



Major Energy Users Inc.

Australian Energy Markets Commission

National Electricity Amendment (Generator ramp rates and dispatch inflexibility in bidding) Rule 2014

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Comments on the Consultation Paper

Submission by

The Major Energy Users Inc

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Executive Summary

The Major Energy Users Inc (MEU) welcomes the opportunity to provide comments on the AEMC's Consultation Paper issued as part of its assessment of the rule change proposed by the AER to address the observed use by generators to bid ramp rates at levels lower than their machines are capable of performing.

The MEU has also seen that generators are using the artificially low settings for ramp rates to improve their financial outcomes by effectively constraining on faster start generation for short periods of time or by holding up prices and constraining off lower priced generation; the purpose of these actions is to accrue a better financial outcome for their outputs. Either outcome is less efficient than generation being dispatched on its merit order. The MEU sees that the AER proposal is focused on achieving a more efficient market.

Consumers are seeing rapidly increasing costs for electricity supplies delivered to their points of supply, reflecting structural changes in the market, the unbalanced network investment rules, and massive government social policy interventions. This rule change is in part aimed at reducing the costs of delivered electricity to more efficient levels.

The MEU points out that the Discussion Paper seems to be focused on obtaining proof that the rule change provides "long term benefits to consumers" as required by the National Electricity Objective. The MEU considers that the AER has established that generators can exercise their market power by offering artificially low ramp rates and by doing so cause transfers of wealth from consumers to generators and even from some generators to generators using their artificially low ramp rates. The market is required to be efficient under the National Electricity Law. This means that the AEMC should require opponents of the rule change to prove that the detriments of the rule change outweigh the benefits that will be generated by establishing a more efficient outcome for the wholesale market.

The MEU supports the rule change proposed by the AER.

1. Introduction

The Major Energy Users Inc (MEU) welcomes the opportunity to provide its comments on the AEMC's consultation paper relating to the AER rule change proposal on generator ramp rates and rebidding.

1.1 About the MEU

The Major Energy Users Inc (MEU) represents some 20 large energy using companies across the NEM and in Western Australia and the Northern Territory. Member companies are drawn from the following industries:

- Iron and steel
- Cement
- Auto industry
- Paper, pulp and cardboard
- Processed minerals
- Fertilizers and mining explosives
- Tourism and accommodation
- Mining

MEU members have a major presence in regional centres throughout Australia, e.g. Western Sydney, Newcastle, Gladstone, Port Kembla, Albury, Mount Gambier, Westernport, Geelong, Port Pirie, Kwinana and Darwin.

The articles of the MEU require it to focus on the cost, quality, reliability and sustainability of energy supplies essential for the continuing operations of the members who have invested \$ billions to establish and maintain their facilities.

Because the MEU members in many cases have their major manufacturing operations located in regional centres, the members require the MEU to ensure that its comments also reflect the needs of the many small businesses that depend on the existence of large manufacturing operations, and the many residential electricity consumers that make up the members' workforces and contractors in those regional centres.

1.2 The MEU view of the energy markets as a whole

The MEU considers that the rule change proposal should be addressed in the context of the electricity market as it is now operating. In this regard, consumers are already seeing escalating electricity costs stemming from a range of causes, such as:

- Generator market power itself (the focus of the proposed rule change)
- Steeply rising transmission and distribution network prices
- The electricity market exhibiting reduced competitive pressures from re-aggregation of competitive elements
- Excessive volatility in wholesale electricity prices, and as a result retailers are including in retail price offerings, larger risk and profit maximisation premiums, which are causing significant retail contract price increases
- Implementation of the renewable electricity target (RET) through the LRET and SRES programs which are currently forecast to provide nearly 30% of electricity from renewable sources.
- In addition to the direct premiums these programs place on electricity costs, there are considerable indirect costs that are being seen through
 - increasing generation prices as thermal generators attempt to recover their fixed costs over lesser production
 - the need to augment networks to meet the RET requirements
- Myriad (and sometimes duplicative) Federal and State Government renewable energy, energy efficiency and climate change programs and 'initiatives', such as feed-in tariff schemes, climate change levies, energy efficiency programs, etc

A trend of reducing demand and consumption across the NEM has resulted from the loss of considerable industrial demand and increased penetration of residential roof top solar generation. This means that generators have to recover their fixed costs over a smaller consumption base, leading to increased unit prices. At the same time, network revenues are still increasing with the revenue recovered from lower demand and consumption also leading to higher prices.

However, one of the more important factors becoming increasingly evident is the increasing volatility in the regional spot markets for electricity. This volatility is resulting in increased risk to generators and retailers and this has caused a significant increase in risk margins included in retailer and generator offers and in increased retailer margins.

Overall, there is a general expectation that electricity supply costs will continue to rise in real terms over the next few years as a result of these changes, a significant proportion of which is driven by the many government interventions in a supposedly competitive market. These increasing prices for delivered electricity is having a 'chilling' effect on downstream investments and creating an environment where the ability to pay is becoming a major issue for all consumers, ranging from large industrials facing international competition to small consumers, especially in the lowest income quintiles.

1.3 Generator market power

Generators are able to exercise market power because of constraints in the electricity networks. Once a constraint in the network occurs, it limits the competition between generators that drives efficient pricing by generators.

In 2010, the MEU submitted a rule change proposal that would limit the ability of the dominant generator(s) in a region being able to set the regional spot price when the interconnector(s) to an adjacent region is constrained. This has been referred to as transient market power; the exercise of transient market power is a feature of all competitive electricity markets - both in energy only markets and capacity markets. In most overseas jurisdictions, the exercise of transient market power is seen as inefficient and is prevented but this is not the case in the NEM. Setting artificially low ramp rates is another exhibition of where generators use network constraints to limit competition and thereby accruing a financial benefit at the expense of others - consumers and other generators.

The main issue the MEU has with the approach used by the AEMC to assess its rule change on MEU proposal against the exercise of generator market power, is that the AEMC used a unique approach to assess the impact of the exercise of this transient market power, to such an extent that the problem was to a large extent "averaged away". Despite this, the AEMC still concluded that generator market power was likely to be an issue in the future and that this should be monitored for re-emergence.

Effectively, the AEMC assessed that the amount of damage caused by the inefficiency was not sufficient to warrant a change to the rules but that, in the future, the damage to consumers might exceed a value whereby the matter might need to be reassessed. The MEU considers that the AEMC approach did not address the issue of market power as such, but that the amount of damage caused by the exercise of the market power was "within tolerance" of what would be expected of a competitive market¹.

There are a number of solutions available to address the observed outcomes of generator market power and these include:

¹ The MEU is not convinced by the AEMC outcome on its assessment of transient market power as it is akin to being only a little bit pregnant or assuming that theft is only real when the amount stolen is above a certain value

- Increase the size of the network to eliminate any constraints (an expense to consumers)
- Require generators to pay for the certainty of being able to be dispatched (such as through the Optional Firm Access model currently being contemplated)
- Remove the ability of generators being able to garner financial benefit through bidding and rebidding practices (such as proposed by the MEU rule change on market power)
- Require generators to offer their services to match the physical ability of their plant (as sought by the AER rule change)
- Do nothing and permit consumers to continue paying for generators use of their market power (such as the AEMC response to the MEU rule change effectively permits)

The MEU recognises that constraints applied to generators under the rules could have the ability to deter future investment of generation and thereby put at risk the long term security of supply. Equally, the MEU notes that the electricity market is intended to be competitive and that where competition is constrained this also has the potential to limit future investment due to the inherent risks.

The NEM is intended to operate in a way that with sufficient competition, the market would evidence a wholesale price that reflects the marginal cost of generation. At low demand times, the wholesale price should reflect the price at which a generator balances the costs of maintaining output against the costs of stopping and restarting generation, such as keeping the boilers steaming. At high demand times, the wholesale price reflects the cost of having fast start generation, which is only occasionally dispatched.

The most efficient dispatch of generation is where the merit order of generation dispatch is set by the relative costs for generation. It is inefficient where any generator is dispatched out of merit order; ie where a higher marginal cost generator is dispatched before a lower marginal cost generator. Where this out of merit order dispatch is caused by a generator using its unique locational circumstances to cause this (and gain a commercial benefit) such an exercise of market power should be prevented.

1.4 Summary

It is recognised that it is probably inefficient to augment the networks to eliminate any congestion. At the same time, it is inefficient to allow just a few generators to increase their financial reward by deliberately under-quoting the ability of their equipment to provide the services required whilst causing:

- Other generators to lose revenue by being constrained off out of merit order, and/or
- Consumers to pay more for the services than is required by causing unnecessary constraining on dispatch of higher priced generation when lower cost generation is available.

Consumers are facing considerable price impacts for their electricity supplies. A key driver is due to the significant changes in the market structure of the NEM. It is not reasonable that these price rises be exacerbated by generators using their market power to further increase electricity prices, and by doing so create a significant transfer of wealth away from consumers.

2. The AER Rule change proposal, the AEMC approach and the NEO

The Second Reading Speeches for the 2005 and 2007 amendments to the National Electricity Law (NEL) make it clear that competition is the basis for maximising efficiency in generation and retailing. It is by maximising efficiency that will deliver the least cost to consumers.

The MEU agrees that the National Electricity Objective (NEO) should be the basis for rule changes and this is outlined by the AER in its rule change proposal and by the AEMC in the consultation paper.

2.1 The proposed rule change and the NEO

The consultation paper prepared by the AEMC provides a sound approach to clarifying the issues behind the AER decision to seek a rule change to address the damaging effects from the exercise of generator market power through setting artificially low ramp rates.

The NEO is drafted in a way that requires the rule maker (AEMC) to ensure that the supply of electricity to consumers must be delivered in a way that ensures the maximum efficiency is achieved by the market. As Minister Hill (for Minister Conlon) noted² when discussing the NEO in the second reading speech for the NEL amendments in 2005

“The national electricity market objective in the new 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 safety, reliability and security of the national electricity system.

The market objective is an economic concept and should be interpreted as such. For example, investment in and use of **electricity services will be efficient when services are supplied in the long run at least cost**, resources including infrastructure are used to deliver the greatest possible benefit and there is innovation and investment in response to changes in consumer needs and productive opportunities.

² Hansard, SA House of Assembly 9 February 2005

The long term interest of consumers of electricity requires the economic welfare of consumers, over the long term, to be maximised. **If the National Electricity Market is efficient in an economic sense the long term economic interests of consumers in respect of price, quality, reliability, safety and security of electricity services will be maximised.**

... **Applying an objective of economic efficiency recognises that, in a general sense, the national electricity market should be competitive**, that any person wishing to enter the market should not be treated more nor less favourably than persons already participating in the market, and that particular energy sources or technologies should not be treated more nor less favourably than other energy sources or technologies." (emphases added)

Efficiency in the market will deliver the least cost to consumers over the long term. It is patently inefficient if a generator can exercise market power and as a result cause a transfer of wealth from consumers to generators or a transfer of wealth from one generator to another.

With the above in mind, the AEMC should accept the premise that the current rules allow a generator to exercise its market power to the detriment of consumers and the market in general. As the proposed rule change is clearly focused on increasing efficient dispatch of generation (and therefore a more efficient market), the AEMC should therefore be examining the rule change proposal with the **onus of proof for not implementing the change lying with those who benefit from not changing the rules.**

Put another way the AEMC should be requiring opponents of the rule change proposal to prove that the detriments of the change outweigh the benefits to consumers such that this inefficiency in the market should be accepted by consumers and be retained.

2.2 The AER proposed rule change

In the rule change proposed by the AER, the AER has identified that when a constraint occurs, it is the ability of the generators isolated from the rest of the region to limit their ramp rates such that out of merit order dispatch has to be implemented (called "disorderly bidding") in order to maintain the network in a secure condition. The outcome of this activity the AER notes is that the spot market exhibits considerable volatility and overall increases in the spot price of electricity in the region.

The AER rule change proposal is intended to maintain efficient dispatch of generation on a merit order that is based on lowest cost, most efficient

generation being dispatched in an orderly fashion before higher cost generation is dispatched. This will achieve the NEO in that the NEO seeks to ensure there is efficient operation of the electricity market. What is observed is that inefficient dispatch is occurring under the current rules and this is being caused by generators using their market power to set artificially low ramp rates.

Prima facie, the proposed rule change recognises that generators have, at times, the ability to offer their services in a manner which results in less efficient operation of the market with an accompanying financial benefit to the generator by doing so. It is inefficient for generation to be constrained on or constrained off because another generator has identified a commercially attractive approach that artificially limits its ability to respond to market signals.

The proposed rule change will require generators to bid ramp rates that reflect their equipment's ability to respond to market demand rather than at rates that are less than their equipment's ability. This will ensure that the order of dispatch is driven by technical constraints rather than artificial constraints that result in inefficient dispatch

An earlier rule change proposed by the AER (and implemented in the rules) looked to achieve this same outcome. The earlier rule change required generators to offer ramp rates at a minimum of 3 MW/minute (or 3% of rated capacity/minute where the generator was rated at less than 100 MW) unless there is a technical reason for having a lower ramp rate.

The AER has since observed that setting a minimum ramp rate still has allowed some generators to bid at the minimum despite their equipment having the capability of implementing higher ramp rates. As a result of bidding at the minimum ramp rate, the generators have been able to gain a financial benefit and, at the same time, cause inefficiencies in the operation of the market. This means that the previous rule change did not go far enough in minimising the ability of some generators to use their market power to the detriment of the market.

To redress this market inefficiency, the AER proposes that all generators should be required to bid their ramp rates to match the technical capacity of their equipment. This means that the rule change proposal is an extension to the earlier rule change implemented which did not go far enough to eliminate the problem that had been observed.

The MEU considers this rule change a sensible and pragmatic extension to the earlier rule change that was itself implemented for very sound and sensible reasons.

2.3 The AEMC process

The AEMC has noted that there is another rule change relating to generator dispatch under consideration which has been submitted by the SA government. This other rule change looks at the processes of bidding and rebidding at times of network constraints. The inference drawn from the AEMC observation in this consultation paper is that perhaps the AER proposed rule change assessment might be deferred so that the two could be considered together, although this is not stated. Despite the SA government rule change proposal, the MEU considers that the AER rule change proposal should be reviewed on its merits and not deferred.

The AEMC notes that the AER has identified a number of benefits that will result from the implementation of its proposed rule change:

- Faster alleviation of network constraints
- Reduction in counter price flows
- Reduction in wholesale market volatility
- Less network investment to relieve constraints

The MEU agrees that all of these benefits should flow from implementing the rule change but highlights that the benefits are all driven by an artifice available to increase generator profitability. Such an artifice would not exist in a generation dispatch arrangement where minimising costs to consumers is the driving force. The artifice is possible under the current rules because generators seek to maximise their profitability by reducing competition.

The AEMC seems to imply that it will assess the impacts on the market as noted by the AER but will look further to the issue and assess the impacts on security of the market as well. The MEU agrees that this is an appropriate extension of the review process.

Despite supporting the inclusion of an assessment of the security implications of the rule change, the MEU is of the view that this should not be the prime determinant as to whether the rule change should be made. In fact, the MEU considers that this issue of security needs only be taken into consideration if the implementation of the rule change demonstrably reduces system security.

The AEMC notes that it also needs to balance the benefits from the rule change proposal against the potential detriments, such as (page 10):

"...the potential benefits that generators may obtain from an ability to manage the risk of not being dispatched, including the ability to meet their contractual

obligations under hedge contract arrangements and to obtain revenue certainty for access to third-party financing to underpin efficient investments."

The MEU recognises that the AEMC is correct in its need to assess detriments of the rule change. What concerns the MEU is that under the current rules, one generator exercising its market power by artificially setting low ramp rates has the potential to harm other generators which also need to manage their dispatch to meet their contractual obligations. So what might be a detriment to one generator, could well be a benefit to another.

The MEU recognises that the AEMC must balance the benefits and detriments but notes that the AER proposal is merely an extension of a rule change already implemented. As such, the MEU considers that many of the arguments against making the rule change will not recognise the proposal is, in reality, an extension of a previous rule that was changed for valid reasons.

2.3 Summary

What the AEMC Discussion Paper does not address in a climate of increasing costs to consumers for the supply of electricity, is that there is a need to address ever escalating costs for power. This rule change is, in part, driven by a need to reduce the costs of power seen at the consumers' point of supply.

The AEMC examination should reflect that allowing the exercise of market power through allowing artificially low ramp rates is essentially not efficient. The consultation paper seems to take the view that the onus of proof for implementing a change lies with the proponent. In fact the onus lies with proving that retaining an obvious inefficiency is preferable.

The AEMC Discussion Paper does not examine the issue in the context that there have been significant and substantial changes in the market structure of the NEM which, inter alia, have resulted in greater concentration, higher barriers to new entrants, re-aggregation of generation with retail, and increased volatility and risks which have all contributed to higher prices.

3. Specific questions raised by AEMC

The MEU provides the following responses to the specific questions raised in the Consultation Paper. The MEU has endeavoured to keep its answers as concise as possible and refers to the commentary in the preceding sections to amplify its reasoning.

AEMC question		MEU response
1	(a) Does the current minimum required ramp rate of 3 MW/minute hinder AEMO’s ability to determine an economically efficient dispatch arrangement while maintaining system security?	<p>The fact that system security has been maintained subsequent to the introduction of the earlier rule change (that set the minimum ramp rate to 3 MW/minute) clearly shows that the system security has not been compromised to any discernable extent by the imposition of the earlier rule change.</p> <p>Efficient dispatch requires the lowest cost generator to be dispatched first and offloaded last. If this merit order is violated because of artificial ramp rates being imposed, then the outcome is not efficient.</p> <p>AEMO sets the constraint violation penalty for ramp rates very high as "it cannot second guess generator capability" (table 5.1). If the ramp rate is artificially set lower than equipment capability then this imposes less efficient actions to be implemented by AEMO to maintain system security.</p>
	(b) If so, would the AER’s proposed rule improve the economic efficiency of the dispatch process in this regard?	<p>Yes. See response to Q1(a)</p> <p>Setting ramp rates to match the technical capability of the equipment results in AEMO being able to maximise ensuring correct merit order loading and offloading of all generators.</p>
	(c) What evidence is there that system security has	<p>System security has not been actually compromised by the setting of minimum ramp rates at 3 MW/minute as the market records show.</p>

	been compromised by ramp rate limitations?	<p>However, artificially limiting down ramp rates to 3 MW/minute when a fall in supply is required has the potential to create an oversupply condition and this could lead to system security issues. Equally, artificially limiting increase ramp rates to 3 MW/minute when an increase in supply is needed could result in an undersupply condition.</p> <p>Both of these conditions have to be addressed by either increasing flows on constrained network elements or by other generators being required to accommodate the requirement imposed by the condition.</p> <p>This means that artificially setting the ramp rates at less than equipment capability increases the risk that system security could be compromised at some point in the future.</p>
2	(a) Do you agree with the AER's assessment of the costs associated with counter-price flows?	The MEU has no better information than the AER assessment. However the MEU considers that the AER has no reason not to provide accurate information
	(b) To what extent is generator rebidding a cause of counter-price flows on interconnectors? Is this primarily due to generators' ramp rates or other forms of bidding behaviour?	<p>The MEU has no better information than that provided by the AER</p> <p>As AEMO has the ability to over-ride price and volume rebidding but is loath to over-ride ramp rates it is clear that ramp rates would be the prime cause of counter price flows on interconnectors.</p>
3	(a) Is it valid to conclude that changes in the merit order of dispatch results in productive efficiency losses?	Yes.
	b) Is there a difference in	Yes.

	<p>productive inefficiencies caused by the rebidding of ramp rates and other forms of bidding behaviour?</p>	<p>The argument proposed by the AEMC that it might be more efficient for ramp rates to be set low as this might result in other generators making new bids which would result in overall lower costs to consumers is merely supposition. In theory, prices offered by a generator are assumed to be based on that generator's marginal cost. It is impossible to second guess what a seller might do under every set of circumstances (including scheduling maintenance), so the AEMC must assume that bidding reflects marginal costs as this is what AEMO is required to assume.</p> <p>Therefore, a generator called for offloading would be assumed to be the highest marginal cost generator at that time. If its ramp rate offer precludes it being offloaded then a lower marginal cost generator must be offloaded instead. This gives a loss of productive efficiency.</p> <p>Similarly, if a generator is called for increased supply (because it is the next marginal generator) but its ramp rate precludes it being loaded, then a higher marginal cost generator must be loaded until the lower cost generator can "catch up". This also gives a loss in productive efficiency.</p>
	<p>(c) Assuming productive efficiency losses can be caused by other forms of rebidding, would the AER's proposed rule reduce the extent of productive efficiency losses?</p>	<p>The fact that there may be other forms of bidding and rebidding which cause loss of productive efficiency does not mean that eliminating this aspect of bidding and rebidding (ie of ramp rates) will not reduce the loss of productive efficiency.</p> <p>However, the AER has identified that removing the artificial restriction applying to ramp rates will improve productive efficiency, and has quantified this improvement.</p>
<p>4</p>	<p>(a) To what extent have participants experienced a quantifiable increase in the</p>	<p>The MEU members are not Market Participants and therefore the MEU does not have access to first hand experiences to share with the AEMC.</p> <p>However, the MEU investigations relating to its own rule change proposal supports a view that increasing volatility in the market increases risks and that retailers and generators</p>

	<p>costs of managing wholesale market risks through higher risk premiums on hedge contracts and, if so, to what extent can this be attributed to the issues discussed above?</p>	<p>increase their risk margins to accommodate the change in risk profile.</p> <p>The MEU is unaware as to how every retailer and generator manages each element of risk but is aware from its earlier research that a number of retailers and generators tend to take a holistic view on all the risks they face implying that, at least by some, risks are aggregated. This approach is logical because risks tend not to be constant but vary with time and market conditions. Therefore an assessment of the cost to manage the each risk element cannot be determinative but varies with each retailer and generator.</p> <p>Risk assessment is not the same as determinative costing. When there are a number of risks that are faced, it is expected that some risks are unlikely to occur if others do occur. This means that the same risk is likely to be quantified differently by different entities, and would vary with the expectation of the likelihood of other risks occurring.</p> <p>The risk of volatility caused by artificial settings of ramp rates requires a number of precedents before the risk is realised (such as the needed demand, constraint of the network, dispatch of the generators creating the conditions, etc). Once the conditions are created, the risk faced by each retailer and generator has to be assessed within its own overall risk profile.</p> <p>This means that it is unlikely that risks associated with volatility caused by ramp rate would be assessed and quantified separately to all other risks that comprise the risk premium each retailer o generator would apply.</p>
	<p>(b) Assuming the adoption of a prudent risk management and purchasing strategy, do these higher risk premiums represent a real and measurable cost to consumers?</p>	<p>See response to Q4(a)</p> <p>The fact that there is an increase in risk from increased volatility due to artificial setting of ramp rates means that this risk has to be managed or a risk premium applied.</p> <p>Regardless of whether the risk is managed or accepted at a cost premium, there is a cost that is incurred. Retailers and generators have to pass this cost on and therefore this becomes a real cost to consumers.</p> <p>However, it is most unlikely that a specific cost can be measured as the costs resulting</p>

		from this specific risk will vary from entity to entity.
5	(a) To what extent has the rebidding of ramp rates under constraint conditions led to inefficient price signals? Is there evidence to suggest this has led to investor uncertainty?	<p>The fact that there has been increased volatility with both increases and decreases in prices seen as a result of rebidding caused by artificially low settings for ramp rates highlights that the resulting price signals reflect inefficient outcomes - spot prices should reflect actual costs that are incurred by the generation of electricity rather than an opportunity cost to increase profitability.</p> <p>Further, that counter price flows have also occurred again supports a view that price signals are inefficient.</p> <p>Investment in new generation has occurred since the previous rule was applied to set a limit of 3 MW/min ramp rates. This suggests that there is little investor uncertainty caused by setting of ramp rates.</p> <p>However, the MEU notes that, despite very high prices in SA region for over the three years of 2008, 2009 and 2010 where there was significant market volatility, there was little investment in new generation. This implies that the greater the volatility in wholesale prices, the greater the investor uncertainty. The MEU therefore considers that reduced volatility will provide greater investor certainty. As increased market volatility is seen as an outcome of setting artificially low ramp rates, the AER proposal would reduce volatility and thereby increase investor confidence.</p>
	(b) Have participants with peaking generators experienced higher levels of price unpredictability arising from the issues discussed above? Can these impacts be quantified?	<p>The AEMC comments that peaking generators might not be able to start sufficiently quickly in order to address the changes in supply caused by the low ramp rates. MEU members with fast start gas turbines advise that very fast starts do result in increased wear to their equipment. That attempts are made to address potential shortfalls and over supplies caused by artificially low ramp rates will cause unnecessary wear on the equipment that is dispatched to maintain market security - this is an unnecessary cost that is incurred by the market to address an artificially created problem.</p>

		<p>There is a rough rule of thumb for each gas turbine where each start can be equated to a set number of hours of running for maintenance purposes but it is doubtful whether this should be sufficient to determine a cost for quantifying the problem.</p>
<p>6</p>	<p>(a) To what extent can a reduction in the effectiveness of SRA units be attributed to the rebidding of ramp rates under constraint conditions compared to other forms of generator rebidding?</p>	<p>The MEU has no better information on this than the AER and AEMC has provided regarding the impacts of artificial low settings of ramp rates. The fact that this reduces the effectiveness of the SRA process should be sufficient to support a change, regardless of the quantum of benefit</p>
	<p>(b) As a NEM participant, do you consider SRA units to be an effective instrument for the management of inter-regional price risk and have you used SRA units for these purposes in the past? To what extent has this changed due to the issues discussed above?</p>	<p>MEU members are not Market Participants but in discussions with retailers, MEU members have reported to the MEU that retailers will not offer them firm contracts based on generation prices in another region. This seems to imply that the SRA process has not sufficiently addressed the ability to trade across regional boundaries.</p>

<p>7</p>	<p>Would the application of the AER’s proposed rule affect the valuation of SRA units and the impact on network charges?</p>	<p>The MEU notes that residues from the SRA process are transferred to consumers through transmission network charges. The proposed rule will lead to a reduction in counter price flows and thereby increase the amounts of the residues of the SRA process being transferred to consumers through transmission network charges.</p>
<p>8</p>	<p>(a) Is it valid to assume that generators would generally be able to operate at their maximum ramp rates submitted in accordance with schedule 3.1 of the NER?</p> <p>(b) To what extent are the cost differences associated with different levels of ramp rates material and should this be taken into account in the determination of maximum technical ramp rates?</p>	<p>While the technical issue is relatively straight forward the MEU sees that an issue lies with the costs involved. As a starting point, the MEU sees that each generator should be able to advise the maximum ramp rates for each individual generator in its fleet. These ramp rates should be interrogated by AEMO and AER to ensure that the generators are not artificially de-rating the ramp rates that are technically achievable.</p> <p>MEU members with gas turbines advise that there are cost differences between ramp rates, with the greatest cost applying to ramp rates for equipment that has to start from cold. They advise that once operating, the costs for different ramp rates are much less. However, cost does not define what the technical capabilities of equipment are and the MEU sees that the two need to be addressed separately. In particular, the need to use the maximum ramp rate only applies when there is a constraint. So the requirement for advise of ramp rates should have a least two features - one where the preferred ramp rate is advised where its cost reflects the usual operation of the equipment and a second where the technical maximum is advised, but only to be used when there is a constraint. Currently AEMO will not dispatch a generator at a greater than the advised ramp rate because it is unaware of the equipment capability. By defining two ramp rates (the preferred and the technical maximum) AEMO can use the higher maximum dispatch rate knowing the equipment is capable of the higher ramp rate. Knowing that AEMO will only</p>

		call for the higher ramp rate when needed encourages the generator to minimise its cost exposure by appropriate rebidding of volumes into different price bands.
	(c) Are there any issues relating to the ability of generators to determine the maximum ramp rates of their generating units?	See response to Q8(b) When offers are received for the ramp rates, these should be reviewed to identify if the ramp rates offered are consistent with the type of plant. If there is inconsistency, then the generator should be required to explain the reasons for the inconsistencies. The MEU would expect that national benchmarking and international benchmarking would provide AEMO and AER with sufficient data to identify if there are inconsistencies and whether the offers for the ramp rates for maximum technical ramp rates are sustainable.
	(d) Are there any issues relating to the enforcement of the AER's proposed rule?	The MEU does not consider that any of the issues cannot be addressed. Therefore enforcement should not be an issue.
9	Would a requirement to submit ramp rates that reflect the technical capability of generating plant increase risks to generators? What form would these risks take and can they be quantified?	The risk to the generator for using the maximum ramp rate lies only with the costs involved as the equipment is rated for the purpose. The AER does not appear to be suggesting that generators provide ramp rates greater than the technical limit so on a technical basis there is no increased risk. The greatest risk is whether the technically set ramp rate is more expensive than a lower ramp rate. This can be minimised by only allowing AEMO to call for the maximum ramp rate when needed and the cost impact of this potentially relatively infrequent requirement can be addressed by allowing the generator to rebid its volume into different price bands when the constraint occurs. This approach allows the generator to manage its risk. The AEMC refers to the risk that introducing higher ramp rates will result from generators being constrained off and not being able to meet their hedging commitments. The MEU notes that if one generator uses an artificial ramp rate to remain dispatched out of merit

		<p>order then another generator is constrained off even though it has offered a lower price and should be dispatched. This is inequitable and reflects that the current rules allow some generators to maximise their profitability at the expense of other generators. By maximising the ramp rates to technical capability results in the market being more efficient with dispatch being more reflective of a competitive outcome.</p>
10	<p>(a) Would the proposed rule create an incentive for generators to actively reduce the technical ramp rate capability of their generating plant?</p>	<p>Yes. This is why the MEU considers that the ramp rates offered should be interrogated by AEMO and AER to ensure that they are consistent with expected outcomes.</p>
	<p>(b) Since the making of the AER's previous rule change request, have conditions in the NEM changed such that a minimum ramp rate of 3 MW/minute is no longer sufficient?</p>	<p>It must be recognised that generators are much more aware now of how to use market power than in earlier years of the NEM. The fact that the minimum ramp rate is being used to manipulate the market and its outcomes, attests to this observation. This means that the minimum ramp rate needs to be changed to minimise the ability of generators to use their market power when constraints occur. Further, as the AER points out, ownership changes have resulted in much greater integration between generators and retailers, with the "gentailers" now owning the biggest proportion of the generation fleet.</p>
	<p>(c) Would generators be able to negate the effects of wear and tear by bidding volumes within price bands as suggested by the AER?</p>	<p>Yes. They already do this through their normal dispatch processes so there is no reason to not accept that they can do likewise with increased ramp rates when needed. Further it is important to note that the need for the higher ramp rates is not a consistent issue - it only need apply at times of network constraint. Whilst these network constraints do occur sufficiently frequently to warrant attention, they still occur only for relatively short periods of time and a not very frequent. If AEMO is only permitted to call for the maximum</p>

		<p>ram prate at times of constraint, then the impact of the use of higher ramp rates will impose little extra cost overall.</p> <p>The MEU notes that while the use of capacity withholding (another form of market power) is used infrequently, the cost to consumers is massive because of the very high market price cap compared to the SRMC of generators operating in the NEM. The MEU sees artificially low ramp rates as another form of market power that needs to be used infrequently but cause considerable harm to consumers.</p>
11	<p>(a) What are the costs and benefits of requiring generators to submit minimum ramp rates for each of their individual physical units rather than a single minimum ramp rate for the aggregated total?</p>	<p>The MEU sees that there is little additional cost to generators to provide ramp rates for their individual units. Most generators have a number of identical units in their fleets so the cost to advise individual ramp rates would not increase markedly.</p> <p>However the benefit from the multiplier effect from each unit being called for dispatch based on its individual ramp rate would provide a significant benefit</p>
	<p>(b) Does the view still hold that the aggregation provisions can be used to manage concerns around incentives to aggregate?</p>	<p>The fact that the issue of artificially low ramp rates being used to "game" the market indicates that the aggregation provisions are being used to the disadvantage of the market and consumers.</p>
12	<p>(a) What are the costs and benefits of requiring generators to submit maximum technical ramp rates only at times of</p>	<p>As noted above, the MEU considers that this option reduces the risks and costs faced by generators but addresses the primary concern.</p> <p>The MEU notes that generators do respond very quickly when constraints occur in the market so that they can maximise their financial position. Noting this, the MEU is equally aware that generators would respond very quickly to a constraint where AEMO would call</p>

	network constraints?	<p>on a generator to provide a ramp rate at the technical maximum. The MEU has also noted that generators now take pre-emptive action to ensure that their financial position is negatively impacted to the least extent when constraints occur. For example, the MEU noted that during the high priced events that occurred in SA during 2008-2010, generators acted to ensure that the cumulative price threshold was not exceeded as it would have resulted in invoking an administered price if it were exceeded. The MEU considers that generators would take similar actions to optimise their financial outcomes in the event that AEMO required a ramp rate at the technical limit.</p>
	(b) Are there any variations to this approach, such as the use of average ramp rates, which may be more preferable?	<p>The MEU does not consider that averaging will necessarily result in the best outcome. Just as generators are seen to be abusing the current requirements by artificially setting low ramp rates the MEU sees that the generators would find a way to use the average ramp rates in a similar way.</p>
13	(a) What are the costs and benefits of requiring generators to submit a ramp rate that reflects a percentage of the capacity of their generating plant?	<p>The MEU sees that this approach is inconsistent with actual equipment performance. For example, fast start gas turbines tend to be smaller in size than coal fired base load generators. The application of using a percentage of capacity would result in the fast start gas turbines having lower ramp rates than the large coal fired power stations. This is clearly counter to perceived expectations. This issue can be reinforced by looking at actual examples. A combined cycle GE 9FB GT generator has an output of 510 MW and a ramp rate of greater than 50MW/minute³ (ie from zero to rated output in about 10 minutes and back to zero in the same time frame).</p>

³ See http://www.ge-flexibility.com/static/global-multimedia/flexibility/documents/GEA18829%2BNew_9FB_r2.pdf

		<p>Similarly a GE 7F open cycle GT generator has an output of 250 MW and a ramp rate of 50MW/min⁴. The ramp rates are much the same yet one generator has half the output. A Siemens SCT-8000H open cycle gas turbine generator⁵ has a rated capacity of 375 MW with a standard loading ramp rate of 15MW/min, a fast loading ramp rate of 35MW/min and cycling ramp rates of about 28MW/min.</p> <p>This shows that different manufacturers of similar sized plants have different ramping characteristics which do not relate to capacity</p> <p>Coal fired thermal generators of a larger (or even smaller) sizes do not have these ramp rates exhibited by gas turbines.</p> <p>So setting ramp rates based on capacity does not reflect the actualities of the various generator types and manufacture available.</p>
	<p>(b) Assuming adoption of this approach, what percentage of capacity should be required?</p>	<p>See response to Q13(a)</p> <p>The MEU does not consider that this approach reflects the actuality of generation plant performance and should not be used</p>
<p>14</p>	<p>Are there any other alternative approaches? To what extent could an alternative approach be based on incentives rather than relying on</p>	<p>The MEU supports the use of incentives where such incentives can be used and deliver benefits to consumers.</p> <p>The only refinement that the MEU sees that might be viable would be a mechanism where generators are encouraged to provide higher ramp rates when there is congestion. One option to implement this would be that generators are allowed to bid ramp rates that they would normally use but provide a higher priced ramp rate when asked to operate at the</p>

⁴ See http://www.ge-flexibility.com/static/global-multimedia/flexibility/documents/7F_7_Series_Product_Fact_Sheet.pdf

⁵ See <http://www.energy.siemens.com/hq/pool/hq/power-generation/gas-turbines/SGT5-8000H/gasturbine-sgt5-8000h-h-klasse-performance.pdf> page 6

	regulatory/technical requirements?	<p>technical limit by AEMO. However, the MEU sees that such an approach could be abused and the controls needed to ensure that abuse did not occur might be much more complex than the issue warrants.</p> <p>The MEU therefore considers that as a starting approach, generators should submit two ramp rates for each generation unit in their fleet - one which is the ramp rate they consider will be efficient from their point of view (but not less than the current 3 MW/min ramp rate now in place, and a second ramp rate that is at the technical limit of the plant. Normally AEMO would use the lower ramp rate but when congestion occurs, AEMO can require the higher ramp rate to be used,</p> <p>Once this process is in operation and the frequency of the requirement to use the higher ramp rates is better understood, then perhaps an incentive regime could be examined.</p>
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Major Energy Users
AER proposed rule change on ramp rates
Response to AEMC Consultation Paper