

Reliability Panel AEMC

FINAL GUIDELINES

Review of reliability standard and settings
guidelines

1 December 2016

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About the Reliability Panel

The Reliability Panel (Panel) is a specialist body established by the Australian Energy Market Commission (AEMC) and comprises industry and consumer representatives. It is responsible for monitoring, reviewing and reporting on reliability, security and safety of the national electricity system and advising the AEMC in respect of such matters. The Panel's responsibilities are specified in section 38 of the National Electricity Law. This work is copyright.

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1 Introduction

These guidelines set out the principles and assumptions the Reliability Panel (the Panel) will use in conducting the reliability standard and settings review (the review). They are prepared in accordance with National Electricity Rules (NER) clause 3.9.3A.

The guidelines:

- establish the assessment framework the Panel will use when undertaking each review;
- identify those parts of the reliability frameworks the Panel considers should be re-examined at each review; and
- outline a general approach to the modelling the Panel will use in each review.

The Panel's overarching goal in producing the guidelines is to provide the market with useful and transparent information about how it intends to undertake each review. The guidelines do not determine the values of the reliability standard (the standard) and the reliability settings (the settings). These will be determined in each review. Rather, the guidelines set out the principles that the Panel will apply in undertaking each review.

2 Assessment framework

The Panel is guided by the National Electricity Objective (NEO) when developing these guidelines and when undertaking each review. The NEO is:¹

“to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.”

When developing these guidelines and undertaking each review, the Panel's key focus is to support efficient investment in and operation of electricity services to maintain the reliability of the supply of electricity and the reliability of the national electricity system. However, the costs of providing reliability and the value customers place on this reliability are also central to the Panel's considerations.

When undertaking each review of the standard and settings, the Panel will be guided by the following general assessment principles in order to meet the NEO:

1. **Allowing efficient price signals while managing price risk:** The Panel will exercise its judgement to balance allowing for efficient price signals against managing price risk for participants.

The settings should allow sufficient scope for competition between buyers and sellers in the market to set efficient prices to achieve the standard, over the long run. The settings should be designed to provide a sufficient range to promote this behaviour in the market.

The settings should also provide protection from high prices in any given trading interval, and sustained high prices over a defined period, such that market outcomes do not result in inefficient over-investment, overly high financing costs or excessive price risk for all participants.

2. **Delivering a level of reliability consistent with the value placed on that reliability by customers:** The Panel will have regard to estimates of the value placed on reliability by customers when exercising its judgement as to the level of the standard.

The settings should be sufficient to support the level of investment necessary to deliver the standard, over the long run.

¹ National Electricity Law, s.8 as contained in *National Electricity (South Australia) Act 1996 (SA)*.

The settings should also deliver a level of reliability that is commensurate with the value that customers place on that reliability as reflected by measures including, but not limited to, the Australian Energy Market Operator's (AEMO) measure of the value of customer reliability (VCR).

3. **Providing a stable, predictable and flexible regulatory framework:** The Panel will exercise its judgement so as to achieve predictable outcomes, while reflecting significant changes in market conditions, to support efficient investment and operational decisions by participants.

3 Components of the reliability standard and settings

These guidelines provide information on the standard and each of the settings. These are divided into the following components of the reliability regulatory frameworks, which include the *form* and the *level* of the:

- reliability standard;
- market price cap (MPC);
- cumulative price threshold (CPT);
- market floor price (MFP); and
- administered price cap (APC).

3.1 Approach to assessment

The Panel's approach to reviews of the standard and settings is designed to balance stability and flexibility in the development of the regulatory frameworks for reliability. It does this by establishing for the form and level of each of the components of the reliability regulatory frameworks:

- A definition of their purpose.
- The approach taken to each component by the Panel in each review, including whether it is:
 - **Open**, meaning that the form and/or level of the component is open for assessment in each review;
 - **Subject to a materiality assessment**, meaning that the form and/or level of the component will remain the same as in the previous review, unless the Panel considers there may be a material benefit in assessing it during its review; or
 - **Closed**, meaning that the form and/or level of the component will not be open for assessment in the next review.
- Depending on whether the component is open or subject to a materiality assessment, some guidance on the principles the Panel will apply in making its assessment of the component during any review.

The following table summarises the approach the Panel will take to the components of the standard and settings. Should any of these need to be reviewed and potentially changed, the Panel will do so in line with the rules consultation procedures.

Reliability components

	Reliability Standard	Market Price Cap	Cumulative Price Threshold	Market Floor Price	Administered Price Cap
Form	Closed	Closed	Closed	Closed	Closed
Level	Materiality assessment	Open	Open	Materiality assessment	Materiality assessment
Application of indexation	N/A	Closed (indexation is to apply)	Closed (indexation is to apply)	Closed (indexation is not to be applied)	Closed (indexation is not to be applied)
Form of indexation	N/A	Materiality assessment	Materiality assessment	N/A	N/A

3.2 Reliability standard

3.2.1 Form of reliability standard

Function: The standard is a measure applied to generation and inter-regional transmission elements in the National Electricity Market (NEM), the purpose of which is to define the maximum expected amount of energy that is at risk of not being served in a region in a given financial year.

Approach: Closed. The form of the standard is confirmed in these guidelines as a measure of unserved energy (USE). It will not be opened for reconsideration in future reviews.

3.2.2 Level of reliability standard

Function: The standard is currently set at 0.002% USE, being the maximum amount of energy that is at risk of not being served in a region in a given financial year.

Approach: Materiality assessment. The level of the standard remains as in the previous review, unless the Panel considers that there may be a material benefit in reassessing it.

In making this decision, the Panel will consider factors including but not limited to:

- any changes made to AEMO's VCR measure; and
- any marked changes in the way consumers use electricity, particularly through the use of new technology, that suggests a large number of consumers may place a lower value on a reliable supply of electricity from the NEM.

3.3 Market price cap

3.3.1 Form of market price cap

Function: The MPC is the maximum market price, measured as a \$/MWh value, that can be reached in any dispatch interval and in any trading interval. It is indexed to movements in the Consumer Price Index (CPI).

Approach: Closed. The form of the MPC is confirmed in the guidelines as a \$/MWh value. It will not be opened for reconsideration in future reviews.

3.3.2 Level of market price cap

Function:

- *Primary function:* The primary purpose of the MPC is to enable the market to achieve and send efficient price signals, to support efficient operation of and investment in electricity services over the long run.
- *Secondary function:* The secondary purpose of the MPC is to manage participant exposure to price risk.

Approach: Open.

When assessing the level of the MPC, the Panel will consider the following principles:

- The MPC should not be used to actively steer the market into a short-run equilibrium position, or to actively drive disinvestment decisions.
- While the MPC may move either up or down over time, these movements should be gradual. These movements should occur over a period of several review periods.
- When setting the MPC, the Panel should give secondary consideration to the MPC's effect on the financial burden faced by participants from high market prices, including price volatility and impacts on retailers.

3.4 Cumulative price threshold

3.4.1 Form of cumulative price threshold

Function: The CPT is the maximum total market price, measured in Australian dollars, that can be reached in a period of 336 trading intervals, before an administered price period (APP) commences and the APC is applied to market prices. Its level is indexed to movements in CPI.

Approach: Closed. The form of the CPT is confirmed in these guidelines as a price threshold, measured in Australian dollars. It will not be opened for reconsideration in future reviews.

3.4.2 Level of cumulative price threshold

Function:

- *Primary function:* The primary purpose of the CPT is to cap the total price risk to which market participants are exposed, over a given time period.
- *Secondary function:* The secondary purpose of the CPT is to maintain the effectiveness of the MPC, by not hindering the market price signals for efficient operational decisions and efficient investment in generation capacity and/or demand-side response.

Approach: Open.

When assessing the level of the MPC, the Panel will consider the following principles:

- The CPT should protect all market participants from prolonged periods of high market prices, with particular consideration to impacts on investment costs and the promotion of market stability.
- The CPT should not impede the ability of the market to determine price signals for efficient operation and investment in energy services.
- The CPT should be determined giving consideration to the level of the MPC.

3.5 Market floor price

3.5.1 Form of market floor price

Function: The MFP serves as the minimum price that can be achieved in any dispatch and trading interval, measured in \$/MWh.

Approach: Closed. The form of the MFP is confirmed in these guidelines as a \$/MWh value. It will not be opened for reconsideration in future reviews.

3.5.2 Level of market floor price

Function: The purpose of the MFP is to allow the market to clear during low demand periods, while preventing market instability by imposing a negative limit on the total potential volatility of market prices.

Approach: Materiality assessment. The level of the MFP remains as in the previous review, unless the Panel considers that there may be a material benefit in reassessing it.

In making this decision, the Panel will consider factors including but not limited to:

- the number and frequency of trading intervals where the market price has been, or has approached, the level of the MFP; and
- whether there have been significant changes in the generation fleet, such that average generator cycling costs have changed significantly.

3.6 Administered price cap

3.6.1 Form of administered price cap

Function: The APC is the maximum market price paid to participants, measured as a \$/MWh value, that can be reached in any dispatch interval and any trading interval, during an APP.

Approach: Closed. The form of the APC is confirmed in these guidelines as a \$/MWh value. It will not be opened for reconsideration in future reviews.

3.6.2 Level of administered price cap

Function: The function of the APC is to cap participant exposure to the potential of what could otherwise be high prices during an APP, while maintaining incentives for participants to supply energy.

Approach: Materiality assessment. The level of the APC remains as in the previous review, unless the Panel considers that there may be a material benefit in reassessing it.

In making this decision, the Panel will consider factors including but not limited to:

- whether there have been any significant changes in the typical short-run marginal costs of generators in the NEM; and
- whether there have been any compensation claims since the last review.

3.7 Indexation

3.7.1 Application of indexation

Function:

- MPC and CPT are subject to indexation.
- MFP and APC are not subject to indexation.

Approach: Closed. It is confirmed in these guidelines that MPC and CPT are subject to annual indexation and the MFP and APC are not subject to indexation. This will not be opened for reconsideration in future reviews.

3.7.2 Form of indexation applied to the cumulative price threshold and market price cap

Function: MPC and CPT are subject to annual indexation to movements in the CPI.

Approach: Materiality assessment. Indexation approach to MPC and CPT will continue to be based on the CPI, unless the Panel considers that there may be a material benefit in reassessing this approach.

In making this decision, the Panel will consider factors including but not limited to whether:

- there have been material changes in the basket of goods used to calculate the CPI that make it less relevant for indexation of the settings;
- there have been changes in the methodology used to calculate the CPI; and
- a more preferable index becomes available and/or there is a change in the designation of the CPI as an official statistic.

4 Modelling

In developing modelling for the purposes of informing its assessment of the standard and settings, the Panel will consider the following general principles:

- the model should consider how a long-term equilibrium between price and reliability can be achieved in the market; and
- in considering long-term equilibrium, the modelling should consider both new investment and the potential for retirement of capacity.

When designing the specifics of the model, the Panel will consider the following principles regarding the assumed generator behaviour included in the model:

- the model should be technology-neutral and assess MPC on the basis of the cheapest available marginal technology that can be used to deliver the standard;
- assumed generator behaviours should be modelled in reality and the modelled generators should be allowed to offer their capacity in a way that reflects reasonable behaviour; and
- the model should not make assumptions regarding the contracting behaviour of any modelled generators.

The range of inputs to be used in the model may include but are not limited to :

- average and peak demand projections for each region;
- expected load profiles;
- government-mandated schemes for encouraging renewable energy technologies;
- sectoral or economy-wide mechanisms designed to address climate change, such as a sectoral emissions intensity trading scheme or an emissions trading scheme;
- gas price trajectories;
- costs for marginal generating units;
- demand-side participation quantities and price thresholds;
- expected changes in the large scale generation fleet, particularly thermal unit retirement; and
- growth rates for small scale distributed generation, particularly rooftop PV and battery storage.²

² To the extent possible, the Panel will consider how the usage of such technologies would change over the period in question.

The scenarios to be used in the model may include but are not limited to:

- high and low capital cost assumptions for marginal plant;
- alternative MPC / CPT ratios;
- high and low peak demand and average demand growth forecasts;
- changes in load profiles, including withdrawal of large industrial loads;
- different emission reduction and renewable target settings;
- high and low gas price projections;
- potential changes in the level of demand side participation;
- different projections in the price of distributed energy and emerging technologies, including solar PV and battery storage;
- different timelines for retirement of large scale generators; and
- different timelines for exit of large customers.