

# MBB Group



**How Renewable  
Energy Zones will  
keep the lights on  
in Australia.**



## Shifting public sentiment on climate action, along with aging power station infrastructure are driving the transition to renewable energy sources at an unprecedented rate.

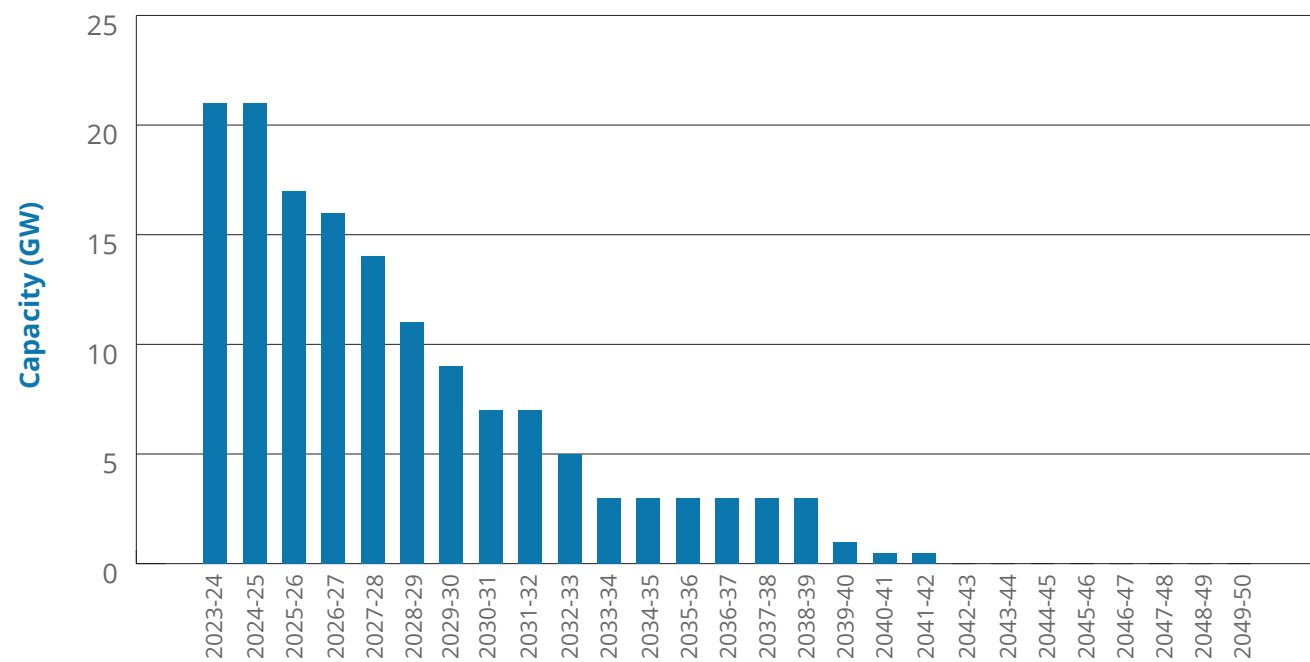
For the last 50 years, Australia's east coast has been powered by a handful of coal and gas fired power stations. The Australian Energy Market Operator (AEMO) has projected, in an optimal future scenario, that up to 60% of electricity generated by coal-fired plants will be retired and by 2043

These changes are a result of both corporate and public sentiment towards carbon intensive energy generation and volatile consumer energy prices due to the unreliability of the aging coal and gas fired generators. All this leads to the fact that the transition to renewable energy will need to happen at an unprecedented speed and scale if we want to keep the lights on in Australian homes.

One of the biggest challenges Australia faces in supplying consumers with reliable clean energy from sources such as wind and solar farms, is the fact that most of the sunniest and windiest locations in Australia are not located near existing network transmission infrastructure. Connecting the grid to these new renewable energy sources to the grid is, simply put, a momentous infrastructure challenge. An estimated 10,000km of new high voltage transmission lines will be required by 2050 <sup>2</sup>.

Across Australia, the states are tackling the energy transition at all fronts. The Commonwealth's *Rewiring the Nation* initiative, NSW Government's *Electricity Infrastructure investment Act*<sup>3</sup> and *Roadmap*<sup>4</sup>, Victoria's *Renewable Energy Zones Development Plan*, and most recently Queensland's *Energy and Jobs Plan* put forward critical investment goals for the network. The above states intend to optimise investment and advance deployment of grid-scale renewable energy through the development of Renewable Energy Zones (REZs). In NSW the development of these projects will get a kick start from the recently announced \$1.2 billion Transmission Acceleration Facility.

Table 1: Forecast coal requirements in NSW, QLD and VIC in a step change scenario <sup>5</sup>.



### NSW, QLD, VIC

<sup>1</sup> AEMO, ISP Infographic, <https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-isp-infographic.pdf?la=en>

<sup>2</sup> AEMO, 2022 Integrated System Plan, <https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-integrated-system-plan-isp.pdf?la=en>.

<sup>3</sup> Electricity Infrastructure Investment Act 2020 No 44 (NSW), <https://legislation.nsw.gov.au/view/html/inforce/current/act-2020-044>

<sup>4</sup> NSW DPIE, NSW Electricity Infrastructure Roadmap. Available at: <https://www.energy.nsw.gov.au/sites/default/files/2022-08/NSW%20Electricity%20Infrastructure%20Roadmap%20-%20Detailed%20Report.pdf>

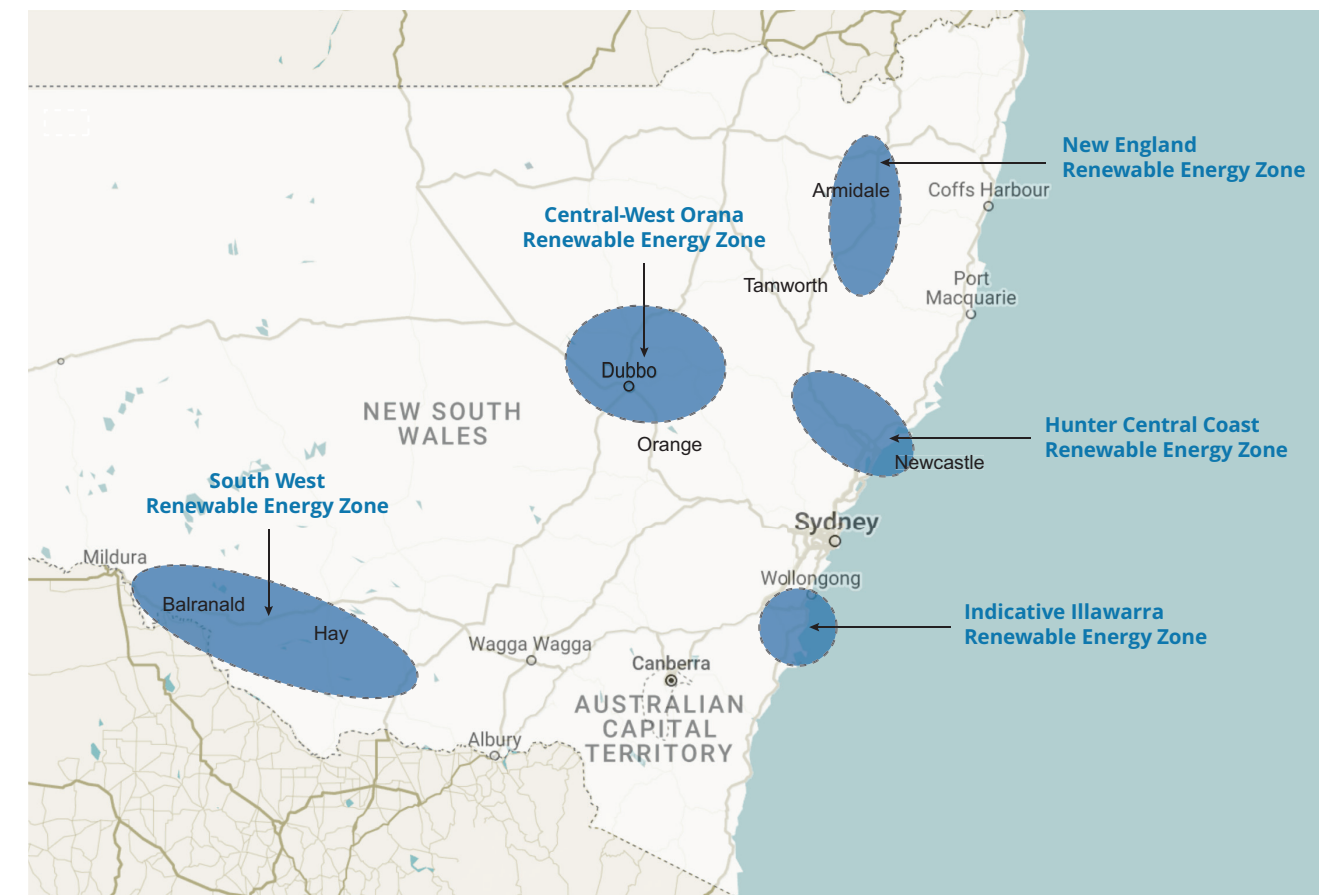
<sup>5</sup> AEMO, 2022 ISP, Figure 20.

NSW, VIC, QLD and TAS have identified over 15 REZs and a number of them to be developed and delivered over the next couple decades. The below figure provides the current state of REZs in NSW. There are four declared REZs: Central West Orana (CWO), New England (NE), South West (SW) and Hunter Central Coast (HCC) and one in planning: Illawarra (ILW) <sup>6</sup>.

<sup>6</sup> EnergyCo, Draft Network Infrastructure Strategy, <https://www.energyco.nsw.gov.au/sites/default/files/2022-09/draft-networkinfrastructure-strategy.pdf>

<sup>7</sup> EnergyCo, 'Renewable Energy Zone Locations', <https://www.energyco.nsw.gov.au/renewable-energy-zones/renewable-energy-zone-locations>

Figure 1: NSW renewable energy zones <sup>7</sup>.

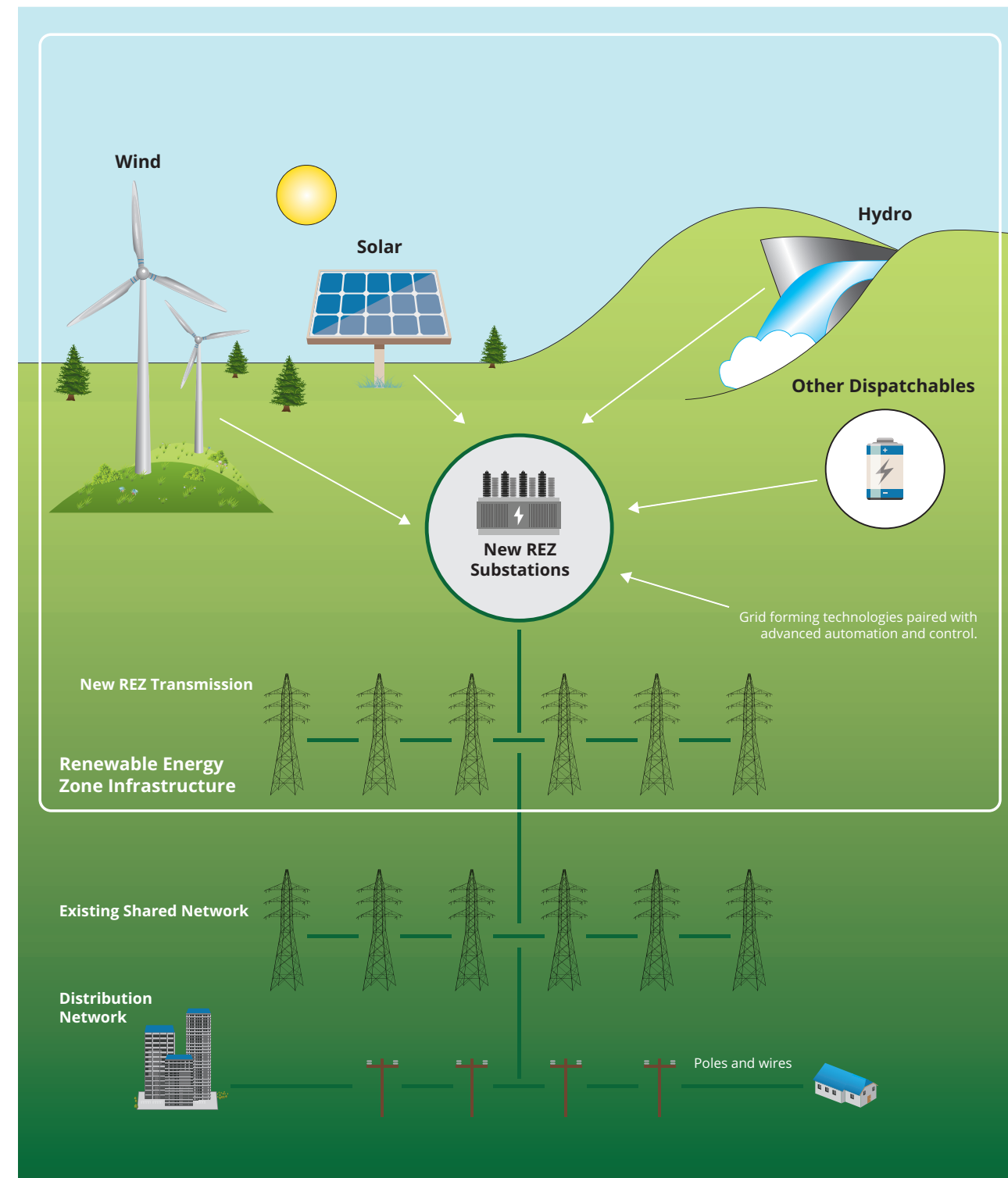




**Renewable Energy Zones (REZs) are the modern day equivalent of power stations and are critical to the success of Australia's energy transition.**

REZs connect and host multiple solar, wind and storage projects with new purpose-build network infrastructure to act as a one-stop shop for generating, storing and delivering renewable energy to businesses and households. By locating these new assets within a specific geographical area, REZs capitalise on economies of scale and coordinated investment into the network to deliver cheap, reliable and clean electricity.

Figure 2: Example Renewable Energy Zone Layout



Renewable Energy Zones are expected to deliver multiple benefits for consumers and the NEM including:

- more reliable and cheaper energy for consumers;
- improving generator's opportunities to connect to the network in a coordinated manner that will reduce connection delays and network congestion risks;
- incentivising private sector investment into network infrastructure and renewable generation simultaneously – solving the historic chicken and egg issue with transmission;
- significant opportunities for social license and community benefits for regional NSW; and
- creating construction and ongoing jobs, mostly in regional NSW.

Key aspects of the REZs under the NSW government framework that differentiate them from other transmission projects are:

- billions of dollars' worth of transmission projects to be delivered as PPP-style regulation concessions that have the initial capital requirement funded through private finance;
- a coordinated, more streamlined connection process and increased certainty of curtailment risk for generators;
- a deep market with significant interest in developing the projects, however with capacity constraints to deliver new projects within context of Australia's infrastructure boom;
- coordinated efforts to support communities who will host the new infrastructure, including strategic benefits payments for affected landowners; and
- assessment by the Consumer Trustee and AER to determine a prudent, efficient and reasonable cost outcome and project scope.





**Energy transformation comes with great challenges that needs to be resolved through collaborative effort.**

Energy transformation at a scale this great, presents unprecedented challenges for Australia and its people. We see the following challenges to be addressed to enable the unlocking of REZs and provide Australians access to cheap and reliable clean energy. MBB is closely working with government and private sector to overcome these challenges.

	<p><b>1. LEGACY REGULATORY INTERFACES</b></p> <p>The National Electricity Rules have been a tried and proven regulatory framework for a transmission network based on large-scale centralised sources of generation such as coal-fired power stations, however the framework may not be fit-for-purpose for the connection of decentralized generation and the scale of investment in transmission that is required.</p> <p>A balancing act will need to be made between the provisions of the NER relating to connection of network assets and compliance with generator performance standards, and the journey for the REZ and its generators to meet those standards.</p>
	<p><b>2. SOCIAL LICENCE TO OPERATE</b></p> <p>The management of impacts to the community and sharing of benefits is becoming a critical success factor for infrastructure projects in all sectors. The unprecedented level of development and acquisition of land in rural regions for solar, wind, hydro and transmission projects will inevitably create tension within communities, however there are great opportunities to leave a positive legacy.</p>
	<p><b>3. CONSTRUCTION MARKET CONSTRAINTS</b></p> <p>There will be a strong market of potential REZ developers who will want to bid, however we anticipate there will be constraints in the infrastructure construction contractor market given the large number of high value infrastructure projects currently in delivery.</p>
	<p><b>4. BANKABILITY OF REZ PROJECTS</b></p> <p>Financiers and investors will expect that long-term service charges are underpinned by a stable cashflow stream that is adequate to repay capital and return on capital.</p>
	<p><b>5. RISK ALLOCATION</b></p> <p>The allocation of development risks continues to be one of the most challenging aspects of infrastructure delivery. Allocating such risks to the private sector may give rise to excessive risk premiums that are not efficient or value for money for electricity consumers.</p> <p>Equally, allocating them to Government limits the incentive for the private sector to adopt innovative solutions to pricing and management of those risks.</p>
	<p><b>6. CONNECTION AND COMMISSIONING OF GENERATORS</b></p> <p>The key objective of the REZ is to facilitate renewable generation and storage projects. It will be important to incentivise the REZ operator to connect generators and storage as soon as possible .</p>
	<p><b>7. INTERFACES AND THE ROLE OF INCUMBENT TRANSMISSION NETWORK SERVICE PROVIDERS</b></p> <p>REZ projects will have significant interfaces with incumbent TNSPs. The REZ developer will connect to the existing transmission network, which will require augmentation by the relevant TNSP to enable the connection. In addition there are a number of operational interfaces that will need to be managed to ensure that the wider transmission network remains stable with the addition of the new infrastructure. Keeping strong relationships with the TNSP and other key stakeholders will be critical to the success of the REZ.</p>
	<p><b>8. STAGING AND AUGMENTATION</b></p> <p>REZ projects may be looking at staging the development (both the initial construction and further augmentations to capacity and geographic area). Consideration will need to be given to the ability of the developer to raise further financing in future, and how augmentations will be evaluated by the regulator to determine prudent and efficient cost.</p>
	<p><b>9. COORDINATED GENERATOR CONNECTION</b></p> <p>The REZs will require a new model of connecting generators to the network to take on the volume of new capacity. States are exploring and developing a more cooperative and streamlined connection process that is fit-for-purpose for connecting renewable energy in bulk. The key to driving this process will be collaboration and transparency between generators and the REZ operator.</p>

**The unprecedented level of investment required for the clean energy transition presents great opportunities.**

The Australian government are aware of the risks involved in moving towards renewable energy sources. It will require an unprecedented effort from all sides of the energy market including the government, the construction industry, private investors, network operators, generators and regulators. All this must come together in a coordinated and collaborative manner to ensure a cohesive strategy, robust regulatory framework, and a holistic delivery and maintenance approach.

MBB is proud to be at the forefront of this transition, working hand in hand with the government and developers to help provide cheap, clean and reliable energy for Australian consumers. We are fortunate to have partnered with governments, TNSPs and other regulatory agencies to offer strategic, commercial, technical and project management advice for projects such as Central West Orana REZ, New England REZ, Project EnergyConnect, Marinus Link, Tasmanian North West Transmission Developments and VNI West.





For more information on Renewable Energy Zones, including how MBB could assist you in renewable opportunities, please reach out to our team at MBB Group.



**Michael Posener**  
Director  
[michael.posener@mbbgroup.com.au](mailto:michael.posener@mbbgroup.com.au)



**Nic Candotti**  
Director  
[nic.candotti@mbbgroup.com.au](mailto:nic.candotti@mbbgroup.com.au)



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**MBB Group Pty Ltd** | ABN 25 600 765 106

✉ [enquiries@mbbgroup.com.au](mailto:enquiries@mbbgroup.com.au)

☎ 1300 059 660

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**Sydney** Level 4, 73 York Street,  
Sydney, NSW 2000

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**Melbourne** Level 19, 80 Collins Street (North  
Tower), Melbourne, VIC 3000

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**Brisbane** Level 38, 71 Eagle Street, Brisbane,  
QLD 4000

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**Adelaide** Level 21, 25 Grenfell St,  
Adelaide, SA 50

[www.mbbgroup.com.au](http://www.mbbgroup.com.au)

[www.linkedin.com/company/mbb-group-pty](https://www.linkedin.com/company/mbb-group-pty)

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