

National Emergency Management Agency

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About The Australian Energy Market Operator (AEM)

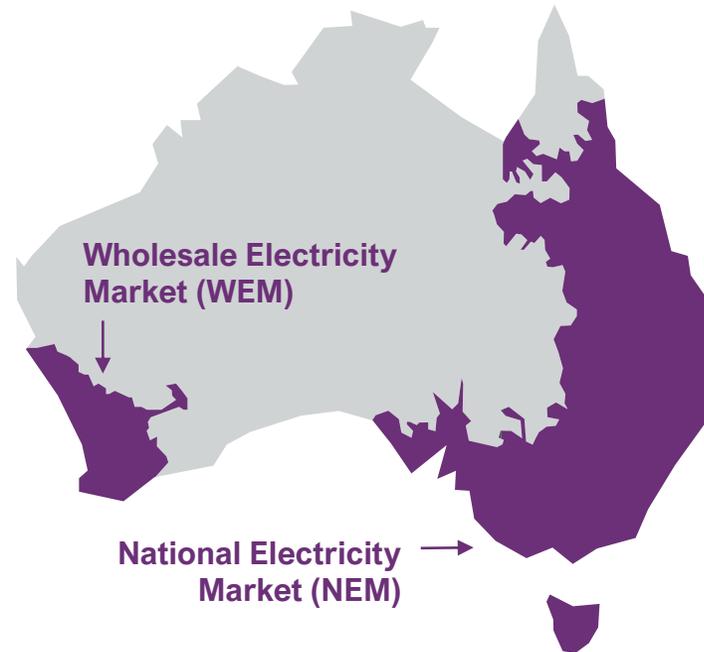
- AEMO is a member-based, not-for-profit organisation.
- We are the independent energy market and system operator for the National Electricity Market (NEM) and the WA Wholesale Electricity Market (WEM), and system planner for the NEM.
- We also operate retail and wholesale gas markets across south-eastern Australia and Victoria's gas pipeline grid.



Electricity



Gas



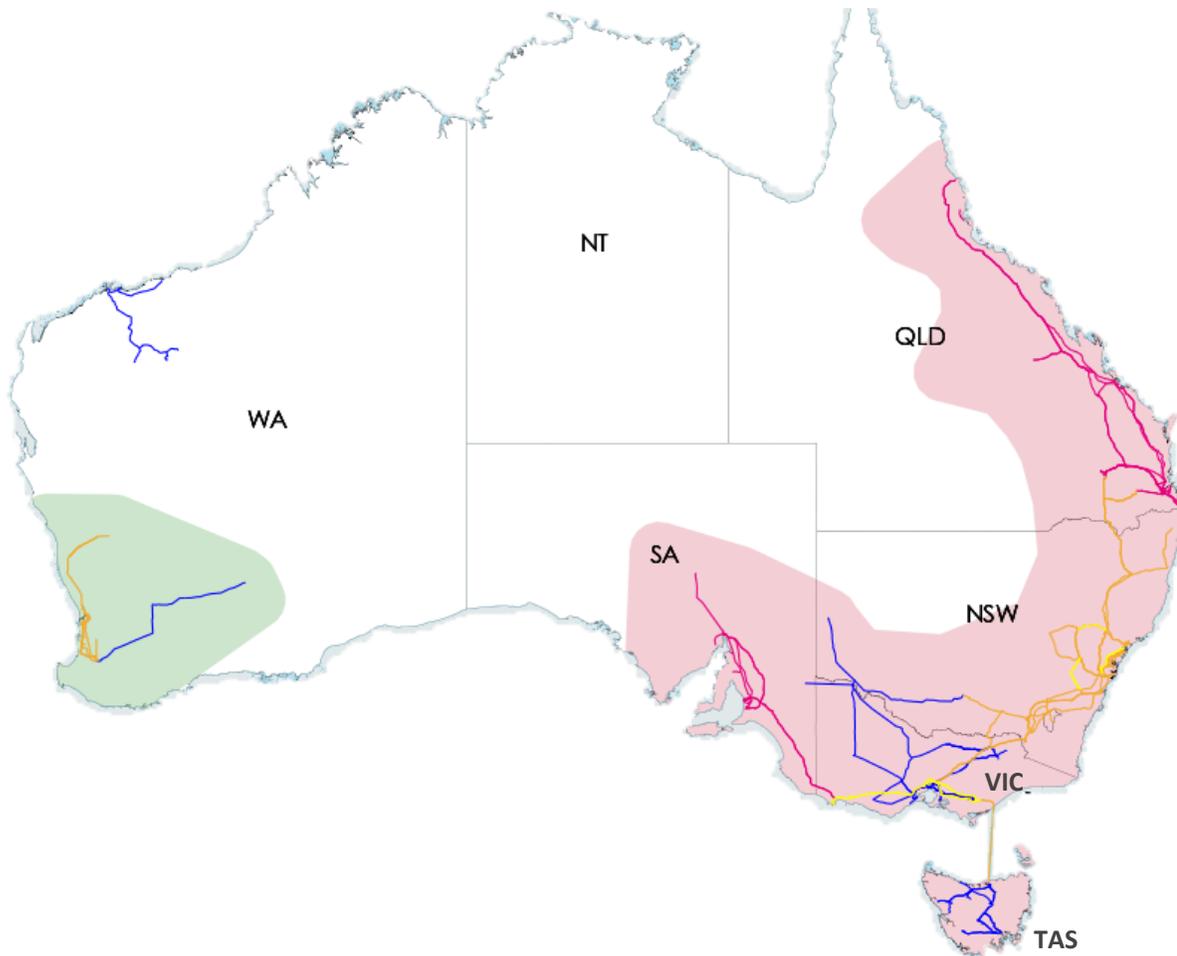
Declared Wholesale Gas Market (DWGM)

Short Term Trading Market (STTM) and Gas Supply Hub (GSH)



AEMO Services is an independent subsidiary of AEMO, established in 2021 to enable the transparent provision of advisory and energy services to National Electricity Market jurisdictions.

National Electricity Market (NEM)



Population **22.8 million**

NEM Max Demand **35,796 MW**

NEM Min Demand **11,892 MW**

Wind Capacity **10,439 MW**

Solar Capacity **9,481 MW**

Rooftop Solar Capacity **18,356 MW**

Approximately **3 million**
homes have a solar system

Wholesale Electricity Market (WEM)

Population **2.7 million**

WEM Max Demand **4,006 MW**

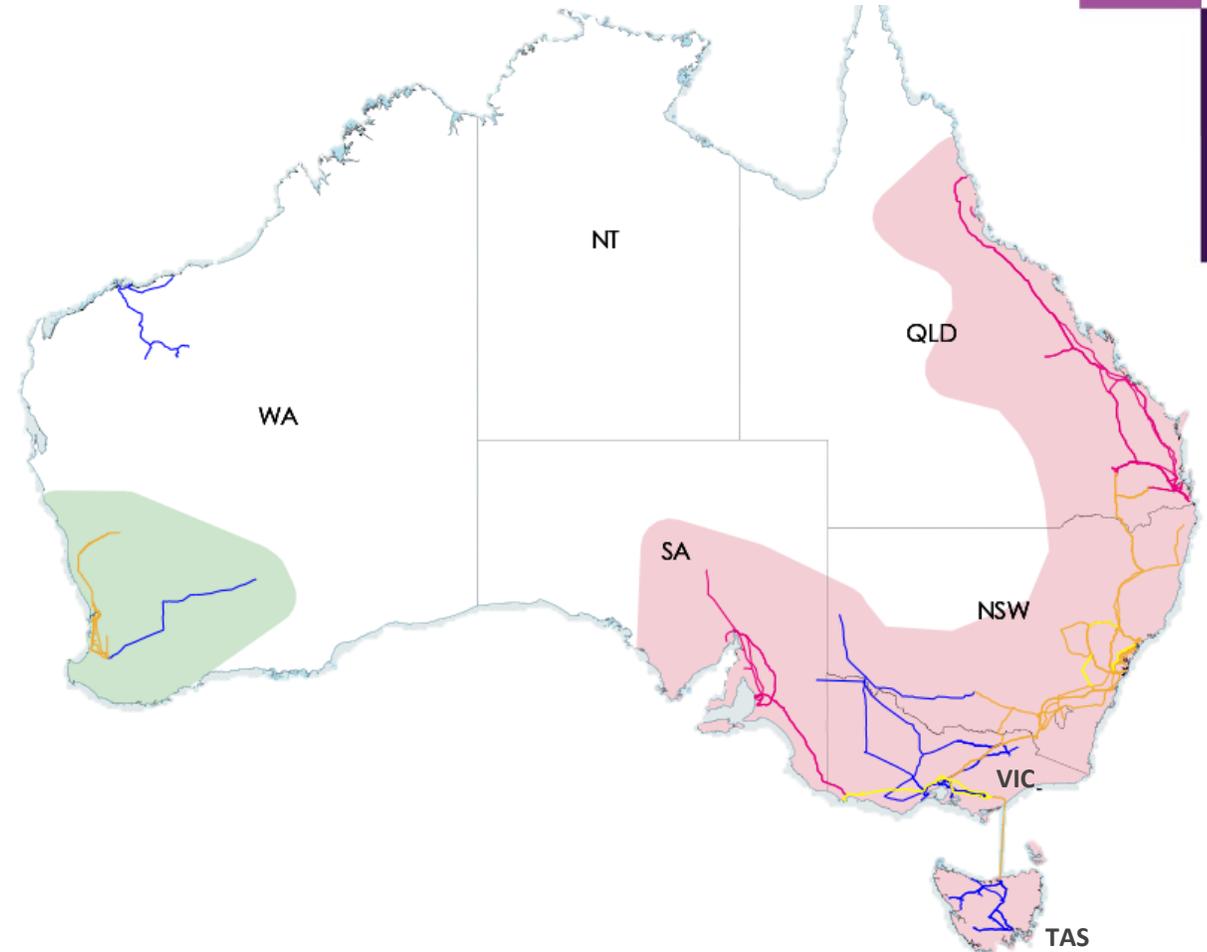
WEM Min Demand **626 MW**

Wind Capacity **1,026 MW**

Solar Capacity **151 MW**

Rooftop Solar Capacity **1,963 MW**

Approximately **9 times** smaller than the NEM in terms of demand



Important Terms



Satisfactory

The power system is within the normal operating band.



Secure

The ability of the power system to withstand a credible contingency event and remain in a satisfactory state.



Supply Reliability

The ability to meet demand and reserve requirements.



Credible Contingency Events

Events which are considered reasonably possible.

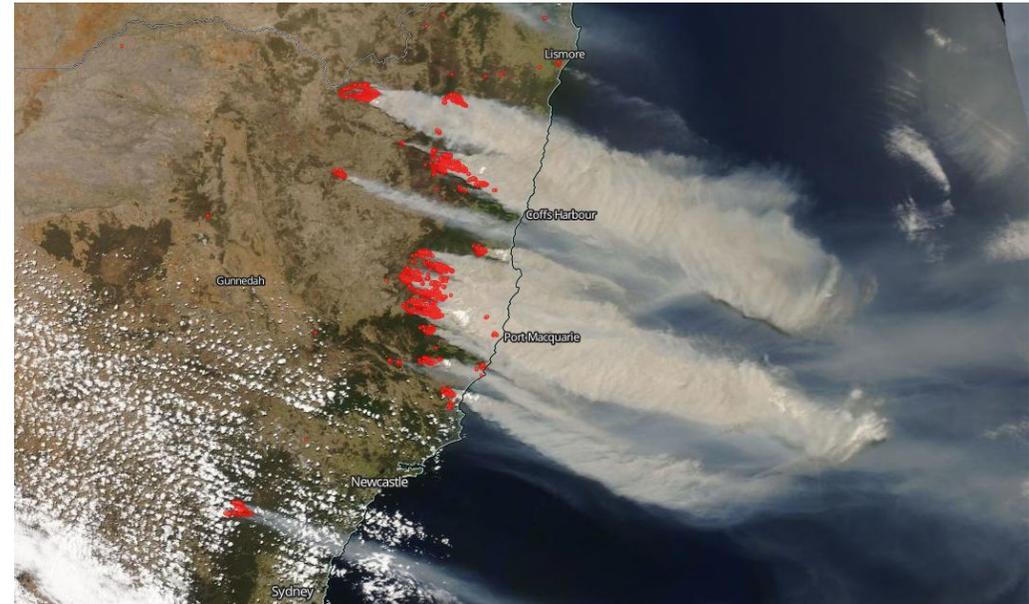


Non Credible Contingency Events

Events other than credible *contingency events*.

Extreme Weather Impacts

2019/ 20 Summer bushfires saw extensive attenuation of solar farms and rooftop PV output due to smoke



Dust storms can impact on demand as well as distributed and utility scale PV

Risk Drivers

Managing Variable Weather Conditions



Increasing Non-market generation



Communications, & SCADA



Protection and Control systems



Market Structure



Cyber Security / Malicious actors



Political



Economic



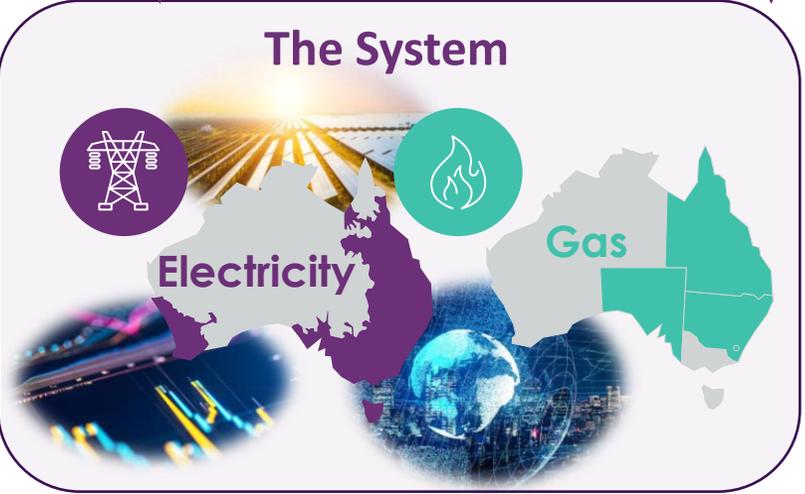
Human Error



Asset Failure



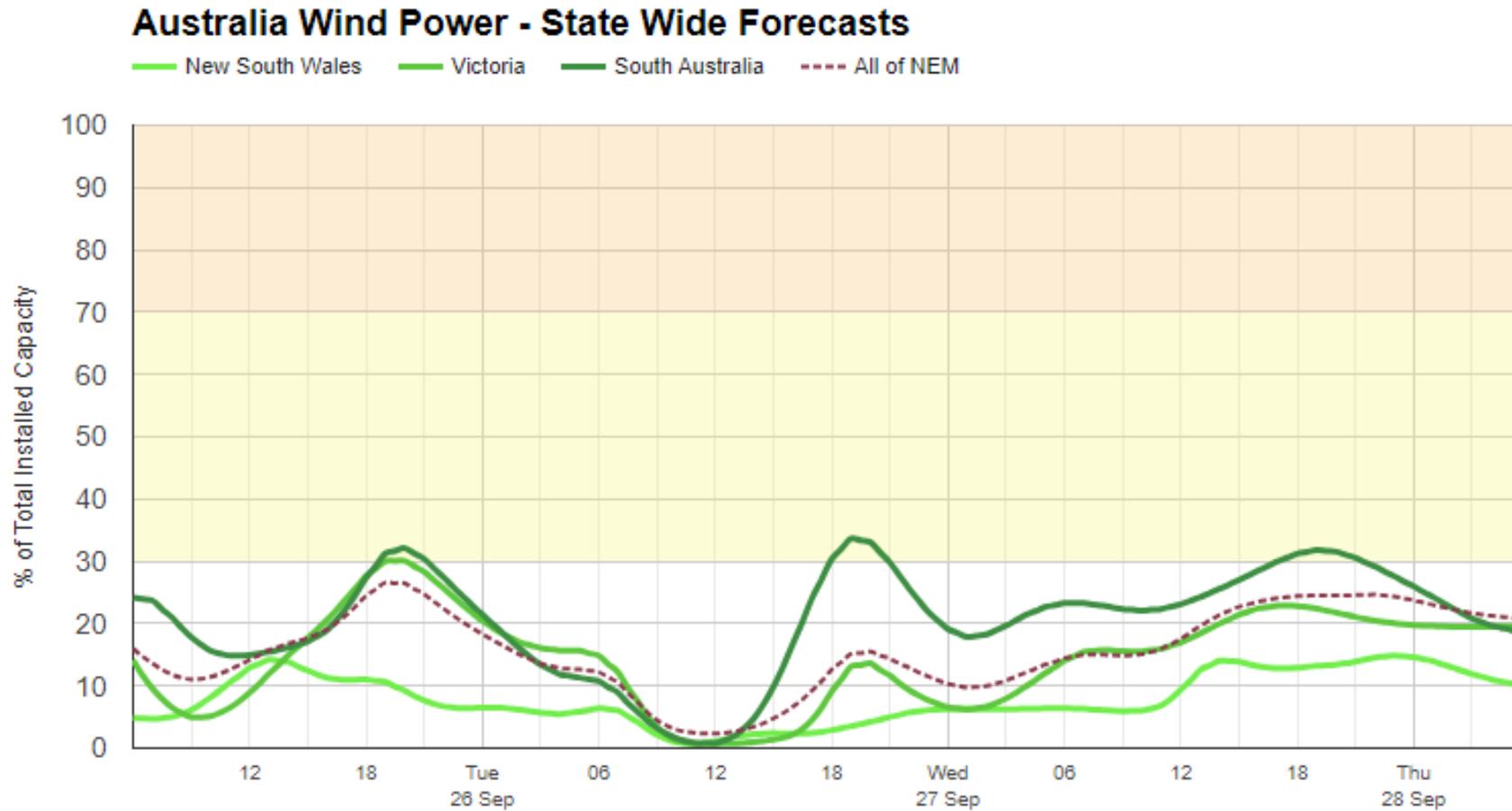
The System



System changes due to energy transition (Impacting Security and reliability)

Operational tools and systems unable to adapt to the transitioning power system

Wind and solar generation forecasts for NEM regions (three-day outlook)

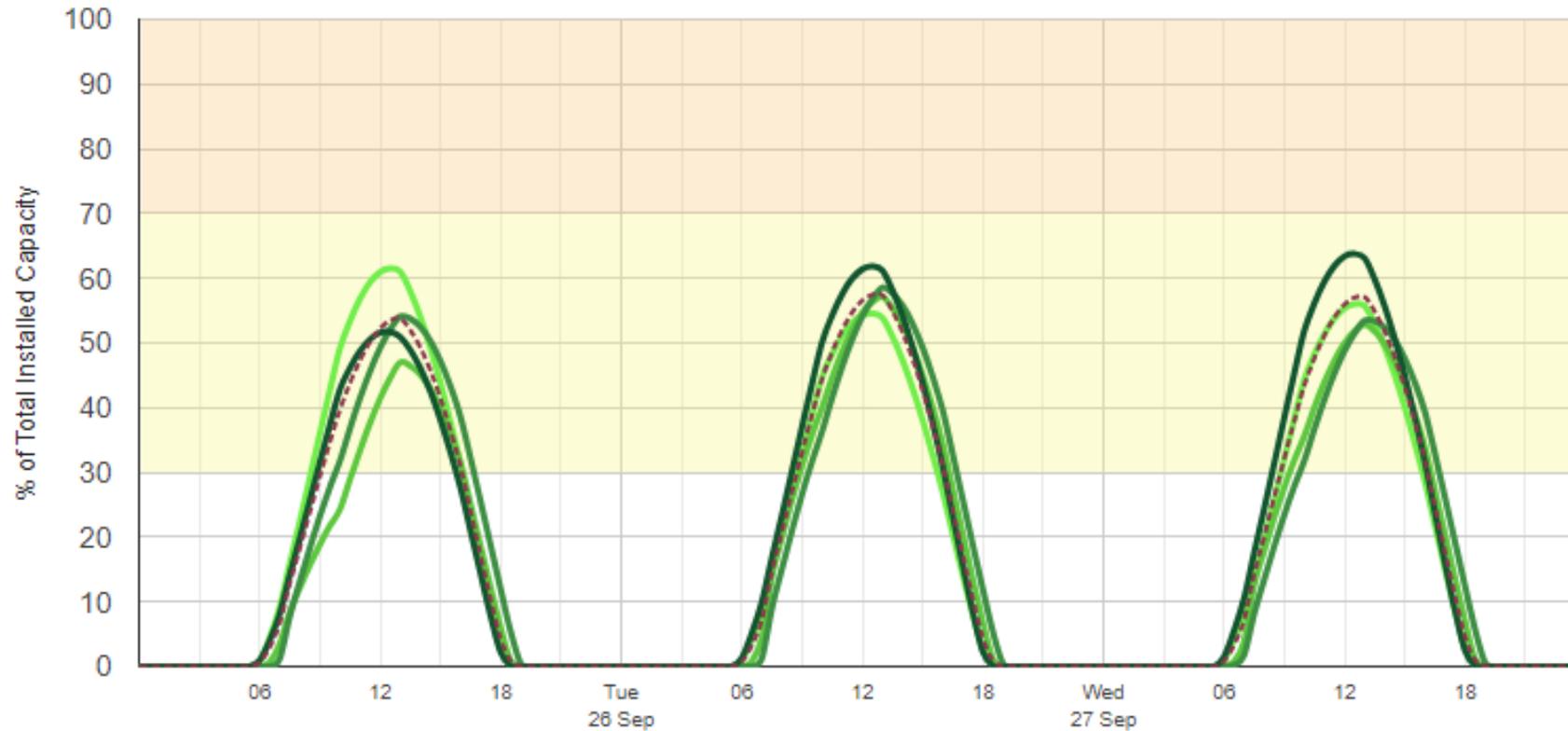


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Wind and solar generation forecasts for NEM regions (three-day outlook) continue

Australia Solar Power - State Wide Forecasts

— NSW
 — VIC
 — SA
 — QLD
 - - - All of NEM



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For more information visit

aemo.com.au