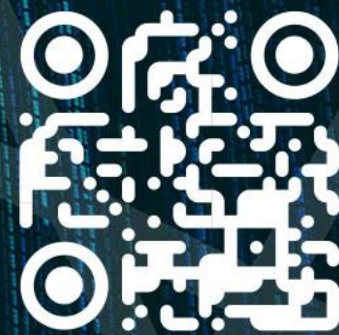




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WELCOME

24-26 October 2022
Adelaide, South Australia



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accelerating the clean energy revolution

Conference History

2004	Brussels, Belgium		
2006	Napa, USA		2nd International Conference on Integration of Renewable and Distributed Energy Resources December 4-8, 2006 • Napa, CA
2008	Nice, France		
2010	Albuquerque, USA		4th International Conference on Integration of Renewable and Distributed Energy Resources December 6-10, 2010 Albuquerque, NM USA
2012	Berlin, Germany		5th International Conference on Integration of Renewable and Distributed Energy Resources December 4-6 2012 Berlin, Germany
2014	Kyoto, Japan		IRED2014
2016	Niagara, Canada		7th International Conference on Integration of Renewable and Distributed Energy Resources
2018	Vienna, Austria		IRED 2018 International Conference on Integration of Renewable and Distributed Energy Resources
2022	Adelaide, Australia		IRED 2022 9TH INTERNATIONAL CONFERENCE INTEGRATION OF RENEWABLE & DISTRIBUTED ENERGY RESOURCES



What to expect...

- Key topics:
 - Major International Programs
 - Markets
 - GPFM
 - GPST
 - RACE for 2030 CRC
 - Research / Testing
 - DER Integration
- Collaboration
 - Long Breaks – Lots of opportunities for discussion
 - Poster session this evening
 - Dinner Tuesday evening

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Australia's energy transition:



Electricity

enabling reliable, low-emission energy networks with flexible electricity generation, use and storage



Industry

enabling the decarbonisation of Australian transport and industrial sectors



Community & Environment

driving strong community engagement and environmental outcomes

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Australia's Electricity Systems (NEM, SWIS & more)

- Eastern interconnection (NEM)
 - 56 GW of electricity generation capacity
 - 15 - 35 GW demand
 - 5 minute generation dispatch, Energy-Only market, since 1998
 - Security constrained economic dispatch, with co-optimised energy and ancillary services
- WEM for SWIS
 - 5.8GW of electricity generation capacity
 - comprises a wholesale electricity trading component and a capacity component.
- Significant increase in wind, solar and battery connections. (NEM: 15GW small solar, 7GW wind, 4GW large solar)



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Australia's Electricity Systems (2030+)

Australia's electricity sector is in a period of intense change:

- All scenarios in the Australian National Outlook (ANO) show near 100% decarbonization and doubling of the sector by around 2050
- We have world leading levels of distributed renewables
 - For example, South Australia recently had 80% of electricity from rooftop solar
 - This is challenging existing electricity system operational approaches, and renewable energy uptake is being constrained
- Decarbonisation of many industries is through electrification, introducing new energy use characteristics
- Increasing electricity system throughput without massive infrastructure upgrades requires much greater system visibility, to unlock latent capacity.
- 80% of Australian primary energy production is exported, with future green energy export production (Hydrogen, Ammonia, undersea HVDC) via the electricity system.

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Reliable electricity networks

- Enabling affordable, reliable, secure and sustainable electricity networks
- Improving utilisation of existing infrastructure

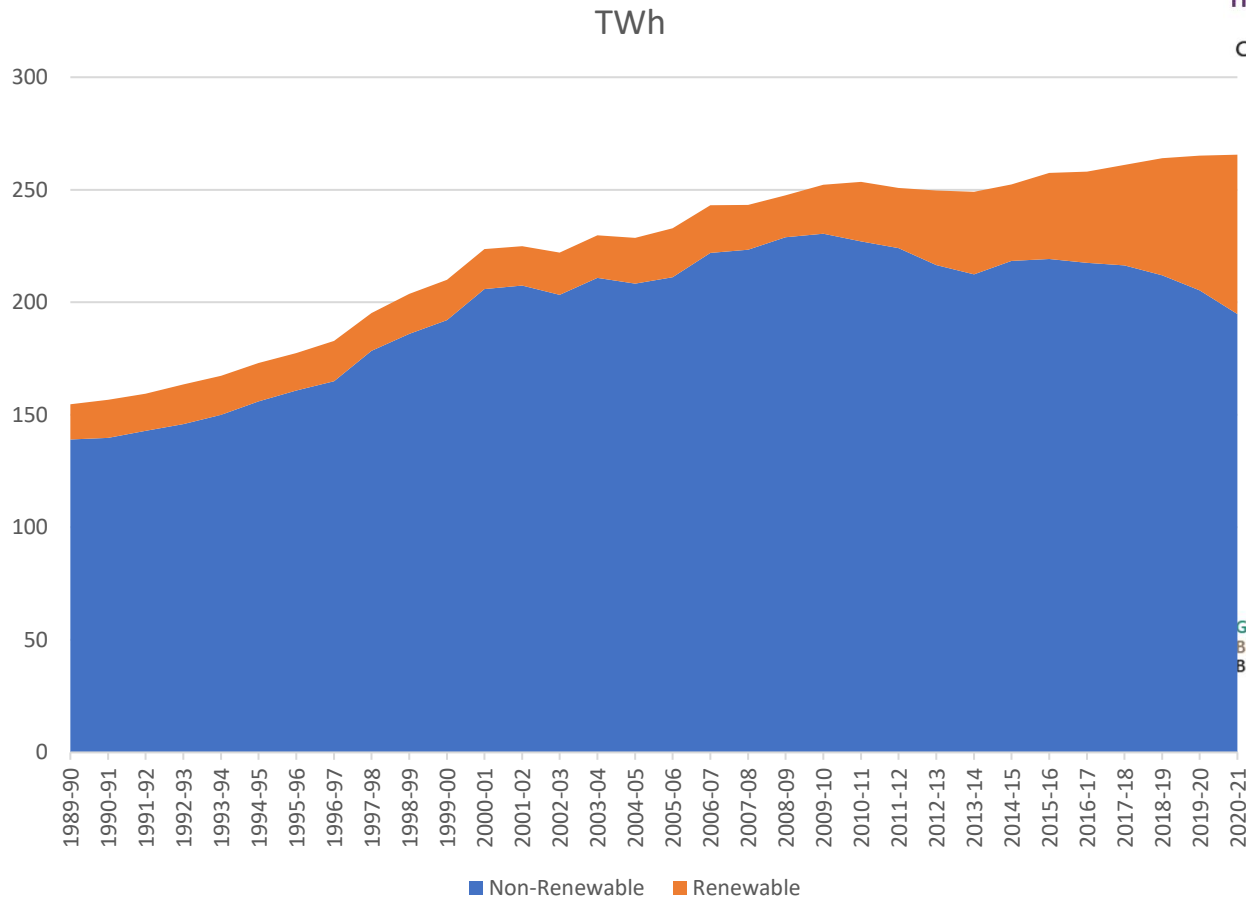
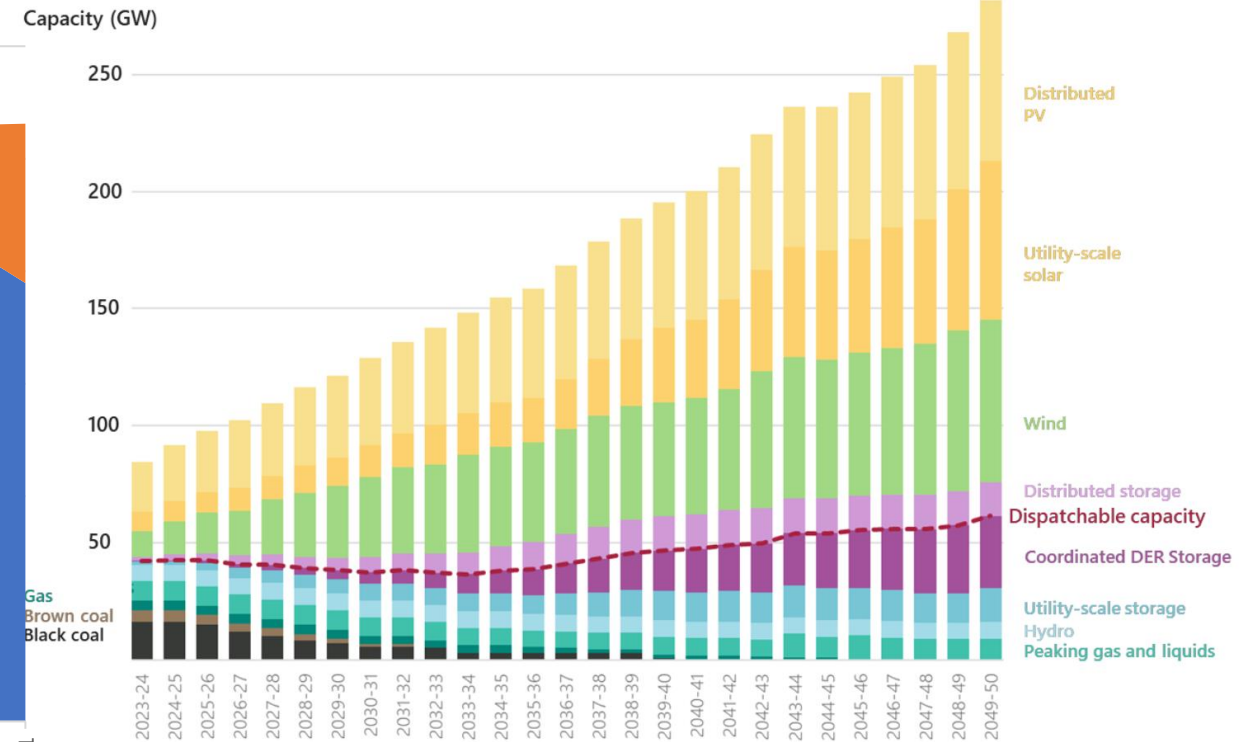


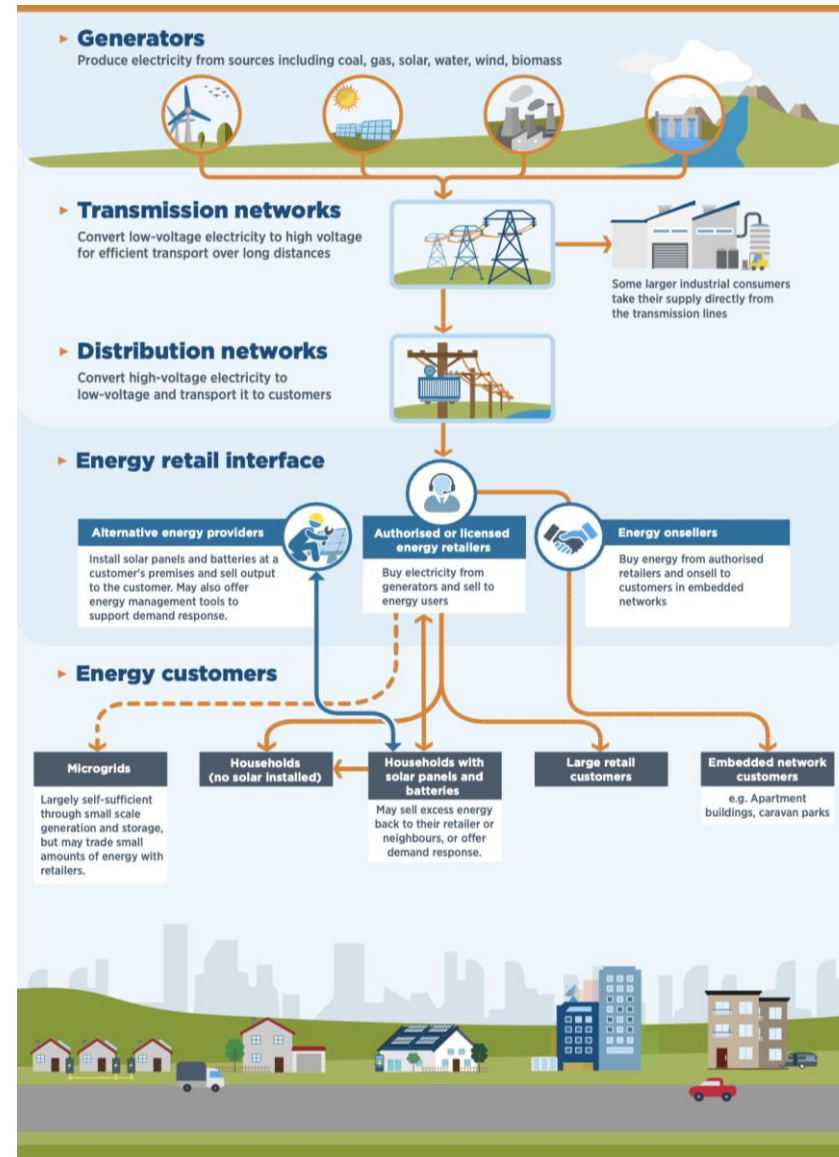
Figure 1 Forecast NEM capacity to 2050, Step Change scenario, with transmission



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Transformation

- AEMO ISP (2050):
 - ~ 2 x Elec usage
 - ~ 30 x Storage
 - ~ 5 x Distributed Solar
 - ~ 9 x Large Scale Solar
- Global Coordination
 - GPST
 - MI GPFM
 - IEA ISGAN



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Thanks
Enjoy the conference



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