

# Changing Energy Market

Australia's energy market is changing.

Renewable sources of energy are being harnessed to meet electricity demand and reduce carbon emissions to mitigate the impacts of climate change.

The Australian Government has a national target of 82% electricity in the NEM from renewable sources by 2030 and has legislated national emissions reduction targets of 43% by 2030 (compared to 2005 levels) and net zero by 2050 in the *Climate Change Act 2022*.

Whole-of-system planning for the National Electricity Market (NEM) is managed by the Australian Energy Market Operator (AEMO) and outlined in its Integrated System Plan (ISP), which is updated every two years.

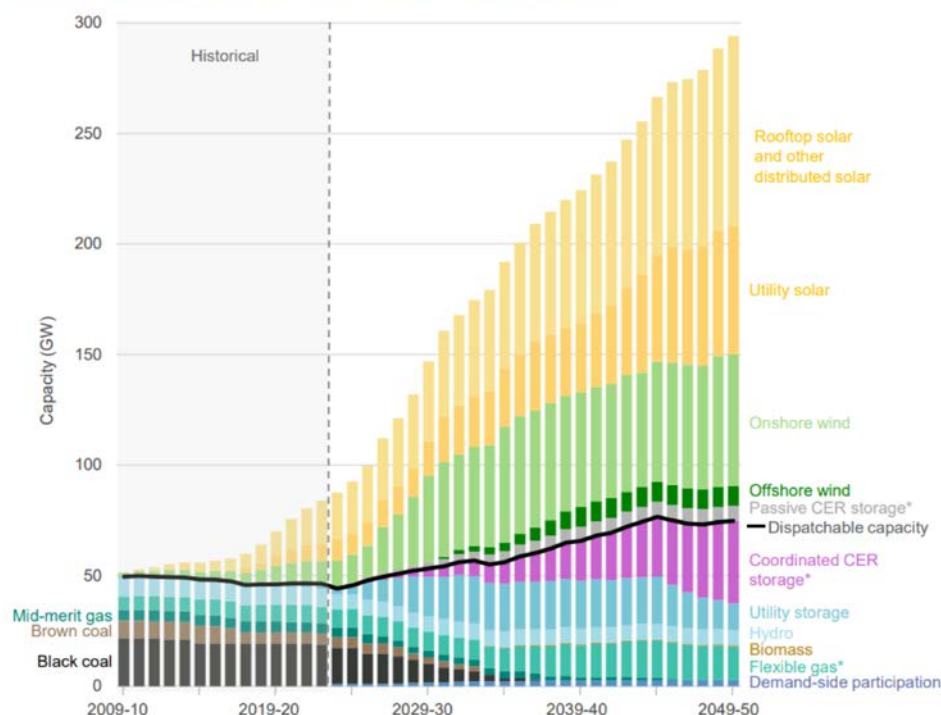
The ISP's objective is to: *maximise value to end consumers by designing the lowest cost, secure and reliable energy system capable of meeting any emissions trajectory determined by policy makers at an acceptable level of risk.*

The 2024 ISP considered the most likely scenario for the NEM is a 'Step-change' scenario, which forecasts that:

- Coal generation will be retired by 2038.
- Electricity consumption from the grid will nearly double by 2050.
- Australia will require 127 GW of grid-scale variable renewable energy (a six-fold increase, ~ 6 GW more each year) and 49 GW of energy storage capacity by 2050.

Currently 40% of Australia's and 36% of NSW's electricity generation comes from renewable sources (CEC 2025).

**Figure 2 Capacity, NEM (GW, 2009-10 to 2049-50, Step Change)**



Notes: "Flexible gas" includes gas-powered generation and potential hydrogen capacity.  
 "CER storage" means consumer energy resources such as batteries and electric vehicles.  
 Projections for "Rooftop solar and other distributed solar" and "CER storage" are forecast based on unit costs, consumer trends and assumptions about payments received to participate in the electricity market.

Source: AEMO, 2024 Integrated System Plan

Since 2017, 223 renewable generation and storage projects have been commissioned, worth \$33.5 billion in capital investment.

The *'Billions in the Bush'* report (Clean Energy Council, Farmers for Climate Action) forecasts that by 2050 landholders could receive up to \$9.7 billion in payments and community contributions are likely to be ~\$2 billion.

The *'Emissions reductions delivered by renewable energy, 2015-2025'* report (Clean Energy Council, Green Energy Markets), shows that 40 gigawatts of large-scale renewables have been installed since 2015, avoiding 200 million tonnes of CO<sub>2</sub> and lowering Australia's emissions by 30%.

*'The Impact of a Delayed Transition on Electricity Bills'* report (Jacobs) shows renewables are the cheapest way to lower energy bills, and that power bills could increase by 30% for households and 41% for small businesses by 2030, if the rollout of renewable energy is stalled.

## Information about renewable energy

Energy Fact Check is a website to help answer questions about the energy transition, and provides information on the energy system, electricity costs, renewable energy and storage.

Visit [energyfactcheck.com.au](https://energyfactcheck.com.au) or scan QR code below.

Scan the QR code to visit the Energy Fact Check website



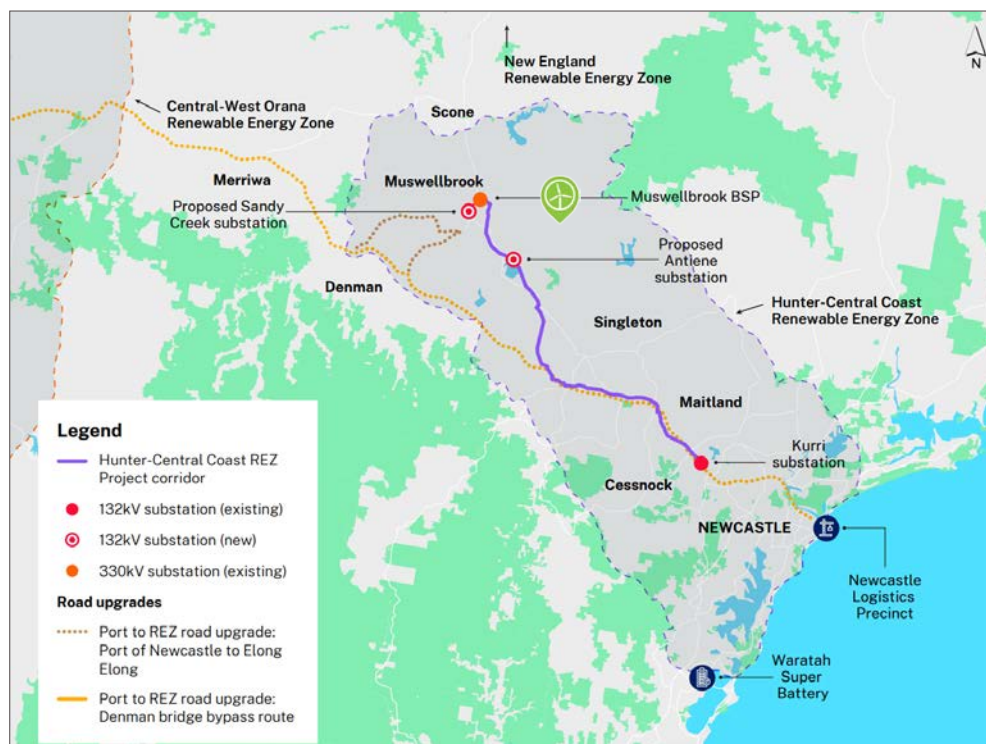
New South Wales (NSW) was one of the first Australian jurisdictions to commit to net zero emissions by 2050. The *Climate Change (Net Zero Future) Act 2023* commits to emissions reduction targets for NSW of 50% reduction (compared to 2005 levels) by 2030, 70% reduction by 2035 and net zero by 2050.

The NSW Government's plans to transition the state's electricity network are outlined in its *Net Zero Plan Stage 1: 2020–2030* and the *NSW Electricity Infrastructure Roadmap*. The NSW Government expects its plans to attract more than \$32 billion in private sector investment and support more than 9,000 jobs over the next 10 years, mostly in regional parts of the State.

The Roadmap involves development of renewable energy zones (REZ), areas that will help to deliver energy bill savings from reduced wholesale electricity costs, reduce carbon emissions, provide reliable clean energy supply, and enable strategic planning and best practice benefit sharing. To date five REZ areas have been identified. The Bowmans Creek Wind Farm site is located within the Hunter-Central Coast REZ, which was formally declared in December 2022.

The Hunter and Central Coast regions have unique features which make them ideal for a REZ, including excellent renewable energy resources, electricity network infrastructure, port and transport infrastructure and a skilled workforce. The Hunter-Central Coast REZ will ensure the region has a key role in a renewable energy future, powering existing industries and supporting economic growth.

The modernisation of the Hunter-Central Coast electricity network will assist industries to decarbonise and access cleaner, cheaper and more reliable renewable energy by connecting new renewable energy and storage projects. The initial intended network capacity for network infrastructure in the Hunter-Central Coast REZ is 1 GW. EnergyCo's proposed Hunter Transmission Project would deliver up to 8 GW of additional transfer capacity from inland REZs to support the decarbonisation of existing industries and the growth of emerging technologies.



Scan QR codes below for more information

Australian Energy Market Operator's 2024 Integrated System Plan (web page)



NSW Renewable Energy Planning Network, NSW Government (web page)



NSW Government, Net Zero Plan: 2022 Implementation Update (PDF)



Hunter-Central Coast Renewable Energy Zone.  
Source: NSW Government EnergyCo  
[www.energyco.nsw.gov.au/hcc-rez](http://www.energyco.nsw.gov.au/hcc-rez)

## Bowmans Creek Wind Farm

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