

Reliability and firming infrastructure



What is system reliability?

Reliability in the energy system means having enough electricity available to meet demand when it is needed. A reliable system has enough generation, storage, network and firming infrastructure to meet demand, including when demand is high or renewable generation is low.



What is the reliability standard?

The reliability standard defines an efficient level of reliability. It balances the impact of electricity outages against the cost of avoiding them. For the purposes of this assessment, ASL adopted the 0.002% reliability standard specified in the National Electricity Rules for the relevant assessment period.



What is an indicative reliability gap?

A reliability gap arises when forecast unserved energy exceeds the reliability standard. In this report, an indicative reliability gap is the amount of perfectly available and suitably located additional firm generation capacity needed to bring expected unserved energy down to the reliability standard.



What is firming infrastructure?

Firming infrastructure provides electricity when the system is strained, such as when demand is high and/or renewable generation is low. This infrastructure complements variable generation, long-duration storage and network infrastructure by providing dispatchable capacity and sustained energy when it is needed.



Reliability risks identified in 2033–34

Does NSW face future reliability risks?

ASL's modelling identified reliability risks in NSW from 2033–34 following the expected retirement of the Bayswater and Vales Point power stations. The analysis reinforced the importance of early planning and continued investment in generation, storage, network and firming infrastructure.

In December 2025, the NSW Minister for Energy directed ASL, as the Consumer Trustee, to conduct a competitive tender for firming infrastructure in response to the potential forecast shortfall.

ASL prepared the *2026 Firming Infrastructure Investment Objectives report* in response to that direction.

What conclusions did ASL come to?

The modelling found that reliability risks are more manageable if the 2025 IIO 'ambition' development pathway is delivered on time. Risks increase materially if infrastructure delivery is delayed, coal-fired power stations retire earlier than expected, or low renewable generation continues for an extended period. In more challenging scenarios, the risk shifts from a short-duration capacity problem to an energy shortage that may lead to unserved energy across several days.

ASL translated these findings into a development pathway of **1,500 MW of additional firming infrastructure**, to be fully commissioned and operational by the end of May 2033, and an associated tender plan.

How did ASL assess the risks?

ASL used electricity market modelling to assess reliability risks in 2033–34 under a range of future conditions. The assessment considered:



- the impact of planned generation, long-duration storage and network projects being delivered on time, or not



- the impact of coal-fired power station retirements



- prolonged periods of low wind and solar generation.

What is in the 2026 Firming IIO?

Key report takeouts



1,500 MW development pathway: ASL has set a pathway for 1,500 MW of additional firming infrastructure to be fully commissioned and operational by the end of May 2033.



Three required characteristics: Firming infrastructure will need to exhibit net energy contribution, dispatchable capacity and sustained energy delivery over periods of at least eight hours, and ideally longer.



Firming is one part of the solution: Reliable electricity supply will also depend on the continued delivery of renewable generation, long-duration storage and network infrastructure.



Early planning supports delivery: Identifying the need around seven years before the potential forecast shortfall gives industry time to develop projects, secure financing, construct infrastructure and achieve commissioning.



A balanced pathway: The pathway reflects ASL's assessment of an appropriate and proportionate response to the identified reliability need and balances reliability, consumer cost and deliverability considerations in support of the long-term financial interests of NSW electricity customers.



A staged tender approach: The plan provides an early market signal while retaining flexibility to respond to updated reliability assessments and infrastructure delivery progress.

What happens next?



Late 2026: ASL will begin market consultation to understand the project pipeline and seek feedback on the proposed tender and firming LTESA product design.



2027: ASL will conduct a competitive tender with an indicative size of 1,500 MW.



Around 2030: ASL may conduct a contingent tender if updated information shows that additional firming infrastructure is required.



End of May 2033: Successful projects will need to be fully commissioned and operational.