



AEMC Terms of Reference

Reliability Panel

2022 Reliability standard and settings review

1. Context

The reliability standard and settings (market price cap, market price floor, cumulative price threshold, administered price cap) are essential elements of the NEM's reliability framework. These elements aim to encourage sufficient investment in generation or demand response capacity to meet consumer demand for energy, while protecting market participants from potential substantial risks that threaten the overall stability and integrity of the market.

In accordance with the National Electricity Rules (NER), the Reliability Panel (the Panel) is required to undertake a Review of the Reliability Standard and Settings (RSS review) every four years.¹

The RSS review allows the Panel to assess and consider whether the reliability standard and settings remain suitable for expected and evolving market conditions, or whether the Panel recommends that changes should be made to ensure they continue to meet the intended purpose as well as the requirements of the market, market participants and consumers.

In October 2021, Dr. Kerry Schott, former chair of the ESB, submitted a rule change request, which proposed to reduce the scope and extend the time of the 2022 RSS review. A draft determination for the rule change was published on 23 December 2021. The Commission's draft determination is to make a more preferable rule that requires the Panel, for the 2022 RSS review, to:²

- consider the reliability standard and settings that it recommends should apply for 1 July 2025 to 30 June 2028; and
- provide its final report to the AEMC, with any recommendations for changes to the reliability standard and settings, by 30 August 2022.

This document sets out the terms of reference for the Panel's 2022 RSS review consistent with its obligations under the NER. The AEMC may provide the Panel with a supplementary

¹ NER cl 3.9.3A(d).

² AEMC, *Extension of time and reduction in scope of the 2022 reliability standard and settings review*, Draft Determination, 23 December 2021, Sydney, available [here](#).

document that amends the terms of reference once the final determination and final rule for the *Extension of time and reduction in scope of the 2022 reliability standard and settings review* rule change is made.

Reliability standard

The reliability standard is an ex-ante standard used to indicate to the market the required level of supply to meet demand on a regional basis. AMEO operates the system to meet the reliability standard. The reliability standard is operationalised by AEMO, including informing the market that the reliability standard is not being met.

The reliability standard is not zero per cent since this would be too costly. Instead, it represents a trade-off between the prices paid for electricity and the cost of not having energy when it is needed - increasing levels of reliability involves increased costs. The reliability standard should be set at a level that provides a balance between delivering reliable electricity supplies and maintaining reasonable costs for customers i.e. an economic trade-off between reliability and affordability, based on what consumers value.

The form and level of the reliability standard is specified in the NER.³ The current reliability standard for generation and inter-regional transmission elements in the NEM is expressed in terms of the expected unserved energy (USE) in a region and is set at a maximum of 0.002% of the total energy demanded in that region for a given financial year. There is also an interim reliability measure currently in the NER.

Reliability settings

The reliability settings are reliability market settings that are closely linked to, and derived direction from, the 'reliability standard'. These form a price envelope for spot prices and consist of the following:

- Market Price Cap (MPC), which places an upper limit on dispatch prices in the wholesale market.⁴ The MPC is currently set at \$15,100/MWh.⁵
- Market Floor Price (MFP), which places a lower limit on dispatch prices in the wholesale market.⁶ The value of the MFP is currently set at -\$1,000/MWh.
- Cumulative Price Threshold (CPT), which is the limit of aggregate dispatch prices over a period of seven days (2,016 trading intervals) that, when surpassed, triggers an administered price period.⁷ The CPT is currently set at \$1,359,100 for the energy market, and
- Administered Price Cap (APC), which is the prevailing dispatch price that applies during an administered price period after a set of sustained high dispatch prices exceed the cumulative price threshold.⁸ The value of the APC is currently set at \$300/MWh.

³ NER clause 3.9.3C(a).

⁴ NER clause 3.9.4.

⁵ Under NER clause 3.9.4, the Commission is required to adjust the market price cap in line with the consumer price index by 28 February each year.

⁶ NER clause 3.9.6.

⁷ NER clause 3.14.1(e).

⁸ NER clause 3.14.1.

These are designed to incentivise investment in sufficient generation capacity and demand side response to deliver the reliability standard while providing limits that protected market participants from periods of very high or very low prices.

2. Scope of the 2021-2022 Review

The Panel is to carry out the 2022 RSS review in accordance with the requirements in clause 3.9.3A of the NER, the Review of the Reliability Standard and Settings Guidelines (Guidelines),⁹ which were published by the Panel in July 2021, and the rules consultation procedures set out in rule 8.9 of the NER.

For the 2022 RSS review, the Panel must consider the reliability standard and settings that should apply for the next four-year period, which is on and from 1 July 2024 to 30 June 2028.¹⁰

The NER sets out several requirements that relate to the assessment of the reliability standard and each of the settings.

The Guidelines set out the principles, assessment approach and assumptions that the Panel must comply with when conducting RSS reviews. As part of the Panel's update in 2021 to the Guidelines, the AEMC notes that these requirements and other criteria have been included in the Guidelines. It also notes that these, along with the relevant other factors outlined in the Guidelines, form the materiality assessment for the Panel to assess both the form and level of the reliability standard and each setting.

When the Panel undertakes an assessment of the reliability standard and settings in an RSS review, it must set out its conclusions and recommendations in a final report. The Panel must submit this report to the AEMC as soon as practicable after the completion of each RSS review. The Panel must submit a rule change request to the AEMC if it decides to recommend changes to the reliability standard and/or settings.¹¹ Any recommended change to the form and level of the reliability standard or settings would then be considered through the AEMC rule change process.

The interim reliability measure will be out of scope for the 2021 RSS review. The AEMC notes that it is required to undertake a review of the interim reliability measure by 1 July 2023.¹² The AEMC requests that the Panel may wish to provide commentary to the Commission on the interim reliability measure in the final report, to the extent that such commentary is relevant to the Panel's assessment of the reliability standard and/or settings.

3. Matters for consideration

In addition to the matters set out above, the Panel is requested to consider the following specific matters in the 2022 RSS review:

- the changing generation mix and market environment

⁹ Reliability Panel, *Review of the Reliability Standard and Settings Guidelines*, Final Guidelines, 1 July 2021, Sydney, available [here](#).

¹⁰ As outlined, the draft rule for the *Extension of time and reduction in scope of the 2022 reliability standard and settings review* rule change, if made, will amend this time period to a three year period, where the Panel will review the reliability standard and settings that should apply on and from 1 July 2025 to 30 June 2028.

¹¹ NER clause 3.9.3A(i).

¹² NER clause 11.128.12(c)

- impact of Government policies
- the increasing focus on the need to maintain system security, including the introduction of new procurement mechanisms
- the evolving nature of consumers' interactions with and participation in the NEM
- the impacts of changes to NEM frameworks from ongoing market and jurisdictional reforms, and
- interaction with the contract market.

The AEMC specifically requests the Panel to set out in the RSS review issues paper and draft report:

- how these matters may relate or intersect with the Panel's assessment of the reliability standard and settings, and
- how it will take these matters into account when undertaking its assessment of both the form and level of the reliability standard and settings, including in any modelling for the review.

In its final report, the Panel is asked to identify any future market or policy conditions that are likely to have a significant bearing on the effectiveness of reliability standards and settings recommended by the Panel.

Changing generation mix and market environment

The review will be undertaken in the context of rapid change occurring in the NEM. The generation mix of the NEM is changing faster than expected and there has been an increased frequency of severe weather events and other global disruptions. These changes introduce uncertainty and are likely to continue over the next two decades.

These changes will affect both the supply and demand side of the wholesale market and will be relevant to the 2022 RSS review of the standard and settings to varying degrees. The Panel is asked to take into account these changes on a forward looking basis in its review and developing its recommendations for the final report.

Maintaining and reforms to system security of the power system

There are increasing challenges and complexity in managing power system security. These security challenges have and are in part caused by extreme environmental events, and the rate at which the power system is undergoing the change to higher penetrations of inverter-based resources.¹³

There is a significant work program currently underway to address the management of system security through the transition, which the Panel should take into consideration in its review. Of particular relevance is the:

- ESB's Post 2025 Market Design work on essential system services and scheduling and ahead mechanisms. This work encompasses frequency control, system strength, ramping services, and inertia with the aim to develop a long-term, fit-for-purpose market framework to support security and reliability that could apply from the mid-2020's.

¹³ Reliability Panel, Annual Market Performance Report, May 2021.

- AEMC suite of system services rule changes that is aimed at addressing a number of important elements of system security and to advance issues that are urgent in nature. Rule changes that have recently been completed include:
 - [Fast frequency response market ancillary service](#), and
 - [Efficient management of system strength on the power system](#)

Rule changes underway include:

- [Primary frequency response incentives](#)
- [Operating reserve market & introduction of ramping services](#), and
- [Synchronous services markets & capacity commitment mechanism for security and reliability services](#).

Evolving nature of consumer participation in the NEM

Distributed energy resources are changing the way that customers interact with the electricity market and are creating new opportunities for service providers to meet customer needs. Customers are continuing to install solar PV at high rates and are increasingly taking up home batteries, electric vehicles, and other technologies. It is important that the effects of these changes on the wholesale market are considered in the review. It is also important for the Panel to consider changes to the way people use and value electricity, including the impacts of more people working from home.

Changes to NEM frameworks and market reforms in progress

There are a number of market reforms and reviews that provide relevant context for the Panel's consideration of the reliability standard and settings. Some of the reforms are scheduled to be introduced prior to the timeframe that the Panel must consider e.g. the introduction of five-minute settlement¹⁴ and the wholesale demand response mechanism.¹⁵

Of key relevance is the ESB's final advice to Energy Ministers on a long-term reform package with the priority to provide advice on the market design of the NEM. In July 2021, the ESB provided recommendations to Energy Ministers, as part of the Energy National Cabinet Reform Committee (ENCRC) on its redesign of the NEM. The ESB's advice includes recommendations across four reform pathways:¹⁶

- Strengthen signal for investment in the right mix of capacity to keep the system reliable, affordable and secure,
- Deliver essential system services to maintain grid stability,
- Improve transmission and access arrangements to ensure timely transmission investment, incentivise better use of the network to lower costs for consumers and reduce investment uncertainty, and
- Better enable participation of flexible demand side resources and the integration of DER.

In October 2021, National Cabinet endorsed the final package of reforms for the Post-2025 NEM, as agreed by the ENCRC in September 2021.¹⁷

¹⁴ AEMC, *Five Minute Settlement*, Final Determination, 28 November 2021, Sydney.

¹⁵ AEMC, *Wholesale Demand Response Mechanism*, Final determination, 11 June 2020, Sydney.

¹⁶ Energy Ministers, *Post-2025 Market Design*, available [here](#).

¹⁷ Details on the final reforms package and corresponding ESB recommendations is available [here](#).

The AEMC notes that the Panel's 2022 review is to consider the reliability standard and settings for the current energy only market design. The design of a capacity mechanism is being considered by the ESB and hence both the merits of and design of a mechanism are out of scope for the 2022 RSS review. The Panel is requested to collaborate with the ESB so that processes can align and dove-tail where possible.

As noted, the AEMC is undertaking a substantial work program on various rule changes relating to system security and other matters that may affect the market in the medium and longer-term. AEMO is also undertaking work looking at the future of the power system, including through its Engineering Framework.¹⁸

Other market bodies and jurisdictional governments are also pursuing initiatives and work programs that may be relevant to the review. The Panel should consider these reforms, as relevant, particularly the material changes they may have on the regulatory arrangements for reliability in the NEM.

Other relevant policy changes, either internal or external to the NEM, may emerge during the course of the 2022 RSS review which the Panel should also have regard to where appropriate.

Interaction with the contract market

In coming to a conclusion on the reliability settings, the Panel should consider how changing the settings may affect risk management behaviour, including potential impacts on contract markets, and how this may affect investment outcomes in the NEM.

4. Process and timing

The NER requires the Panel to follow the rules consultation procedures¹⁹ in carrying out the 2022 RSS review. This includes the requirement to publish:

- an initial issues paper for stakeholder consultation at the commencement of the RSS review
- a draft report and undertake a second round of stakeholder consultation, and
- a final report with the Panel's recommendations for the RSS review.

The AEMC anticipates that there will be significant interest in the 2022 RSS review, and hence requests that the Panel hold at least one public stakeholder meeting during the course of the review.

The AEMC also notes the importance of the 2022 RSS review to a wide range of stakeholders throughout the sector, including existing participants, new entrants, and consumers. It therefore requests the Panel to hold stakeholder engagement as a priority for the review and encourages Panel members to utilise their industry groups that they represent in order to make sure myriad reviews are represented.

The Panel's final report is to be published and submitted to the AEMC no later than 30 April 2022. The AEMC notes that this timeline is currently the subject of the current rule change and any update to the timeline will be provided in the final determination and final rule made.

¹⁸ More information is available [here](#).

¹⁹ NER clause 3.9.3A(d); the procedures are set out in rule 8.9.

