

NSW Renewable Energy Zones Offer Smart Strategy to Phase Off Coal

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Renewable Energy Zones are designated areas with high concentrations of renewable energy resources, designed to coordinate multiple generators, energy storage systems, and transmission infrastructure. In NSW, REZs enable the state to retire coal-fired power plants while maintaining reliable electricity supply. The Central-West Orana REZ, declared in November 2021, targets 3 GW of clean energy delivery by the mid-2020s. The New England REZ, the largest in the roadmap, is expected to generate 8 GW and power 3.5 million homes. REZs address both cost and reliability challenges across the National Electricity Market, making them critical infrastructure for phasing off coal while supporting regional economic development through construction and operational jobs.

Publication context: This article reflects its publication date. Market prices, program rules, reporting duties and deadlines may have changed. Confirm current official guidance before making a decision.

The Australian government has finally committed to net-zero emissions by 2050. While this announcement is exciting, it will require considerable involvement from policy, finance, and engineering sectors to strategically coordinate the transition to a cleaner energy grid.

And it will take input from all states to achieve this 2050 target.

In New South Wales (NSW), there is extensive planning and development of renewable energy zones (REZs) - areas with high concentrations of clean, renewable energy. Developing these REZs with renewable energy generators, energy storage, and transmission capacity will provide NSW with the power to harness clean energy, reduce electric costs, and retire coal-fired power plants.

The Central-West Orana REZ - The Pilot Program

Formally declared on 5 November 2021, The Central-West Orana region was selected to be the first developed NSW REZ because of its proximity to the existent transmission network and for the area's abundance of renewable energy resources. This pilot REZ is set to begin construction at the end of 2022 and is slated to deliver 3 GW of clean , renewable energy to the state's electricity grid by mid-2020s.

The state's June 2020 Request of Interest (ROI) demonstrated incredible enthusiasm for the project, garnering 113 registrations of interest whose combined generation would contribute 27 GW of energy generation - nine times the amount designated for this REZ. This incredible interest incentivised the state to consider larger-scale projects for upcoming REZ in the state's Energy Infrastructure Roadmap.

The overflow of interest will allow NSW to be selective with its development, enabling the state to move forward with developers and plans that bring the greatest overall benefit to the region. It's estimated that during peak development, the REZ will support 3,900 construction jobs - keeping those jobs local will boost the regional economy. In addition to job creation, a portion of the access fees paid by

generating stations to guarantee connectivity to the transmission network will go directly to the local region and is estimated to bring \$265 million to host communities by 2042.

The Australian Energy Market Operator (AEMO) has deemed the Central-West Orana REZ an 'actionable' transmission project, which means it is critical to address cost, security, and reliability issues across the entire National Electricity Market. With solar and wind being the most economic forms of power generation across Australia, the Central-West Orana REZ offers significant opportunity for the state to wean off uncompetitive coal-fired plants and drive down utility costs.

New England REZ - The Largest REZ in NSW

With momentum spurring from the outstanding interest for the Central-West Orana REZ, NSW increased the scope for its New England REZ to generate an expected 8 GW of energy, making it the largest REZ in the NSW roadmap.

Given the rich potential for pumped-hydro projects in the New England area, this REZ will likely incorporate pumped-hydro technology into its infrastructure buildout, although the project is not yet to the stage of detailing development plans.

The size and scope of the New England REZ are expected to support 830 operational jobs and 1,250 construction jobs each year. When completed, it should sufficiently power 3.5 million homes and enhance the area's energy resiliency by connecting to existing high-voltage power lines that connect NSW and Queensland and allow NSW to export surplus energy to the neighbouring state.

Other REZs in the NSW Roadmap

The Central-West Orana REZ and New England REZ combined make NSW the leading state in Australia for investment in renewable energy. On top of these two REZ locations, NSW also includes three other REZ sites in its Energy Infrastructure Roadmap:

South-West REZ - Chosen for large availability of solar resources and proximity to transmission project EnergyConnect, this REZ is currently in the Request for Interest phase, which will be open until the end of November.

Hunter-Central Coast & Illawarra REZs - These are the final two proposed REZs in the NSW Energy Infrastructure Roadmap. As with the other three REZ sites, these will take a number of years to plan and develop, and this planning phase will heavily involve communication and feedback from stakeholders to assure development coincides with regional economic activity and local community values.

Electricity in NSW is currently powered primarily by coal. That is set to change as coal-fired power plants are scheduled to retire in the upcoming decades. The first set to shut down operations is the Liddell plant in the Hunter Valley region, planned to be fully closed in 2023. Others are expected to close in following years.

This adds gravity to the situation of advancing NSW REZ development so that the state continues to have reliable energy as it phases out coal. In addition to providing energy security, REZ development can also help transition Australia towards other energy markets as global demand for its coal exports declines.

Scheme and certificate context

Before using a certificate or grant figure, confirm the current scheme method, eligible activity, effective date, evidence requirements, price date and registration or application process.

Related guidance

Certificate services

Government schemes

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What are Renewable Energy Zones (REZs) and how do they support NSW's energy transition strategy?

Renewable Energy Zones are designated areas with high concentrations of renewable energy resources, designed to coordinate multiple generators, energy storage systems, and transmission infrastructure. In NSW, REZs enable the state to retire coal-fired power plants while maintaining reliable electricity supply. The Central-West Orana REZ, declared in November 2021, targets 3 GW of clean energy delivery by the mid-2020s. The New England REZ, the largest in the roadmap, is expected to generate 8 GW and power 3.5 million homes. REZs address both cost and reliability challenges across the National Electricity Market, making them critical infrastructure for phasing off coal while supporting regional economic development through construction and operational jobs.

How can energy businesses assess investment opportunities within NSW Renewable Energy Zones?

Businesses interested in REZ participation should prepare detailed project briefs describing their generation capacity, proposed technology, connection requirements, and operational timelines. NSW's Request of Interest process (exemplified by the 113 registrations for Central-West Orana in June 2020) provides an initial screening opportunity. We can assist by conducting feasibility assessments for renewable generation projects, evaluating transmission access requirements, and developing investment cases that align with REZ development timelines. Assessment should include technical site evaluation, grid connection feasibility, and financial modeling under different energy price and policy scenarios relevant to NSW's energy infrastructure roadmap.

What are the commercial and operational implications of REZ transmission infrastructure for renewable energy projects?

REZ transmission infrastructure creates shared access arrangements where multiple generators connect to coordinated high-voltage networks. The Central-West Orana REZ includes access fees paid by generating stations, with an estimated \$265 million directed to host communities by 2042. Developers must understand transmission capacity allocation, connection timelines, and ongoing network charges when building investment cases. Grid connection becomes a project dependency rather than an isolated decision. Our energy optimization services include assessment of renewable energy and storage systems fitted within site loads, network limits, and operating needs—directly relevant to evaluating how individual projects integrate with REZ infrastructure and wholesale electricity market participation strategies.

How does the New England REZ's pumped-hydro potential affect energy project planning in the region?

The New England REZ, expected to generate 8 GW, incorporates pumped-hydro technology given the area's geological suitability for storing energy through water elevation differences. Pumped-hydro systems provide critical grid services: energy arbitrage (charging during low-demand periods, discharging during peaks), frequency support, and voltage stability. For businesses operating in the region, pumped-hydro availability affects wholesale electricity pricing patterns and demand response opportunities. Feasibility assessments for industrial or commercial projects should consider how pumped-hydro dispatch patterns influence tariff structures and peak-demand exposure. Our water and renewable energy expertise enables assessment of how pumped-hydro projects interact with operational requirements and demand management strategies across multi-site portfolios.

What role do Request of Interest processes play in REZ development, and how should businesses respond?

Requests of Interest identify generator interest and capability before formal development phases. The Central-West Orana REZ received 113 registrations proposing 27 GW—nine times the designated capacity—demonstrating significant market interest. Businesses submitting interest registrations establish early position and gain visibility into transmission planning. A comprehensive response should document technology type, proposed capacity, development timeline, operational experience, and financial backing. Our energy audit and project assessment services support businesses preparing competitive registrations by establishing realistic performance baselines, identifying site-specific constraints, and developing evidence-based capacity and timeline claims. Strong registrations demonstrate technical credibility and reduce uncertainty during subsequent development and approval stages.

How can organizations evaluate energy efficiency opportunities alongside REZ participation?

REZ participation and energy efficiency are complementary strategies. While REZs increase clean energy supply, efficiency reduces demand, lowering overall system costs and accelerating coal retirement. Organizations should prepare parallel assessments: one evaluating REZ generation investment, another identifying internal energy savings opportunities. Our six-stage delivery approach—assess, build the case, capture value, deliver, procure, and perform—applies to both pathways. An integrated energy strategy might combine renewable generation (REZ-connected or behind-the-meter solar and storage) with operational efficiency improvements in pumping, treatment, or production systems. Measurement and verification ensures that efficiency savings are verified and can support investment cases, while renewable procurement through schemes like moREnewable100 manages electricity attributes without replacing existing supply contracts.

What investment case framework should businesses use when evaluating REZ project participation?

Investment cases for REZ projects must separately state capital costs (generation equipment, grid connection infrastructure), operating assumptions (capacity factor, maintenance), revenue sources (wholesale electricity prices, any scheme support), and timing dependencies tied to REZ development phases. The Central-West Orana REZ construction beginning late 2022 with mid-2020s delivery creates specific commissioning windows. Businesses should model scenarios with and without conditional support (grants or certificates) to understand downside cases. Key comparisons include connection cost and timing assumptions, transmission access fees, and how project economics change across different electricity price forecasts. Our investment case guidance emphasizes keeping energy savings, tariff effects, certificate proceeds, and grant support as separate line items, enabling transparent sensitivity analysis and decision-making aligned with organizational risk tolerance and capital allocation frameworks.

How do NSW Energy Savings Scheme and peak-demand reduction schemes interact with REZ renewable energy procurement?

NSW offers multiple parallel incentive pathways: the Energy Savings Scheme (ESS) for demand reduction, the Peak Demand Reduction Scheme (PDRS) for battery storage and demand management during peak periods, and renewable energy schemes (Renewable Energy Target with LGCs, REGOs). These are distinct programs with different eligibility, timing, and financial outcomes. A comprehensive energy strategy might include ESS-eligible efficiency measures (reducing baseline demand), PDRS battery storage (managing peak periods), and renewable generation participation (either REZ-connected or behind-the-meter). Eligibility depends on equipment type, installation date, measurement method, and scheme rules current at implementation. Our services span funding-pathway assessment, measurement and verification, and certificate support across these schemes, enabling businesses to identify which combination of incentives applies to their specific

project scope and timeline.

What measurement and verification requirements should REZ developers consider for operational performance tracking?

REZ generators face multiple measurement requirements: grid connection protocols (AEMO standards), wholesale market settlement metering, and potentially environmental certificate creation (if pursuing LGCs or REGOs). Measurement and verification establishes baseline performance, documents actual output against designed capacity, and provides evidence for optimization. For multi-site operators, coordinated monitoring across generation, storage, and demand management (SCADA-enabled load optimization) enables data-driven operation and market participation. Our measurement and verification services include project-boundary selection, baseline modeling, savings calculation, and IPMVP-standard approaches applicable to both efficiency and generation projects. Establishing metering and monitoring plans before commissioning ensures that operational data informs financial performance tracking, enables rapid identification of underperforming assets, and supports transition planning toward decarbonization targets while maximizing revenue from energy markets and environmental schemes.