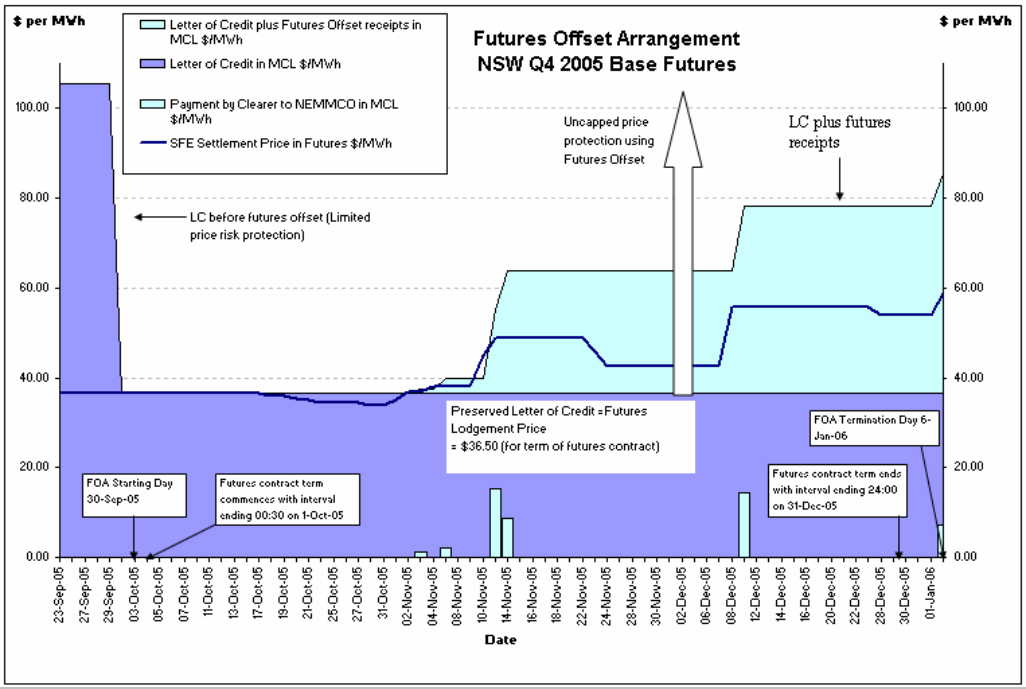
The Futures Lodgement Price ($/MWh): 36.50

Appendix 4. Examples of Futures Offset Arrangements cash flows (diagrams)

Example 1. Vic Q1 2006. Assume FOA lodged with a FLP equal to the last futures settlement price preceding the start of the quarter (i.e. $33.57/MWh). "LC" denotes (bank letter of credit/bank guarantee).



Example 2: NSW Q4 2005. Assume FOA lodged with a FLP equal to the last futures settlement price preceding the start of the quarter (i.e. $36.50/MWh).



Example 1: **Vic Q1 2006.** Cash flows and bank guarantee (letter of credit) balance throughout MCL period.
n.b. A $1/MWh increase in futures value creates a larger $/MWh contribution to MCL (if MCL MWh < futures MWh).

Worked example of Futures Offset Arrangement - cashflows and prudential impact. VIC Base Q1 2006 (BVH6). 1 contract assumed.

Date	SFE Settlement Price in Futures $/MWh	Letter of Credit in MCL $/MWh	Payment from Clearer to NEMMCO in Futures $/MWh	Payment by Clearer to NEMMCO in MCL $/MWh	Accumulated Futures Receipts in MCL $/MWh	Letter of Credit plus Futures Offset receipts in MCL $/MWh	Futures MWh = 2,160 per contract. MCL MWh = 1,008. FLP = $37.75
Fri, 23 Dec 2005	37.75	33.57				33.57	
Wed, 28 Dec 2005	37.75	33.57				33.57	
Thu, 29 Dec 2005	37.75	33.57				33.57	
Fri, 30 Dec 2005	37.75	33.57				33.57	FOA Starting Day. MCL < FLP hence LC unchanged (for MCL period covered by futures term, commencing half hour ending 00:30 1-Jan-2006)
Tue, 3 Jan 2006	37.75	33.57				33.57	First (potential) payment day: (37.75-FLP) *2160 hrs * 1MW = 0
Wed, 4 Jan 2006	37.75	33.57				33.57	
Thu, 5 Jan 2006	37.75	33.57				33.57	
Fri, 6 Jan 2006	37.75	33.57				33.57	
Mon, 9 Jan 2006	37.75	33.57				33.57	
Tue, 10 Jan 2006	37	33.57				33.57	
Wed, 11 Jan 2006	37	33.57				33.57	
Thu, 12 Jan 2006	37	33.57				33.57	
Fri, 13 Jan 2006	37	33.57				33.57	
Mon, 16 Jan 2006	37	33.57				33.57	
Tue, 17 Jan 2006	37	33.57				33.57	
Wed, 18 Jan 2006	37	33.57				33.57	
Thu, 19 Jan 2006	37	33.57				33.57	
Fri, 20 Jan 2006	37	33.57				33.57	
Mon, 23 Jan 2006	37	33.57				33.57	
Tue, 24 Jan 2006	42	33.57				33.57	
Wed, 25 Jan 2006	42	33.57	**4.25**	**9.11**	9.11	42.68	NEMMCO receives: (42.00-DSPt-1) * 2160 hrs * 1 MW = **$9,180**
Fri, 27 Jan 2006	42	33.57			9.11	42.68	
Mon, 30 Jan 2006	42	33.57			9.11	42.68	
Tue, 31 Jan 2006	42	33.57			9.11	42.68	
Wed, 1 Feb 2006	42	33.57			9.11	42.68	
Thu, 2 Feb 2006	42	33.57			9.11	42.68	
Fri, 3 Feb 2006	42	33.57			9.11	42.68	
Mon, 6 Feb 2006	42	33.57			9.11	42.68	
Tue, 7 Feb 2006	42	33.57			9.11	42.68	
Wed, 8 Feb 2006	42	33.57			9.11	42.68	
Thu, 9 Feb 2006	42	33.57			9.11	42.68	
Fri, 10 Feb 2006	42	33.57			9.11	42.68	
Mon, 13 Feb 2006	42	33.57			9.11	42.68	
Tue, 14 Feb 2006	42	33.57			9.11	42.68	
Wed, 15 Feb 2006	42	33.57			9.11	42.68	
Thu, 16 Feb 2006	42	33.57			9.11	42.68	
Fri, 17 Feb 2006	42	33.57			9.11	42.68	
Mon, 20 Feb 2006	42	33.57			9.11	42.68	
Tue, 21 Feb 2006	42	33.57			9.11	42.68	
Wed, 22 Feb 2006	42	33.57			9.11	42.68	
Thu, 23 Feb 2006	42	33.57			9.11	42.68	
Fri, 24 Feb 2006	46.5	33.57			9.11	42.68	
Mon, 27 Feb 2006	46.5	33.57	**4.50**	**9.64**	18.75	52.32	NEMMCO receives: (46.50-DSPt-1) * 2160 hrs * 1 MW = **$9,720**
Tue, 28 Feb 2006	46.5	33.57			18.75	52.32	
Wed, 1 Mar 2006	46.5	33.57			18.75	52.32	
Thu, 2 Mar 2006	46.5	33.57			18.75	52.32	
Fri, 3 Mar 2006	46.5	33.57			18.75	52.32	
Mon, 6 Mar 2006	46.5	33.57			18.75	52.32	
Tue, 7 Mar 2006	46.5	33.57			18.75	52.32	
Wed, 8 Mar 2006	46.5	33.57			18.75	52.32	
Thu, 9 Mar 2006	46.5	33.57			18.75	52.32	
Fri, 10 Mar 2006	46.5	33.57			18.75	52.32	
Mon, 13 Mar 2006	46.5	33.57			18.75	52.32	
Tue, 14 Mar 2006	46.5	33.57			18.75	52.32	
Wed, 15 Mar 2006	46.5	33.57			18.75	52.32	
Thu, 16 Mar 2006	46.5	33.57			18.75	52.32	
Fri, 17 Mar 2006	46.5	33.57			18.75	52.32	
Mon, 20 Mar 2006	46.5	33.57			18.75	52.32	
Tue, 21 Mar 2006	46.5	33.57			18.75	52.32	
Wed, 22 Mar 2006	46.5	33.57			18.75	52.32	
Thu, 23 Mar 2006	46.5	33.57			18.75	52.32	
Fri, 24 Mar 2006	46.5	33.57			18.75	52.32	
Mon, 27 Mar 2006	46.5	33.57			18.75	52.32	
Tue, 28 Mar 2006	46.5	33.57			18.75	52.32	
Wed, 29 Mar 2006	46.5	33.57			18.75	52.32	
Thu, 30 Mar 2006	46.5	33.57			18.75	52.32	
Fri, 31 Mar 2006	43.95	33.57			18.75	52.32	Last trading day of futures contract. Futures contract term ends half hour ending
Sat, 1 Apr 2006	43.95	33.57			18.75	52.32	Standard MCL calculation for periods after Q1 2006 (assumed 33.57)
Thu, 6 Apr 2006	43.88	33.57			18.75	52.32	FOA Termination Day. Futures Cash Settlement Day. Futures Cash Settlement Price = 43.88.

Gross MCL (approx/MWh) = PR x VFR = $25.83 x 1.3 = $33.58.

For illustrative purposes, figures assume static NEMMCO MCL calculation inputs during current quarter and next quarter and that a similar FOA is registered for Q2 2006.

Example 2: **NSW Q4 2005.** Cash flows and bank guarantee (letter of credit) balance throughout MCL period. n.b. A $1/MWh increase in futures value creates a larger $/MWh contribution to MCL (if MCL MWh < futures MWh).

Worked example of Futures Offset Arrangement - cashflows and prudential impact. NSW Base Q4 2005 (BNZ5). 1 contract assumed.

Date	SFE Settlement Price in Futures $/MWh	Letter of Credit in MCL $/MWh	Payment from Clearer to NEMMCO in Futures $/MWh	Payment by Clearer to NEMMCO in MCL $/MWh	Accumulated Futures Receipts in MCL $/MWh	Letter of Credit plus Futures Offset receipts in MCL $/MWh	Futures MWh = 2,208 per contract. MCL MWh = 1,008. FLP = $36.50
Fri, 23 Sep 2005	36.50	105.63				105.63	
Mon, 26 Sep 2005	36.50	105.63				105.63	
Tue, 27 Sep 2005	36.75	105.63				105.63	
Wed, 28 Sep 2005	36.50	105.63				105.63	
Thu, 29 Sep 2005	36.50	105.63				105.63	
Fri, 30 Sep 2005	36.50	36.50				36.50	FOA Starting Day. MCL reduced to FLP (for MCL period covered by futures term, commencing half hour interval 00:30 1-Oct-2005)
Mon, 3 Oct 2005	36.50	36.50				36.50	First (potential) payment day: (36.50-FLP) * 2208 MWh * 1 contract = 0
Tue, 4 Oct 2005	36.50	36.50				36.50	
Wed, 5 Oct 2005	36.50	36.50				36.50	
Thu, 6 Oct 2005	36.50	36.50				36.50	
Fri, 7 Oct 2005	36.50	36.50				36.50	
Mon, 10 Oct 2005	36.50	36.50				36.50	
Tue, 11 Oct 2005	36.50	36.50				36.50	
Wed, 12 Oct 2005	36.50	36.50				36.50	
Thu, 13 Oct 2005	36.50	36.50				36.50	
Fri, 14 Oct 2005	36.50	36.50				36.50	
Mon, 17 Oct 2005	36.50	36.50				36.50	
Tue, 18 Oct 2005	36.00	36.50				36.50	
Wed, 19 Oct 2005	36.00	36.50				36.50	
Thu, 20 Oct 2005	35.25	36.50				36.50	
Fri, 21 Oct 2005	35.00	36.50				36.50	
Mon, 24 Oct 2005	34.50	36.50				36.50	
Tue, 25 Oct 2005	34.50	36.50				36.50	
Wed, 26 Oct 2005	34.50	36.50				36.50	
Thu, 27 Oct 2005	34.50	36.50				36.50	
Fri, 28 Oct 2005	34.00	36.50				36.50	
Mon, 31 Oct 2005	34.00	36.50				36.50	
Tue, 1 Nov 2005	35.00	36.50				36.50	
Wed, 2 Nov 2005	37.00	36.50				36.50	
Thu, 3 Nov 2005	37.00	36.50	**0.50**	**1.10**	1.10	37.60	NEMMCO receives: (37.00-DSP_h) * 2208 MWh * 1 contract = **$1,104**
Fri, 4 Nov 2005	38.00	36.50			1.10	37.60	
Mon, 7 Nov 2005	38.00	36.50	**1.00**	**2.19**	3.29	39.79	NEMMCO receives: (38.00-DSP_{t-1}) * 2208 MWh * 1 contract = **$2,208**
Tue, 8 Nov 2005	38.00	36.50			3.29	39.79	
Wed, 9 Nov 2005	38.00	36.50			3.29	39.79	
Thu, 10 Nov 2005	45.00	36.50			3.29	39.79	
Fri, 11 Nov 2005	49.00	36.50	**7.00**	**15.33**	18.62	55.12	NEMMCO receives: (45.00-DSP_{t-1}) * 2,208 MWh * 1 contract = **$15,457**
Mon, 14 Nov 2005	49.00	36.50	**4.00**	**8.76**	27.38	63.88	NEMMCO receives: (49.00-DSP_{t-1}) * 2,208 MWh * 1 contract = **$8,832**
Tue, 15 Nov 2005	49.00	36.50			27.38	63.88	
Wed, 16 Nov 2005	49.00	36.50			27.38	63.88	
Thu, 17 Nov 2005	49.00	36.50			27.38	63.88	
Fri, 18 Nov 2005	49.00	36.50			27.38	63.88	
Mon, 21 Nov 2005	49.00	36.50			27.38	63.88	
Tue, 22 Nov 2005	49.00	36.50			27.38	63.88	
Wed, 23 Nov 2005	45.75	36.50			27.38	63.88	
Thu, 24 Nov 2005	42.50	36.50			27.38	63.88	
Fri, 25 Nov 2005	42.50	36.50			27.38	63.88	
Mon, 28 Nov 2005	42.50	36.50			27.38	63.88	
Tue, 29 Nov 2005	42.50	36.50			27.38	63.88	
Wed, 30 Nov 2005	42.50	36.50			27.38	63.88	
Thu, 1 Dec 2005	42.50	36.50			27.38	63.88	
Fri, 2 Dec 2005	42.50	36.50			27.38	63.88	
Mon, 5 Dec 2005	42.50	36.50			27.38	63.88	
Tue, 6 Dec 2005	42.50	36.50			27.38	63.88	
Wed, 7 Dec 2005	42.50	36.50			27.38	63.88	
Thu, 8 Dec 2005	55.60	36.50			27.38	63.88	
Fri, 9 Dec 2005	55.60	36.50	**6.60**	**14.46**	41.84	78.34	NEMMCO receives: (55.60-DSP_h) * 2,208 MWh * 1 contract = **$14,572.80**
Mon, 12 Dec 2005	55.60	36.50			41.84	78.34	
Tue, 13 Dec 2005	55.60	36.50			41.84	78.34	
Wed, 14 Dec 2005	55.60	36.50			41.84	78.34	
Thu, 15 Dec 2005	55.60	36.50			41.84	78.34	
Fri, 16 Dec 2005	55.60	36.50			41.84	78.34	
Mon, 19 Dec 2005	55.60	36.50			41.84	78.34	
Tue, 20 Dec 2005	55.60	36.50			41.84	78.34	
Wed, 21 Dec 2005	55.60	36.50			41.84	78.34	
Thu, 22 Dec 2005	55.60	36.50			41.84	78.34	
Fri, 23 Dec 2005	55.60	36.50			41.84	78.34	
Wed, 28 Dec 2005	54.00	36.50			41.84	78.34	
Thu, 29 Dec 2005	54.00	36.50			41.84	78.34	
Fri, 30 Dec 2005	54.00	36.50			41.84	78.34	Last trading day of futures contract
Sat, 31 Dec 2005	54.00	36.50			41.84	78.34	Futures contract term ends half hour ending 24:00
Sun, 1 Jan 2006	54.00	36.50			41.84	78.34	Standard MCL calculation for periods after Q1 2006 (assumed 36.50)
Fri, 6 Jan 2006	**58.83**	36.50	**3.23**	**7.08**	48.91	85.41	FOA Termination Day. Futures Cash Settlement Day. Futures Cash Settlement Price = 58.83. NEMMCO receives: (Cash Settlement Price-DSP_h) * 2,208 MWh * 1 contract = **$7,131.84**

Gross MCL (approx/MWh) = PR x VFR = $33.24 x 3.2 = $105.64.

For illustrative purposes, figures assume static NEMMCO MCL calculation inputs during current quarter and next quarter and that a similar FOA is registered for Q1 2006.

Appendix 5. Suggested formula and worked examples for calculating MCL reduction for Futures Offset Arrangements

Suggested Formula

Max [(PR x VFR – FLP) x FLR x T, 0]

Where for each Futures Offset Arrangement:

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

Worked examples of calculation of MCL reduction for Futures Offset Arrangements

Consider: **NSW Q4 2005.**

MCL calculation prior to Futures Offset Arrangement:

Assume NEMMCO predicts Market Participant's average quantity of energy use for Q4 NSW = 24MWh per day.

MCL for NSW Q4 2005 prior to futures offset:

= PR x VFR x LR x T

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

= $105.64 x 24 MWh x 42 days

= $ 106,483.10

MCL reduction under Futures Offset Arrangement

Now assume a FOA is lodged in accordance with the Notice of FOA as per in appendix 3 (NSW Q4 2005: 1 contract representing 24 MWh per day).

1. MCL Reduction as at 1-Oct-05

Assume MCL reduction for Futures Offset Arrangement is being calculated on 1-Oct-05, a day when the futures term fully encompasses the 42 day MCL calculation period.

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

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

= $69,691.10

2. MCL Reduction as at 9-Dec-05

Assume that the MCL reduction for Futures Offset Arrangement is being calculated on 9-Dec-05 when the 42 day MCL calculation period extends beyond the end of the futures contract term (Q4 2005 ends 31-Dec-05) by 20 days, and no Futures Offset Arrangements or reallocations are registered for Q1 2006.

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

= Max [($40.63 x 2.6 – $36.50) x (24 MWh) x **(42-20)** days, 0]

= $ 36,504.86

Appendix 6. Background Information – Efficiencies delivered by Futures Offset Arrangements

1 Background to duplication of collateral burden and the existing Rules

The Parer Report cited an unnecessary collateral burden faced by NEM participants. "Retailers currently have to lodge around $1.6 billion in bank guarantees to back their pool settlements. These guarantees take no account of any financial contracts that significantly reduce their pool exposure. They are, therefore, larger than are necessary, and then in addition the retailers must allow for the capital to back the risk associated with their financial contracts." [14] These guarantees (or letters of credit) are intended to ensure the payment by NEMMCO of pool price purchases to generators that provide energy to the pool.

To calculate the size of guarantees required from banks (and state governments) intended to secure uncertain future pool market liabilities of retailers, NEMMCO estimates its worst-case exposure to retailers based on the MCL formula. The primary inputs into this formula include a prediction of the average price of electricity for the upcoming quarter (and predicted volatility of this price) which NEMMCO bases on historical pool price observations and the anticipated energy consumption of the market participant.[15]

The Rules currently allow for retailers to reduce their bank guarantee-posting requirements associated with future pool price outcomes by entering into "ex-ante" reallocations.[16] Ex-ante reallocation transactions are financial arrangements between NEMMCO, a paying participant (usually a retailer) and a receiving participant (usually a generator). The generator agrees (via a reallocation request to NEMMCO) to forgo future pool receipts in favour of a designated retailer. In return, NEMMCO reduces the guarantee support required from the retailer by deducting reallocated amounts within the MCL formula. Effectively, NEMMCO facilitates the generator selling a financial swap derivative with a fixed price of $0.00 /MWh to the retailer, with the generator being permitted to use potential future generation as trading collateral.

Although not provided for in the current Rules, it can be assumed that the retailer and generator enter into an off market Over the Counter (OTC) financial transaction to compensate the generator for agreeing to forgo future pool revenue. Price and volume information arising from these transactions is not publicly disclosed.

2 How the proposed Rule supporting FOAs will support efficiency improvements to the NEM.

The integration of electricity Futures Offset Arrangements in the spot market prudential framework will contribute to the achievement of the NEM market objective in the following ways:

2.1 Futures Offset Arrangements will reduce credit risks in the NEM

Futures Offset Arrangements will reduce credit risk exposure in the NEM while lowering the collateral funding costs incurred by market participants[17]. Clearing Participants (and the SFE Clearing Corporation) provide an incremental level of prudential safeguard and credit risk mitigation in comparison to existing reallocation arrangements, particularly in instances where prices increase rapidly due to generation outages and intra-regional constraints, precisely when the NEM prudential framework is most vulnerable. The failure of a generator does not effect the contractual performance of a bought futures contract facilitated by a SFE Clearing Participant on behalf of a retailer, even if the sale of the futures contract was originally initiated on behalf of a generator.

14 W.R Parer, Towards A Truly National And Efficient Energy Market, Commonwealth of Australia 2002. p.31.

15 Method for Determining Maximum Credit Limits, Version 4, NEMMCO 21-4-2004.

16 Unless otherwise stated, a reference to "reallocation" refers to "ex-ante reallocation"

[17] d-cypha SFE Electricity futures are recognised as a zero credit risk weighting under Basel II. Futures Offset Arrangements as proposed, would have reduced MCL guarantee requirements for NEM retailers by up to 69% (e.g. NSW and SA Q2 2006).

In comparison, current ex-ante reallocation arrangements involve NEMMCO relying on an unsecured generator being available to generate with absolute certainty in the future. Reliance on unsecured potential future generation creates the undesirable risk of a reallocated generator failing and of that failure in itself creating high spot prices at a time when the prudential system is least able to absorb them, as the retailer's commitment to NEMMCO becomes unsecured without warning[18].

Futures Offset Arrangements involve a residual component of the MCL (equivalent to the price at which the Futures Offset Arrangement is registered) being retained as bank letters of credit, providing additional collateral support to NEMMCO. Under the existing ex-ante reallocation arrangements, no residual bank letters of credit are retained, fully exposing NEMMCO to the potential default (e.g. due to unforeseen outage) of a reallocated generator.

2.2 Duplication of collateral burden is eliminated with Futures – not merely transferred to generators

Ex-ante reallocations necessitate large off-market OTC commitments between participants, and create significant inefficiencies and risks, predominately associated with counterparty default risk. This arises under ex-ante reallocation because the risk of retailer default is transferred from NEMMCO to reallocating generators. If the retailer defaults on OTC payments to the generator, the generator will suffer a loss. The magnitude of such credit risk is significant for OTC reallocation arrangements as evidenced by NEMMCO's own insistence for financial guarantees to cover the equivalent risk. Current reallocations involve the generator forgoing large gross pool amounts, such that a supporting OTC transaction must compensate the generator for the full-agreed price (in $/MWh) multiplied by the quantity of energy (in MW/hour) multiplied by the entire term of the deal (in hours). Settlements received under these arrangements far exceed cash flows required to secure the obligations arising from futures contracts facilitated through a Central Counterparty (CCP) Clearer such as the SFECC. Futures cash flow obligations are much smaller and more efficient because futures are cash settled each business day and outstandings are not allowed to accumulate for 4 weeks or longer as in the case of longer-termed reallocation contracts (or normal NEMMCO settlement arrangements).

The pricing of supporting OTC transactions and the transferral of risks from NEMMCO to generators are cited by market participants as being significant impediments to the success of the existing reallocation mechanism.

In order to be compensated for the additional risk involved in current reallocations, generators should logically require a credit risk margin, which is reflected in the price of OTC transactions that support NEMMCO reallocation agreements. Moreover, it is impractical for retailers to seek reallocation transactions with only one generator (unless the retailer and generator are vertically integrated). The retailer will wish to have a choice of generators to select from when arranging for a reallocation transaction for reasons of competitiveness and liquidity. Some generators refuse to enter into reallocations. Generator reallocation support is unlikely to be constantly available on request from the same generator and as a result, retailers will seek to establish pre-emptive collateral support arrangements (e.g. bank guarantees) with several generators. To enable any practical choice of reallocation supply options, the retailer must establish duplicate bank guarantee facilities or other forms of pre-emptive collateral support arrangements, further exacerbating the cost of reallocation.

[18] E.g. Consider the effect of a fully ex-ante reallocated generator suddenly being unable to dispatch, while the reallocated retailer has received a full MCL offset and guarantee reduction on the basis of the reallocation. If the generator outage caused or occurred during a period of VOLL, NEMMCO may be exposed to a prudential shortfall within one or more hours, even if the reallocated generator had unpaid settlements owing to it.

2.3 Futures Collateral Management is much more efficient for NEM retailers due to netting and daily margining

Through Futures Offset Arrangements, payment risks are reduced and borne by SFE Clearing Participants which are supported by the prudential framework of the SFECC, rather than being transferred (in gross amounts) to individual generators.

The substantial collateral efficiency advantage inherent in futures markets arises from the margining process facilitated by the futures clearing house – SFE Clearing Corporation (SFECC), which requires collateral to cover only one day of worst case price movement[19]. SFECC achieves this efficiency through daily mark to market revaluation of the futures contract. NEMMCO ex-ante reallocations require much larger collateral amounts (e.g. in the form of letters of credit) to cover much larger potential price movements over much longer terms. The security and efficiency of daily mark to market cash margining is not utilised by NEMMCO.

An example of the relative efficiency of Futures Offset arrangements is provided by noting that a $0.92/MWh futures initial margin (which earns interest) deposited by a retailer to its Clearing Participant would reduce the retailer's guarantees to NEMMCO by $75.40/MWh.[20]

Additionally, the netting and novation efficiencies automatically delivered by electricity futures avoid unnecessary duplication of collateral postings to multiple parties. If no futures position is held by a participant, no initial margin deposit is required. Substantial collateral efficiency gains for NEM participants will be achieved through leveraging off the licensed futures Clearing House (supervised by ASIC, the RBA and the ACCC), prudentially supervised Clearing Participants (credit risk management experts), and the benefit of contract novation and daily margining efficiencies. Non-compulsory futures offset arrangements will allow for a substantial reduction in reliance on inflexible bank guarantee arrangements which provide limited coverage during periods of prolonged high pool prices[21] but are also a cumbersome and expensive collateral substitute for daily mark to market margining. Appendix 1 shows the percentage reduction in the collateral burden on NEM retailers that could have been achieved by Futures Offset Arrangements in every state region, since Q2 2005.

2.4 Ex-post net settlement benefits are already being delivered by futures

Daily futures variation margins automatically provide ex-post reallocation benefits for participants without the need to lodge a reallocation request with NEMMCO. Daily futures cash settlements ensure that cash flows associated with futures positions automatically reflect daily mark to market value. In a situation where a retailer has an "in the money" futures hedge position, the associated positive cash flow is automatically released to the retailer and may be applied to NEMMCO settlement obligations, NEMMCO security deposit arrangements or for any other purpose. This compares favourably to the current ex-post reallocation arrangements supported by NEMMCO, which require agreement between generators and retailers before OTC and pool related cash flow offsets can be achieved. The identities of hedging counterparties do not need to be revealed to NEMMCO or other participants for retailers to benefit from

[19] To within a 99% confidence level. Additional prudential safeguards are provided (see www.sfe.com.au for more details).

[20] Refer to Appendix 1 for MCL guarantee calculations. NSW Q2 2006 initial margin was $0.92/MWh per contract. A NSW retailer could have applied a Futures Offset Arrangement to release $75.40/MWh of Letters of Credit to NEMMCO for each futures contract funded at $0.92/MWh throughout Q2 2006. Initial margin deposits may be met with cash or letters of credit.

[21] E.g. Bank guarantee shortfalls during Q1 2006 in Victoria where NEMMCO's MCL price and volatility estimate (and LC coverage) were inadequate during higher than expected pool prices – necessitating reactionary collateral calls on retailers. The inefficiency of the existing methodology was illustrated by Q2 2006 where Futures Offset Arrangements could have reduced the MCL collateral burden on NSW and SA retailers by 69%.

futures cash flow offsets.[22] Futures cash settlements apply similarly to longer dated positions (up to 4 years ahead) such that any net positive cash flows from futures portfolios may be applied directly to NEMMCO payment obligations at any time.

2.5 Reduced systemic credit risk from a more diverse pool of prudential support providers

The Parer Report notes that "As the major domestic banks in Australia provide most of the guarantees to NEMMCO, the issue of concentration of risk within their lending portfolios is placing a constraint on the further extension of credit support."[23] An increase in the spot market price ceiling, or the privatisation of government owned retailers (currently backed by state government letters of credit) is likely to cause a step-jump in NEMMCO related collateral requirements and concentration risk among a limited number of non-government prudential support providers. The integration of electricity futures contracts in the NEM prudential framework will alleviate the concentration risk amongst financial support providers by instantaneously doubling the number of banks actively involved in providing prudential support to NEMMCO. Futures Offset Arrangements will provide an immediate solution to these structural challenges that otherwise pose a significant risk to the prudential security of the NEM.

No fewer than 7 licensed Clearing Participants (including four major banks[24]) which do not currently provide NEMMCO guarantee support on behalf of NEM retailers clear Australian electricity futures. Clearing Participants are supportive of the proposed Rule change to support FOAs and welcome the opportunity to provide competition to the limited pool of guarantee providers to NEMMCO[25]. Increased competition among providers of prudential support to NEMMCO will deliver lower transaction and funding costs to retailers and market customers. Numerous SFE Clearing Participants wish to increase their clearing services to the industry.

Currently, electricity futures exposures (measured in terms of initial margin balances) constitute less than 6% of clearing exposures on the SFECC. Multi-product and multi-participant diversification avoids undesirable risk concentrations within a single industry sector such as that which led to the Californian ISO defaulting on payments and the California Power Exchange filing for bankruptcy, amid high electricity spot price events in 2001.[26]

SFE Clearing Participants are responsible for determining the credit worthiness of their clients and assume the credit default risk of their clients. SFECC enforces strict prudential requirements upon SFE Clearing Participants. NEMMCO and NEM participants may avoid having to attempt to administer a similar degree of prudential integrity and ongoing credit assessment of counterparties by leveraging off the prudential strength and expertise of the SFECC and its Clearing Participants.

2.6 Futures reduce NEMMCO's reliance on call notices to retailers

Under the current Rules, if a high spot price event occurs that exceeds NEMMCO's estimated price outcome (and bank guarantee coverage), a collateral shortfall is created, which may result in a reactionary

[22] OTC dealings also require counterparty identities to be revealed at the time of trade initiation. The anonymity of futures trading enables completely anonymous transacting.

[23] W.R Parer, Towards A Truly National And Efficient Energy Market, Commonwealth of Australia 2002. p.166.

[24] Clearing Participants include but are not limited to Credit Suisse, ABN AMRO, Deutsche Bank and UBS.

[25] The pool of guarantee providers will contract significantly when QLD Treasury Corp ceases to provide financing support to Ergon and Energex if the QLD retailers are privatised during 2006.

[26] Kaminski V (ed), "Managing Energy Price Risk, The New Challenges and Solutions", Risk Books, London, 2004. p.433

call notice on retailers. In this case, NEMMCO's risks are higher than if it had the concurrent benefit of positively valued futures contracts which could capture the value of the high price event (often pre-emptively) and create positive cash flow through futures variation margins. Even a 1 MW bid in a single futures contract that creates a higher official daily settlement price in response to a high pool price event, could create a very large positive cash flow benefit for NEMMCO (from potentially hundreds or thousands of MWhs of FOAs). Conversely, under the proposed Rule change to support FOAs NEMMCO never makes a payment (or repayment) against a Futures Offset position even if the value of the futures contract subsequently declines.

2.7 Futures reduce systemic credit risk in the event of generation outages and intra regional constraints

The use of FOAs will reduce the risks associated with reliance on call notices to retailers where a "reallocated" generator experiences an unforeseen capacity outage. Under the current ex-ante reallocation procedures, where a reallocated generator experiences an outage during the term of the reallocation, the generator may be unable to dispatch to meet the reallocation commitment. In such a situation, NEMMCO may be forced to deregister the reallocation, resulting in an immediate increase in the MCL calculation and a collateral shortfall from the relevant retailer[27]. If such an outage occurred during (or caused) a prolonged period of high prices, the retailer may find itself under financial pressure to meet this sudden increased obligation to NEMMCO, particularly where the reallocation covered a meaningful quantity of energy. NEMMCO's creditors (generators) are at risk until or unless the retailer covers the shortfall.[28] In effect, these participants are at risk due to the unreliability of another generator. If the generation shortfall occurs in one region, settlement obligations owed to generators from other regions are also at risk.

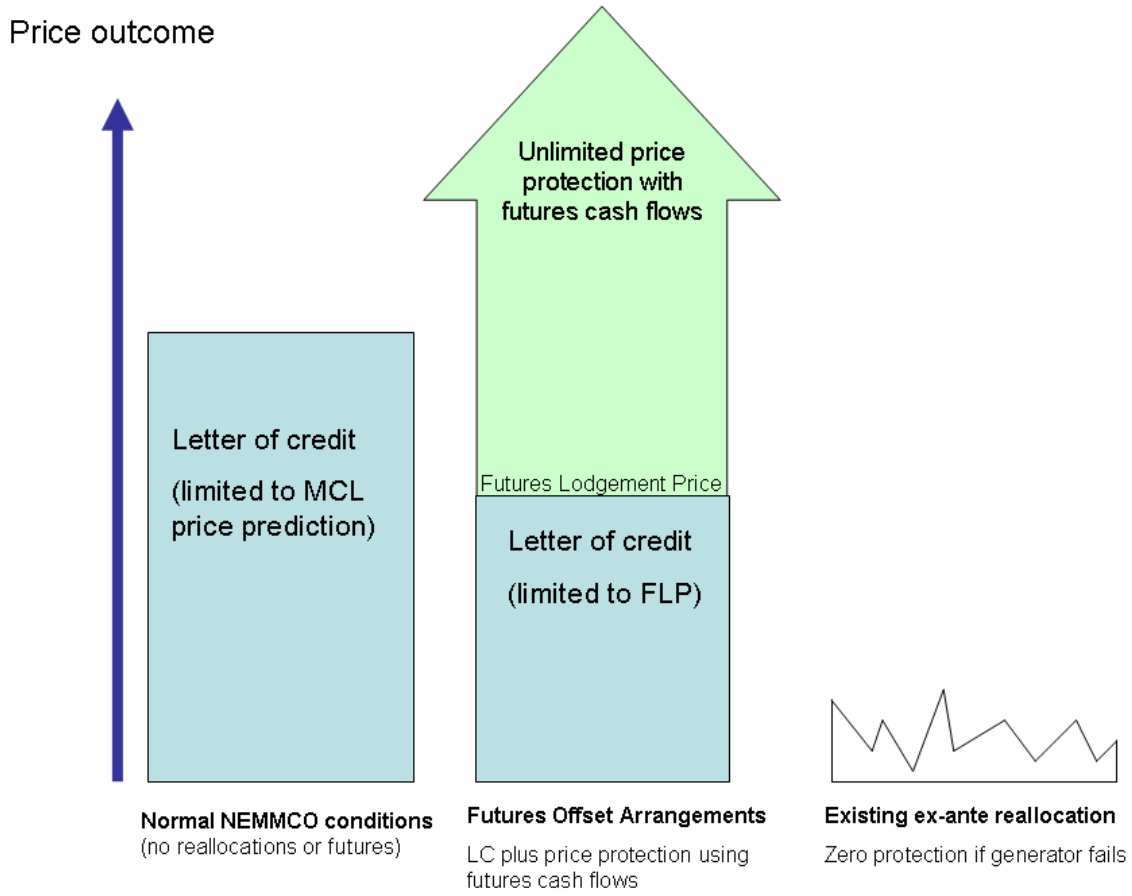
This creates perverse risk/return incentives because reallocating generators have an incentive (e.g. a margin built into the OTC transactions that support the reallocation) to commit to reallocations regardless of the reliability of their plant. These generators know that any potential losses arising from outages during the term of an imprudent reallocation hedge will be shared by other generators. The reallocating generator keeps all of the profit margin if unreliable plant output meets the future dispatch commitment under the reallocation but assumes only a fraction of the risk if the plant suffers an outage.

A more efficient and reflective risk outcome is achieved under FOAs. In the event of a generator outage (or intra regional energy constraint), the retailer's commitment continues to be supported by the futures positions and there is no need for the retailer to post additional collateral when a generator fails. Other NEM generators are not reliant on reactionary call notices being paid by the retailer. Under FOAs, any outage risk lies with the unreliable generator (to the extent that they may have over-hedged available capacity) rather than providing a plant-reliability free ride on other generators and NEMMCO creditors. See diagram 1 below.

[27] NEL s 3.15(11) (n) and (o)

[28] National Electricity Code s3.15.22 and s3.15.23

Diagram 1. Comparison between price protection outcomes under (a) normal conditions (no reallocations or FOAs); (b) FOA; and (c) ex-ante reallocations, where a reallocated generator fails.



2.9 Reduced risk of NEMMCO price prediction errors (regardless of reallocation)

NEMMCO applies the MCL formula to estimate an expected worst case average price for the upcoming calendar quarter, which is then used to set the level of bank guarantee support required from retailers' banks. Under this methodology, NEMMCO samples historical price volatility and historical pool prices in each NEM region.[29] Predicting future pool price outcomes based entirely upon historical observations is imprecise. This methodology takes no account of the inherent seasonality differences between calendar quarters (e.g. high quarter one summer peak volatility versus low quarter two autumn shoulder volatility). In the event that upcoming pool prices exceed NEMMCO's worst-case historical-based estimate, retailers may be under-provisioned and bank guarantees posted to NEMMCO may be insufficient to cover the payments owed by retailers[30]. Additional calls for collateral must be relied upon in such events, placing additional financial stress on retailers and the limited pool of credit support providers.

[29] NEMMCO, Method for Determining Maximum Credit Limits v4, 24-2-2004.

[30] E.g. Q1 2006 where NEMMCO's MCL methodology predicted a worst case 33.57/MWh pool price average (approx) for Victoria and the actual Q1 2006 pool price average was $43.88, creating collateral shortfalls.

It is unlikely that any given weekly price outcome will equal NEMMCO's price and volatility estimate for the calendar quarter (even in the unlikely event that the estimation of the quarter average price proves to be accurate). Where a weekly price outcome significantly exceeds the anticipated average price of the quarter, bank guarantees in favour of NEMMCO may be insufficient to cover payments owed by the retailer and an additional call for collateral must be made on retailers (and, hopefully met) to protect creditors (generators). Quarterly futures contracts capture the price outcomes of all half hours during the quarter, reflected via market consensus in daily futures settlement prices and in the final futures cash settlement value (which equals the exact pool price average of the quarter). In this way, Futures Offset Arrangements address the inherent risk in existing MCL "set and forget" price path assumptions.

2.10 Futures provide risk coverage at all price levels – bank guarantees are limited.

Open and transparent futures markets reflect the best available market intelligence to estimate average quarter pool price outcomes. The transparency of the electricity futures market assists in providing a leading indicator of upcoming pool prices based on real time market consensus as opposed to a backward-looking historical prediction from a single entity (i.e. NEMMCO). Electricity futures contracts are efficient price-following risk management tools. The futures contracts are cash settled against daily mark to market prices based on live market prices during the term of the quarter contract. Several futures market participants are contractually obligated to provide market making (price support) services to the electricity futures products. Their involvement and the activity of at least 30 electricity futures market participants assist futures revaluations (and futures cash flows) to respond (often pre-emptively) to spot market price shocks. At contract expiry, the value of a futures contract is exactly equal to the average spot price of electricity during the quarter. See Appendix 2 for a worked example (Q1 2006 Victoria).

2.11 Reallocations are non-transparent – the futures market is transparent.

The existing reallocation framework contravenes the principle of financial market price transparency. Price and volume information related to reallocation transactions (and the OTC contracts that support them) is never broadcast to the public, resulting in a lessening of financial market price transparency. Decreased forward market transparency creates distorted (or muted) investment signals for new generation, transmission infrastructure and energy retailers. Electricity futures markets automatically provide real time publicly available forward curve price transparency out to 4 years ahead, complemented by the independent and transparent daily price settlement process.

The exclusion of futures from the NEMMCO prudential framework creates distortionary commercial incentives for retailers to bilaterally arrange reallocation deals (with a limited number of same-region generators), rather than transact through an open and transparent national derivatives market. If liquidity in the futures market is crowded out by a NEMMCO reallocation market which receives discriminatory collateral benefit treatment from NEMMCO, the NEM is at risk of losing:

1. A futures price curve that enables parties to make long term investment decisions and to hedge the financial risks associated with such investments;
2. Liquidity that enables participants to transfer or exchange market risk at the lowest possible cost across the energy sector;
3. Credit risk mitigation and trading collateral efficiency benefits provided by the prudential strength of licensed Clearing Participants, supported by the SFECC and earning a zero credit risk weighting under Basel II;
4. The ability for existing market participants to observe a transparent market for collateral offsets to enable them to enter into collateral offset arrangements at informed and efficient price levels.

2.12 Bank and non-bank financial institutions are prohibited from the reallocations market – Futures Offsets address this issue

The Australian electricity futures market consists of domestic, interstate and international trading companies, which contribute to an optimised pool of hedge contract liquidity (and to a significant supply of potential FOAs) via a centrally cleared marketplace. The electricity futures and options market is growing exponentially[31] due in part to the contracts (and participants) not being constrained to "must run" generation commitments. Financial markets (such as cash settled futures markets) which are not constrained by "must run" generation commitments support optimal participant access and unlimited hedge contract churn (with maximum liquidity benefits). Without FOAs, the price of ex-ante reallocation derivative contracts is likely to be distorted (expensive) due to limited competition among a limited selection of base load generators in any NEM region.

Domestic and international non-bank trading entities which are very active in the Australian electricity futures market and are some of the most significant providers of market liquidity (and potential suppliers of FOAs) yet are not NEM Market Participants.[32] Nonetheless, due to the support of SFE Clearing Participants, and the superior collateral efficiencies of futures mark to market margining, these non-bank trading specialists can immediately provide significant volumes of Futures Offsets to NEM retailers, upon FOAs being approved.

2.13 Interstate trading is prohibited under current reallocations – futures solve this problem

Current ex-ante reallocation procedures prohibit interstate trading. NEMMCO is unable to accept the risk of ex-ante reallocations in the absence of firm transmission settlement rights that may otherwise ensure that a generator could supply fungible capacity to an interstate retailer. This prevents generators from providing access to reallocation transactions to interstate retailers and market customers and will continue to severely restrict liquidity in reallocation transactions (or any derivative market requiring energy commitment).[33]

Interstate generators (or any electricity futures trader) can sell electricity futures which can be applied by a NEM retailer via a FOA, without requiring the futures seller's knowledge or permission. In this way FOAs will continue to nurture interstate trade, rather than prohibit it as is the case in the regionalised ex-ante reallocation markets.

[31] 2006 year to date (as of 31st May 2006) electricity futures and options turnover (MWh) represents 39% of NEM system demand (NSW, VIC, SA and QLD). Futures trading experienced an annual increase of 130% over the previous 12 month period.

[32] Unsecured NEM Generator participants are currently permitted to "short sell" ex-ante reallocation derivatives via NEMMCO, despite not meeting the Acceptable Credit Criteria of s 3.3.4 or being supported by a SFE Clearing Participants.

[33] For example Snowy Hydro is excluded from providing ex-ante reallocation support to NSW or VIC retailers because the 3,700 MW generator is located in the SNOWY region

2.14 Futures reduce the incentives for free-riding on other creditors (e.g. generators) under ex-post reallocations

Under the current arrangements, generators that have lodged ex-post reallocations do not share in the default burden created by the default of a retailer (to the extent that the generator has reallocated).[34] This encourages generators to commit to otherwise uncommercial reallocation arrangements with retailers, to the potential detriment of other generators. Generators that have entered into the largest negatively-valued OTC contract positions due for settlement are better placed to supply ex-post reallocation offsets to retailers. FOAs eliminate the ability for generators to "free ride" off other generators, by using reallocations to jump the NEMMCO creditor queue.

The absence of reallocation price transparency and the inability for NEMMCO to ascertain whether a reallocation is transacted at fair value may also create undesirable legal implications for NEMMCO and its creditors under Corporations Law (both for ex-ante reallocations and ex-post reallocations) particularly where the retailer and the reallocating generator are "related entities" (i.e. vertically integrated) and a court deems the transactions to be void.[35]

2.15 Collateral security in the event of low price outcomes – only futures preserve low pool price coverage when a generator fails

Major financial commitments of retailers arise from the requirement to pay NEMMCO for spot price outcomes. Retailers are unlikely to be under similar financial stress during periods of low spot prices. A retailer only has to make payments against bought futures contracts if the value of the futures contract falls. The risk of a retailer failing to make a futures variation payment arising from low price futures outcomes is therefore reduced and, in any case, rests with the retailer's Clearing Participant, not with NEMMCO.

Under the proposed rule to support FOAs, in the event that a retailer did default to a Clearing Participant on a bought futures position and the Clearing Participant was forced to close out the retailer's futures position, the Clearing Participant immediately notifies NEMMCO. The Clearing Participant is obligated to make payment to NEMMCO of positive variation margins above the Futures Lodgement Price, and if the average price at which the futures contracts were closed out is below the Futures Lodgement Price (or at any time), NEMMCO has the ability to apply the preserved bank guarantee protection which is always retained under the FOA. NEMMCO also retains the benefit of any FOA cash flows already received during the term of the FOA. If the futures close out price is above the previous highest settlement price during the term of the FOA, NEMMCO receives the additional value in cash. The preserved bank guarantee protection under FOA provides an additional tier of default protection to NEMMCO during low pool prices, which is not available under current ex-ante reallocation arrangements when a reallocated generator fails to dispatch and is unable to honour a reallocation commitment.

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[34] Reallocation Information Paper and Examples, NEMMCO May 2004. p.5.

[35] See Corporations Act s 588: Uncommercial Transactions. Consider:

1. an insolvent retailer preferentially dealing with a related generator to the detriment of the retailer, via a NEMMCO ex-post reallocation transacted at an uncommercial rate; or

2. an insolvent generator entering into an uncommercial ex-ante reallocation with a related retailer, to the detriment of the generator.

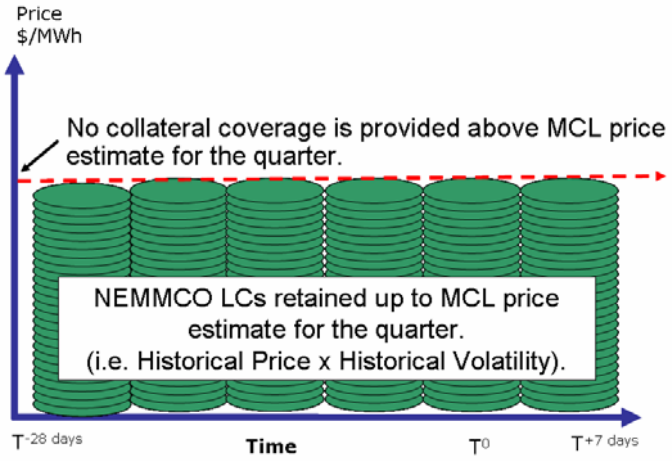
The improved risk coverage provided by futures compares favourably to the existing reallocation arrangements where NEMMCO may be forced to issue a call notice to a retailer (risking non-payment) without the added benefit of support from both futures contracts and preserved bank letters of credit. Current ex-ante reallocation arrangements expose all generators to default risk during low pool prices[36] without the additional tiers of default protection provided by Futures Offset Arrangements (see diagram 2).

[36] E.g. due to the unforseen outage of a reallocated generator that has "short sold" a reallocation transaction via NEMMCO using potential future generation as collateral support.

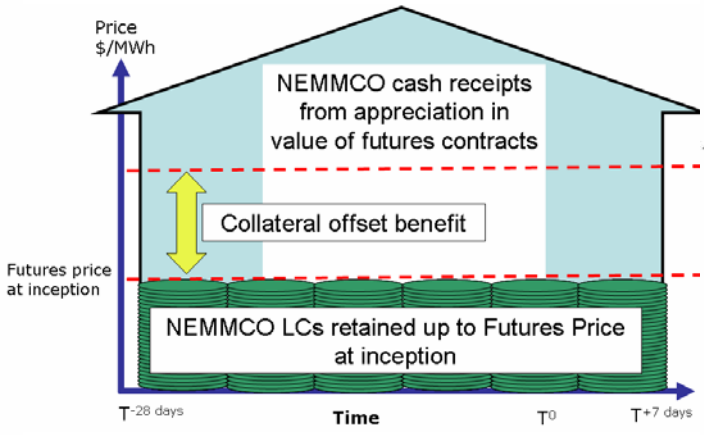
Diagram 2. Comparison of MCL collateral postings expressed in $/MWh for the retailer's average expected energy consumption during the quarter:

1. Without Futures Offset or reallocation;
2. With proposed Futures Offset; and
3. With existing ex-ante reallocation

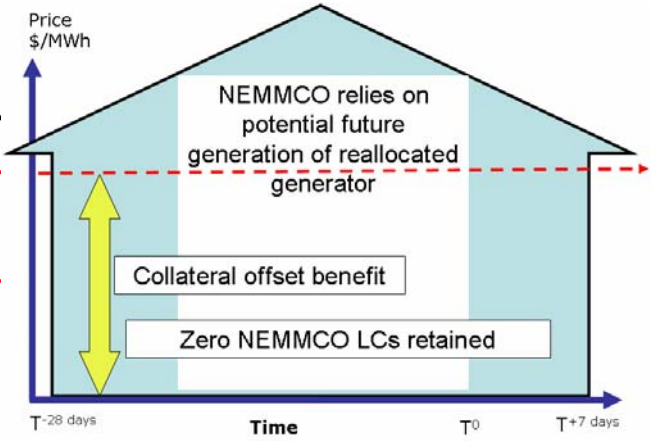
1. MCL without Futures Offset



2. MCL with Futures Offset



3. MCL with ex-ante reallocation



An important distinction between FOAs and ex-ante reallocations is that under FOAs, the retailer continues to maintain a level of bank guarantee support (denoted in the diagram as "NEMMCO LCs") as per the suggested MCL formula, equivalent to the futures contract price (in $/MWh) at inception of the arrangement. In most cases, this price is likely to be the most recent Official Daily Settlement Price of the relevant futures contract prior to registration of the FOA. Under a FOA, the retailer continues to make spot market settlement payments to NEMMCO as normal, while benefiting from a reduced MCL (and reduced collateral burden). Futures cash flows received by NEMMCO may be applied to the retailer's Security Deposit Arrangement or weekly NEMMCO settlement obligation or as otherwise agreed to by NEMMCO and the retailer.

2.16 Anonymity concerns of Market Participants are addressed by futures

Participants have raised concerns regarding anonymity in relation to the current reallocation framework.[37] A distinguishing feature of exchange traded electricity derivatives is that the confidentiality of counterparty identity is protected. Proposed FOAs ensure that the identity of the seller (e.g. generator or hedge fund) is not revealed to the retailer or to NEMMCO. The retailer is not required to disclose the identity of its commercial counterparties[38] as a result of a FOA although price and volume transparency benefits are immediately (or were previously) delivered to the wider market.

2.17 Retailers achieve collateral offset benefits without generator permission using futures

Under the proposed rule changes to support FOAs, retailers (and their Clearing Participant) may initiate a FOA with NEMMCO without requiring the permission of a generator. This addresses the current problem faced by retailers where generators refuse to enter into a reallocation agreement or charge exorbitantly to provide one. Generators, banks or non bank derivative trading entities (or any provider of futures contract liquidity) are indifferent as to whether a futures contract is ultimately submitted to NEMMCO for the purpose of a FOA, and cannot impede such an application.

3 Other Competition based inefficiencies to be addressed by Futures Offsets

3.1 Current barriers to entry avoided by futures

The current cost of providing collateral support to NEMMCO is a significant barrier to NEM entry for new entrant retailers and market customers[39]. Start-up retailers and market customers may not meet the balance sheet requirements to attract reasonably priced (or readily accessible) bank guarantee support from financial guarantee providers. This may also prevent these participants from being able to meet the OTC trading collateral requirements demanded by generators offering reallocation transactions. This problem is exacerbated because trading arrangements necessary to access more than one potential reallocation seller (generator) often require separate, duplicate guarantees to be provided to several counterparties. This requirement magnifies the collateral inefficiency of the current reallocation arrangements in the absence of FOAs. All market participants (supported by SFE Clearing Participants and mark to market margin efficiency) enjoy full and equal access to futures market liquidity with significantly lower collateral requirements (with associated cost reductions).

3.2 Vertical Integration is encouraged (and rewarded) by reallocations – Futures Offset Arrangements address this issue

The ex-ante reallocation rules create incentives for retailers to adopt vertically integrated strategies (owning both retail and generation businesses). Vertically integrated NEM retailers are commercially advantaged by reallocation because they avoid many of the adverse barriers and costs to reallocation faced by independent retailers. Such barriers include:

1. The requirement for a generator's permission to enter into a reallocation; and

2. Credit risk costs associated with OTC contracts that support reallocations with non-related entities.

[37] "Improvements to the prudential framework report", Code change Panel, NECA August 2003.

[38] The retailer will not know the identity of the futures seller due to the anonymity of futures trading.

[39] Bank guarantee facilitation costs for some NEM retailers significantly exceed official overnight cash rates.

These costs and barriers are eliminated or lessened where the retailer and the generator are related entities.

Vertically integrated generators can be expected to provide exclusive or preferential access to reallocations to their related NEM retailer in order to commercially disadvantage competing independent retailers. In the absence of FOAs, the incentives for vertical integration created by the existing rules will:

1. Displace transparent hedge contract availability that would otherwise enable independent retailers and generators to better manage their market risk;

2. Practically exclude or limit independent and new entrant NEM retailers from access to competitively priced reallocation offsets; and

3. Undermine financial market (and reallocation market) transparency, creating long term risks to new investment in generation and transmission and compromise the security of supply in the NEM.

The electricity futures market provides open access and price transparency to all potential participants (both integrated and independent) and reduces the ability and incentive for vertically integrated retailers and generators to "shut down" the supply of financial derivatives in any state market.

3.3 Unnecessary discrimination against peaking generation technology

The current ex-ante reallocation framework relies primarily upon energy-based reallocations and unnecessarily discourages the involvement of capacity-based peaking generation. Peaking generation capacity is critical to the security of supply in the NEM. Many operators of peaking plants (e.g. natural gas fired plants) have a much higher short run cost of production than competing base load generators. Peaking generators earn investment returns by dispatching during higher pool prices but with less predictability of run time than base load generators, which dispatch a much higher proportion of their capacity at most times. Base load generators may more confidently commit to reallocation transactions knowing that their plant is likely to be running at the designated time (subject to unforeseen outages). Peaking plants are less able to participate in reallocation arrangements because peaking plant operators cannot be assured that it will be economical to dispatch the plant at a specific time in the future.

Operators of peaking plants are, however, regularly prepared to hedge a significant proportion of their available installed capacity for all periods through the mainstream derivatives markets (including the futures market). Unless NEMMCO recognises electricity futures contracts for collateral offset purposes, peaking plants will be (practically) prevented from contributing to the supply of NEMMCO prudential offsets via the futures market. Unequal treatment of NEM participants according to generation technology threatens to deter critical future investment in peaking capacity.

4 Summary of issues concerning the existing Rules that will be addressed by Futures Offset Arrangements

As discussed, in the absence of FOAs, the current reallocation mechanism, characterised by the drawbacks identified above, creates for Market Participants, NEMMCO and the NEM:

1. incentives for a regionalised market structure segregated by state boundaries;
2. a reduction in financial market transparency and liquidity, which compromises price discovery, and quality of investment decision making;
3. an increase in barriers to entry for new entrant retailers, reducing customer choice and innovation;

4. preferential treatment of base load generation technology and disincentive for environmentally sustainable peak load generation;
5. a crowding out effect for more efficient (and nationally based) financial markets which are providing important risk mitigation and price discovery support; and
6. incentives for anticompetitive vertical integration, encouraging retailers to purchase generation in their region as a response to a likely deterioration in hedge market liquidity and to avoid credit risk.

Several of these outcomes actively work against key energy market objectives cited by the Coalition of Australian Governments (COAG) regarding transparent and efficient financial markets for energy[40] and the following Market Design Principles enshrined in the National Electricity Rules[41]:

1. minimisation of NEMMCO decision-making to allow Market Participants the greatest amount of commercial freedom to decide how they will operate in the market;
2. maximum level of market transparency in the interests of achieving a very high degree of market efficiency;
3. avoidance of any special treatment in respect of different technologies used by Market Participants;
4. equal access to the market for existing and prospective Market Participants;

[40] Communiqué of the 17th Meeting of COAG (Energy), 10 February 2006.

[41] National Electricity Rules s 3.1.4

8 August 2006

Mr Dean Price
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Dear Dean

RULE CHANGE REQUEST FOR FUTURES OFFSET ARRANGEMENTS

The AFMA Electricity Committee has considered your draft submission to the Australian Energy Markets Commission and supports the concept of using Futures Offset Arrangements as a means for assisting market participants to meet NEMMCO collateral requirements.

The Committee recognises the potential benefits it offers AFMA members and the positive impact its successful implementation is likely to have on electricity financial markets as a whole.

We encourage d-cyphaTrade to work with the AEMC in implementing the proposal in a manner that meets both the prudential requirements of the National Electricity Rules and the needs of market participants.

We are happy for the contents of this letter being made known to AEMC.

Yours sincerely

Duncan Fairweather
Executive Director
Australian Financial Markets Association

Sarah Brown
Chair
AFMA Electricity Committee

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