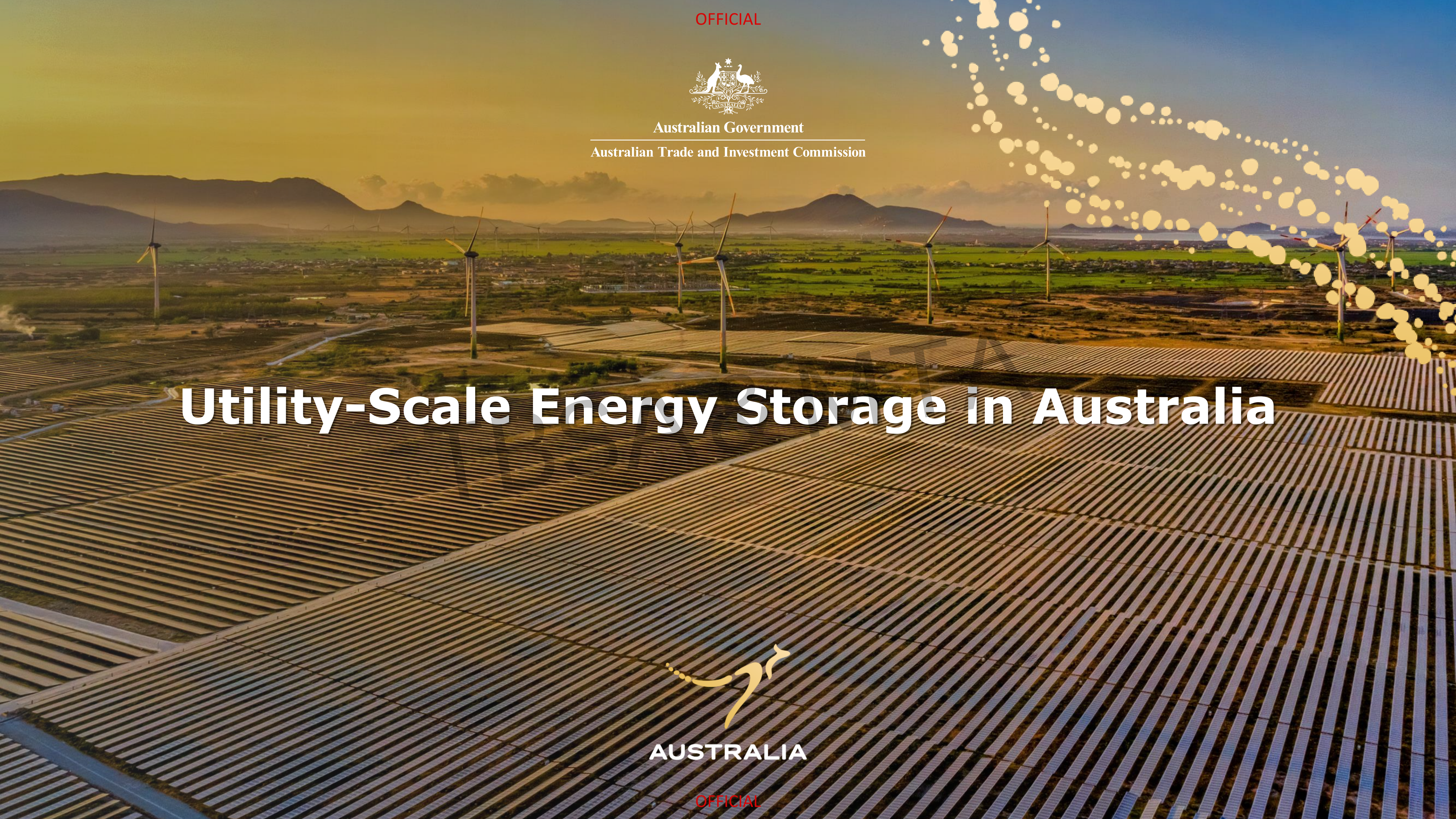

Australian Government
Australian Trade and Investment Commission

Utility-Scale Energy Storage in Australia

AUSTRALIA

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Australia’s
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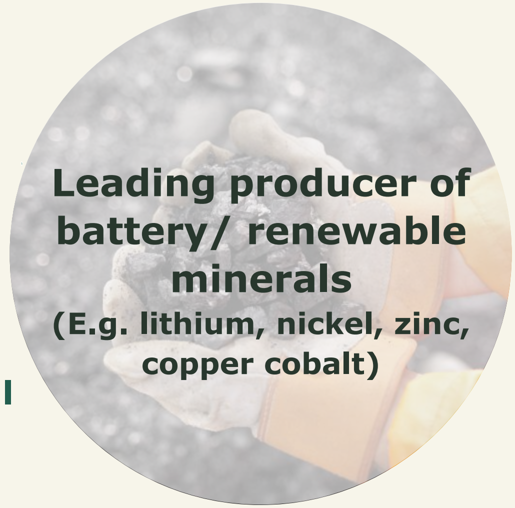
in Context



Australia Overview

Australia’s energy transition

Australia’s energy transition is **real and accelerating**

Underpinned by a country-wide plan to achieve **net zero emission by 2050 and 82% renewable energy by 2030**

Achieving our transition will require large volumes of **renewables and energy storage**

Preparing for Net Zero

Energy storage powering Australia's renewables credentials

4th-largest utility-scale storage market[1]

With nearly 9 GW / 20 GWh utility battery capacity under construction or in operation[1]

+37,000 km^2 for future wind generation[7]

Comparable wind resources to North Sea between Britain and Europe

5th-most attractive country for renewable energy investment[2]

An additional 9.3 terawatt-hours of solar and wind energy in 2023[3]

Largest producer of lithium in the world

Largest reserves of nickel, zinc and iron ore
2nd largest reserves of lithium, copper, cobalt and tantalum[11]

6th-largest producer of solar energy[5]

Sufficient to power 7 million homes[6]
1st in per capita terms[5]

A$300 billion in potential hydrogen investments[9]

Over 100 major hydrogen projects planned[11]

Sources: 1. Rystad, 2024. 2. EY, 2024, Renewable Energy Country Attractiveness Index 2023. 3. Department of Industry, Science, Energy and Resources (2024) Australian Energy Statistics. 4. Department of Climate Change, Energy, the Environment and Water, 2022, Government backs next-generation renewable technology; Austrade. 5. The World Bank, 2024, The World Bank open data; U.S. Energy Information Administration, 2024, Electricity data; Worldometer, 2024, Population by country; all accessed on 19 April 2024, Austrade. 6. Frontier Economics, 2020, Residential energy consumption benchmarks. 7. Department of Climate Change, Energy, the Environment and Water, 2024, Australia's offshore wind areas. 8. The World Bank, 2023, Global photovoltaic power potential by country. 9. Department of Climate Change, Energy, the Environment and Water, 2024, Australia's National Hydrogen Strategy. 10. Geoscience Australia, 2022, Australian Hydrogen projects dataset, September 2022. 11. Geoscience Australia, 2024, Australia's Identified Mineral Resources; US Department of the Interior, 2024, Mineral Commodity Summaries.

Decarbonising Australia's Grid

A$120b

capital required to decarbonise the Australian National Electricity Market

Clean Energy Financial Corporation (CEFC), Annual Report 2022-23

40 %

total generation in NEM came from renewables in 2023

82 %

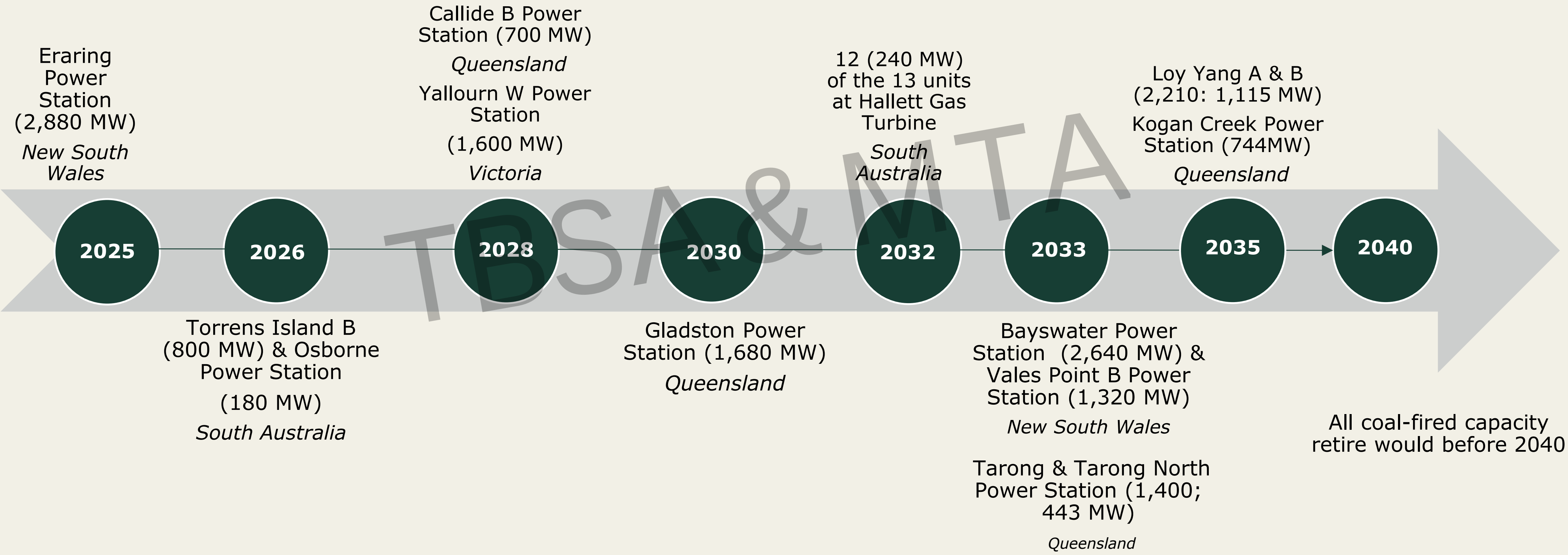
renewable energy generation by 2030

Australia's energy transition to 2050

- 10,000 kms of new **transmission** needed by 2050
- Distributed **solar PV** will increase by 4-fold to reach **86 GW** by 2050.
- **Grid-scale wind and solar** to increase **6-fold** to **126 GW** by 2050
- **Firming storage capacity** from sources other than coal to **quadruple** **64 GW** by 2050
- **Coal** generation to be **withdrawn** **100%** by 2038.

Coal-Fired Power Station Closures

Fuelling an urgent need for firmed renewables to meet Australia’s energy demand



The Queensland Government has indicated that the coal-fired generators Stanwell (1,460 MW), Tarong (1,400 MW), and Tarong North (450 MW) could also be retired by 2033 subject to successful completion of the Queensland Energy and Jobs Plan.

** Exact dates subject to change.*

Source: AEMO, Electricity Statement of Opportunities, August 2023

Australia Power Grid Map

National Electricity Market (NEM)

- Links QLD, NSW, ACT, VIC, SA and TAS.
- Delivers 80% of all electricity consumption in Australia.

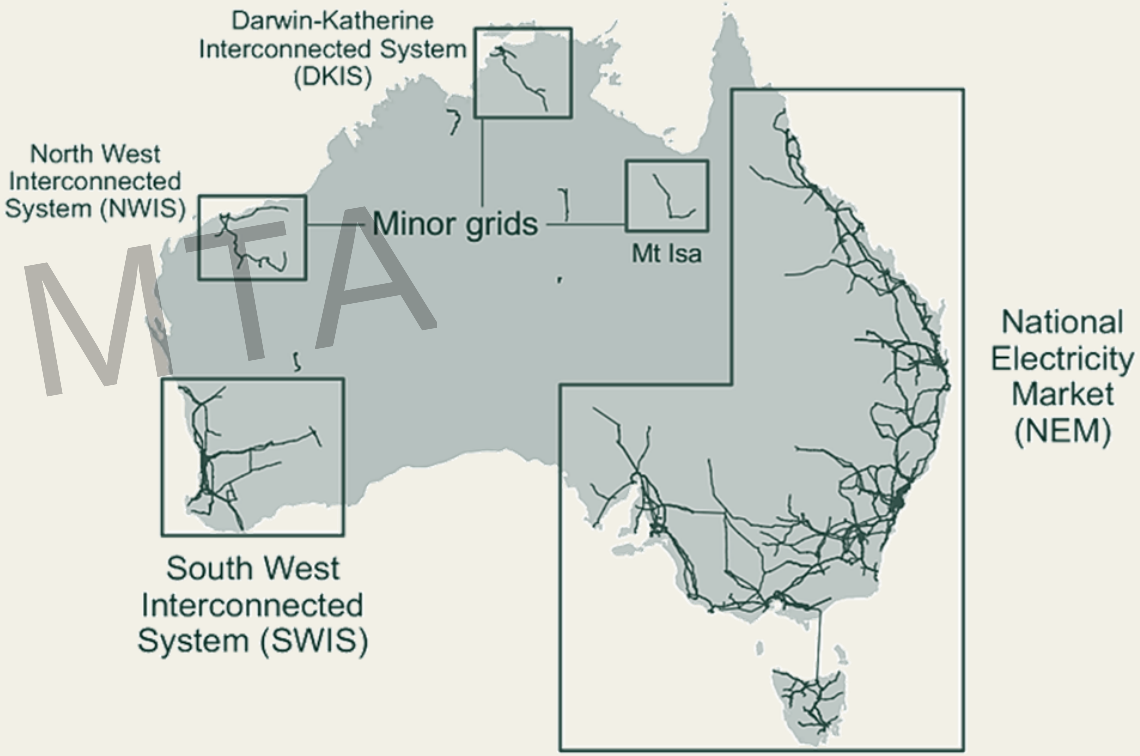
Western Australia

- **SWIS Wholesale Electricity Market (WEM):** Operated by AEMO, ensuring secure electricity supply in the South West Interconnected System (SWIS) with plans for additional 4,000km transmission lines.

- **North West Interconnected System (NWIS):** with additional 3,000km transmission lines needed in the Pilbara.

Northern Territory

- **Networks:** Darwin-Katherine, Tennant Creek, Alice Springs
- **SunCable/Australia-ASEAN Power Link:** 800km above ground to Darwin, 4,500km subsea cable to Singapore.



Source: Grattan analysis of Geoscience Australia (2021)

Energy Storage in Australia

Energy Storage Opportunities in Australia

- **Australia is the 4th largest utility-scale battery** market globally, behind only China, USA, and UK

Australia's power market is one of the world's most volatile which means that grid scale store investment makes commercial sense by trading energy alone

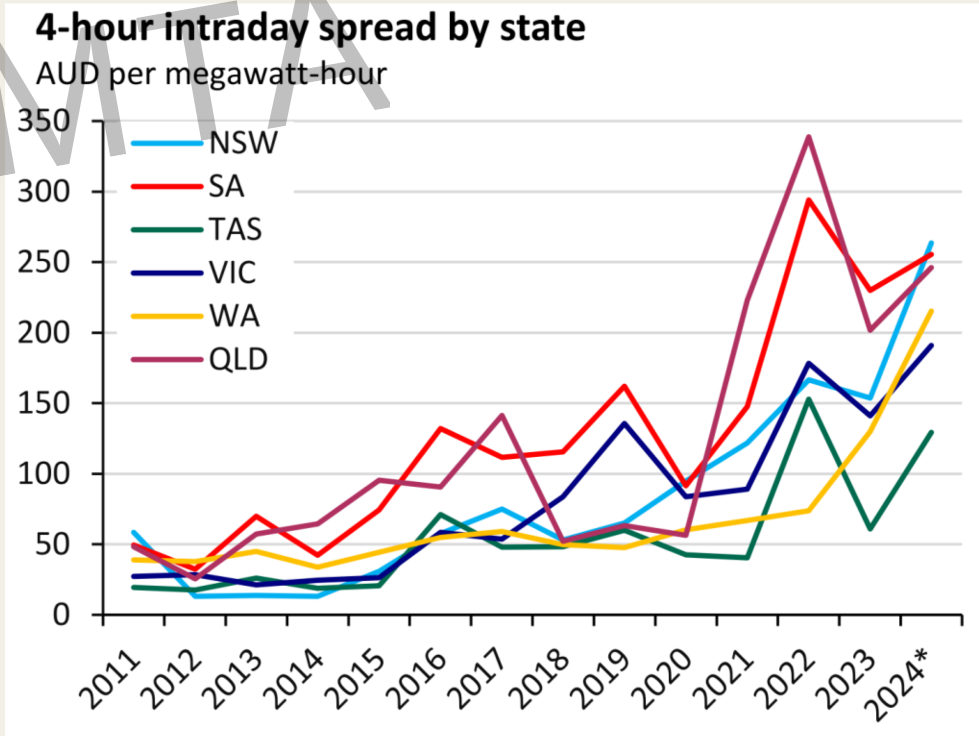
Coal exit and renewables growth create intraday price spreads, enabling strong arbitrage opportunities

Government investments are enhancing revenue streams

- **Capacity Investment Scheme (CIS)**
- **System Integrity Protection Scheme (SIPS)**
- **Retailer Reliability Obligation (RRO)**
- **NSW Government Long Duration Storage (LDS) schemes**
- **ARENA grants**
- **CEFC low-cost debt**

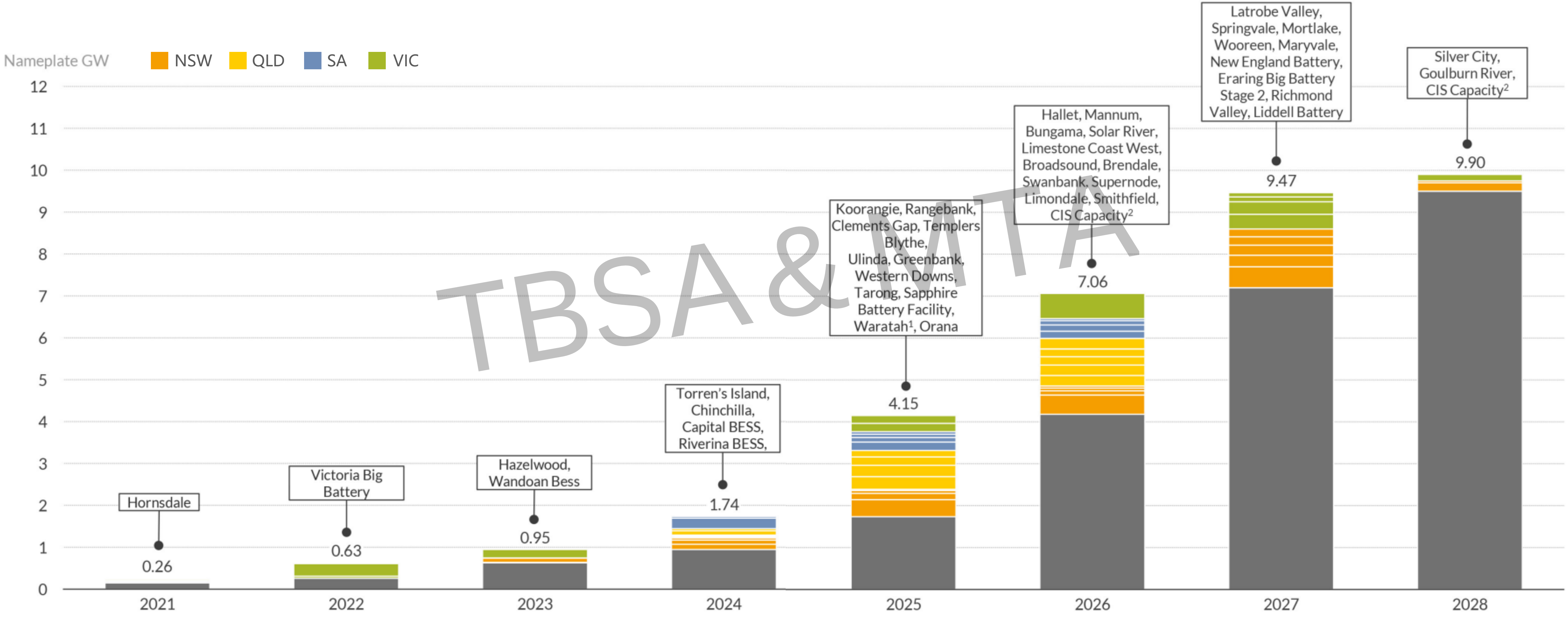
Utility scale batteries(>4 hours duration)are now commercially viable based on energy trade (arbitrage) alone due to:

- **High volatility** (daytime prices very low while high evening peak prices)
- **Negative prices**
- Falling capex costs for batteries



Australia's Energy Storage Growing Pipeline

Committed, in-construction and announced projects likely to proceed*



Notes:
1) Waratah Super Battery, 850MW/1680MWh, has 700 MW reserved for SIPS and has only been included in Aurora market scenarios as its merchant capacity of 150 MW.
2) CIS capacity totalling 350 MW/1400MWh

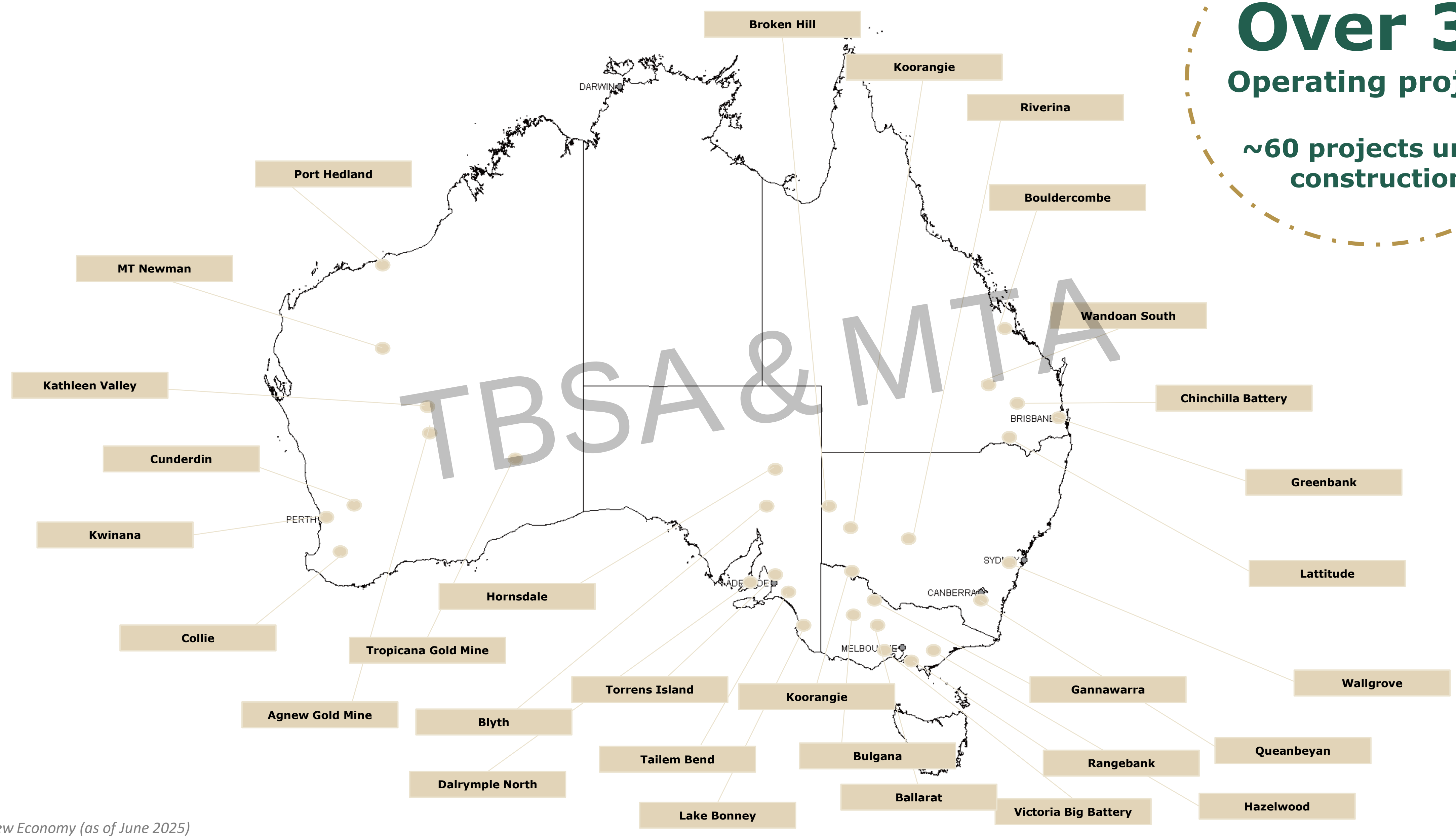
Source: "Power & Renewables Market Forecast for the Australian NEM" - Aurora Central Scenario Battery Capacity Projection Break-down, Aurora Energy Research

Operating Big Battery Storage Projects in Australia

Over 30

Operating projects

~60 projects under construction



Source: Renew Economy (as of June 2025)

Overcoming Barriers

Modernising Australia’s electricity grid
10,000 km of new transmission for supply of reliable and secure energy via the A$19B Rewiring the Nation fund

National Battery Strategy
to build Australia‘s battery manufacturing industry

via the A$523.2M for the Battery Breakthrough Initiative, A$20.3M for Building Future Battery Capabilities

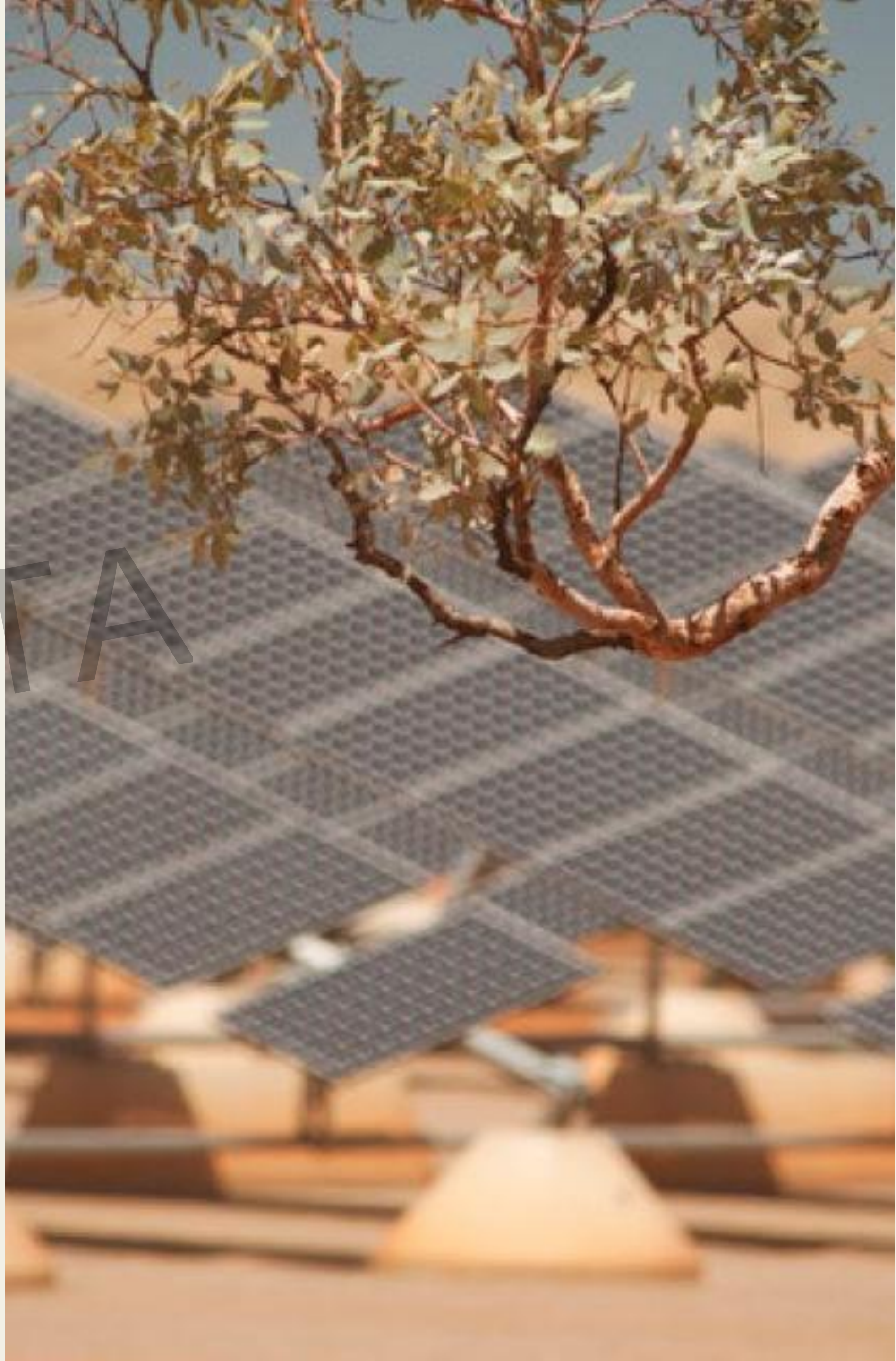
10,000 green energy apprenticeships
to address skill shortages via the Australian National Energy Workforce Strategy

Addressing social license
through regional government support and community engagement

Empowering First Nations to play a role in Australia’s renewable energy transition

Simplifying complex regulation
to reduce bottlenecks for clean energy projects

The Australian Government has coordinated actions to fast-track critical renewables projects



Government Support

Austrade’s Services

The Australian Trade and Investment Commission (Austrade) is the Australian Government’s international trade promotion and investment attraction agency. We deliver quality trade and investment services to businesses to grow Australia’s prosperity.

Connection

Introductions
Federal, State and Territories governments & supporting programs

Referrals
Service Providers including legal and tax consultants

Invitations
Events, roundtables and industry briefings

Advice

Sector insights
Help investors understand Australia ecosystem and share success stories

Opportunities
Provide professional insights to investor plans to meet market need

Regulation and incentives
Advice on R&D tax incentive, visa and regulations

Support

Business matching
Matching investors with relevant partners or suppliers

Site visits to Australia
Assist site visit and meetings with governments and commercial organisation

Information requests
Tailor-made research support

Australian Government's commitment to deliver cleaner, cheaper and more reliable renewable energy

Rewiring the Nation

A$20bn to upgrade electricity grid

DCCEEW: Rewiring the Nation

Capacity Investment Scheme

23 GW of renewable capacity
9 GW of clean dispatchable capacity

DCCEEW: Capacity Investment Scheme

National Reconstruction Fund

A$3bn to support clean technologies

Department of Industry, Science and Resources; National Reconstruction Fund

Green hydrogen initiatives

A$4bn Hydrogen Headstart program
A$6.7bn Hydrogen production tax incentive

DCCEEW, Hydrogen Headstart Program
Treasury, Hydrogen production tax incentive

Future Made in Australia Innovation Fund

A$1.7bn to support innovation, commercialisation and pilot programs of clean technologies

Australian Government Budget 2024-25;

Solar Sunshot

A$1bn Solar Sunshot program will support Australia's solar PV manufacturing industry

ARENA: Solar Sunshot

The Capacity Investment Scheme (CIS)

The CIS is a revenue underwriting scheme which will encourage new investment in renewable generation and clean dispatchable capacity.

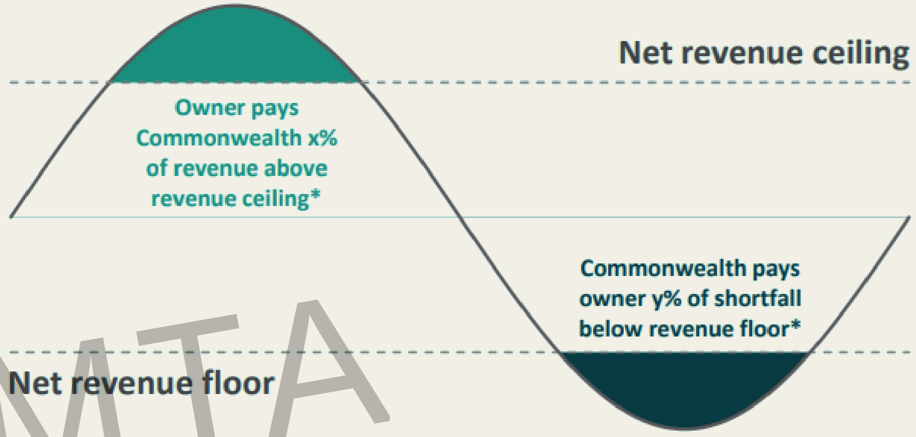
Long-term Commonwealth Government **revenue underwriting** for an agreed 'floor' and 'ceiling'

Launched in 2023, with roll-out from 2024 to 2027, the CIS aims to deliver **9GW of dispatchable capacity** and **23GW of new variable renewable capacity** to be supported by the scheme, by 2030

Successful proponents awarded CIS Agreement (CISA) for up to 15 years

Anticipated to support around **$70 billion in investment** in renewable generation and clean dispatchable capacity

Competitive tenders (~ every 6 months) to determine the projects supported and the agreed revenue 'floor' and 'ceiling'



Subject to annual payment cap

TENDERS SNAPSHOT	CAPACITY TARGETS	REGISTRATIONS*	BIDS SUBMITTED TO STAGE A	INVITED TO STAGE B	SUCCESSFUL BIDS
SA/Vic - Dispatchable	2.4 GWh (600 MW of 4hr equivalent)	155 Registrations ~ 33 GW ~ 90 GWh	104 Bids ~ 19 GW ~ 59 GWh	20 Bids ~ 3.6 GW ~ 11 GWh	6 Bids 995 MW 3,626 MWh
Tender 1 – NEM Generation	6 GW	119 Registrations ~ 41 GW	84 Bids ~ 27 GW ~ 16.5 GWh**	52 Bids	19 Bids 6.38 GW 3.6 GWh
Tender 2 – WEM Dispatchable	2 GWh (500 MW of 4hr equivalent)	22 Registrations ~ 3.5 GW ~19.6 GWh	16 Bids ~ 2.5 GW ~ 13.5 GWh	Bids Under Assessment	Mar 2025
Tender 3 – NEM Dispatchable	16 GWh (4GW of 4hr equivalent)	Closed 11 Dec 2024	Close 18 Dec 2024	Mar 2025 (indicative)	Sep 2025
Tender 4 – NEM Generation	6 GW	Close 11 Feb 2025	Close 18 Feb 2025	May 2025 (indicative)	Oct 2025 (indicative)

CLP – EnergyAustralia

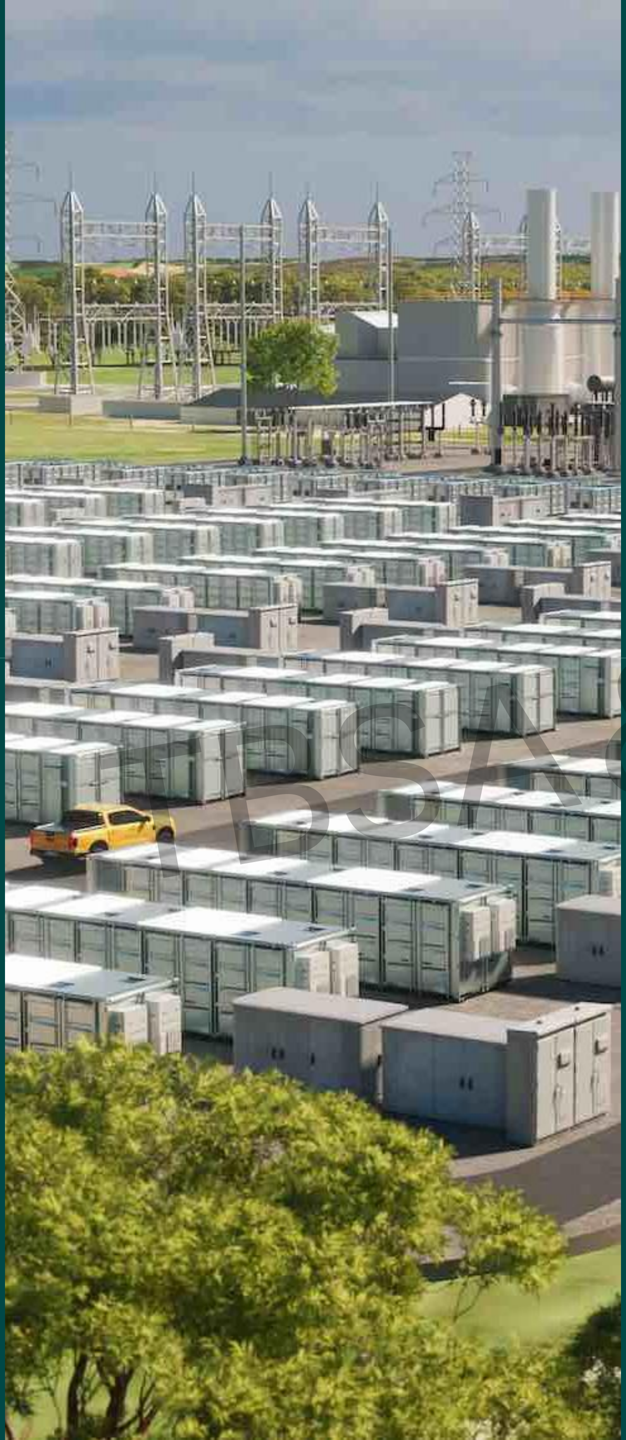
CLP Group is the owner of **Energy Australia** –
Australia's **Top 3** largest integrated energy retailers

Net Zero Target:
Net Zero target by 2050
Transit out of coal by 2040

Renewable projects:

- Cathedral Rocks Wind Farm (62 MW)
- Riverina & Darlington Point BESS (90MW/ 180MWh)
- Wooreen BESS*(350MW;1400 Mwh developing)
- Ballarat BESS (30MW/ 30MWh)
- Gannwarra BESS (25MW/ 50MWh)
- Hallett BESS* (50MW/ 200MWh; developing)

*Projects are CIS tenders' winners



SPIC/CPIH – Pacific Blue

State Power Investment Corporation (SPIC) is the owner of **Pacific Blue**, which operator and developer of renewable energy assets

Diversified portfolio of wind, hydro and solar assets amounting to an installed capacity of 665 MW

Renewable projects:

- Ten Wind Farms
- Two Hydro Plants
- Three Solar Farm (Two Developing)
- Clements Gap Battery* (60 MW/ 120 Mwh; Developing), alongside with Clements Gap Wind Farm

*Projects are CIS tenders' winners

Upcoming Events

Australian Government
Australian Trade and Investment Commission

Want to learn more?

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Investment Director
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www.austrade.gov.au

AUSTRALIA

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