

Review report – Draft 2026 Integrated System Plan

Integrated System Plan

The Australian Energy Market Operator (AEMO) is responsible for publishing the Integrated System Plan (ISP) every 2 years and an ISP methodology at least every 4 years. The ISP is a forward-looking roadmap for eastern Australia's power system that sets out a whole of system plan that seeks to optimise benefits from future investment as the market transitions to a lower carbon environment and to contribute to achieving the national electricity objective. The ISP identifies the generation, storage and network investments needed to meet current policy settings and deliver significant net market benefits for consumers.

The ISP identifies the transmission network (or equivalent non-network) solutions that are most likely to maximise net market benefits. AEMO identifies the network investments that are likely to optimise the net market benefits across future National Electricity Market (NEM) development scenarios over the 20-year planning horizon as the optimal development path (ODP) for the NEM. The ODP includes 'actionable' ISP projects and future ISP projects, which can be progressed through the regulatory investment test for transmission (RIT-T) process. It also identifies future ISP development opportunities such as distribution assets, storage, and demand side developments.

Our review role in the ISP development process

The Australian Energy Regulator's (AER) role is to ensure AEMO's processes are robust, credible and transparent. The requirements and considerations that the AER places on AEMO's forecasting processes are specified in our Forecasting Best Practice (FBP) and Cost Benefit Analysis (CBA) guidelines.

The AER's FBP guidelines require AEMO's forecasting practices and processes to have regard to the following principles:

- forecasts should be as accurate as possible, based on comprehensive information and prepared in an unbiased manner
- the basic inputs, assumptions and methodology that underpin forecasts should be disclosed
- stakeholders should have as much opportunity to engage as is practicable, through effective consultation and access to documents and information.

Our CBA guidelines aim to ensure that AEMO identifies an ODP that promotes the efficient development of the power system based on a quantitative assessment of the costs and benefits of various options across a range of scenarios. In undertaking this assessment, the CBA guidelines:¹

- require AEMO to balance the risks of over-investment, under-investment, premature or overdue investment to consumers
- provide AEMO flexibility in its scenario development, modelling and the selection of the ODP
- require that the ODP provide a positive net market benefit in the most likely scenario
- require AEMO to have regard to the need for alignment of market benefits between the ISP and the RIT-T for actionable ISP projects.

[Further information on the AER's role in the ISP development process can be found here.](#)

Transparency Review

The National Electricity Rules (NER) require the AER to publish, in a review report, whether AEMO has adequately explained how it has derived key inputs and assumptions used in the draft 2026 ISP and how these inputs and assumptions have contributed to the outcomes of the Draft ISP.²

Our transparency review process is not intended to assess the merits of AEMO's decisions or

¹ AER, *Cost Benefit Analysis guidelines*, November 2024, p. 3

² NER, cl. 5.22.13(a); NER, cl. 5.22.13.

contents of the Draft ISP or ODP, nor is it an assessment of AEMO's compliance with requirements in the NER or the guidelines. Rather, our role through the transparency review process is to focus on the adequacy of AEMO's explanations of key inputs and assumptions and how these have contributed to the outcomes of the Draft ISP.

The AER has a separate role in monitoring the ISP's compliance with our CBA guidelines. As part of the publication of the ISP, AEMO is required to submit a compliance report outlining how its ISP has complied with our CBA guidelines. However, our transparency review of the Draft ISP precedes our evaluation of that compliance report. Further, our findings in this report have no interaction with our compliance monitoring process and are made independently of that process.

As part of the ISP development process, we previously published our review of AEMO's 2025 Inputs, Assumptions and Scenarios Report (IASR) on 28 August 2025.³ AEMO published [an addendum to the 2025 IASR](#) alongside the Draft ISP to address the issues we identified in the IASR review report.

The NER also require AEMO to take the following actions to address any issues identified in this ISP review report:⁴

- provide further explanatory material in an addendum to the Draft ISP
- consult on these issues.

Our assessment approach

We approach our role in reviewing the Draft ISP in 3 stages.

Firstly, in order to support the quality of AEMO's process and report, we raise and discuss potential issues through regular engagement with AEMO. Our involvement in the ISP process improves our visibility of the inputs and of consultation that AEMO has undertaken.

Secondly, following the publication of the Draft ISP, we review the report and its appendices with reference to NER clause 5.22.13 and any

transparency issues that have arisen in our engagement with AEMO. We focus on issues where stakeholders have raised a need for greater transparency as well as new and significantly changed inputs and assumptions.

Thirdly, we summarise the outcomes of our review in the review report. We will monitor how AEMO responds to the issues raised in this report and maintain our involvement in the ISP process.

Issues identified in the Draft ISP

This section identifies issues for which AEMO must, as soon as practicable, provide further explanatory information in an addendum to the Draft ISP. AEMO must also consult on these issues.

The AER also acknowledges the increased size and scope of the Draft 2026 ISP. AEMO must, for the first time, consider gas development projections and possible distribution augmentation and other demand side developments in the demand side factors statement. While the work undertaken to date provides some transparency on inputs and analyses, some information guidelines and processes are still under development. We expect that these newer parts of the ISP will be further improved in the next ISP cycle.

Operational output changes from 2024 ISP

Figure 15 of the Draft ISP presents the expected amounts of capacity for a range of technologies to 2049-50, and Figure 16 presents a forecast of coal capacity.⁵ Figure 4 in Appendix 2 also presents the changes between capacity outcomes between the 2024 ISP and the draft 2026 ISP.⁶ However, these Figures present a stacked series for technologies that are operationally very different and for which operation will change over time.

Some of the ways the generation technologies in Figure 15 differ are:

- The capacity factor and operation of each technology is different, so that 1 MW capacity

³ NER, cl. 5.22.9

⁴ NER cl. 5.22.13(c)

⁵ AEMO, *Draft 2026 ISP*, December 2025, pp.58–60.

⁶ AEMO, *Draft 2026 ISP – Appendix A2 Generation and Storage*, December 2025, p.14.

of one technology does not equal 1 MW capacity of another technology.

- Consumer energy resource generation and storage are not modelled outputs in the ISP – they are assumed and modelled inputs from the IASR.
- Coal power is noted to have declining capacity factor over time, such that constant capacity would result in less generated energy for each successive year.⁷
- Gas power is noted to change from mid-merit operation to backup operation over the period to 2050.⁸
- Wind capacity seems to have decreased compared to the 2024 ISP, which may be due to the cost increasing,⁹ but AEMO notes elsewhere that the reduced capacity is because of increased capacity factor for some wind installations,¹⁰ and that the change in weighted average capital cost is material to the outcome.¹¹

These differences would be elucidated by providing visibility to the graph of generation per technology over time and explaining differences from capacity graphs as well as changes since the 2024 ISP. Indeed, while the ISP contains information on efficient investment (capacity)¹² and efficient use (demand and consumption) over time,¹³ the data on efficient operation (generation) is less transparent and available.¹⁴ Transparently presenting information on each of these 3 areas would more fully explain how the ISP meets the national energy objectives.

We expect AEMO to provide further explanation in their addendum on the most significant drivers and differences of each of the types of generation and storage. We also expect AEMO to present and explain the results for generation, how they

have impacted the selection of the ODP and how they are different to the 2024 ISP.

Contribution of key inputs to the outcomes of the ODP

Appendix 6 of the Draft 2026 ISP presents the cost benefit analysis process used to arrive at the network projects proposed in the Draft 2026 ISP. In this appendix, a list of changes to several key inputs and assumptions since the 2024 ISP is provided.¹⁵ However, AEMO has not provided discussion or analysis on how these changes to the key inputs have contributed to the outcomes in the draft 2026 ISP, and we were unable to trace outcomes back to these changes in inputs when reading Appendix 6.

We therefore expect AEMO to provide information on how these key inputs have affected the outcomes in an addendum to the Draft 2026 ISP.

Process for determining scenario least-cost development paths

In the Draft 2026 ISP, AEMO states that it considered around 2,000 potential development paths and modelled a shortlist of 23 candidates to identify the ODP.¹⁶

Appendix 6 identifies that AEMO determines the least-cost development paths for each scenario, in the first step in determining the optimal development path.¹⁷ We understand that AEMO uses its Single-Stage Long-Term model to inform the formulation of many development paths in each scenario. In particular, the most recent ISP methodology notes that the linear network build decisions from this model provide a first indication of potential network investments for the formulation of development paths which are then assessed in the Detailed Long-Term model.¹⁸ We further understand that AEMO uses its Detailed

⁷ AEMO, *Draft 2026 ISP*, December 2025, pp.30, 59–60.

⁸ AEMO, *Draft 2026 ISP*, December 2025, pp.70–72.

⁹ AEMO, *Draft 2026 ISP – Appendix A2 Generation and Storage*, December 2025, p.13

¹⁰ AEMO, *Draft 2026 ISP*, December 2025, p.62.

¹¹ AEMO, *Draft 2026 ISP*, December 2025, pp.18, 93–94.

¹² AEMO, *Draft 2026 ISP*, December 2025, pp.57–64.

¹³ AEMO, *Draft 2026 ISP*, December 2025, pp.34–38.

¹⁴ AEMO, *Draft 2026 ISP – Appendix A2 Generation and Storage*, December 2025, pp.19, 26, 35, 45.

¹⁵ AEMO, *Draft 2026 ISP – Appendix A6 Cost-Benefit Analysis*, December 2025, p.20.

¹⁶ AEMO, *Draft 2026 ISP*, December 2025, p.9.

¹⁷ AEMO, *Draft 2026 ISP – Appendix A6 Cost-Benefit Analysis*, December 2025, p.25.

¹⁸ AEMO, *ISP Methodology*, June 2025, p.10.

Long-Term model to compare these development paths to find the least-cost development path which minimises system costs for each scenario.

It is less clear how the range of inputs and assumptions are used in ‘whittling down’ the set of potential development paths and deriving a least-cost development path for each scenario.¹⁹ We consider that there is a lack of transparency with respect to:

- the differences between the 2,000 potential paths and which groupings, data and decision variables were used to reduce this down to the 23 candidate development paths
- the set of development paths which are considered in each scenario when finding the least-cost development path.

We therefore expect that AEMO’s addendum will provide further information and examples in relation to the data, main groupings and process AEMO used to determine both the least-cost development path in each scenario and the set of candidate development paths.

Changes in consumer battery capacity

The Draft 2026 ISP states that, under the Step Change scenario, household and commercial battery capacity is forecast to grow to an estimated 5 GW in 2029–30, then 27 GW in 2049–50.²⁰ This growth is attributed to lower costs, easier-to-use technology, and government policies such as the Cheaper Home Batteries Program. In the 2024 ISP, the Step Change scenario instead forecast capacity of about 7 GW in 2029–30 and 34 GW in 2049–50.²¹

We note that the forecast household and commercial battery capacity has been reduced under the same scenario between the 2024 ISP and the Draft 2026 ISP, without an explanation or reference for this change.

We expect AEMO to provide a clearer explanation for the reduction in the residential and commercial battery capacity forecasts since the 2024 ISP.

Application of the build limit constraint in the constrained delivery sensitivity

AEMO modelled a sensitivity in the step change scenario where delivery is constrained, by introducing an annual build limit extrapolated from historical data but gradually increased in later years. The Draft ISP briefly discusses the overall outcomes of this sensitivity but does not explain how the outcomes over time and final technology mix are driven by the changes in inputs. As an example, there is a 7000 MW greater increase in wind generation capacity compared to the optimal development path in the step change scenario by 2034–35 although costs are assumed to be higher, and construction limited. Similar trends of interest exist to a lesser extent for utility scale solar buildout and a lower emissions trajectory for 2031–48.

We expect AEMO to provide further analysis and explanation behind how the constraints impacted the modelled outcomes throughout the forecast period for this sensitivity.

Results for the Northern Transmission Project

The Northern Transmission Project (formerly the Mid North South Australia REZ Expansion) in South Australia is one of 2 projects that may be actionable depending on further analysis. AEMO noted that this project is not identified in the proposed ODP, ODP project counts, cost benefit assessment totals and other metrics in this Draft 2026 ISP.²²

AEMO included some description in Appendix 6 noting that this project is not optimal in the Draft 2026 ISP, but AEMO intends to analyse it further for the final ISP and will conduct stakeholder consultation to inform that analysis.²³

However, AEMO didn’t include the analysis which was presented for other projects (Take-one-out-at-a-time, actionability or regrets analysis) which may have better informed the stakeholder feedback that they are seeking. Therefore, we expect AEMO’s addendum to the Draft 2026 ISP include this analysis.

¹⁹ AEMO, *Draft 2026 ISP*, December 2025, p.54.

²⁰ AEMO, *Draft 2026 ISP*, December 2025, pp. 5, 59 & 85.

²¹ AEMO, *2024 ISP*, June 2024, p. 50.

²² AEMO, *Draft 2026 ISP*, December 2025, p.76.

²³ AEMO, *Draft 2026 ISP – Appendix A6 Cost-Benefit Analysis*, December 2025, pp.111-112.