



Fact Sheet

A roadmap to Australia's energy transition

Australia's energy system is undergoing rapid change.

Coal fired generators are closing and urgent investment in generation, storage and transmission is needed to make sure our homes and businesses continue to enjoy reliable and affordable electricity.

The ISP outlines what Australia needs to build to keep the lights on as coal-fired generation retires.

It is developed by AEMO as part of its role as national transmission planner.

The details of what must be included in the plan are set out in the National Electricity Rules.

What the ISP does

The ISP guides investment

The ISP shows where new transmission, generation and storage is needed across the National Electricity Market (NEM).

It outlines the lowest-cost investment needed to make sure Australians have access to reliable, secure, and affordable electricity and meet Australia's emissions reduction targets.

It assesses the options available to industry, and identifies the best path forward, at the lowest cost to electricity customers.

What the ISP considers

The ISP is based on economic modelling and engineering analysis.

The ISP takes into consideration:

- New generation, including building and operating costs.
- Fuel prices, including forecasts of gas and coal prices.
- Different types and duration of storage – including batteries and pumped hydro storage.
- New flexible gas generation.
- New transmission.
- Consumer energy resources such as rooftop solar.
- Federal and state government policy
- Requirements of the National Electricity Objective and Rules.

The ISP projects the generation mix and the best combination of generation, storage, and transmission to meet government policy targets.

This includes renewable energy such as solar and wind generation as well as storage technologies like batteries, pumped hydro, and flexible gas-powered generation.

The ISP is developed with industry

The ISP is developed every two years in consultation with industry, government, and energy consumers.

For the 2024 ISP, AEMO consulted with more than 2,100 stakeholders and considered 220 submissions

from industry, investors, consumer and community representatives, network planners and governments to produce the latest plan for the NEM.

The ISP included inputs from:

- Energy experts from industry, market organisations and academia.
- The ISP Consumer Panel – a group set up under the National Electricity Rules to provide independent expert advice.
- Technical papers from across the industry.

The ISP factors consumer resources

Consumer energy resources are appliances owned by homes or businesses, such as rooftop solar, home batteries and electric vehicles.

These appliances are a key part of the power system, and the ISP takes these into account in working out what is needed to support the transition to net-zero.

The ISP takes into consideration the expected growth in the number of these appliances.

While the role of these household appliances is considered in contributing to energy reliability and grid security, the costs are not modelled in the ISP as these are purchases decided by households and businesses.

The ISP uses GenCost data

The [GenCost report](#) is developed each year between CSIRO and AEMO. It looks at how much it costs to build and run different types of generation. GenCost is an important input for the ISP.

The ISP includes costs and benefits for consumers

The plan includes an estimate of what it will cost to build the new generation, storage, and transmission

needed to maintain a reliable supply of electricity as coal generation retires.

That estimate is an annualised capital cost of \$122 billion to 2050.

Building the transmission projects in the plan delivers \$18.5 billion in avoided costs to Australian homes and businesses.

The 2024 ISP is also expected to deliver \$3.3 billion in emission reductions using the Australian energy ministers' interim value of greenhouse gas emissions.

The ISP does not include distribution costs

The ISP does not plan the distribution network, that is the poles and wires that connect individual households and businesses to the grid.

It is primarily focused on investment in large utility-scale generation, storage, and transmission.

Distribution system planning, including costs, happens at a state and local level – not in the ISP.

The ISP does not plan for nuclear power

Nuclear is not considered in the ISP because it is required to take account of existing Federal and State Government law and policy.

Nuclear generation is currently banned under Australian law.

GenCost finds nuclear generation to be a lot more expensive than other options to generate electricity.

Also, the time it would take to design and build nuclear generation, may be too slow to replace retiring coal fired generation.

The ISP is a plan for the future

The ISP is a plan for future investment.

It does not model the cost or benefits of infrastructure that was built in the past, is under construction, is committed to or is anticipated to be developed.

In addition, it does not include the costs of consumer energy resources, such as rooftop solar, home batteries and electric vehicles.

The ISP looks at the lowest cost way to move forward.

The ISP is ambitious, but deliverable

The plan outlines the lowest-cost way to generate, store and transmit electricity for Australian homes and businesses. It is a comprehensive plan to develop generation, storage and transmission as ageing coal-fired power stations retire.

Changes to the 2026 ISP

In April, Australia's energy ministers published a review of the ISP.

The report includes recommendations to evolve how the ISP identifies the infrastructure needed to achieve net-zero emissions by 2050 while optimising energy affordability and reliability for consumers.

This includes incorporating a more detailed view of gas supply and demand, and gas infrastructure development, as well as greater consideration of distribution investments to enable effective and continued development of consumer energy resources.

AEMO is looking at what can be delivered for the 2026 ISP.

Where can I find more information?

The ISP is available at: [AEMO's Integrated System Plan](#)

The ISP Consumer Overview is available at: [2024 ISP Consumer Overview](#)