

4 April 2014

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1234

Level 22
530 Collins Street
Melbourne VIC 3000

Postal Address:
GPO Box 2008
Melbourne VIC 3001

T 1300 858724
F 03 9609 8080

By email

Dear Mr Pierce

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

AEMO appreciates the opportunity to submit comments on the National Electricity Amendment (Generator ramp rates and dispatch inflexibility in bidding) Rule 2014 Consultation Paper.

AEMO supports the proposed rule as it would improve consistency in the treatment of physical aspects of generators in bidding. AEMO also suggests clarification of the bid and offer aggregation data provisions to improve consistency and the application of those provisions.

Should you have any questions or wish to discuss this submission further, please contact Brian Nelson on (02) 9239 9132 or brian.nelson@aemo.com.au.

Yours sincerely



Mike Cleary
Chief Operating Officer

Attachment: AEMO Submission in response to AEMC Consultation Paper: National Electricity Amendment (Generator ramp rates and dispatch inflexibility in bidding) Rule 2014

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1. Introduction

The rule proposal deals with two technical aspects of generating units that are inputs to the central dispatch process. This is an area of the rules that is currently treated inconsistently, which in AEMO's view has resulted in uncertainty over its interpretation, application and enforcement. The AER's proposal presents an opportunity for improving this aspect of the National Electricity Rules (rules).

The technical aspects of generators that are used in central dispatch are capacity, market ancillary service data, ramp rates, fixed loads¹ and fast-start profiles². While the proposed amendment deals with ramp rates and fast-start profiles, AEMO has also considered the treatment of the other technical aspects in this submission.

In making this submission, AEMO seeks that the rules:

- Are consistent with other provisions of the rules.
- Are not unduly prescriptive and provide enough flexibility to allow participants to comply and adapt.
- Are transparent and just.
- Consider compliance burdens imposed by the rules.
- Are enforceable.³

AEMO is aware that ramp rates are often used by participants to manage their risks of being constrained-off or constrained-on by network congestion. Other areas of work such as the South Australian Government's rule change request referred to in the consultation paper and the AEMC's proposals for optional firm access also address similar or related issues. This submission does not take into account the potential impacts of this work on the issue being addressed here.

AEMO's submission is divided into two sections. The first section discusses inconsistencies in the rules that would be addressed by the amendment. The second section provides answers to selected questions posed in the consultation paper.

2. Inconsistencies in the Rules relating to technical aspects of generating units

There are two areas of inconsistency in the National Electricity Rules (rules) that relate to the proposed amendment:

- The treatment of technical aspects of generators' bids.
- The information provided in bid and offer validation data in Schedule 3.1 of the rules.

¹ Known in the rules as dispatch inflexibilities.

² Known in the rules as dispatch inflexibility profiles.

³ Adapted from *Performance Benchmarking of Australian Business Regulation: Role of Local Government as Regulator. Appendix I Principles of best practice regulation*. Productivity Commission. 18 July 2012. Accessed 21 March 2014. <http://www.pc.gov.au/projects/study/regulation-benchmarking/local-government/report>

2.1. Treatment of technical aspects

Table 2.1 of the consultation paper summarises limitations and enforcement of four technical aspects of generating units in the rules, which are all treated differently. A separate provision⁴ relates to notification of scheduled capacity, which only specifies timing but has no technical limitations.

AEMO submits that the different treatments has reduced the transparency of the technical capabilities of the NEM and means these rules are applied differently for different participants. AEMO recommends these aspects be aligned as part of this rule change.

2.2. Bid and offer validation data

The rules have two mechanisms that mitigate the risk of incorrect inputs being used in central dispatch. These are:

- Verification of dispatch offers, dispatch bids and market ancillary service offers against standard data provided by the participant.
- Identification of dispatch outcomes that are affected by other incorrect input data, and replacement of prices affected by incorrect inputs with the most recent valid prices (manifestly incorrect input procedures in clause 3.9.2B of the rules⁵).

With the introduction of the current ramp rate rules in 2009⁶ the bid and offer validation data was also amended. This has introduced some unintended consequences to the data by effectively regulating the ramp rates being offered instead of the clear intent of the data which is to allow incorrect input data to be trapped before being used in the central dispatch process.

This has resulted in administrative overheads for participants⁷ who have taken a conservative approach to ramp rate validation data, requiring the data to be amended more often than before the ramp rate rule.

It also means the different validation data are specified inconsistently, leading to uncertainty into its meaning and application. Table 1 lists the inconsistencies in Schedule 3.1 of the rules.

Table 1 Schedule 3.1 Inconsistencies

Plant Type	Data	Comment
Scheduled generating unit Semi-scheduled generating unit	Maximum generation of the scheduled generating unit, to which the scheduled generating unit may be dispatched	Provides guidance on maximum generation.
	Maximum ramp rate of the scheduled generating unit	Maximum ramp rate glossary definition applies “under normal circumstances”. Currently applied

⁴ Clause 3.8.4 of the rules.

⁵ Manifestly incorrect inputs are not related to this amendment but are included for completeness.

⁶ National Electricity Amendment (Ramp Rates, Market Ancillary Service Offers, and Dispatch Inflexibility) Rule 2009 No.1, commenced 31 March 2009.

⁷ For example, participants undertaking system restart ancillary service testing have been revising their bid and offer validation data as part of the testing procedure.

Plant Type	Data	Comment
		as a binding on participants more than as a validation check.
Scheduled load	Maximum load of the scheduled load, to which the scheduled load may be dispatched	As for maximum generation.
	Maximum ramp rate of the scheduled load	As for generation maximum ramp rate.
Scheduled network service	Maximum power transfer capabilities to nodes A and B	No guidance on how to interpret "maximum".
	Maximum ramp rate of power transfer capability of the installation	As for generation maximum ramp rate.
Ancillary service generating unit and ancillary service load	Maximum market ancillary service capacity	No guidance on how to interpret "maximum" or "minimum".
	Minimum enablement level	
	Maximum enablement level	
	Maximum lower angle	
	Maximum upper angle	

Although not part of the AER's proposal, the consultation paper requests comment on the application of the bid and offer validation rule to the amendment. AEMO believes the technical data specified in Schedule 3.1 of the rules should be expressed consistently for all data. This would have the benefit of making clear that this data is used for verification of bid data and not for the regulation of bids provided by participants.

AEMO recommends all the bid and offer validation data be expressed as either the maximum or minimum of the relevant data, without the qualification or guidance that apply to maximum generation, maximum ramp rate and maximum load.

3. Responses to Consultation Paper Questions

This section provides our comments and responses to selected questions from the consultation paper.

3.1. Question 1 – Efficient Security Constrained Dispatch

Ramp rates are like any other constraint so that when they are binding, the NEM Dispatch Engine (NEMDE) must find a solution that will be at a lower value (based on dispatch bids and offers) than would otherwise be found. This applies to ramp rates more than any other constraint on dispatch as it has the highest of all constraint violation penalties⁸. Ramp rates must therefore be honoured before other constraints necessary to manage system security, such as network constraints. This was a key issue in the 2009 amendment.

⁸ *Schedule of Constraint Violation Penalty Factors*. AEMO. 2 August 2013.
<http://www.aemo.com.au/Electricity/Market-Operations/Dispatch/Schedule-of-Constraint-Violation-Penalty-Factors>

3.2. Questions 2, 3, 5 and 6 – Rebidding Compared to Other Forms of Bidding

The consultation paper notes that generators may be able to achieve similar outcomes to a ramp rate limitation through rebidding dispatch volume into lower price bands. Although this may often be effective, it does not guarantee a unit will not be dispatched at high ramp rate if market or system conditions require. It is important to understand that as ramp-rates are the highest priority constraint, use of ramp-rates as a technique to maintain high outputs supersedes network constraints and AEMO's negative residue management procedure⁹.

The proposed rule does not distinguish between initial bids, initial offers and rebids. The current minimum ramp rate is commonly used in both initial offers and in rebids, and so the rule is likely to impact equally on initial offers and rebidding of ramp rates.

3.3. Question 7 – Value of Settlement Residue Auction (SRA) Units

AEMO would expect the proposed rule will increase the value of the Settlement Residue Auction (SRA) by reducing the price impact of some network constraints and by reducing the occurrence of negative residues on interconnectors.

3.4. Question 8 – Ramp Rate Determination and Enforcement

As mentioned in section 2, Schedule 3.1 should not be linked to determination or enforcement of ramp rate offers and should be clarified to ensure it is not used in this way. The current Schedule 3.1 is internally inconsistent with different requirements for different data being provided.

3.5. Question 10 – Adequacy of Existing Rule

AEMO confirms that the minimum ramp rate 3 MW/min continues to be sufficient to manage the NEM power system under normal circumstances. AEMO does not believe the rule should act to restrict a participant's ability to manage wear and tear on a unit in the short term through ramp rate offers and in the longer term through the maximum ramp rate capabilities. AEMO considers wear and tear should be a factor in determining the capability of the plant.

3.6. Questions 11, 12 and 13 – Alternative Approaches

The AER considered an alternative requiring aggregated units to apply minimum allowable ramp rates to individual physical generating units rather than aggregated units. The costs of implementing this alternative would depend on the detail of the option. For example, if the individual minima were provided as information only, then the implementation costs would be small. However, if the option required individual ramp rates to be included in the offer then it would require processing to be undertaken by us. There may also be practical issues as well, such as whether common infrastructure (such as water or gas pipelines) would impose a ramp rate limit that was lower than the total of the individual ramp rates.

Questions 12 and 13 relate to options that manage ramp rates and dispatch inflexibility profiles under different system conditions. Both these arrangements would involve administrative arrangements to oversee rebidding ramp rates under varying conditions. As it also continues the existing inconsistencies between each of the technical aspects of generator offers, AEMO would recommend against further consideration of these options.

⁹ *Comments on Issues Paper: Management of negative inter-regional settlements residues*. AEMO. 21 May 2013. Section 4. <http://www.aemc.gov.au/getattachment/5f4e6f08-16f7-4f14-b4d0-3b65cf6e8f48/Australian-Energy-Market-Operator.aspx>