AEMC

INFORMATION

Final Determination - Review of the system restart Standard

The Reliability Panel has determined a revised system restart Standard

The Reliability Panel (Panel) has:

- **determined** a revised system restart **standard** (Standard), to reflect current conditions and to provide flexibility for AEMO to procure black start and restoration support services
- **made** final **recommendations** to strengthen the current system restart regulatory framework and actions by the Australian Energy Market Operator (AEMO) to support improved system restart preparedness, including proposed changes to the rules that would clarify requirements for forward-looking restoration planning and strengthen frameworks to validate this plan.

The Standard defines restoration targets to support AEMO's procurement of system restart ancillary services

System restart refers to the capability for the power system to be re-energised following a major supply disruption or black system event. Black system events are rare, but they can and do occur and the consequences for our modern societies can be severe. Australia experienced a black system event in South Australia in 2016, when storm damage led to a state-wide blackout that lasted around 8 hours.

The Standard sets out targets for the level of supply restored within a given time and reliability of system restart ancillary services (SRAS) procured. The SRAS that is procured is coordinated by AEMO to initiate and support power system restoration in the event of a black system event.

The Panel undertook an economic analysis to investigate the costs and benefits associated with SRAS procurement while accounting for the inherent uncertainty related to the risk of a black system event. The results from this analysis shows that there is significant value in providing an effective system restoration capability for the NEM to protect against the potential impact of a prolonged disruption of electricity supply on our modern digitised society.

The revised Standard provides greater flexibility for AEMO to procure services needed to support system restoration

In response to AEMO's technical advice, the revised final Standard provides greater flexibility to support procurement of SRAS to meet the needs of the changing power system. The key elements of the revised Standard are described below.

Revised targets for system restoration to support enhanced restart preparedness

The revised standard provides AEMO with increased flexibility in planning for system restoration and supporting the procurement of restoration support services. Stakeholder feedback to the Panel's draft determination noted strong support for the revised targets. Restoration support services are expected to be required to enable the restoration of a renewable-dominated grid. It is expected that these services will be used in the future to help balance and stabilise large-scale renewable generation during system restoration and provide stable load during periods of high generation from distributed rooftop solar PV.

The restoration targets in the revised Standard are for AEMO to be able to:

- form one or more restoration islands in an electrical sub-network within 2 hours of the major supply disruption; and

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- restore supply in each electrical sub-network to be able to meet 50% of forecast average annual underlying demand within 8 hours of the major supply disruption.

Increased aggregate required reliability for SRAS in the mainland NEM regions

The revised Standard increases the aggregate required reliability for SRAS in the NEM mainland regions of 95%, up from 90% under the current Standard. This change was supported by stakeholder feedback to the Panel's draft determination, and is intended to support the procurement of additional SRAS to provide increased redundancy and reliability in the event of a black system event. This change is underpinned by the findings from the Panel's economic analysis.

Consideration of sensitive loads such as aluminium smelters

In response to stakeholder feedback, the Panel has made minor adjustments to the additional guidance in the draft Standard for AEMO's consideration of the strategic location of SRAS and its impact on sensitive loads. The revised guidance requires AEMO to consult with the relevant jurisdictional system security coordinator (JSSC) and consider any advice it provides in relation to the strategic location of SRAS for each electrical sub-network and the existence of any sensitive loads. The revised guidance in the final Standard, supports AEMO in considering additional SRAS procurement in response to JSSC advice. AEMO would be required to report to the Panel on how it considered any such JSSC advice.

The revised Standard would take effect on 1 July 2027

This timing aligns with that provided by the AEMC in the terms of reference for the Review, allowing sufficient time for AEMO to update the SRAS Guidelines and make arrangements to procure sufficient SRAS, including black start and restoration support services, to meet the revised Standard.

The Panel has reviewed the NEM restart arrangements and recommendations to enhance restart preparedness

The Panel has undertaken a review of the regulatory framework and processes related to system restoration in the NEM, and has set out its consideration of the system restart regulatory framework on the following, to assess whether they are still fit for purpose in the transition:

- transparency and reporting arrangements
- procurement and investment
- testing arrangements
- the local black system procedure (LBSP) framework
- governance arrangements.

The Panel's draft determination found the existing Rules framework to be fit for purpose and made recommendations for AEMO to leverage the existing framework to improve system restart preparedness outcomes, in the context of the changing needs of the power system.

However, in considering stakeholder feedback, the **Panel recommends that a Rule change request be submitted to the AEMC on the following matters related to the system restart regulatory framework**:

- **transparency and reporting:** to clarify the inclusion of system restoration modelling and planning through the Transition Plan for System Security and Electricity Statement of Opportunities.
- **testing arrangements:** to strengthen the system restoration testing framework to support deeper network testing.
- **LBSP framework:** to strengthen the framework by clarifying the information provided and provide further effect to energy support arrangements.

The Panel also makes recommendations for AEMO to:

- proactively engage with the market to identify future system restart needs by leveraging flexibility in the existing system restart framework to procure SRAS and meet any identified SRAS gaps in a timely manner.
- conduct an audit of LBSPs, to recommend that AEMO update the LBSP Guidelines to include clear requirements to notify AEMO when changes are identified on LBSP plant.

The Panel will work to develop the Rule change request, to be submitted to the AEMC in the first half of 2026.

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