INFORMATION

Draft Determination - System Restart Standard

The Reliability Panel has determined a revised draft system restart standard

The Reliability Panel (Panel) has determined a revised draft system restart standard (Standard) and made draft recommendations for actions by the Australian Energy Market Operator (AEMO) to enhance system restart preparedness. The Panel's draft determination is informed by technical advice provided by AEMO that describes the challenges and opportunities related to system restart in the context of the transitioning power system.

The Standard defines restoration targets to support AEMO's procurement of System restart ancillary services (SRAS)

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 and 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 show that there is significant value of 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 Draft standard provides greater flexibility for AEMO to procure services needed to support system restoration

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

Revised targets for system restoration to support enhanced restart preparedness

The draft standard includes revised restoration targets to provide AEMO with increased flexibility around how it plans for system restoration and support the procurement of restoration support services. 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 stabilse large scale renewable generation during system restoration and provide stable load during periods of high generation from distributed roof-top solar PV.

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

- form one or more restoration islands in an electrical sub-network within 2 hours
- restore supply in each electrical sub-network to be able to meet 50% of forecast average annual underlying demand within 8 hours.

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The Panel invites submissions to the Draft Determination by 16 October 2025

Increased aggregate required reliability for SRAS in the mainland NEM regions

The draft standard includes increased aggregate required reliability for SRAS in the NEM mainland regions of 95%, up from 90% under the current standard. This change 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 supported by the findings from the Panel's economic analysis.

Consideration of sensitive loads such as aluminium smelters

In response to stakeholder feedback, the draft standard provides additional guidance to AEMO on the strategic location of SRAS and the impacts on sensitive loads. These changes include a requirement for 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. AEMO would be required to report to the Panel on how it considered any such JSSC advice.

The Panel proposes that the draft Standard would take effect on 1 July 2027

This timing would allow 18 months from the planned publication of a final determination in December 2025 to the date that the new Standard would take effect. This timing would allow sufficient time for AEMO to update the SRAS Guidelines and procure sufficient SRAS, including black start and restoration support services, to meet the new Standard.

The Panel has reviewed the NEM restart arrangements and makes a number of draft recommendations for actions by AEMO to enhance restart preparedness

The Panel considers the current system restart regulatory framework, alongside the revised draft Standard, provides AEMO sufficient flexibility and guidance to deliver adequate system restart capability through the energy transition.

At the same time, the Panel has developed a series of recommended actions for AEMO to undertake to improve system restart preparedness and adapt to the changing needs of the power system as generation increasingly becomes dominated by inverter based resources such as wind, solar and battery energy storage systems.

The draft recommendations relate to:

- Proactive engagement by AEMO with market participants to identify future system restart needs and procure SRAS as required in a timely manner.
- AEMO's use of Type 2 Transitional service contracts to support SRAS technology trials.
- From 2026, AEMO setting out in the *Transition plan for system security* how it plans to deliver system restart capability through the energy transition.
- From 2026, AEMO reporting on identified SRAS investment opportunities through the *Electricity Statement of Opportunities* or similar publication.
- AEMO's review the Local black start procedure (LBSP) guidelines and related processes to support the timely provision of accurate information on the capabilities of power system equipment to support system restoration.
- AEMO's audit of LBSPs, prioritising critical LBSPs to enhance the quality of LBSP information and support targeted procurement of SRAS to meet system restoration needs.

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