



## ROADMAP FOR THE ENERGY TRANSITION

# AEMO's Draft 2024 Integrated System Plan

This document provides an overview of the Draft 2024 *Integrated System Plan*, which is a roadmap for the energy transition for the next 20 years and beyond.

## About AEMO

As Australia's independent system and market operator and system planner, the Australian Energy Market Operator's (AEMO's) purpose is to ensure secure, reliable and affordable energy and enable the energy transition for the benefit of all Australians.

We do this by operating the electricity and gas systems and markets of today and planning the energy system of the future.

This includes the National Electricity Market (NEM), an interconnected power system that delivers electricity to around 23 million people across Queensland, New South Wales (including the Australian Capital Territory), Victoria, South Australia, and Tasmania.

For more information: [www.aemo.com.au](http://www.aemo.com.au)

## About the ISP



The energy transition is well underway, and AEMO's *Integrated System Plan* (ISP) outlines the changes needed to the NEM to continue delivering secure, reliable, and affordable electricity for millions of Australians.



Published every two years, the ISP details what, when, where, and how much electricity transmission, generation and storage is required in the NEM. This assists governments and industry to plan and invest to meet people's current and future energy needs.



Developed in extensive consultation with consumers, policy makers, regulators, industry representatives and other groups, it is informed by a broad variety of technical expertise, voices and views.



The ISP is designed to ensure benefits to all who produce, consume and transport electricity in the NEM.

## Consultation process

AEMO's Draft 2024 ISP reflects feedback from a wide range of different groups and sources, including workshops, webinars, public forums, other engagements and submissions.



**1,300+**  
stakeholders engaged



**10**  
webinars hosted



**60+**  
presentations and reports

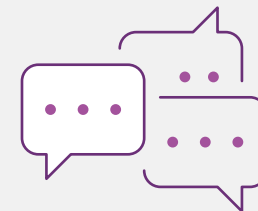


**110+**  
written submissions considered

## Consumer and community voices in the Draft ISP

AEMO seeks consumer and community input in the preparation of the ISP in a range of ways. This includes the establishment of two groups specifically to provide this guidance:

- **ISP Consumer Panel:** Provides independent expert consumer-focused advice to inform the development of the ISP. AEMO considers Panel reports in preparing the ISP, as discussed in the Draft 2024 ISP.
- **Advisory Council on Social Licence:** Provides a diverse range of perspectives from landholder, agriculture, rural and regional communities, First Nations, consumer and environmental groups, to enhance AEMO's broader understanding of social licence issues, and consideration of these within the ISP.



## Open for feedback

AEMO welcomes feedback from all interested groups on its Draft 2024 ISP by **16 February 2024**, for consideration prior to finalising the 2024 ISP by the end of June 2024.

Find details on upcoming consultation forums, presentations and webinars on [AEMO's website](http://www.aemo.com.au).



# The energy transition is well underway

Australia's coal-fired generators are closing. The lowest-cost pathway for secure and reliable electricity is from renewable energy, connected by transmission, supported by batteries and pumped hydro, and backed up by flexible gas-powered generation.

Urgent investment is needed so that Australian homes and businesses can continue to enjoy a reliable supply of electricity.

As Australia accelerates towards a net-zero energy future, work is already well underway by industry and governments to develop the supporting investments required to the NEM power system.

The Draft 2024 ISP confirms that urgent investment is needed in new renewable energy generation, transmission, storage and flexible gas generation to continue to deliver secure, reliable and affordable energy, and reach the renewable electricity generation targets of NEM jurisdictions.

## Key facts and figures



Household and business electricity consumption from the grid is **forecast to nearly double by 2050**.



With coal expected to retire faster than currently announced, the NEM is forecast to need a **seven-fold increase** in large-scale wind and solar generation by 2050.



It also requires building close to **10,000 km of new transmission lines and upgrades to existing networks by 2050** to connect new generation across the power system.

Delivering the transmission projects identified in this plan is expected to avoid \$17 billion in additional costs to consumers if those projects were not delivered.



As the energy transition brings both opportunities and challenges, listening and responding to the **voices, needs and concerns of consumers and local communities will be essential**.



Storage capacity

**to increase significantly**

Batteries, virtual power plants, pumped hydro



Grid-scale wind and solar

**to increase 7-fold**



Distributed solar PV

**to increase 4-fold**

Rooftop solar, other distributed solar



Electricity consumption from the grid **to nearly double**



Gas-powered generation

**to increase**

While current mid-merit plants will all retire within that period



Coal generation

**to be withdrawn**

Capacity to be retired by:



# A roadmap for the NEM's energy future

At a high level, the ISP presents an 'optimal development path', or the lowest cost, most resilient and pragmatic plan setting out the optimal size, place and timing for the NEM's future assets to deliver a secure, reliable and affordable energy future that meets emission reductions targets.

## What the energy transition and ISP means for consumers

As Australia's power systems rapidly transform, the way that Australians think about, use and experience energy will too.

AEMO understands that cost of living, and electricity prices, are a key concern for many families and businesses. In preparing the ISP, AEMO identifies the lowest-cost pathway to meet consumers' energy needs for secure, reliable and affordable energy.

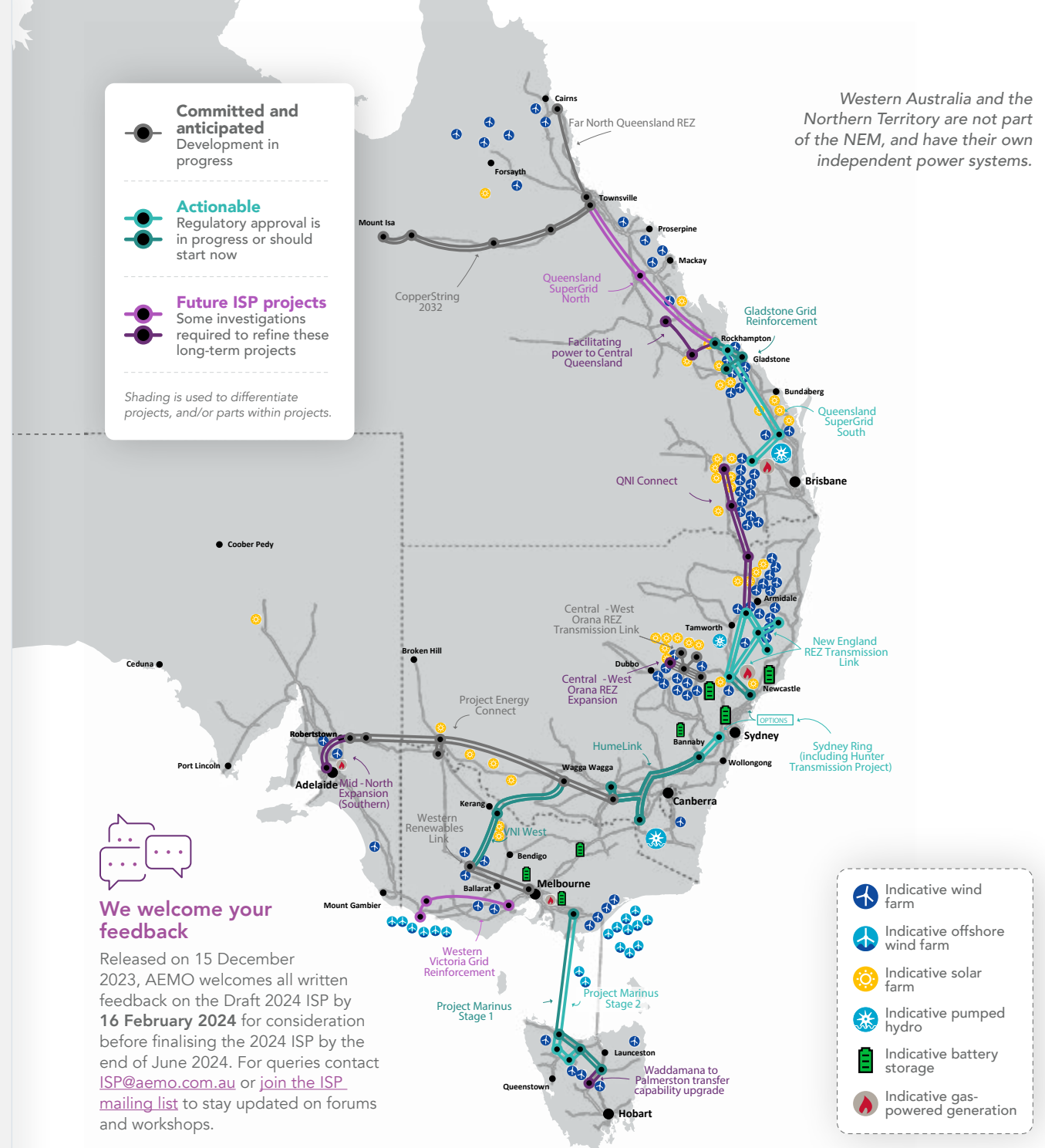
While the energy transition may present challenges for rural and regional communities asked to host new infrastructure, it also offers opportunities through economic diversification, renewable energy zone development, new manufacturing zones and jobs. Project developers will need to foster ongoing trust and acceptance through transparent and consistent engagement, address key community concerns, and ensure benefits are shared across communities.

Consumer energy resources like rooftop solar, home batteries and electric vehicles are empowering households and businesses with flexibility over their energy use. As these resources grow, more benefits may flow to consumers with greater orchestration of these resources (actively coordinating charging and discharging). This in turn may reduce the need for larger investments, making the most out of consumers' resources.

-  **Committed and anticipated**  
Development in progress
-  **Actionable**  
Regulatory approval is in progress or should start now
-  **Future ISP projects**  
Some investigations required to refine these long-term projects


*Shading is used to differentiate projects, and/or parts within projects.*

Western Australia and the Northern Territory are not part of the NEM, and have their own independent power systems.



## We welcome your feedback

Released on 15 December 2023, AEMO welcomes all written feedback on the Draft 2024 ISP by **16 February 2024** for consideration before finalising the 2024 ISP by the end of June 2024. For queries contact [ISP@aemo.com.au](mailto:ISP@aemo.com.au) or [join the ISP mailing list](#) to stay updated on forums and workshops.

-  Indicative wind farm
-  Indicative offshore wind farm
-  Indicative solar farm
-  Indicative pumped hydro
-  Indicative battery storage
-  Indicative gas-powered generation