

All Energy | 24th October 2024

A Renewable Future Made in Australia



Chair: **Dr Adam Best**

Panellists: **Kallen Cook**, Origin Energy
Richard Petterson, Tindo Solar
Daniela Hajkova, Oceanex Energy
Ben Bishop, Energy Renaissance



I would like to begin by acknowledging the Wurundjeri people as the Traditional Owners of the land that we're meeting on today, and pay my respect to their Elders past and present.





Australia's Renewable Energy Future

Enabling affordable, reliable, secure and sustainable electricity networks by 2030, improving utilisation of existing infrastructure by 50%, through the adoption of CSIRO's energy system modelling, simulations, and data tools.

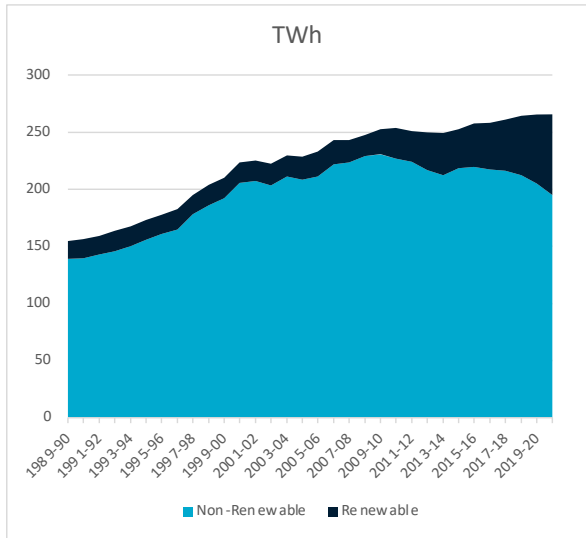
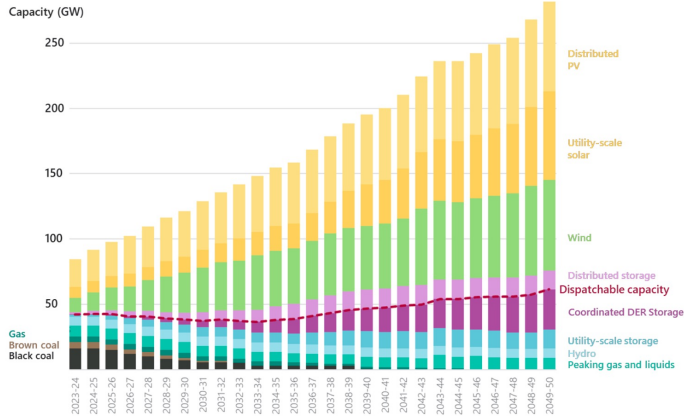


Figure 1 Forecast NEM capacity to 2050, Step Change scenario, with transmission

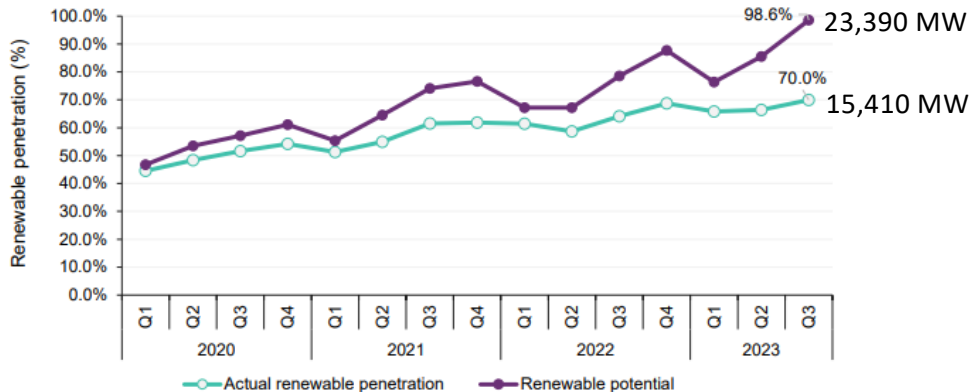




Record Renewables in Australia

Figure 53 Record high actual and potential renewable penetration

Quarterly maximum instantaneous actual renewable penetration and renewable potential



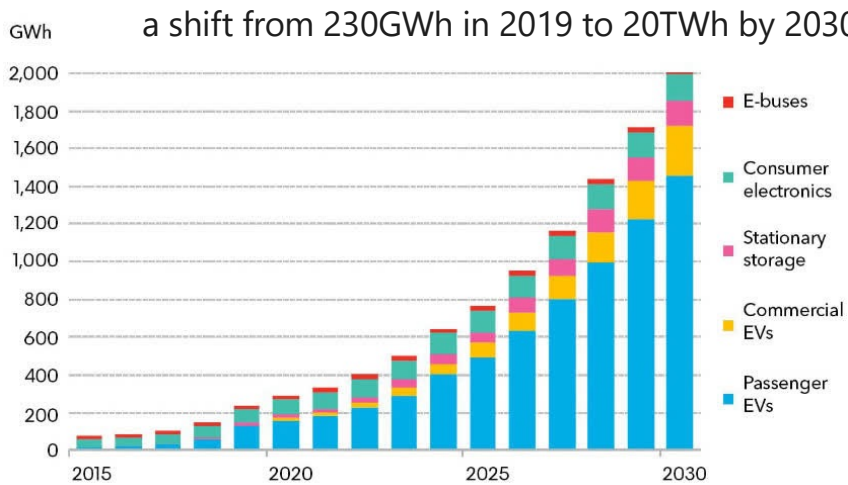
Energy storage will improve the affordability, reliability and security of the Australian grid





Global Battery Storage Demand

Annual lithium-ion battery demand



Benchmark Minerals Intelligence
↓
>400 new mines!



Australian Demand for Energy Storage

Passive CER → not
Grid connected

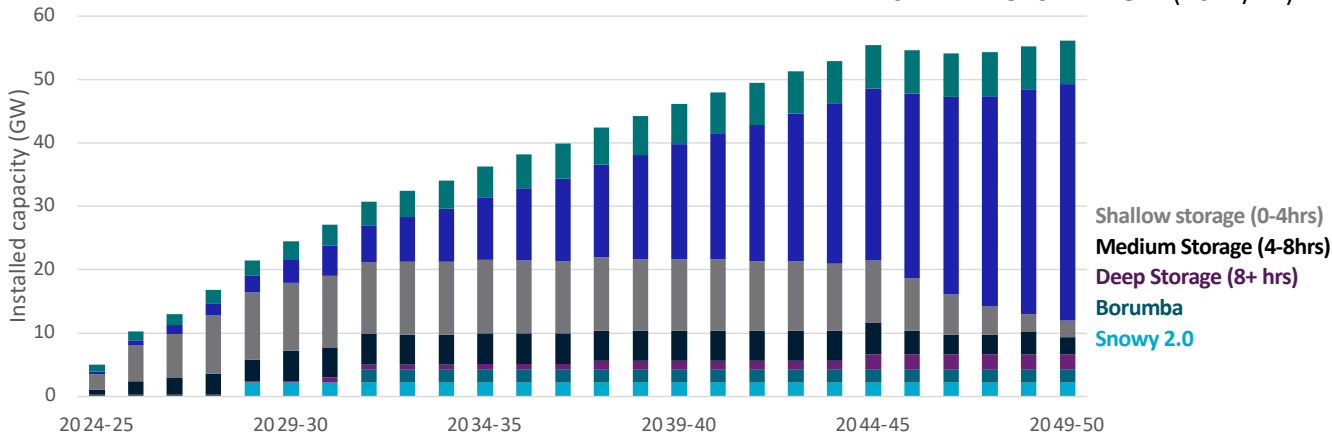
Co-ordinated CER incl.
VPPs → return to Grid

*CER = Consumer Energy Resources

2020 AEMO ISP: 16 GW (2041/42)

2022 AEMO ISP: 48 GW (2041/42)

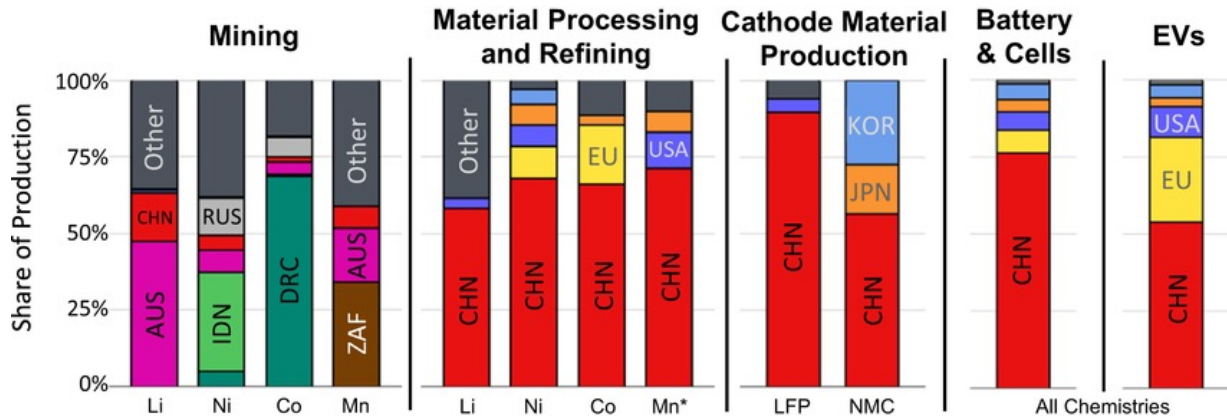
2024 AEMO ISP: **47 GW** (2041/42)



[2024-integrated-system-plan-isp.pdf \(aemo.com.au\)](https://aemo.com.au/2024-integrated-system-plan-isp.pdf)



Supply Chain Challenges



Is Australian
manufacturing
a fight worth
fighting?

How is Origin supporting a future made in Australia?



Kallen Cook
Head of New Technology

About Origin Energy

Origin is proudly Australia's leading integrated energy company. We deliver today's energy needs to more than 4.5 million electricity, natural gas, LPG and broadband customers across Australia and the Pacific.

Our purpose

Getting energy right for our customers, communities and planet

Our ambition

Lead the transition to net zero through cleaner energy and customer solutions

Our strategic objectives



Unrivalled customer solutions



Accelerate renewable and clean energy



Deliver reliable energy through the transition

Our decarbonisation priorities

Enable customers to decarbonise

Grow our portfolio of renewables and cleaner energy

Reduce emissions from our existing operations

Generation and storage



Accelerate renewable
and clean energy

Grow our portfolio
of renewables
and cleaner energy

We're growing our portfolio of large-scale solar, battery energy storage systems and pumped storage hydro developments.

Major projects

NSW

Eraring Power Station
battery **2GWh** LFP BESS

+

VIC

Mortlake Power
Station battery
600MWh LFP BESS



Flow Batteries

5% equity interest in Newcastle based clean-tech company Allegro Energy

Long duration

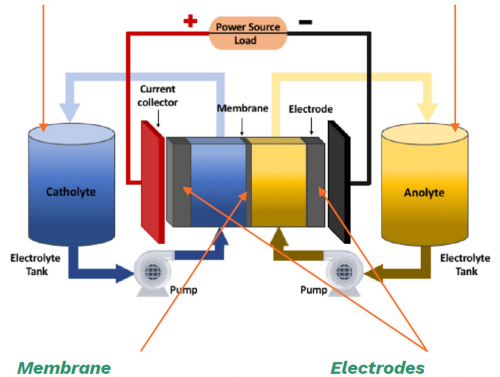
- 100kW / 8-hour demonstration plant under construction

Technology

Flow batteries incorporating aqueous electrolytes, with iron and an organic material used, improved stability through the use of a microemulsion.

Benefits

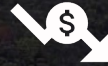
Performance negligible degradation, 80% RTE
Low cost
Recyclable and readily available materials
No fire risk
Easy to maintain





Offer a range of energy supply options

- Energy Supply Agreements
- LGCs and PPAs
- GreenPower



Reduce carbon emissions and energy costs

- Energy reduction analysis
- On-site solar and storage
- VPP and orchestration
- Demand reduction products



Offset remaining carbon emissions

- Carbon neutral energy
- Carbon offsets
- Project co-investment and development



Electrify assets

- E-mobility leasing and subscription
- EV charging infrastructure
- Conversion from gas to electric heat processes
- Energy as a Service



How we can help

Design

Accelerating business towards

zero

Source

Co-Invest

Implement

Manage

Supporting Local Manufacturers

We are looking for clean technology companies and promising technology developers to complement our storage projects



Contracting and tendering processes

We consider a range of criteria – including modern slavery, local and regional supply and first nations



Looking Local

to assist with and accelerate the development of local solutions.



Regulation vs innovation –
is Australia stuck in neutral
on clean energy?



Advanced Manufacturing

Richard Petterson

Chief Executive Officer, Tindo Solar



tindo.

Harness the po



tindo.



Scaling renewable manufacturing and Australia's share in the advancement of NetZero



tindo's gigafactory – plans & benefits



Is Aussie
manufacturing
built to last or
doomed to fail?

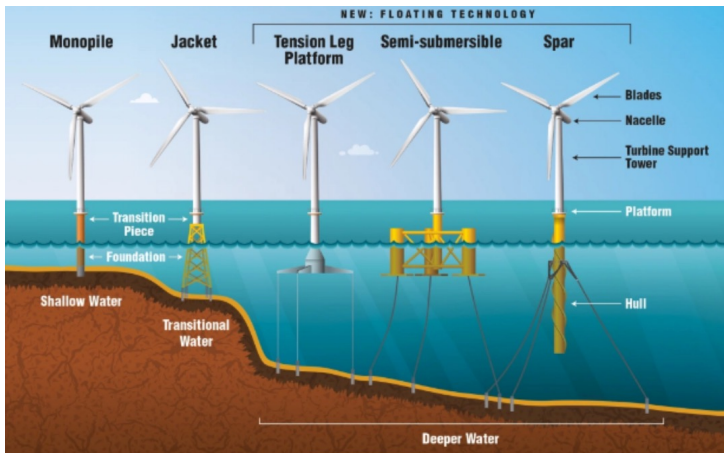
Oceanex Energy

All Energy Australia

A renewable future made in Australia



Offshore wind opportunity

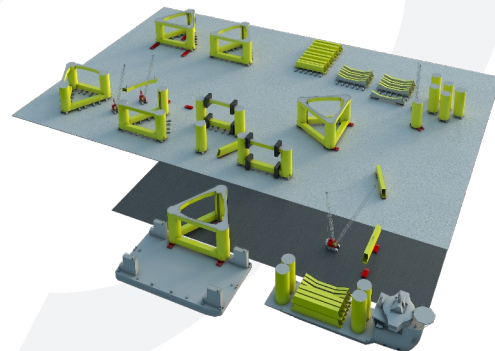


per project:

A\$10b+ CAPEX

3,000+ Direct jobs during construction

35-65% Estimated local content



*Equinor - Wind Semi block assembly and load-out

Why should offshore wind industry be made in Australia

Declared Area	Number of Projects	GW	CAPEX (b)	Low local content 35%	High local content 65%	Number of turbines	Steel Mass Towers (T)	Steel Mass Foundations (T)	Total Steel Mass (T)
Gippsland, VIC	5	9	\$45	\$16	\$29	603	512,550	1,206,000	1,718,550
Hunter, NSW	3	6	\$30	\$11	\$20	402	341,700	1,889,400	2,231,500
Illawarra, NSW	1	2	\$10	\$4	\$7	134	113,900	629,800	743,700
Southern Ocean, VIC	1	1.2	\$6	\$2	\$4	80	68,340	160,800	229,140
Indian Ocean, WA	3	6	\$30	\$11	\$20	402	341,700	804,000	1,145,700
Bass Strait, TAS	1	2	\$10	\$4	\$7	134	113,900	268,000	381,900
	14	26	\$131	\$46	\$85b	1755	1,5m	5m	6,5m

\$85b
Local content potential

6,5m
(T) Total steel mass requirement

Next steps to unlocking local supply chain

Government support through
clear signalling

Industry collaboration
to work out
competitive advantage

Local **supply chain** readiness

Workforce and skills

Is Australian-made
the way to go green?

energy
renouissance

Ben Bishop
Distribution Sales Manager





Opportunities

Local Innovation

Golden opportunity to build truly local, smarter and safer batteries leveraging local expertise and manufacturing

Sovereign Supply Security

Foster sovereign capability to secure our own supply chains and avoid vulnerability to overseas disruptions

Sustainable, High-tech Industry

Work with leading institutions and local suppliers to spearhead an advanced manufacturing ecosystem in Australia

Creates jobs, fosters technical expertise and sustainability

Challenges

Government Support

To date Energy Renaissance continues to be privately funded without State and Federal grant support or procurement



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Security and Supply Chain Risks

Crucial concern as we develop local industries that must not only compete with subsidised foreign products but also protect against external supply chain disruptions

Access to Capital

Lack of investment capital is one of the largest hurdles.

Australian investors have been slow to recognise the commercial potential



Work Local
Build Local
Employ Local
BE Local



With larger economies able to outpace us in production and innovation, are we the tortoise or the hare?

Summary



A Renewable Future Made in Australia

Get in touch
with the speakers



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**Download the
presentation**

