NEMMCO

National Electricity Market Management Company Limited
ABN 94 072 010 327

Request for Amendment to National Electricity Rules: Reallocations

- *Move detail of reallocation transactions into procedures*
- *Introduction of new category of Registered Participant (Reallocator)*
- *Introduction of prudential margin*

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1 Background

NEMMCO has an obligation under Rule 3.3.19(a) to consult with Market Participants to establish procedures to enable Market Participants to create reallocation transactions. Proposals to increase the options for reallocation have been discussed with and developed in consultation with an Industry Prudential Working Group – that Working Group was involved in early discussion on all concepts contained in this paper.

The NEM is designed and operated as a gross pool whereby all physical energy deliveries into and out of the NEM pool are valued and settled at the potentially volatile regional reference price. Market Participants arrange bi-lateral contracts (typically contracts for difference payments) between themselves to reduce price risk for agreed quantities of electricity. It is widely accepted that the majority of electricity purchases and sales in the NEM are hedged with such instruments.

The hedging arrangements are commercial-in-confidence and are not available to NEMMCO for consideration in determining the settlement risk of Market Participants. The National Electricity Rules (the "Rules") currently provide for some limited forms of optional reallocation or "set off" of settlement obligations between a pair of Market Participants so that NEMMCO can reduce one party's debit to NEMMCO and reduce the other party's credit position correspondingly.

Reallocation has the capacity to significantly improve the efficiency, with respect to cost and risks, of the NEM prudential framework. Currently, reallocations have not been adopted in the NEM to a level where there is any significant reduction of total Market exposure.

A number of opportunities have been identified to improve the robustness and flexibility of the reallocations process that would improve the usability of reallocations. Accordingly NEMMCO submits this request for amendment to the National Electricity Market Rules to progress the development and efficiency of the NEM prudential framework.

This paper assumes a working knowledge of the NEM prudential process, which is overviewed in the paper entitled "NEM Settlement Prudential Supervision Process"[1]. Appendix 2 to this paper explains a simple reallocation calculation and summarises the proposed reallocation process.

Terms specifically relevant to this paper with defined meanings in the existing or proposed the Rules are *italicised*.

[1] Available on NEMMCO's website at http://www.nemmco.com.au/settlements/530-0028.pdf) or included with the NEM Prudentials CD-ROM, an order form for which can be found at http://www.nemmco.com.au/nemgeneral/530-0026.pdf

2 Summary of issues with the existing Rules

The existing Rules do not permit settlement reallocations that closely reflect the settlement requirements of generic contracts for difference, caps or floors. The existing provisions only allow reallocation of an energy quantity or a defined dollar reallocation in advance of real time. This has contributed to the situation where bi-lateral contracts are mostly still settled directly between contracting parties. The current reallocation arrangements have had little use and thus the NEM settlement represents mainly the spot market transactions. These spot transactions can be very large and volatile with inherent financial settlement risk. In addition some parties have sought to have futures contracts become part of a reallocation transaction. The existing Rules would not permit a Clearing Participant of the futures exchange to become party to a reallocation arrangement. The current structure of the Rules does not readily accommodate the reallocation options that could improve prudential efficiencies.

The current Rule for setting the *trading limit* as a proportion (being the *prudential factor*, set at either 84% or 75%) of the *maximum credit limit* (MCL) is based on the principle of allowing seven days reasonable worst-case accruals from the issue of a *call notice* to the issue of a suspension notice (i.e. 7 days to remove the party via the default and suspension provisions). The prudential factor being a percentage of the MCL is only valid when the effect of reallocations is small. The existing proportional arrangement provides no buffer of *credit support* to cover liabilities accrued during the default and suspension process in cases where the defaulting Participant's reallocation approaches 100% of average physical energy transactions. In this case the MCL would only be a small value and thus the *prudential factor* only provides a small margin.

The reasonable worst case, during the 7-day *reaction period*, needs to recognise that the settlement credits (expected from physical generation or non firm reallocation respectively) may cease at any time. When reallocation is present, any safety (or prudential) margin cannot be related proportionally to the MCL. This margin takes an independent value that can be calculated on seven days of settlement obligations from physical energy purposes and/or firm reallocation debits.

Some of the prudential formulae as expressed in the Rules are not clearly effective when components take on negative values. Negative values are valid and need to be addressed. The formulae's use of security deposits (early cash payments) is also clarified in such a way as not to alter the exiting calculations.

3 Description of the proposed Rule change

The proposed Rule changes are designed to address the above issues by:

- Permitting more flexibility in the type of reallocation transactions by allowing the detail of reallocation calculations to be included in *reallocation procedures* under Rule 3.15.11 rather than have them directly embedded in the Rules. Such additional types of reallocation, would be expected to include formulas for contract-for-difference, cap and floor reallocations that determine the trading amounts to be settled for them. (see Section 3.1)

- Introducing a new category of Registered Participant called a *Reallocator* who has the ability to enter into and settle reallocation transactions with other Market Participants. (see Section 3.2)

- Introducing the concept of a prudential margin that will:

  – more accurately determining the exposure of Market Participants who have large reallocations by amending the interpretation and calculation of the difference between *maximum credit limit* (MCL) and the *trading margin*, so that it is always calculated as 7 days' exposure under reasonable worst-case conditions rather than a simple proportion of the MCL. A formalised definition of "*prudential margin*" is proposed. (see Section 3.3)

  – clarify the description and calculation of *outstandings* and *trading limit* to extend these concepts to negative values so that prudential limits of reallocating generators are properly managed. (see Section 3.3)

Further description of the operation of the existing and proposed Rules is set out in the following sub-sections.

3.1 Use of reallocation procedures

The problem

The current structure of the Rules does not readily accommodate the range of common types of hedges (caps, floors, collars) that, if more readily accounted for in reallocation processes, could improve prudential efficiencies.

The Rules associated with reallocations were originally implemented to cater for ex-ante or prospective reallocation transactions, where the agreement to reallocate dollar amounts or energy amounts was advised and locked in before the spot price is set. This process was subsequently extended to include ex-post reallocations of dollar amounts where the agreement to reallocation is advised to NEMMCO after the spot price is known but before settlement occurs.

Proposed solution

It is intended to offer additional reallocation options, as part of the *reallocation procedures*, such as the ability to net the value of financial contracts directly against the physical energy transactions of Market Participants – such an arrangement would essentially mean only the stable known value is exchanged at settlement. The potential additional reallocation options whereby the full settlement value of typical instruments (such as contracts for difference, caps and floors) can be applied to the settlement statements as reallocation transactions.

Using these types of options, Market Participants could reallocate the full, or at least a major portion of, the settlement value of their basic hedging instruments so that there is a more stable and predictable NEM settlement and with little residual transactions required directly between the contracting partners.

It follows that the direct financial contract settlement risk between the reallocating partners can also be reduced. As with existing reallocation commitments that are "locked in" in advance (i.e. ex-ante or prospective reallocations), NEMMCO's methodology for determination of MCLs could be amended to take these new reallocations into consideration so that the credit support requirement could be reduced for those retailers who take up these options.

Given the number of contract options expected, over time, to be made subject to reallocation, and the complexity associated with accommodating each variant of these options directly in the Rules, it is proposed to provide a degree of flexibility by putting the detail of reallocation calculations in *reallocation procedures* under Rule 3.15.11. NEMMCO proposes that the new *reallocation procedures* be determined by NEMMCO following Rules consultation procedures.

3.2 Introduction of additional reallocation parties

The problem

The existing Rules would not permit a Clearing Participant of the futures exchange or other relevant party to become party to a reallocation arrangement. The current structure of the Rules does not readily accommodate the reallocation options that could improve prudential efficiencies.

Reallocation transactions obtain maximum benefit when reallocating parties have equal and opposite financial cash positions, outside of the spot market, that can be netted off the gross spot market transactions. The usual position would be a generator and retailer pair who have a hedge type of financial contract they agree should be settled together with their spot market obligations via a reallocation. This avoids circular cash flows and reduces the volatility of the spot settlement.

Proposed solution

Reallocation parties could be any two Market Participants. They could be both retailers as long as the retailer increasing its position with NEMMCO has adequate *credit support* to cover its greater NEM settlement exposure. Alternately one of the parties could be a financial institution.

There has been some interest in exploring the use of futures contracts as the basis of a reallocation. Futures contracts are bought and sold, mostly by Market Participants, via a Clearing Participant of the futures exchange. The Clearing Participant is usually a financial institution such as a bank. Although NEMMCO has not yet been able to accept the risks in directly using margin payments from futures contracts as part of a reallocation, there is potential for a Clearing Participant to manage those risks and enter into a defined reallocation transaction. The inclusion of financial institutions as reallocation parties would enable those Market Participants with futures positions via a financial institution (such as a Clearing Participant of the futures exchange) the opportunity to leverage the value of those futures as risk management instruments with the financial institution. The financial institution, such as the Clearing Participant, may, no doubt at a cost to the Market Participant, be able to directly factor in the value of futures contracts with a client retailer and directly become the reallocation partner of that retailer.

This would have benefits to those retailers who extensively use futures contracts or who are not able to negotiate a reallocation arrangement with a generator.

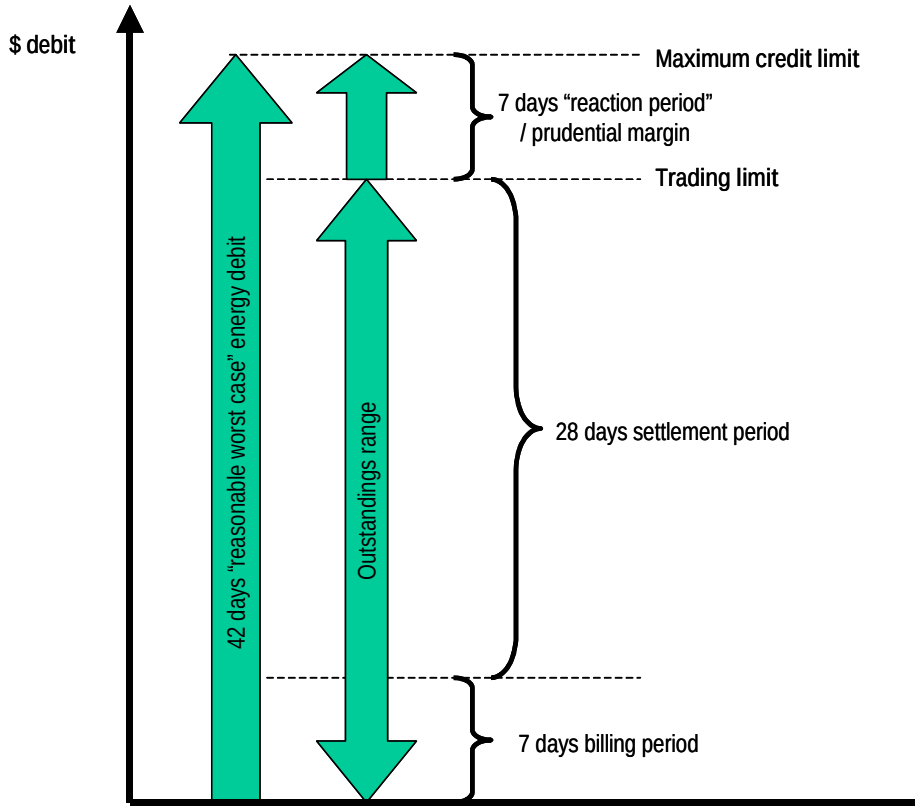
If the financial institution satisfies the Rules' acceptable credit rating (clause 3.3.4) then no *credit support* would be required to be posted, otherwise the financial institution would be required to provide *credit support* as for any other Market Participant.

The financial institution, as a reallocation party would be required to comply with the Rules and *reallocation procedures* as any other Registered Participant.

The Rules are proposed to be modified to incorporate this additional class of Market Participant.

3.3 Establishment of a "prudential margin"

A key issue concerning the implementation of a more effective settlement reallocation regime is the prudential risks associated with allowing Participants to enter into large volume settlement reallocation agreements. The present method to determine a *maximum credit limit* (MCL) in accordance with the Rule Schedule 3.3 looks at a reasonable worst case exposure over a 42 day period. This is made up of a 7 day billing period, 28 days for settlement and a 7 day *reaction period*. Determination of the MCL for a typical retailer (taking no account of reallocations) is schematically represented below.



Generators are Market Participants and are subject to the prudential obligations in Rule 3.3. Where a party typically has trading credits (a generator) rather than debits (a retailer), the calculated MCL will be negative and thus deemed to be $0, with no requirement to provide credit support. Further, Rule 3.3.10(c) currently requires that the *trading limit* for Market Participants to be set via a *prudential*

factor at 84% of the MCL (i.e. 35 days out of the 42 days total). Hence in the case of a zero MCL the *trading limit* is also zero. This means that the generator satisfies its prudential obligations as long as it remains in credit to NEMMCO.

The problem

The present prudential framework does not adequately address the implications of a generator executing a net settlement reallocation to a substantial level, and then experiencing either a plant failure or an industrial dispute during a period of high spot prices. In such a scenario, the unavailability of the generator's plant has the potential to cause high prices and it is feasible that the generator's on-going settlement reallocation liabilities could exceed the value of their generation income.

If a generator's production of electricity were interrupted for a period of weeks due to systemic plant failure or industrial dispute, then, even on the assumption of steady prices, the generator's trading credits would be reduced over the subsequent weekly settlement periods to the point where trading credits could be eliminated and the generator could approach its zero MCL. In addition, there may be some small load taken through the generator connection points which would lead to the generator incurring a small debt to the market after the energy credits had been paid out. This is handled in the short term by the generator providing a suitable security deposit or guarantee to ensure that their *outstandings* remain below their *trading limit*, which is equal to zero for a typical generator. If the situation of no generation were to persist, NEMMCO would set a non-zero MCL for the generator using the standard formula and the average amount of energy being purchased. The generator would then be obliged to provide credit support.

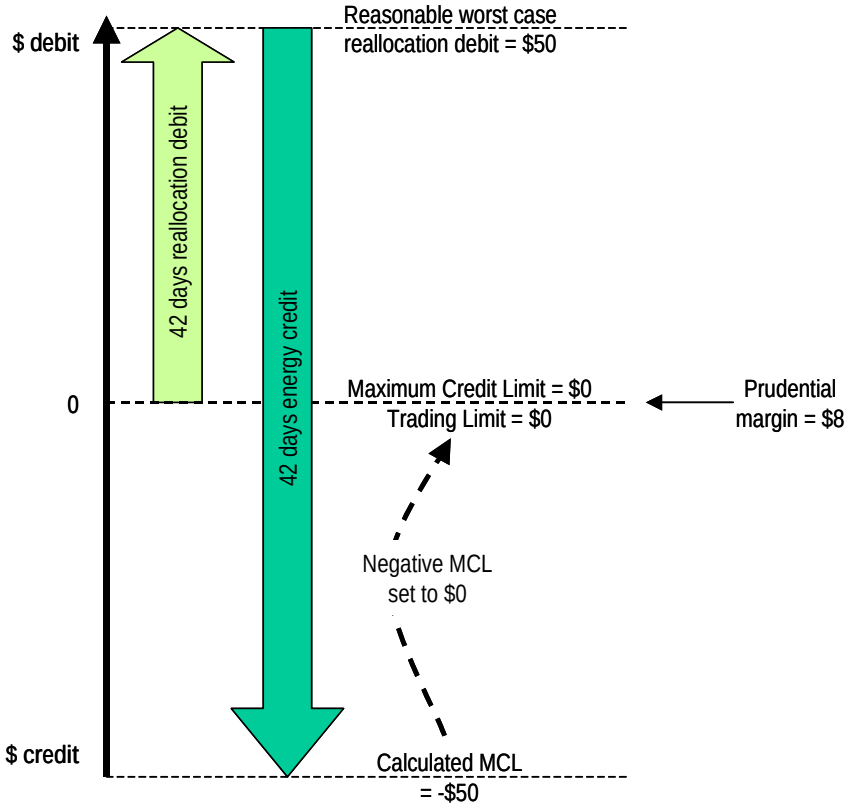
The situation where a generator reallocates a significant percentage of its capacity presents a risk to the prudential framework because under these circumstances the *trading limit* is not set in a way that guarantees, under reasonable worst case conditions, its *outstandings* will remain within a credit band between its MCL and *trading limit*. The following diagrams demonstrate how this situation arises.

Diagram 1 depicts the prudential calculations relating to a generator that lodges ex-ante or prospective reallocations to 50% of the average dispatched generating capacity. This example used simplified dollar numbers where 42 days of generation equals $100, the MCL methodology produces a calculated MCL of -$50 for 42 days of reasonable worst-case prices, made up from a debit of $50 from the reallocation and a credit of $100 from the generation. This is taken to mean that the generator will be owed money by NEMMCO and is therefore not a settlement risk to the NEM. Accordingly the MCL methodology deems the MCL to be zero and there is no credit support requirement for the generator.

As noted above, the generator satisfies its prudential obligations as long as it remains in credit to NEMMCO – its *outstandings* as calculated under Rule 3.3.9 can be anywhere within the credit band below the zero line shown in Diagram 1.

One of the most important fundamentals of the NEM prudential framework is that there is a safety margin which allows reasonable worst case liabilities to accrue for seven days (defined in the Rules as the *reaction period*) while NEMMCO works through the default and suspension process contemplated in Rule 3.15.21.

Diagram 1:
Generator with 50% reallocation under current Rules



In the scenario depicted in Diagram 1, it is reasonable to assume that the daily generation energy credits could stop suddenly due to major plant failure or industrial dispute. The consequences could be as follows:

- The reallocation debits would continue to accrue at 1/42 of $50 per day, or at approximately $1.19 per day.
- If the generator happened to be operating near the top of its *outstandings* range (say at -$0.10 in this example) then, under reasonable worst case pricing, it would be exceeding its *trading limit* by $1.09 on the very next day.
- This amount ($1.09) would be owed to NEMMCO without the protection of *credit support* or other collateral to mitigate the risk of settlement default.

This example demonstrates how the existing framework does not meet one of its prime objectives in the case of a generator that has entered into significant reallocation. A similar line of reasoning applies to a generator who is not reallocating but instead has one or more large customer load connection points on its settlement statement.

Proposed solution

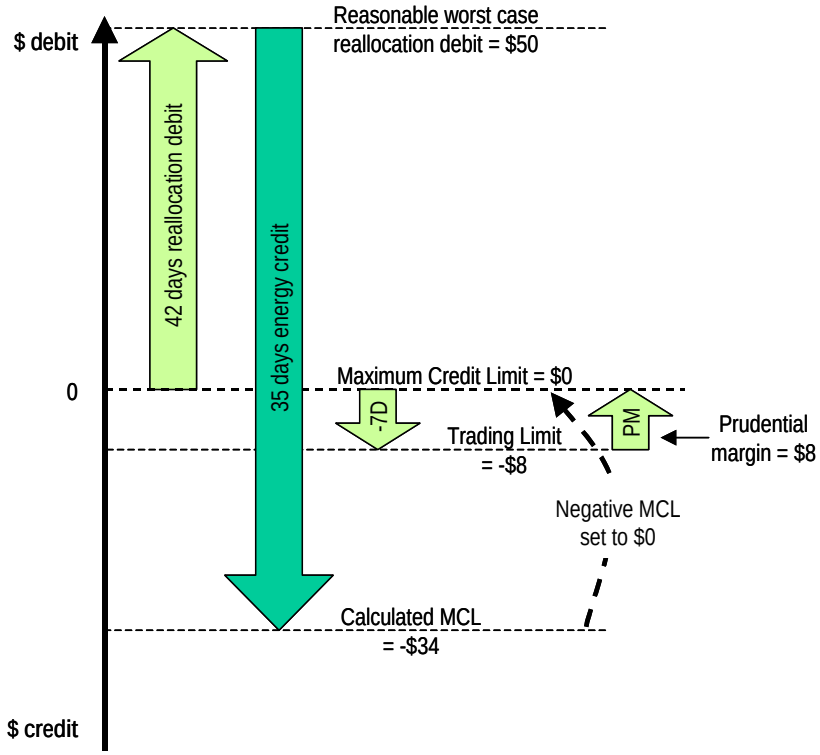
To mitigate the risk of a generator reallocating or physically purchasing customer load to a significant proportion of its capacity, thereby presenting a settlement risk should its generation stop abruptly, it is proposed to ensure that the trading

position of the generator maintains a prescribed buffer or 'headroom' from the zero credit position with the market. If the generator maintains this headroom after reallocation then, as is currently the case, no *credit support* would be required.

The Rules already have an implied concept of the "prudential margin" (without the term being formally defined), being the difference between the *trading limit* and *credit support* provided. It is proposed to apply this same margin (equivalent to seven days' reasonable worst-case trading, ignoring all generation settlement credits) to the reasonable worst-case scenario for the generator. This will give NEMMCO seven days at reasonable worst-case prices with no generation credits to rectify any transgression of the prudential obligations before the market is exposed to the generator without the protection of *credit support*.

To achieve this, the MCL methodology can be modified to calculate the MCL on the basis of say, 42 days of debits or reallocations and customer energy purchases, but giving credit for only, say 35 days of average generation energy and reallocation credits (if any). Where the calculated MCL is a credit (or negative) position, the actual *maximum credit limit* will be set to zero as is the case under the existing Rules. The *trading limit* is then set to a value less than the actual MCL by the amount of the *prudential margin*. This means the *trading limit* is set at a required credit (or negative) value, equal to seven days' worth of the reallocation debit. In the example, the generator must maintain a credit of at least $8. The proposed arrangement is shown in Diagram 2.

Diagram 2:
Generator with 50% reallocation
with "prudential margin"



For the case of that same generator, the resulting MCL would be calculated at -$34 composed of 42 days reallocation debit at 50% (=$50), less 35 days credit generation at 100% (= -$84). The zero minimum is applied so that the MCL is still assessed at $0. The proposed amended Rule 3.3.10 sets the *trading limit* as the MCL (or *credit support*) less the *prudential margin*, not as a proportion of the *trading limit*. In this example the *prudential margin* is the equivalent of seven days' reasonable worst-case value of the reallocation debits (i.e. 7/42 * 50% of $100 = $8) and the *trading limit* is set accordingly to -$8. The day-to-day *outstandings* of the generator would be at most -$8 (i.e. at least $8 in credit). Even if *outstandings* are close to the upper limit at -$8 and all physical generation stops abruptly, it will take 7 days (at 1/42 * 50% of $100 = $1.19 per day, ignoring rounding error) for the *outstandings* to rise to a positive value such that the generator owes money to NEMMCO.

Note that this example relies on the concept of a negative *trading limit*. This means that if the generator's *outstandings* exceeded -$8 (or in other words if the generator had less than $8 credit with NEMMCO) then it would be in breach of that negative *trading limit* and would be issued with a *call notice* to remedy the situation. The remedies are exactly the same as those available to retailers – to lodge a cash security deposit, to lodge *credit support* in NEMMCO's standard form or to lodge an ex-post reallocation to the value of the *call amount*. Payment of the *call amount* moves the *outstandings* below the *trading limit* to the level of the *typical accrual*, i.e. the level of settlement credit that would be expected under average prices and generation levels.

With this arrangement in place, the MCL and *trading limit* can be set for the generator so that, say, seven days' *prudential margin* is maintained. However, this does not preclude an excessive reallocation being lodged, which might cause the generator's *outstandings* to exceed the *trading limit* (or even the MCL). Accordingly, Rule 3.15.11(g) and the *reallocation procedures* require amendment to address this situation. The procedures will stipulate that all reallocations are registered subject to the prudential condition that the Market Participant who is the debit party maintains a positive *trading margin*. If the Market Participant does not address the prudential position NEMMCO would have the power to reject one or more reallocations lodged on or since the previous business day, issue a *call notice,* or do both. NEMMCO would reject one or more reallocation requests only where, in NEMMCO's reasonable opinion, the debit reallocations submitted were inconsistent with the Market Participants' reallocation history and physical energy position and directly contributed to the *trading limit* being exceeded.

The *prudential margin* approach also works to improve the prudential framework in the case of a retailer that is using reallocation credits, or for a retailer using its own generation to reduce its MCL. This is discussed in more detail in Appendix 4.

The important points that flow from the *prudential margin* approach are:

- The gap between MCL and *trading limit* will be maintained at a level such that after, say, 7 days of reasonable worst-case trading, all settlement amounts owing to NEMMCO (or likely to be owed as the *reaction period* passes) are covered by *credit support*.

- The requirement for a different *prudential factor* for those Market Participants electing to take a reduced MCL is eliminated. The same *prudential margin* applies to both the standard and the reduced MCL cases.

- The *typical accrual* may take a negative value that has logical meaning as the average level of a generator's settlement credit (compared to a retailer's exposure) with NEMMCO.

- A generator with reallocation debits or physical energy purchases will be set a negative *trading limit*, (a minimum level of credit to NEMMCO) and *call notice* Procedures apply if *outstandings* exceed that *trading limit*.

- A retailer with reallocation credits or physical generation will have a higher MCL than is currently the case. See Appendix 4 for a detailed explanation.

A number of Rules need to be amended to ensure that they operate correctly with both positive and negative values. These changes are not intended to alter their meaning.

4 Contribution of proposed Rule to the market objective

The National Electricity Market objective (the "NEM objective") 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.

A non-trivial cost of participating in the NEM is that associated with complying with prudential requirements imposed by the Rules. The requirement on parties with expected trading debits to source and provide financial guarantees imposes a cost on those parties proportionate to the size of the guarantee. Where confidence in the safety of trading between Market Participants is affected (i.e. trading risk), risk premiums will be sought and otherwise efficient trades may not be made. To the extent that any cost of this nature is higher than it needs to be:

- investment signals will be skewed; and
- operational costs (including the cost of *credit support* and risk premiums imposed on trades between Market Participants) will ultimately be passed to end users in the form of higher prices.

Diminishing each of these effects would therefore contribute to achievement of the NEM objective. In order to achieve such an outcome NEMMCO proposes Rule changes in three area:

1) moving the reallocation details into procedures and facilitating reallocation of contracts for difference, caps, floors etc;

2) establishment of a new category of Registered Participant of *Reallocator;* and

3) establishment of the concept of a *prudential margin* involving:

   – an absolute margin between the MCL and the *trading limit*; and

   – allowing prudential formulae to operate with negative numbers and security deposits that do not alter the existing calculations.

Rule changes 1) and 2) above are both intended to increase the likelihood of greater reallocation in the NEM. This greater reallocation would lower the risk of Market Participants defaulting due to volatile and large settlement cash flows when Market Participants' net financial positions may well be secure. The greater use of reallocation is also likely to reduce costs paid by Market Participants to financial institutions for the provision of *credit support* and cash flow management.

Rule change 3) is consequential to Rule changes 1) and 2) above, in that it is necessary to ensure *trading limits* are appropriately determined under substantial reallocation.

The combined effect of these Rule changes will benefit the NEM[2] through reductions in:

- Participant risk and systemic market failure risk;
- required levels of credit support by retailers;
- amount of security deposits (cash) needed to stay below the trading limit;
- impact of short payments to generators;
- cash management costs; and
- direct counterparty credit exposure.

Improved efficiency in both investment and use of electricity services for long term interests of consumers will arise in different measure from each of the above benefits.

Security and reliability of market settlement is crucial to market confidence. Confidence and stability of the NEM would lead to more efficient investment and serve the long-term interests of consumers who can be relieved of some of the burden of existing settlement risk premiums. NEMMCO believes that the creation of a more effective net settlement regime has the potential to benefit all Market Participants, by reducing financial risks for all parties, reducing collateral costs, reducing circular cash flows and enhancing market stability through improved linkages between the spot and financial markets.

[2] Each of these benefits is described in more detail in Appendix 2.

5 Conclusion

Whether or not any Market Participant chooses to increase the degree of reallocation they engage in would be entirely up to them, although any increase in the degree of reallocation engaged in will directly result in reduced credit support costs.

However, NEMMCO believes that a change from a *prudential factor* (percentage of the MCL) to a *prudential margin* (7 days worst case trading) as a way of establishing a Market Participant's trading limit is a necessary step to take. NEMMCO is already faced with Market Participants who reallocate a large percentage of their trades. The consequence of this situation is that the difference between the *trading limit* and the *credit support* of such parties is insufficient to avoid a shortfall in payments to generators should the reallocating party fail and NEMMCO reacts to that failure as quickly as the current Rules allow.

In moving from the existing to the proposed reallocation arrangements some transitional issues (other than the Rules change process itself) will need to be addressed – these are:

- the need to engage in industry consultation, in accordance with Rules consultation procedures, prior to finalisation of any detailed procedures that prescribe the new reallocation process; and
- ensuring NEMMCO and Market Participant systems are ready to implement and take account of new procedures from the date those procedures become effective.

APPENDIX 1 – Required changes to specific Rule provisions

The Rule changes to support increased options for settlement reallocation would have the following characteristics:

a) Permit more flexibility in the provisions for reallocation

- Specify that the detail of reallocation calculations be included in *reallocation procedures* and delete the previous detail included in the Rules. [Rule 3.15.11(b), (c), (d), (k), (l), and (m)] Note that these procedures would be determined by NEMMCO following *Rule consultation procedures*.
- Introduce a new category of Registered Participant called a *Reallocator*. [Rule 2.5B]
- Clarify the basis for termination of reallocation requests and permit NEMMCO to terminate reallocations following a default by one party. [Rule 3.15.11(d1), (e), (f), (g), (h) and (n)]

b) Introduce the concept of a prudential margin to more effectively cater for larger reallocations

- Develop the concept of the *prudential margin* to replace the *prudential factor*. [Rule 3.8(a), (c), and (d)]
- Define the *trading limit* in terms of an offset (equal to the *prudential margin*) from the MCL rather than a percentage of the MCL. [Rule 3.3.8]
- Recognise negative values for *outstandings*, *trading limit* and *typical accrual* and not reset them to zero. [Rules 3.3.10, and 3.3.12]
- Outline the principles for determining the *prudential margin*. [Schedule 3.3.2]

c) Realign formulae and signs that more robustly allow quantities to be either positive or negative – these amendments are not intended to change calculation results from the existing Rules

- Amend the calculation of *outstandings* to recognise that settlement amounts already net off amounts payable by the Market Participant and to the Market Participant and include recognition of security deposit balances. [Rule 3.3.9]
- Amend the calculation of the call amount to recognise that security deposits are included in *outstandings*. [Rule 3.3.11]
- Clarify in Schedule 3.3.1 that the request for reduced payment period relates to the calculation of MCL only, and does not affect the settlement payment timing.

d) Update the glossary

- Amend the glossary in accordance with the above changes

Marked-up text of the proposed Rule changes is presented separately.

APPENDIX 2 – Summary of reallocation

An example of a single period net settlement reallocation is given in the diagram below where the reallocation formula matches the hedge between the retailer and generator. A similar benefit would be obtained if the reallocation formula was some approximation to the net of those parties' financial relationship.

Reallocation based on a simple hedge formula

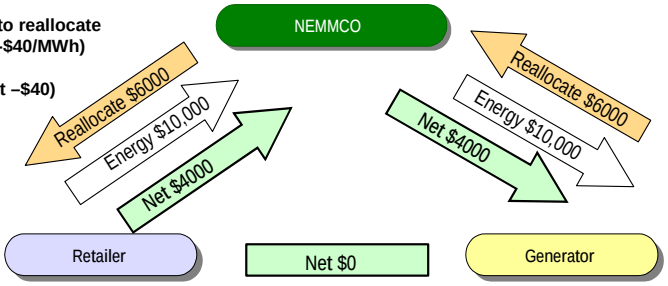
Retailer load 100MWh
Retailer buys 100MWh hedge @ $40/MWh

Generator supplies 100MWh
Generator sells 100MWh hedge @ $40/MWh

Spot price determined as $100/MWh

As the reallocation formula is registered in advance the net exposure to NEMMCO permits a lower MCL.
- lower prudential costs
- reduced circular cash flows
- reduced settlement risk

Retailer and Generator agree to reallocate Gen to Retail 100MW @ (Spot-$40/MWh)
NEMMCO calculates
reallocation = 100MWh x (Spot –$40)
= 100x(100 – 40)
= $6,000



The initial NEM energy settlement of $10,000 is partially offset by a reallocation of $6000 that was determined by the reallocation formula between the parties. The net NEM settlement payment for energy/reallocation is $4000 which is transacted through NEMMCO's settlement system.

In summary, the reallocation model proposed would operate as follows:

- NEMMCO would develop *reallocation procedures*, under the NEM Rules, to include formula based reallocation mechanisms that approximate common financial contracts.
- Two Market Participants provide details of a formula based reallocation request to NEMMCO for registration.
- After the appropriate prudential checks have been successfully completed, NEMMCO would register the reallocation.
- NEMMCO would reassess Market Participants' *credit support* requirements knowing that prospective reallocations will reduce the volatility of a party's settlement exposure – i.e. reduce the *credit support* requirement.
- At each weekly settlement, NEMMCO would calculate the cash flows applicable to the reallocation by referencing the difference between the spot price and agreed reallocation prices and multiplying this by the energy amount specified in the reallocation for the relevant time period.
- The resultant cash flow would be netted against the two Market Participants market *outstandings* and only net figures would be paid or received at settlement.
- As per existing reallocations, the lodging of net settlement reallocation requests would be done on a purely voluntary basis.

APPENDIX 3 – Benefits and costs of net settlement reallocation

The National Electricity Rules oblige NEMMCO to settle the wholesale spot market transactions. These transactions can be volatile and large and do not represent the more stable and risk-managed net financial position of Market Participants. The NEM spot settlement for the whole market can vary from $50M through to $800M per week.

The Rules support a strict prudential regime to manage settlement risk. It imposes obligations on retailers:

- to post substantial bank guarantees with NEMMCO (up to $1.8B in total for the market), and
- to ensure retailers maintain their spot *outstandings* with NEMMCO under a *trading limit*. This can result in requirements, in a very short time frame, for substantial cash payments or additional bank guarantees following high spot price days, and
- to make substantial cash payments under *call notices* within 24 hours if *trading limits* are breached. The Rules' *call notice* process requires that the exposure of the Market Participants be brought right back to typical conditions, not just to remove the breach of *trading limit*. In this circumstance, a $100,000 breach could result in a multi-million dollar *call notice* to be paid in 24 hours, and
- (if such a *call notice* is not met) the Market Participant is in default, and
- (if such a default event is not rectified) the Market Participant can be suspended with retailer's customers either being disconnected or transferred to a "retailer of last resort".

With companies listed on the Stock Exchange, it is possible that even a default event would be "notifiable" to the market. Suspension for a retailer would create real risks for their financial survival.

If party in the NEM fails the impact will be market wide. Banks will tighten their availability of credit support, investors in all sectors of the market will become more cautious and parties will reassess direct counterparty exposures and forward risks.

Widespread use of reallocations has the potential to reduce these risks.

A summary of the benefits and costs associated with the proposed changes to reallocation arrangements is provided below.

A3.1 Participant risk and systemic market failure risk

The NEM prudential regime is onerous, as it has been designed to operate around the volatile gross spot transactions. The failure of any Market Participant would impact all Market Participants. The level of aggregate *credit support* (ranging from $1.2B to $1.8B) is an indicator of the risk of market failure. Even with this level of *credit support* the NEM design does not explicitly provide capital to protect Market Participants in the event of extreme unexpected settlement losses. By extensive use of net settlement reallocation the NEM settlement flows

will move toward stable and predictable values significantly reducing the risks of default and potential failure.

Even though the immediate financial impact of the failure of a Market Participant could be relatively small, the damage caused by such a failure to the integrity of, and confidence in, the NEM would be substantial. Any steps that would reduce this form of risk must therefore have a high, albeit unquantifiable, value.

A3.2 Required levels of credit support

Retailers that transact settlement reallocations can expect to achieve a MCL reduction equivalent to the difference between NEMMCO's reasonable worst-case estimate price (that is used in the retailer's MCL calculation) and the agreed prices in the reallocation. In practice this means a NSW retailer for example, could expect to enjoy a MCL reduction of around 50% for any energy transacted on a firm net settlement reallocation basis.

Integrating ex-ante or prospective reallocations into a retailer's MCL calculation will be a straightforward process. NEMMCO will continue its policy of reviewing the MCLs of Market Participants and the value of the regional parameters used in the MCL calculation every 3 months. In accordance with clause 3.3.8 (f), it will also retain the ability to revise a Market Participant's MCL at any time. The triggers for revision include any request by a Market Participant to do so. Accordingly, should a Market Participant enter into a prospective settlement reallocation agreement part way through the 3-month period and feel that as a result their MCL should be revised, NEMMCO will investigate this to determine if such an adjustment is warranted.

In the first quarter of 2005 the total *credit support* with NEMMCO was $1.2 billion. *Credit support* is estimated to cost between 0.25% and 1% of the value of the guarantee provided, which represents an existing cost to the industry of somewhere between $3 million and $12 million. Therefore, every 10% reduction in the value of *credit support* required represents a saving to industry of somewhere between $300,000 and $1.2 million per annum.

The proposal to introduce a *prudential margin* as opposed to a *prudential factor* does have the effect of:

- not reducing the required credit support to the same extent – and hence credit support costs – for any given increase in the level of reallocation[3].

  Some parties such as retailers and generators currently with substantial reallocation may be required to increase their existing levels of credit support. Regardless of whether or not the overall level of reallocation increases, this is considered to be a necessary step to ensure the on-going integrity of the NEM; and

- increasing the prospect of a generator having to source *credit support*.

  The point at which the level of reallocation creates a positive MCL for generators is close to 84% reallocation – below 84% reallocation generators would be expected to retain an MCL of $0[4].

[3] For example, see *APPENDIX 4 – Use of the prudential margin for retailers who reallocate or have their own generation*, Diagram 4 and Diagram 6.

A3.3 Amount of security deposits (cash) needed to stay below the trading limit

When spot prices rise to near-VoLL values, the mitigating effect of ex-ante or prospective reallocations would be taken into account when determining the level of *outstandings* on the next business day. Accordingly, the amount of short-notice security deposits, or additional guarantee required to maintain a positive *trading margin* is reduced, or may not be required on a given day.

A3.4 Impact of short payments to generators

Under the Rules when a retailer does not make a settlement payment to NEMMCO, NEMMCO short pays all those owed money from NEM settlements – in proportion to the money owed. The risk of a retail failure is much greater in high price periods and thus if a generator reallocates so that its net position owed from NEMMCO reduces by, say 50%, then any potential short payment would be also be reduced by 50%.

A3.5 Cash management costs

By reallocating cash flows resulting from financial trading obligations the cost of managing these cash flows can be reduced. In high-priced periods retailers would not need to source the same extent of funds to NEMMCO. This eliminates the circular cash flows present in the current gross settlement process when in high price periods NEMMCO receives large cash payments from retailers, and then makes large cash payments to generators who then are required to make substantial payments back to retailers under their financial contracts.

The reallocation of hedging contracts so that they are settled via NEMMCO settlement extracts some value that, as far as NEMMCO is aware, is not be picked up by Banks when they issue bank guarantees to NEMMCO on behalf of Market Participants. The cost of bank guarantees or credit support reflects an insurance premium being extracted by financial institutions. As these banks do not appear to be offsetting these premiums by the existence of financial hedges, then an efficiency gain is being achieved by NEMMCO permitting the reduction in the level of required bank guarantees as a result of reallocation.

A3.6 Direct counterparty credit exposure

As reallocation reduces the direct cash payment obligations between Market Participants, there would be some reduction in direct counter-party exposure. For simple hedge contracts the corresponding net settlement reallocations could be tailored to reduce the direct counter-party settlement exposure to zero. However, on default of either party to the reallocation, NEMMCO would be expected to cancel the reallocation agreement with the defaulting and non-defaulting party.

Under certain circumstances generators can derive some benefit from the retailer's *credit support* that has been lodged with NEMMCO, as for that period where transactions have occurred but have not yet been settled, NEMMCO is entitled to draw on the guarantees provided by a defaulting retailer to make good the settlement amounts, including reallocation transactions.

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[4] The exact point at which the calculated MCL for generators will move from zero to positive is also a function of the generator's loss factor.

A3.7 Implementation costs

The proposed changes will have some costs associated with implementation. These costs would be expected to include:

- IT system development costs associated with more complex reallocation processing. These costs would be small and provision was made for most likely options when a recent set of IT changes related to the implementation of web interfaces for the reallocation system was developed. Any further minor changes will only be incremental changes to existing systems.

- Legal costs associated with investigating if NEMMCO needs to acquire a financial services licence. if such a licence was required there would be application and compliance costs. Initial investigation and application costs are expected to be not more than $100,000 (once-off). Compliance costs could be as much as $150,000 in the first year, with on-going annual costs thereafter of, say, $50,000.

APPENDIX 4 – Use of the prudential margin for retailers who reallocate or have their own generation

Diagram 3:
Retailer with no reallocation under current Rules

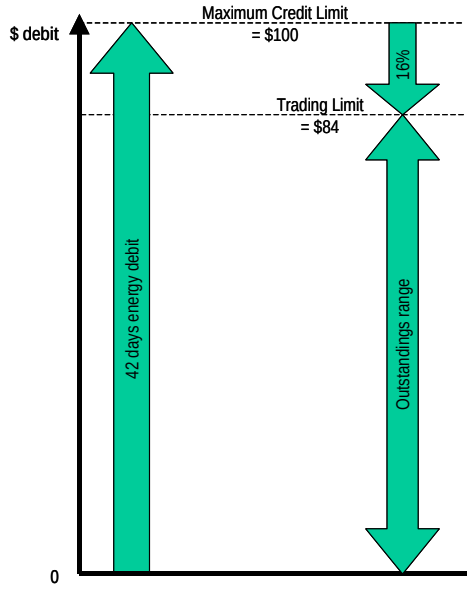
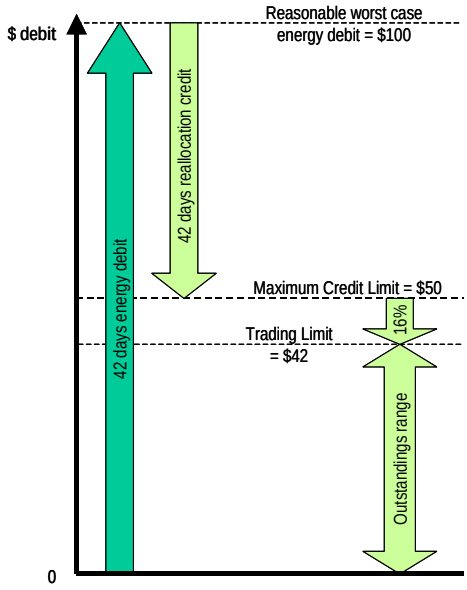


Diagram 4:
Retailer with 50% reallocation under current Rules



Consider the diagrams above. Diagram 3 shows the application of the existing Rules to a retailer with no reallocation and in Diagram 4 with 50% credit reallocation. It can be seen that 50% reallocation leads to a headroom between MCL and *trading limit* of $8.

Diagram 5:
Retailer with no reallocation with "prudential margin" (no change)

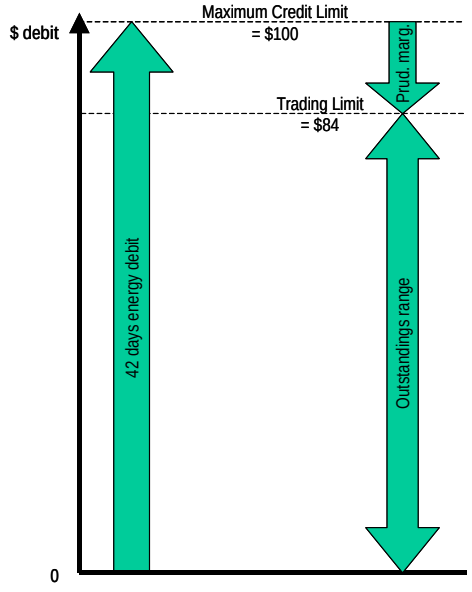
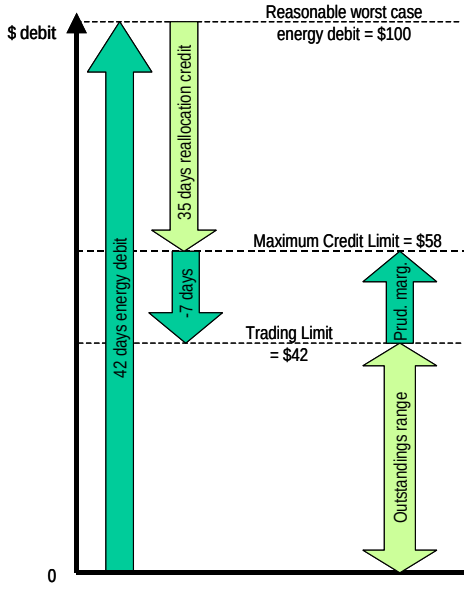


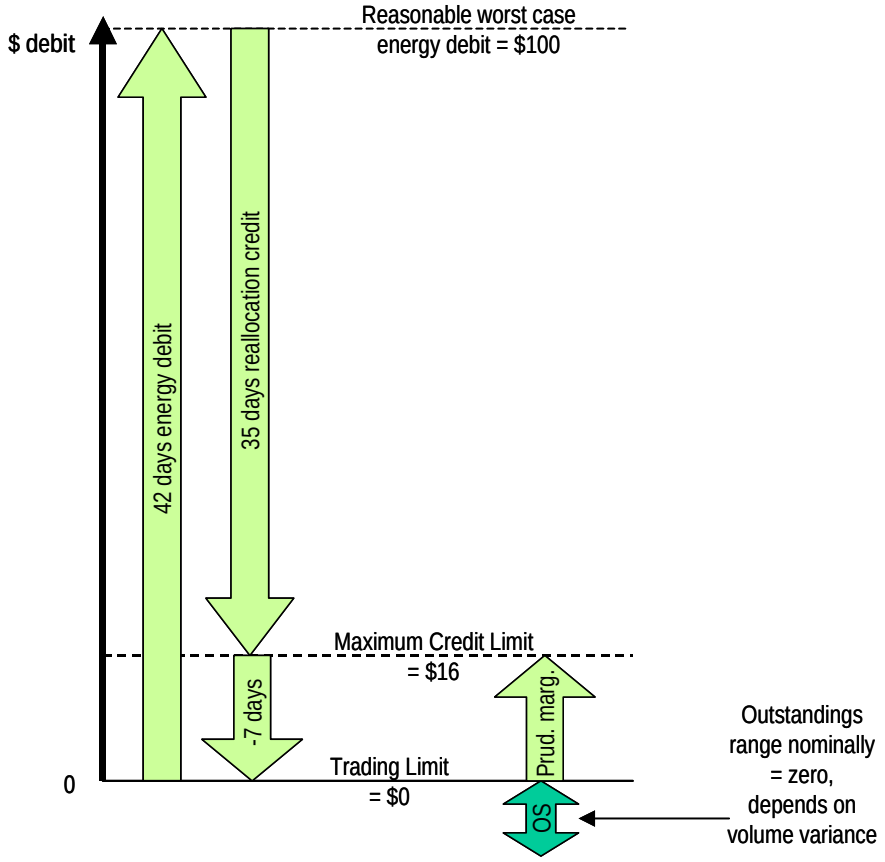
Diagram 6:
Retailer with 50% reallocation with "prudential margin"



Diagrams 5 and 6 show the same two cases under the new proposed Rule and MCL Methodology. A retailer with no reallocation is unaffected. The headroom or *prudential margin* under 50% reallocation moves from $8 to $16 – the same margin in absolute terms as was present in the non-reallocating example.

The final diagram shows the case of a retailer who reallocates to 100% of the physical energy.

Diagram 7:
Retailer with 100% reallocation with "prudential margin"



A MCL of $16 is set for this retailer even though the reallocation is nominally 100%, because only 35 days of reallocation is recognised against the 42 days of physical energy purchase. The retailer could achieve a zero MCL, and hence a zero credit support requirement if that were a critical objective for the retailer, by over-reallocating to 116% of the physical energy. In this case the *trading limit* would be set to -$16 to ensure that the *prudential margin* was maintained.