

# Changing Energy Market

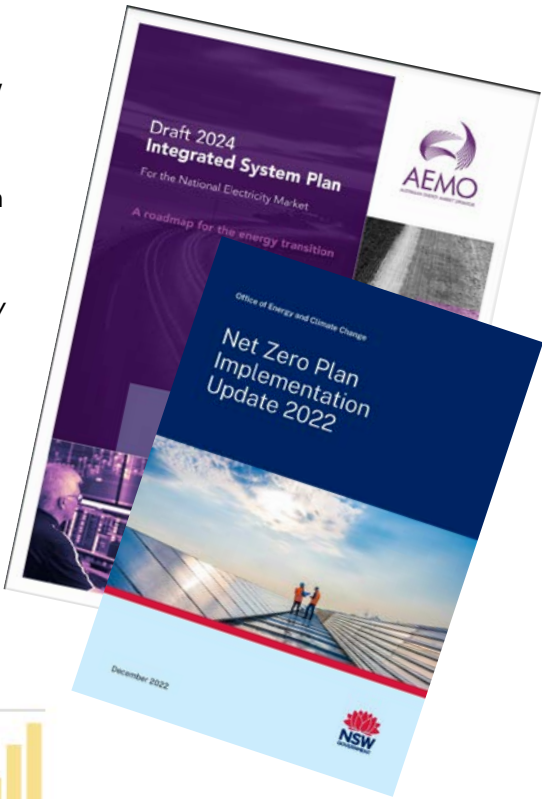
Australia's energy market is in transition.

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

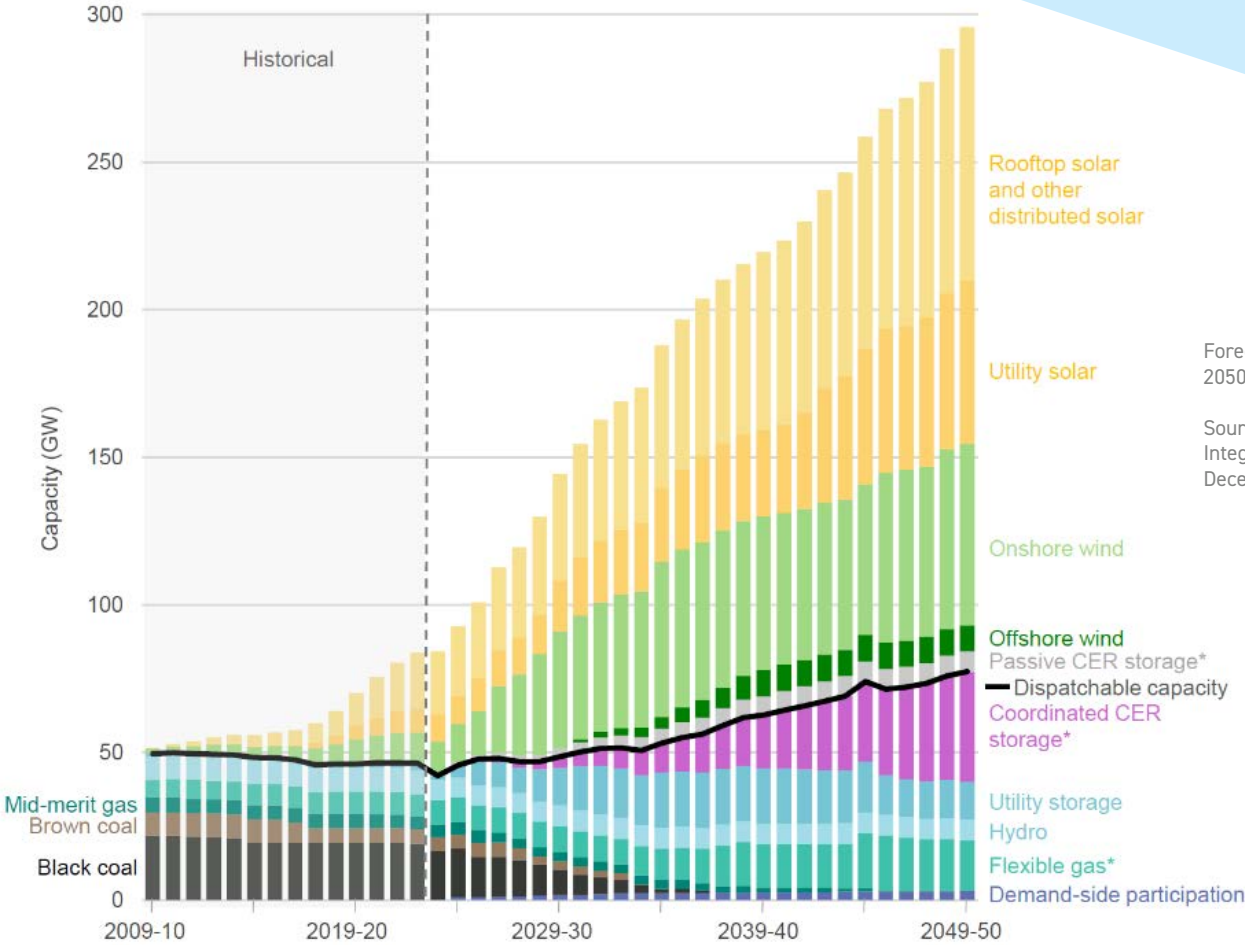
Whole-of-system planning for the National Electricity Market (NEM) is managed by the Australian Energy Market Operator (AEMO) and outlined in its Integrated System Plan (ISP), which is updated every two years.

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.*

In December 2023 AEMO published its Draft 2024 ISP. It reports that under the most likely *Step Change* scenario coal fired generation is predicted to exit the NEM completely by 2038 and 6 gigawatts (GW) of new renewable energy generation will be required every year over the next decade. It predicts that by 2030 Australia will require triple the amount of grid-scale variable renewable energy generation (wind and solar) to 57 GW, and a six-fold increase in battery storage to 19 GW.



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



Forecast NEM capacity to 2050, *Step Change* scenario.

Source: AEMO, Draft 2024 Integrated System Plan, December 2023

Notes: Flexible gas includes gas-powered generation, and potential hydrogen and biomass capacity. "CER storage" are consumer energy resources such as batteries and electric vehicles.

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

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.

In 2022, 36% of Australia's and 30.7% of New South Wales' electricity was generated from renewable sources (Source: Clean Energy Council, *Clean Energy Australia Report 2023*). Achieving the renewable and emissions reduction targets will require harnessing the State's renewable energy potential at speed and scale.

The NSW Government's plans to transition the state's electricity network is outlined in its Net Zero Plan Stage 1: 2020–2030 and the NSW Electricity Infrastructure Roadmap, which aims to support the private sector to deliver 12 gigawatts (GW) of new renewable electricity generation and 2 GW of long-duration storage by 2030.

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.

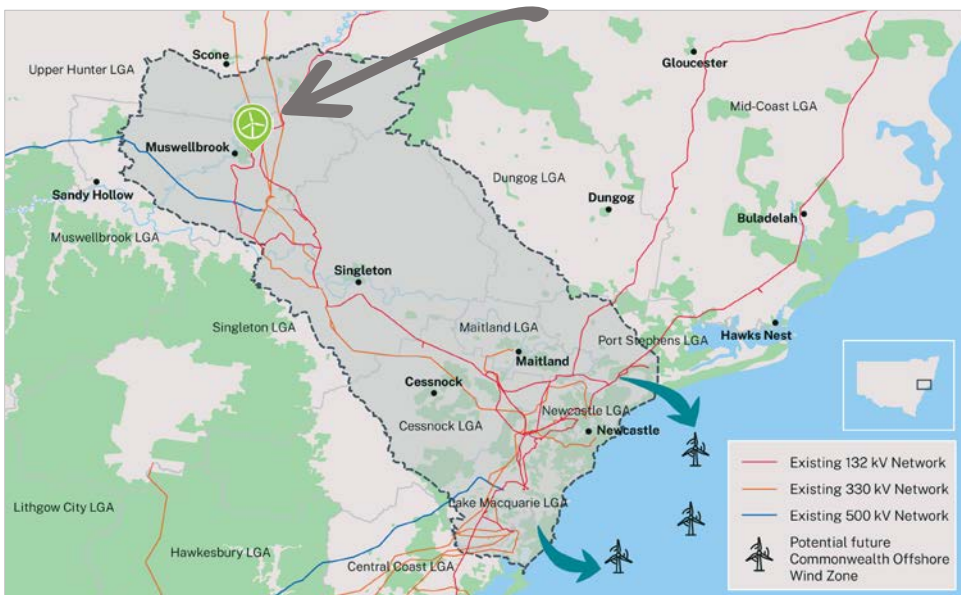
To date five REZ areas have been identified. The Bowmans Creek Wind Farm site is located within the Hunter-Central Coast REZ, which was formally declared in December 2022.

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 system 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 gigawatt. The capacity of the REZ is likely to increase over time with the retirement of coal-fired power stations, re-purposing of mining land and the growth of offshore wind.

*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)



Scan QR codes below for more information

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



Fact Sheet - National Electricity Market, AEMO (PDF)



NSW Climate and Energy Action, Renewable Energy in NSW, NSW Government (web page)



Clean Energy Australia Report 2023, Clean Energy Council (PDF)



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



## More information

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