



2026 Firming Infrastructure Investment Objectives Report

October 2026

Important notice

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ACKNOWLEDGEMENT OF COUNTRY

ASL recognises the Traditional Custodians of Country throughout Australia and acknowledges that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands.

We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

We acknowledge the ongoing challenges and opportunities in First Nations reconciliation and are committed to implementing our Reconciliation Action Plan (RAP). ASL is currently at the 'Innovate' stage of its RAP – continuing to implement, test, and pilot specific strategies to advance reconciliation in our organisation.



Artwork credit: The 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan.

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Message from the CEO

As the system changes, ASL's role as the independent Consumer Trustee under the NSW Electricity Infrastructure Roadmap is to plan early, test risks carefully and provide clear investment signals for the infrastructure NSW needs.

Maintaining reliability over the coming decade will require the successful delivery of generation, storage, network and firming infrastructure as coal-fired power stations retire and the electricity system continues to evolve. Delivering that infrastructure is a significant undertaking that requires early planning, timely investment and a clear understanding of emerging risks.

The 2025 Energy Security Target Monitor report identified a forecast capacity shortfall in 2033–34 following the expected retirement of the Bayswater and Vales Point power stations. In response, the NSW Minister for Energy directed ASL, as the Consumer Trustee, to conduct a competitive tender for firming infrastructure. This report sets out ASL's assessment of the reliability need and the proposed response.

In undertaking this work, ASL has applied independent analysis and judgement to assess the identified reliability risks, the range of potential future outcomes, and the infrastructure response that best supports reliable electricity supply while protecting the long-term financial interests of NSW electricity customers. This assessment considers not only the potential scale of the need, but also how risks could emerge, the contribution of the broader infrastructure program and what can practically be delivered within the required timeframes.

The resulting development pathway and tender plan balance the need to prepare for credible reliability risks with the uncertainty inherent in planning several years ahead. They are designed to provide an appropriate response to the need now evident, while retaining the flexibility to adjust as infrastructure is delivered and the outlook becomes clearer.

A clear focus throughout the report is delivery. The infrastructure required to maintain reliability cannot be delivered at short notice. Development lead times, financing requirements, planning approvals and construction timeframes all require action well in advance of the identified need. The development pathway and tender plan have therefore been designed to provide an early market signal, support investment decisions and create sufficient time for infrastructure to be delivered when it is needed.

The staged tender approach is an important part of maintaining that balance. Market consultation, an initial competitive tender and the potential for a contingent tender provide a framework that allows ASL to respond to updated reliability assessments and infrastructure delivery progress over time, while avoiding unnecessary tendering before it is demonstrated to be required.

NSW has an established policy framework to support infrastructure delivery. The challenge now is ensuring the right infrastructure is delivered at the scale and pace required to maintain reliability. As ASL moves into market consultation and tender design, we encourage proponents to carefully consider how their projects can respond to the identified need and to participate in the forthcoming tender process with high-quality, competitive and deliverable proposals.



Nevenka Codevelle
CEO, ASL

Executive summary

NSW is undergoing a significant transformation of its electricity system as coal-fired power stations retire and are replaced by renewable generation, storage, network and firming infrastructure. Maintaining a reliable, secure and affordable electricity supply through this transition will require continued investment and delivery across all parts of the system.

The 2025 Energy Security Target Monitor (ESTM) report identified a forecast capacity shortfall following the expected retirement of the Bayswater and Vales Point power stations. More recently, the Australian Energy Market Operator (AEMO)'s 2026 Electricity Statement of Opportunities (ESOO) identified significant reliability risks in NSW from 2033–34, reinforcing the importance of planning for the next phase of the energy transition.

Delivering the infrastructure required to maintain reliability is a **complex undertaking** that requires early investment signals, long development lead times and coordinated delivery across multiple stakeholders. In response, the NSW Minister for Energy directed ASL, as the Consumer Trustee, to undertake a competitive tender for firming infrastructure.

This report responds to that direction by assessing future reliability risks, establishing a development pathway for firming infrastructure and outlining the proposed tender approach. By identifying infrastructure needs around **seven years before** the forecast shortfall emerges, ASL is taking a **forward-looking approach** that provides time to manage delivery risks, support orderly investment and reduce the likelihood that consumers face higher costs or reliability risks in the future.

Timely delivery of the NSW Electricity Infrastructure Roadmap ‘ambition’ pathway remains critical

ASL's assessment found that reliability outcomes are **highly dependent on the timely delivery of renewable generation, long-duration storage and network infrastructure** outlined in ASL's 2025 Infrastructure Investment Objectives (IIO) report.

While reliability risks in 2033–34 appear more manageable if planned investments proceed as required, risks increase materially where infrastructure delivery is delayed, coal-fired power stations retire earlier than anticipated or prolonged periods of low renewable generation occur.

In the more challenging scenarios, reliability risks become increasingly associated with prolonged energy supply shortages, particularly during winter and extended periods of low renewable generation.

Firming infrastructure will need to provide three key characteristics

ASL's assessment identified three characteristics required from firming infrastructure to respond effectively to the reliability risks examined in this report:

1. **net energy contribution** – must increase the total volume of energy supplied to the system and not rely on energy consumed from the grid to deliver the contracted capacity
2. **dispatchable capacity** – must respond to system needs when required
3. **sustained energy delivery** – must maintain energy supply over periods of at least eight hours, and ideally longer.

ASL expects **fuel-based generation**, including gas-fired generation, to be well placed to exhibit all three characteristics and make a material contribution to addressing the identified reliability risks. Alternative technologies are not excluded but would need to demonstrate a comparable contribution across each of these characteristics. Hybrid projects (that combine wind or solar generation and storage) are expected to participate primarily through generation or long-duration storage tenders where their characteristics are best aligned with the relevant tender objectives.

Development pathway and tender plan

Having considered the forecast shortfall identified in the 2025 ESTM, modelling outcomes, technology capability, consumer costs and practical delivery considerations, ASL has set a development pathway of **1,500 MW of additional firming infrastructure to be fully commissioned and operational by the end of May 2033**. 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.

The development pathway forms part of a broader investment program under the NSW Electricity Infrastructure Roadmap. Its success will depend on the **continued delivery** of generation, storage and network projects already planned or under development.

To support delivery of this pathway, ASL has adopted a staged firming tender approach comprising **market consultation commencing in late 2026, an initial competitive tender in 2027**, and the potential for a **contingent firming tender around 2030** if updated assessments indicate that additional firming infrastructure is required. This complements the generation and long-duration storage tenders currently underway, as well as further generation and storage tenders, consistent with the 10-year tender plan established in the 2025 IIO report.¹

This approach provides an early market signal while preserving flexibility to respond as circumstances evolve. It is intended to provide industry with sufficient time to develop projects, secure financing, progress construction and achieve commissioning before the identified reliability need emerges.

1. ASL, [2025 Infrastructure Investment Objectives report](#), August 2025.

1. Introduction

- This report responds to a direction from the NSW Energy Minister to address potential reliability risks in 2033–34, following the expected closure of Vales Point and Bayswater power stations.
- Future reliability outcomes remain uncertain and depend on factors including infrastructure delivery, demand and coal retirement timeframes.
- The report translates this uncertainty into a development pathway and tender plan.

NSW is undergoing a significant change in the way electricity is generated, stored and delivered. As coal-fired power stations retire, the electricity system will need enough firm capacity to meet demand when renewable generation is low, and the system is under stress.

Firming infrastructure can respond when needed to support the reliability and security of electricity supply.

Previous NSW firming tenders have supported investment in batteries and demand response. Australian Government Capacity Investment Scheme (CIS) tenders also support investment in dispatchable capacity and complement the firming infrastructure procured through the NSW Electricity Infrastructure Roadmap (the Roadmap). Together, these initiatives contribute to a broader investment program supporting the transition of the NSW electricity system.

The 2025 Energy Security Target Monitor (ESTM) report² showed a forecast capacity shortfall of around 1,500 MW in 2033–34, following the expected closure of the Bayswater and Vales Point power stations.

In December 2025, the NSW Minister for Energy directed ASL, as the Consumer Trustee, to conduct a firming infrastructure tender in response to the forecast shortfall. ASL – in its role as the Consumer Trustee – has prepared this report to respond to that direction.³

This report:

- assesses the risks to meeting the reliability standard and the energy security target that could emerge in 2033–34
- sets a 20-year development pathway for firming infrastructure
- explains why ASL has selected a development pathway of 1,500 MW
- sets out the timing and proposed approach for procuring that infrastructure.

ASL notes that while this report responds to the 2025 firming direction, a broader Infrastructure Investment Objectives (IIO) report covering generation, long-duration storage, firming and network infrastructure is scheduled for release in the second quarter of 2027. This Firming IIO report is narrower in scope and responds specifically to the December 2025 firming direction (see [Legislative framework](#) section for further details).

The firming direction and the forecast shortfall

The 2025 ESTM report found a forecast capacity shortfall of around 1,500 MW in 2033–34, following the expected closure of the Bayswater and Vales Point power stations.

While the ESTM report found that new infrastructure being developed through NSW and Australian Government initiatives had the potential to address the identified shortfall, it noted that uncertainty of delivery, higher forecast demand, prolonged periods of low renewable generation and changes to coal-fired power output could increase future reliability risks.

2. NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW), [2025 Energy Security Target Monitor report](#), December 2025.

3. This report reflects the statutory requirement under section 45(3) of the EII Act for the Consumer Trustee to prepare an IIO report as soon as practicable after being so directed by the Minister.

In response, the Minister directed ASL to conduct a competitive tender for firming infrastructure. The Ministerial direction also noted a range of matters likely to impact the significance or nature of the reliability risk:

- potential fuel supply constraints affecting existing coal-fired power stations
- changes in coal-fired power station operating patterns or closure dates
- the progress of generation and storage projects supported through long-term energy service agreements (LTESA) and the CIS tenders
- the timing and commissioning of new generation and storage projects
- factors that could affect peak electricity demand
- prolonged periods of low wind and solar generation.

These considerations informed the modelling, development pathway and tender plan set out in this report.

While the Ministerial direction initiated the preparation of this report and the associated tender process, the Consumer Trustee remains responsible for determining the development pathway and tender plan. The development pathway and tender plan presented in this report reflect ASL's independent assessment in its capacity as Consumer Trustee, having regard to the legislative framework, modelling outcomes, identified reliability risks and the long-term financial interests of NSW electricity customers.

Legislative framework

The *Electricity Infrastructure Investment Act 2020* (NSW) establishes the infrastructure investment objectives that guide investment under the NSW Electricity Infrastructure Roadmap.

[Figure 1](#) describes these objectives, which comprise:

- **minimum objectives** for the construction of specified amounts of generation by the end of 2029 and long-duration storage infrastructure by the end of 2029 and 2033, and
- **overall objectives** for the construction of generation, long-duration storage, and firming infrastructure that minimises costs to NSW electricity customers and meets the NSW energy security target and reliability standard.

To support the achievement of these objectives, ASL, in its role as Consumer Trustee, prepares an IIO report approximately every two years.⁴ Each report sets out a 20-year development pathway and tender plan identifying the infrastructure required to achieve the legislated objectives.

Additional statutory requirements apply to the procurement of firming infrastructure.⁵ Unlike generation and long-duration storage infrastructure, ASL may conduct a firming infrastructure tender only after receiving a direction from the Minister.

In December 2025, the NSW Government amended the *Electricity Infrastructure Investment Regulation 2021* (NSW) to allow the preparation of a standalone Firming IIO report where it is not practical to address a Ministerial firming direction through the standard biennial reporting process. This allows ASL to prepare a report focused specifically on the firming infrastructure required in response to a Ministerial direction.⁶

ASL has prepared the firming development pathway and tender plan in this report within the legislative framework outlined.

4. ASL, [2025 Infrastructure Investment Objectives report](#), August 2025.

5. EII Act, section 45(3).

6. EII Regulation, clause 24(3).

Figure 1 – Infrastructure investment objectives

Definitions		Overall objectives			
		Minimum objectives	Minimise costs for NSW electricity customers	Meet reliability standard	Meet the energy security target
Generation 	Generation from a renewable energy source ≥ 30 MW	At least the same amount as 12 GW (~33,600 GWh p.a.)* constructed by the end of 2029		N/A	N/A
Long-duration storage 	Storage able to be dispatched at registered capacity for ≥ 8 hours, and scheduled by AEMO in the central dispatch process under the NER	28 GWh constructed by the end of 2033 (including 2 GW and 16 GWh constructed by the end of 2029)	N/A		N/A
Firming 	Firm capacity scheduled by AEMO in the central dispatch process under the NER	None	N/A		

Source: ASL.

The EII Act establishes related but separate objectives for firming infrastructure, which are to a) meet the reliability standard and b) the energy security target. These are explained in [Box 1](#).

Box 1 Reliability standard and energy security objectives

Reliability standard

The reliability standard defines an efficient level of reliability, expressed as the level of unserved energy (USE) that represents an efficient economic trade-off between reliability and affordability based on what consumers value (balancing the impact of outages against the cost of avoiding them). USE is electricity demand that cannot be supplied under particular system conditions. A reliability gap arises when forecast unserved energy exceeds the applicable reliability standard.⁷

Energy security target

The energy security target identifies the firm capacity needed to meet forecast maximum summer demand in NSW. It includes a reserve that allows for the unexpected loss of the two largest generating units in the state.

The Energy Security Target Monitor (ESTM)⁸ calculates the target for each of the following 10 years and assesses whether NSW is expected to have sufficient firm capacity to meet it. The assessment also considers matters such as constraints on electricity transfers between regions. The findings are published annually through the ESTM report, which provides transparency on NSW's projected reliability outlook and whether additional firming infrastructure may be required to maintain a reliable electricity supply.

The development pathway in this report has been considered against both the reliability standard and the energy security target.

2026 Electricity Statement of Opportunities

The 2026 ESOO report, published on 25 August 2026, identified significant reliability risks in NSW from 2033–34 under a range of scenarios.⁹ The ESOO found that, following the retirement of Bayswater and Vales Point power stations, NSW faces significant reliability risks even where government schemes and actionable developments are delivered.

As outlined in [Chapter 2](#) of this report, ASL's analysis finds that, where the ambitious development pathway outlined in the 2025 IIO report is not delivered on time and in full, there are significant reliability risks by 2033–34.¹⁰ This pathway includes 25 GW of renewable generation and 42 GWh of long-duration storage in NSW, materially higher volumes than what is considered in the 2026 ESOO's 'government schemes and actionable developments' scenario.

The 2026 ESOO findings reinforce the importance of substantial investment in new generation, storage and firming infrastructure to support reliability following the retirement of Bayswater and Vales Point, particularly if demand grows more strongly than expected or key infrastructure is delayed.

7. The reliability standard currently requires expected unserved energy to remain below 0.002% of annual electricity demand. In April 2026, the Reliability Panel submitted a rule change request to amend the reliability standard to 0.003%. The Australian Energy Market Commission has not yet commenced its assessment of the [rule change request](#).

8. See NSW Climate and Energy Action's website, [Energy Security Target Monitor](#).

9. AEMO, [2026 Electricity Statement of Opportunities](#), August 2026.

10. ASL, [2025 Infrastructure Investment Objectives report](#), August 2025.

2. Assessment and key findings

- Reliability risks remain manageable if the 2025 IIO ‘ambition’ development pathway is delivered broadly on time but increase materially if delays occur.
- The risks are most pronounced in winter and during prolonged periods of low renewable generation, with more severe scenarios characterised by extended energy shortages rather than short-duration capacity deficits.
- Achieving reliable supply requires the successful delivery of generation, storage and network projects, not firming infrastructure alone.
- Technologies that provide bulk energy, dispatchability and sustained energy delivery are best placed to address the identified reliability need.

ASL applied electricity market modelling to assess reliability risks in the financial year 2033–34 across a range of future system conditions. The modelling approach was broadly aligned with AEMO’s 2025 ESOO, however ASL considered different scenarios to the ESOO to assess how the planned build-out of new generation, storage and network infrastructure, coal retirement timing as well as prolonged periods of low renewable generation impact reliability.

On-time delivery

In the ‘on-time delivery’ scenario, ASL modelling showed that if planned generation, long-duration storage and network projects underpinning the ‘ambition’ development pathway in the 2025 IIO report are **delivered on time**, the NSW electricity system would be exposed to an indicative reliability gap of **435 MW in 2033–34**. This is broadly consistent with the findings of the 2025 IIO report, which identified a similar amount of firming infrastructure would be required in the same timeframes.

Box 2 The 2025 IIO report ‘ambition’ development pathway

The 2025 IIO ‘ambition’ development pathway assumed the successful delivery of large volumes of generation, storage and network infrastructure over the coming decade. Achieving this pathway requires infrastructure to be delivered at or near record rates despite ongoing supply chain, workforce and construction challenges.

The pathway was intentionally ambitious, providing a strong signal of the investment required to support the energy transition and maintain reliable electricity supply.

For generation infrastructure, the ambitious pathway required around 16 GW of new generation capacity to be delivered by 2030 and 25 GW by 2033–34, significantly above the level required to meet the legislated minimum objectives. Similarly, the long-duration storage pathway exceeded the 2034 minimum objective of 28 GWh by 50%, requiring over 42 GWh of long duration storage infrastructure by 2034.

Using the ‘on-time delivery’ scenario as a **baseline**, ASL also conducted a ‘VRE lulls’ **sensitivity**¹¹ examining prolonged periods of low variable renewable generation (VRE) output, which produced a larger indicative gap of 1,705 MW. The sensitivity showed that prolonged periods of low wind and solar generation could materially increase reliability risks, even if the underlying infrastructure program is delivered as assumed.

Box 3 Meaning of indicative reliability gap

The indicative reliability gaps presented in this report represent the amount of perfectly available and suitably located firm capacity required to reduce expected unserved energy back to the current reliability standard of 0.002%. In practice, ASL has considered operational, locational and technology-specific considerations when setting the development pathway.

11. This sensitivity tested how the ‘on time delivery’ scenario would perform during extended periods of low VRE output observed in historical weather years.

Additional scenarios

Recognising that the 2025 IIO ‘ambition’ development pathway presents a favourable trajectory for the NSW energy market, ASL tested additional scenarios including the impact of a two-year delay in infrastructure delivery and accelerated coal retirement (which assumed no coal in NSW). These scenarios presented significantly higher reliability risks by 2033–34.

Box 4 2026 ESOO comparison with 2026 Firming IIO report

Following the completion of ASL’s modelling, ASL notes that AEMO published the 2026 ESOO report, identifying significant reliability challenges in NSW from 2033–34.¹² The ESOO suggests reliability gaps ranging from approximately 5,635 MW (corresponding to 0.13% unserved energy) to 6,270 MW (corresponding to 6.17% unserved energy) under its two main scenarios.

Under the more favourable scenario (‘government schemes and actionable developments’), developments supported by government schemes, including completed CIS tenders and the NSW Infrastructure Roadmap tenders were assumed to proceed, but not the full scale of the ‘ambition’ development pathway from the 2025 IIO report.

As shown in table 1 below, the ESOO ‘government schemes and actionable developments’ scenario has 24% less renewable generation (6,800 MW) compared to ASL’s ‘on-time delivery’ scenario. While the specific modelling assumptions differ from those adopted in this report, the 2026 ESOO findings are aligned with ASL’s findings that where the ‘ambition’ development pathway is delayed or not delivered in full, significant reliability risks arise.

Table 1 – 2026 ESOO comparison with 2026 Firming IIO report

Scenario	USE %	Reliability gap (MW)
2026 Firming IIO - on-time delivery	0.003%	435
2026 Firming IIO - VRE lulls sensitivity	0.014%	1,705
2026 ESOO - government schemes and actionable developments	0.13%	5,635
2026 ESOO - committed and anticipated developments	6.17%	6,270

The NSW demand assumptions in the 2026 ESOO modelling are approximately 7% higher in 2033–34 than assumptions underpinning this report’s modelling, predominantly due to increased projections of data centre demand. Increased demand is another factor that can increase reliability risks and required firming infrastructure.

Nature of reliability risks

The modelling shows that the risk is **most pronounced in winter and during periods of low renewable output**. Importantly, the nature of the reliability risks changes under different scenarios.

In the ‘on-time delivery’ scenario, the reliability challenge is mainly a **short-duration capacity problem** at times of high demand. However, when applying the ‘VRE-lulls’ sensitivity and the other scenarios which assume less favourable conditions, the reliability challenge becomes an **energy deficit problem**, driven by extended periods of insufficient bulk energy rather than an isolated peak-demand event.

In the more severe scenarios, unserved energy events can continue for **several consecutive days**. Limited surplus energy prevents existing storage from recharging effectively between events.

The issue is therefore not simply how much capacity is available. It is whether that firming infrastructure can continue producing energy through an extended winter event when demand is high, renewable generation output is low and storage has limited opportunities to recharge.

12. AEMO, [2026 Electricity Statement of Opportunities](#), August 2026.

Addressing system needs through three technical characteristics

To address the identified reliability risk, ASL has identified three key technical characteristics required for firming infrastructure:

- **net energy contribution** – must increase the total volume of energy supplied to the system and not rely on energy consumed from the grid to deliver contracted capacity
- **dispatchable capacity** – must respond to system needs when required¹³
- **sustained energy delivery** – must maintain energy supply over periods of at least eight hours and ideally longer.

These characteristics reflect the nature of the potential reliability risks in 2033–34. Short-duration resources may assist during brief periods of high demand, but longer reliability events require resources that can continue supplying energy for an extended period.

ASL expects **fuel-based generation**, including gas-fired generation, to be well placed to exhibit all three characteristics and to make a material and dependable contribution to addressing the identified reliability gap. Alternative technologies are not excluded but would need to demonstrate that they can provide a comparable contribution across each of these characteristics. ASL expects that projects combining variable renewable generation and storage (hybrids) may be better aligned to generation or long-duration storage tenders.

The outcomes of ASL's assessment are consistent with longer-term electricity system planning, such as the 2025 IIO report and the 2026 Integrated System Plan (ISP), which generally find that as coal-fired power stations retire, electricity will be primarily supplied by renewable generation and storage. Under these pathways, fuel-based generation provides a relatively small share of annual energy production but remains important for maintaining reliability during periods of system stress. Fuel-based generation would be expected to operate **only when needed** – rather than as a primary source of energy – helping support reliability while limiting the cost of this generation to consumers.

Firming infrastructure is one part of the solution

Firming infrastructure alone is **unlikely** to address all the reliability risks that could emerge following the retirement of the Bayswater and Vales Point coal-fired power stations, particularly under the more severe scenarios where significant energy inadequacy emerges across the system.

Reliable electricity supply in 2033–34 will also depend on the delivery and performance of:

- renewable generation
- long-duration storage
- network infrastructure
- existing and committed dispatchable projects
- electricity demand, including both its overall level and shape
- demand side flexibility and responsiveness
- other actions across the electricity sector.

13. EII Act, section 43(1)(c).

The relationship between these investments is important. Renewable generation provides the energy needed to meet demand and recharge storage. Long-duration storage can move that energy to periods when it is most needed.

Network infrastructure allows electricity to be transferred between generators, storage projects and consumers. Firming infrastructure **provides additional support** when these resources are insufficient or unavailable.

If generation, storage or network projects are delayed, the system may need additional firming infrastructure to maintain reliability. However, meeting more significant reliability risks through additional firming infrastructure alone would likely increase costs for NSW electricity customers. Typical long-term least-cost portfolio approach, such as those applied in the 2025 IIO and the 2026 ISP reports, tend to result in renewable generation and storage providing the bulk of the system's energy requirements and firming infrastructure being used to support reliability when needed.

There are also **practical limits** to reliance on firming infrastructure alone to address reliability risk. The most severe reliability risks are driven by prolonged energy shortages, which could require substantial volumes of infrastructure capable of delivering bulk energy, dispatchability and sustained duration. While fuel-based generation is one technology capable of providing these capabilities, it is uncertain whether sufficient volumes could be developed and integrated within the relevant timeframes and existing system constraints in both electricity network and gas pipeline capacity. Accordingly, reliable electricity supply under these scenarios would depend on the successful delivery of a broader portfolio of generation, storage and network infrastructure, rather than firming infrastructure alone.

The next [chapter](#) sets out how ASL translated these considerations into the development pathway.

3. Development pathway

- ASL sets a firming infrastructure development pathway of **1,500 MW** to be fully commissioned and operational by the end of May 2033.
- The pathway should be considered alongside the broader infrastructure investments identified in the 2025 IIO report 'ambition' development pathway. The reliability outcomes assessed in this report depend on the successful delivery of both.
- The pathway balances modelling results, future uncertainty, consumer costs and practical delivery considerations.

In determining the development pathway, ASL considered the reliability assessment within the context of the large-scale infrastructure expansion envisaged under the 2025 IIO report 'ambition' development pathway. The selected pathway is intended to complement, rather than replace, those investments.

ASL selected a 1,500 MW pathway after weighing:

- the range of modelling outcomes, including the 'central' scenario and the sensitivity examining prolonged periods of low renewable generation
- the approximately 1,500 MW shortfall identified in the 2025 Energy Security Target Monitor report
- the projected role of gas-fired generation identified in longer-term system planning¹⁴
- the importance of continued investment in renewable generation and long-duration storage
- the need to retain flexibility as new information emerges.

The 1,500 MW pathway provides greater protection than the amount indicated under the most favourable modelling outcome, while recognising that the substantially larger volumes suggested by more adverse scenarios may not represent a practical or cost-effective solution to mitigating reliability risks.

ASL considers that addressing these more severe risks will also depend on the successful delivery of generation, storage and network investments, rather than relying solely on substantially larger volumes of firming infrastructure.

ASL considered a wide range of modelling results reflecting different future conditions, which showed the extent to which the management of future reliability risks depend on the delivery of other infrastructure and the conditions experienced by the electricity system.

Balancing reliability, consumer costs and deliverability

ASL weighed the risks of under-procurement against the costs of procuring more firming infrastructure than may ultimately be required.

A lower pathway could reduce near-term procurement costs but leave the NSW electricity system more exposed if planned generation, storage and network projects are delayed, renewable output is lower than expected, or coal-fired power stations retire earlier. A higher pathway could provide greater protection against reliability risks but would increase costs for consumers and may prove impractical to deliver at the scale required.

Long-term energy system planning studies¹⁵ consistently indicate that the least-cost future electricity system is expected to rely primarily on renewable generation, supported by storage, network infrastructure and dispatchable resources that operate when needed. Firming infrastructure capable of providing dispatchability and sustained energy is therefore expected to play an important but relatively infrequent role in addressing system risks. If large volumes of fuel-based generation were required to operate frequently throughout the year, this would generally represent a higher-cost outcome for NSW electricity customers than a system where most energy is supplied by renewable generation and storage.

14. The 2025 IIO report identified approximately 1.6 GW of new gas-fired generation in NSW by 2040, while AEMO's 2026 ISP Accelerated transition scenario forecasts approximately 4.3 GW of new gas-fired generation in NSW by 2040.

15. Ibid.

As such, ASL concluded that a 1,500 MW pathway best balances these considerations, providing greater resilience than the lower modelled outcomes while avoiding the cost and delivery risks associated with procuring infrastructure at the upper end of the modelled range, and thereby protecting the long-term financial interests of NSW electricity customers. The pathway provides an immediate investment signal while avoiding procurement at the upper end of the modelled range before there is sufficient information to determine whether those larger volumes are required.

Continued delivery of generation, storage and network projects

Continued delivery towards the 2025 IIO report 'ambition' development pathway is critical to maintaining reliability outcomes in NSW. The pathway incorporates **substantial volumes** of renewable generation, long-duration storage and network infrastructure and represents a foundational assumption of the reliability assessment undertaken for this report.

The development pathway relies on **continued progress across the broader infrastructure program**.

ASL's modelling indicates that reliability risks increase materially if renewable generation, long-duration storage or network investments are delayed. ASL expects the continued delivery of these investments to remain critical to managing the reliability risks in 2033–34.

ASL launched NSW Roadmap Tender Round 8 (generation infrastructure) and Tender Round 9 (long-duration storage infrastructure) in May 2026,¹⁶ with Tender 8 representing the largest generation tender undertaken under the NSW Electricity Infrastructure Roadmap to date. Further generation and storage tenders are also planned, consistent with the 10-year tender plan established in the 2025 IIO report.¹⁷

ASL expects hybrid projects, including projects that combine renewable generation and storage, to continue to play an important role in delivering the broader infrastructure development pathway. Many such projects may be well suited to generation or long-duration storage tenders, where their contribution to energy supply and storage capability can be directly assessed. Accordingly, ASL expects these tenders to remain the primary procurement pathway for hybrid projects.

The 1,500 MW firming pathway complements these investments, rather than replace them. Its purpose is to address the specific reliability need identified in this report by providing additional dispatchable capacity and sustained energy delivery during periods when other parts of the system cannot fully meet demand. Consistent with this objective, assessment of firming projects would focus on their ability to provide the required firming characteristics.

Meeting the energy security target¹⁸

ASL considered the forecast capacity shortfall identified in the 2025 ESTM report and the role that additional firming infrastructure could play in maintaining adequate firm capacity following the expected retirement of the Bayswater and Vales Point power stations.

The ESTM report identified a forecast shortfall of around 1,500 MW in 2033–34 under its 'central' scenario.¹⁹ ESTM's 'central' scenario forecasts available firm capacity from all generation, storage and transmission projects that AEMO categorises as existing, in-commissioning, committed and anticipated.²⁰

The ESTM report also found that the 'central' scenario shortfall can be entirely addressed when projects supported through existing NSW and Australian Government initiatives are delivered on time. This includes projects granted renewable energy zone (REZ) access rights, long-duration storage required to meet NSW legislative objectives, and increased demand flexibility.²¹ These assumptions were included in the ESTM's 'government schemes' sensitivity and represent a lower trajectory of new infrastructure than the full 'ambition' development pathway from the 2025 IIO report.

The 1,500 MW pathway therefore provides a prudent level of firming capacity aligned with the forecast shortfall while recognising that delivery of the broader development pathway remains critical. ASL expects this 1,500 MW pathway to meet the energy security target.

16. See ASL's website, [Tenders](#).

17. ASL, [2025 Infrastructure Investment Objectives report](#), August 2025.

18. See Box 1.

19. [2025 Energy Security Target Monitor report](#), December 2025, p. 6.

20. Ibid, p. 10. The 'central' scenario only considers existing projects and those considered committed or anticipated in AEMO's July 2025 Generation Information publication.

21. Ibid, pp. 7-8.

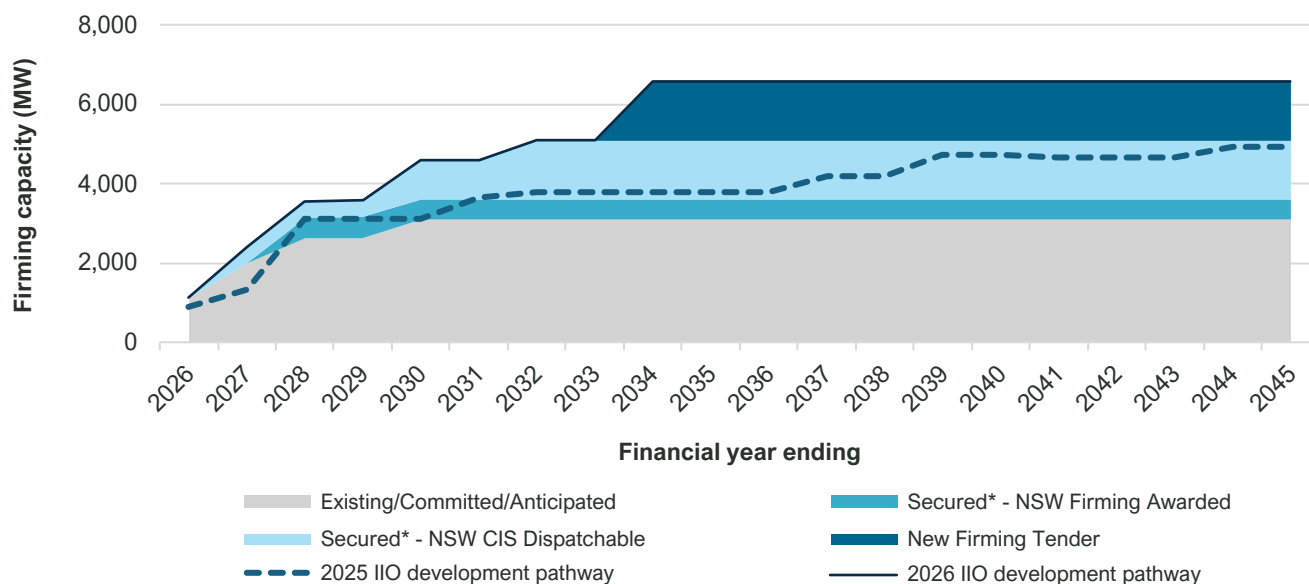
Timing and location

The development pathway consists of 1,500 MW of additional firming infrastructure that must be **fully commissioned and operational by the end of May 2033**.

ASL will target projects that can make a strong contribution to reliability and energy security outcomes in the Sydney-Newcastle-Wollongong (SNW) sub-region. This includes projects both within the sub-region and nearby projects that are electrically connected to – and capable of supporting – the SNW region where reliability risks are most likely to emerge.

[Figure 2](#) shows the annual and cumulative capacity included in the development pathway.

Figure 2 – 2026 Firming infrastructure development pathway



Note: **Secured* refers to infrastructure that ASL expects proponents to build if all projects that currently hold an LTESA, CIS Agreement or Access Right are completed successfully.

As shown in [Figure 2](#) above, the 2026 development pathway builds on the 2025 IIO pathway by incorporating both recent tender and a broader assessment of reliability risks. Recent tender outcomes, including NSW Firming Tender 7 and CIS Dispatchable Tenders 3 and 8, have increased the amount of secured firming infrastructure.²²

In addition, the 2026 modelling exercise identified a further requirement for 1,500 MW of new firming infrastructure to manage reliability risks that were not considered in the 2025 IIO report, such as the potential for earlier coal retirements. As a result, the 2026 pathway requires a higher level of firming capacity than previously identified.

22. See ASL's website, [Tenders](#).

4. Tender plan

- ASL designed the tender plan to support delivery of the 1,500 MW development pathway.
- ASL will commence a **market consultation** process in **late 2026** followed by an **initial tender launched in 2027**.
- This consultation will support the development of key project eligibility requirements and merit assessment priorities, including deliverability and technical capability, and invite feedback on specific aspects of the proposed tender and LTESA product design.
- Projects will need to demonstrate **bulk energy capability, dispatchability and sustained energy delivery**, including over periods of at least eight hours and ideally longer.
- ASL may undertake a **contingent tender around 2030** if future assessments indicate additional firming infrastructure is required and may provide an opportunity for shorter lead time technologies to participate.

The tender plan is intended to support delivery of the 1,500 MW firming infrastructure development pathway and contribute to reliable and secure electricity supply in NSW. It includes:

- an initial tender in 2027
- the potential for a contingent tender around 2030 if later assessments show that additional firming infrastructure is required.

This staged approach provides an immediate investment signal while retaining flexibility to respond to future system or market information.

Market consultation

ASL will begin **market consultation in late 2026**. The consultation is expected to help ASL:

1. Gain greater transparency into the pipeline of potential projects by gauging market interest and identifying prospective projects for participation.
2. Outline key proposed tender design elements, including core eligibility requirements, merit assessment criteria on deliverability considerations and technical capability requirements.
3. Present and seek feedback on the firming LTESA product design options, including specific features and settings to inform the development of the final product framework (including the Project Development Agreement).

ASL will use information gathered through the **consultation** to refine the detailed design of the competitive tender and the firming LTESA product offered.

Initial tender

ASL intends to conduct the initial competitive tender in 2027.

The indicative tender size is 1,500 MW – consistent with the development pathway outlined in [Chapter 3](#). ASL will use the market consultation to finalise the tender design and support reliable project delivery and effective competition.

Successful projects will be required to be **fully commissioned and operational by the end of May 2033** and ASL is targeting projects that can make a strong contribution to reliability and energy security outcomes in the **Sydney-Newcastle-Wollongong** sub-region. This includes projects within the sub-region as well as nearby projects that are electrically connected to – and capable of supporting – the SNW region where reliability risks are most likely to emerge.

Projects will need to provide net energy contribution, dispatchable capacity and sustain energy delivery for extended periods to effectively address identified reliability risks. This may include the ability to deliver energy for **at least eight hours** during periods of system stress.

Contingent tender

ASL may undertake a **contingent tender around 2030** if updated information indicates that additional firming infrastructure is required. The contingent tender is not a separate procurement target and does not create an automatic commitment to procure another 1,500 MW in firming capacity, or any other volume. Rather, it is a mechanism that will allow ASL to respond if circumstances change or the initial tender does not deliver the required outcomes.

Any contingent tender would be designed based on the circumstances and system needs identified at the time of the tender. As a result, the tender approach, product design and project characteristics could differ from those described for the initial tender outlined in this report.

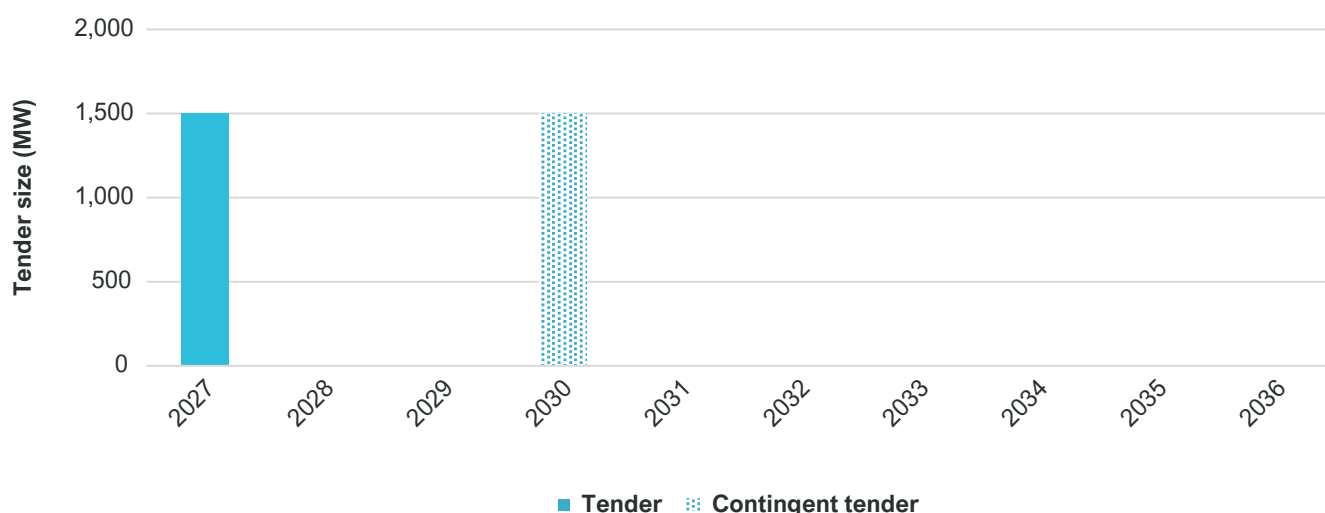
Should a contingent tender be required for future firming infrastructure requirements, ASL may consider:

- the outcomes of the initial 2026 firming tender
- the progress and expected delivery of successful projects
- updated reliability and energy security assessments
- changes in electricity demand
- changes in coal-fired power station operations or closure dates
- the delivery of generation, long-duration storage and network infrastructure
- market conditions
- any remaining reliability gap.

ASL will decide whether to undertake further procurement closer to 2030, when it has more information about the reliability outlook and progress of the infrastructure delivery pipeline in NSW. This approach avoids committing consumers to additional procurement before it is shown to be needed, while preserving the ability to act if reliability risks increase.

[Figure 3](#) shows the proposed timing and indicative size of the tender plan.

Figure 3 – Firming infrastructure tender plan



A1. Regulatory requirements

The EII Act and the EII Regulation require that specific items be included in the IIO report prepared by the Consumer Trustee, as well as matters that must be taken into account when preparing its report.

In preparing this report, ASL has had regard to the infrastructure investment objective for firming infrastructure under section 44(2)(c) of the EII Act. The development pathway and tender plan are intended to support achievement of that objective by promoting the construction of firming infrastructure that contributes to meeting the reliability standard and energy security target while supporting the long-term financial interests of NSW electricity customers.

[Table A1](#) summarises the relevant requirements, and where this report addresses them.

Table A1 – Firming IIO report regulatory requirements

EII Act		Report reference
Section 45, Planning by consumer trustee		
(3)	The Consumer Trustee is also to prepare a report as soon as practicable after being directed by the Minister under section 47(2) to conduct a competitive tender for LTESAs for firming infrastructure.	Chapter 1
EII Regulation		Report reference
Clause 24, Content of infrastructure investment objective reports by consumer trustee—the Act, s 45		
(3)	An infrastructure investment objectives report prepared under the Act, section 45(3) must contain the following:	
	(a) how the firming infrastructure required under the development pathway specified in the report will assist in achieving the infrastructure investment objective specified in the Act, section 44(2)(c),	Chapters 3 and 4
	(b) information about the expected timing, staging and sequencing of the construction of the firming infrastructure required under the development pathway.	Chapters 3 and 4

Abbreviations and definitions

Term	Definition
AEMO	Australian Energy Market Operator
ASL	AusEnergy Services Limited
CIS	Capacity Investment Scheme
Consumer Trustee	ASL appointed as the Consumer Trustee under the EII Act
development pathway	infrastructure required to be constructed over the following 20 years
EII Act	<i>Electricity Infrastructure Investment Act 2020 (NSW)</i>
EII Regulations	<i>Electricity Infrastructure Investment Regulation 2021 (NSW)</i>
ESOO	Electricity Statement of Opportunities
ESTM	Energy Security Target Monitor
firming direction	A direction by the Minister under section 47(2) of the EII Act to conduct a competitive tender for LTESAs for firming infrastructure
IIO report	Infrastructure Investment Objectives report
ISP	Integrated System Plan
LTESA	long-term energy service agreement
minimum objectives	minimum infrastructure investment objectives established by section 44(3) of the EII Act
Minister	NSW Minister for Energy
NEM	National Electricity Market
NER	National Electricity Rules
the Roadmap	NSW Electricity Infrastructure Roadmap
overall objectives	overall infrastructure investment objectives established by section 44(2) of the EII Act
REZ	Renewable energy zone
SNW	Sydney-Newcastle-Wollongong
USE	unserved energy
VRE	variable renewable energy

