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Submissions  
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### **AEMC advice on linking the reliability settings with a value of customer reliability**

Thank you for the opportunity to make a submission to the Australian Energy Market Commission (AEMC) consultation on its advice on linking the reliability standards and reliability settings with the value of customer reliability (VCR).

AEMO must in accordance with the National Electricity Rules (NER) intervene where unserved energy is forecast above the reliability standard. Any changes to the reliability standard may therefore affect AEMO's ability to undertake those functions.

The outcome will therefore directly affect AEMO, and AEMO is pleased to assist the AEMC in any practical way towards reaching its conclusions.

If you would like to further discuss any matters raised in this submission, please contact Magnus Hindsberger, Specialist - Market Policy Development on (07) 3347 3041 or by email:

Yours sincerely



David Swift  
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cc:

Attachments: AEMO submission to AEMC consultation on its advice on linking the reliability standards and reliability settings with the value of customer reliability.

# AEMO Submission to Australian Energy Market Commission consultation on its “Advice on linking the reliability standards and reliability settings with the value of customer reliability”

## 1. AEMO’s responses to the questions raised in the consultation

In the following, AEMO provides its responses to the questions raised in the consultation document, focussing on the suggestions that directly affect AEMO’s processes.

### 1.1. Question 1 – Reliability in the NEM

The consultation paper asked:

Question 1	Reliability in the NEM
(a)	What should be the primary purpose of the market price cap and other reliability settings in the NEM?
(b)	If the market price cap is linked to some level of VCR, is a reliability standard required?

**1 (a) response:** The reliability settings have a dual purpose of ensuring there is sufficient incentive to deliver an efficient level of customer reliability consistent with the financial impact of interruption, whilst limiting the financial risk to market participants of extreme price events, which ultimately increases costs for consumers. This financial risk occurs because customers are, for a number of reasons, unable to fully express their willingness to pay in real time.

It is a trade-off: Low settings can lead to reliability below the economic optimum and interference with efficient market clearing, for example voluntary demand-side participation. High settings will expose participants and ultimately customers to undue financial risk and could lead to overinvestment in generation effectively delivering reliability above the cost of interruption.

Whilst there are linkages, different components of the settings are focussed on different aspects. The Market Price Cap (MPC) is primarily linked to the desired level of reliability while the financial exposure of market participants is primarily limited by the Cumulative Price Threshold (CPT) and Administrative Price Cap (APC).

**1 (b) response:** A reliability standard is needed to allow AEMO to intervene as per 3.1.4 in the consultation paper based on forecast short term reliability vs. reliability signalled by VCR. Without a standard to assess forecast reliability against, there would be no basis for triggering reliability emergency reserve trader (RERT) and reliability directions.

Performance against the reliability standard is also an important benchmark by which stakeholders judge the effectiveness of the market as efficiently delivering investment to meet the demand. For example, it is used in the annual Market Performance Review.

The reliability standard of 0.002% unserved energy was originally determined, and subsequently reaffirmed, on an economic basis. For example, the 2007 Comprehensive Reliability Review found that a more conservative target would require investment exceeding the benefit for customers and a less conservative target would save less value in investment

cost than the value of the additional unserved energy. Thus, 0.002% is a reasonable value around which to base market settings, adequacy forecasts and performance measures.

## 1.2. Question 2 – Value of customer reliability

The consultation paper asked:

**Question 2      Value of customer reliability**

(a) Once a VCR methodology is determined and a range of VCR estimates collected, how should the data be used to determine a VCR which best reflects the diverse preferences of customers?

**2 (a) response:** AEMO is currently undertaking a review of VCR within the NEM. The review will deliver VCRs that can be applied to network planning, operations (including assessment of generation adequacy), and revenue regulation purposes in the NEM.

On 12 November 2013, AEMO published its Statement of Approach and Methodology papers on the Value of Customer Reliability (VCR) review<sup>1</sup>.

The indicative timeline for the remainder of this review is as follows:

<b>Deliverable</b>	<b>Timeline</b>
Measure VCRs in accordance with the methodology and approach.	November 2013 – Mid January 2014
Draft VCRs published.	Early – Mid February 2014
Submissions due on draft VCRs.	End February 2014
Final VCRs published.	April 2014

A pilot survey is now underway and experience with that may lead to changes in this timetable.

It is important to note that whilst customers will have VCR's falling over a large range, the market design may only accommodate one national set of market settings. With respect to reliability, VCR should be a weighted average of the groups of customers most likely to be affected by rotational load shedding in a managed circumstance of inadequate supply.

This group will exclude those loads likely to participate in some form of voluntary demand-response, which should hopefully have already been activated prior to load shedding. It will also exclude sensitive loads which are not in the priority load-shedding order.

<sup>1</sup> See: <http://www.aemo.com.au/Consultations/National-Electricity-Market/Open/Value-of-Customer-Reliability-Statement-of-Approach>

### 1.3. Question 3 – Options for linking the reliability standard and settings with VCR:

The consultation paper asked:

- Question 3 Options for linking the reliability standard and reliability settings with VCR**
- (a) Which of the four options for linking the VCR with MPC is most appropriate for the NEM?
- (b) Are there any other options which would be more appropriate than the four listed?

**3 (a) response:** The consultation paper presented four options for consideration:

- Option 1: direct application of VCR as market price cap.
- Option 2: use VCR as a cross-check on the reliability standard and reliability settings.
- Option 3: direct application of VCR as market price cap at “periods of scarcity”.
- Option 4: different levels of VCR offered into dispatch.

Comments to the four options are given below. Overall, AEMO notes that Option 2 appears most practical with no material implementation issues.

#### Option 1:

In considering this option there are several matters that need to be considered:

- It is not possible, in advance, to know with any certainty which customers will be interrupted in events of supply inadequacy.
- Customer VCRs fall over a very wide range, segmented by customer activity, size and location. Determining what VCR to use as MPC would require weighted averaging of a very wide and uncertain distribution. The determination would in itself require controversial judgement.
- Wherever possible, the MPC should be high enough to avoid interfering with efficient market clearing where customers voluntarily curtail their demand at the value they place on supply at that time. That needs to be balanced with the need in the short to medium term—at least till more of the demand participate actively in the market—to protect customers from paying market prices above what they are willing-to-pay.
- Given the trade-offs, the “optimal” MPC may be lower or higher than the averaged VCR suggesting that a delinking may be more appropriate.
- As discussed in the response to 1 (b), the suggestion excludes a reliability standard, on which AEMO and other stakeholders rely for current processes and benchmarks.

#### Option 2:

This option directly retains a reliability standard allowing AEMO to keep current processes for ensuring reliability, both in terms of issuing warnings and through intervention as per the response to 1 (b) and discussion above. It is, in effect, the current approach.

### Option 3:

Whilst this option discusses operating without a price cap, it should be noted that all electricity markets impose some kind price cap in order to settle. This may be explicit, as it is in the NEM, or implicit. Examples of implicit price caps include regulatory reviews of pricing outcomes or computational constraints in price-setting systems. AEMO suggests that the inevitability of price caps in the market design should be accepted and that they should be explicitly defined. AEMO has therefore interpreted this option as being implemented by a higher, explicit price cap in normal conditions, whilst a lower, explicit price cap is activated when AEMO mandatorily interrupts load.

By allowing higher prices in non-scarcity periods, this option would appear to increase financial risk on market participants without delivering a more optimal level of reliability. In non-scarcity periods the NEM could clear at prices above what customers are willing to pay as some remain unable to express this in real time.

AEMO concurs with the paper's recognition of potential perverse incentives such as artificially inducing scarcity. The market so far has delivered the required reliability capped at one MPC. AEMO is concerned about introducing such a concept without a clear articulation of its benefits.

### Option 4:

Effectively, this option is already permitted and beginning to operate. The demand-side can voluntarily participate by interrupting when the wholesale price exceeds their willingness to pay. This can be done either as a non-scheduled response to prices as they are published, or by bidding in as a scheduled load with a dispatch price, similar to how a generator bids. AEMO observes an increasing amount of demand-side price response occurring.

Ideally, all demand would participate in this manner and centralised load-shedding for reliability purposes would become redundant. Over time we hope the NEM will evolve toward this result. However at this stage there are some loads for which the option is not used, for the following reasons:

- The technology necessary to invoke the demand-response is not present.
- A limitation in the customer's metrology or tariff design.
- The loads have a VCR in excess of the MPC.

For these customers, some form of mandated centralised load shedding remains necessary. It is unlikely to be practical for AEMO to effectively price and dispatch centralised load shedding of these customers through some kind of VCR merit order. It would also make the market price cap unpredictable, undermining its ability to limit participant risk.

With the rollout of smart meters and introduction of (closer-to) real time tariffs, customers will in the future will increasingly be able to directly be able to express their willingness to pay for reliability directly in the market. AEMO suggests it is better to support processes currently underway to enable the demand side and through that let more customers express their own VCR rather than rely on a central agency acting on their behalf. Nevertheless, it is important to ensure the MPC does not unduly interfere with that expression, for those customers where it can practically be achieved.

**3 (b) response:** AEMO has no other options to suggest.