

# ENERGY AND DECARBONISATION DEVELOPMENTS

ANU ENERGY UPDATE 2022

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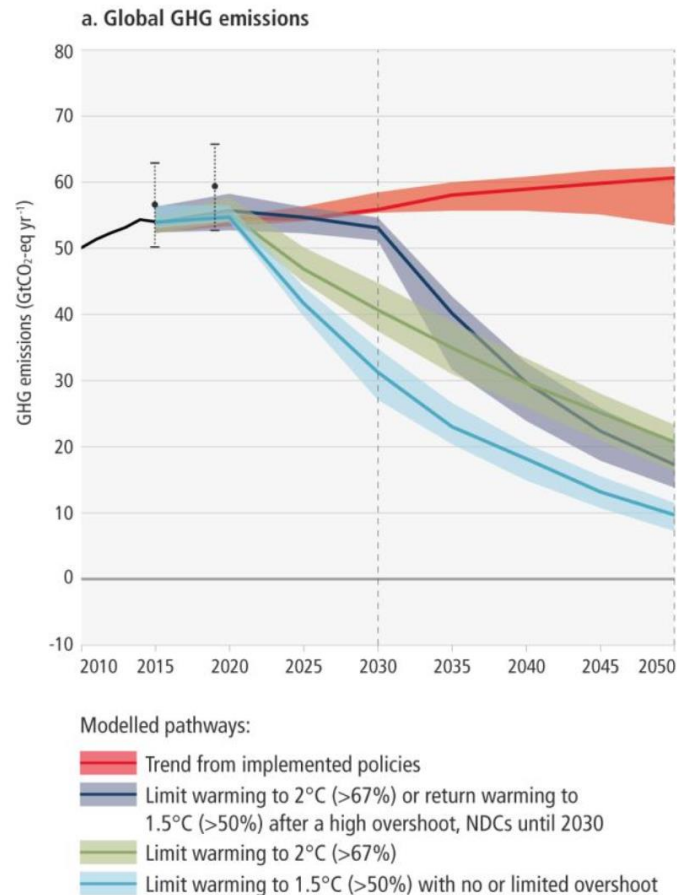
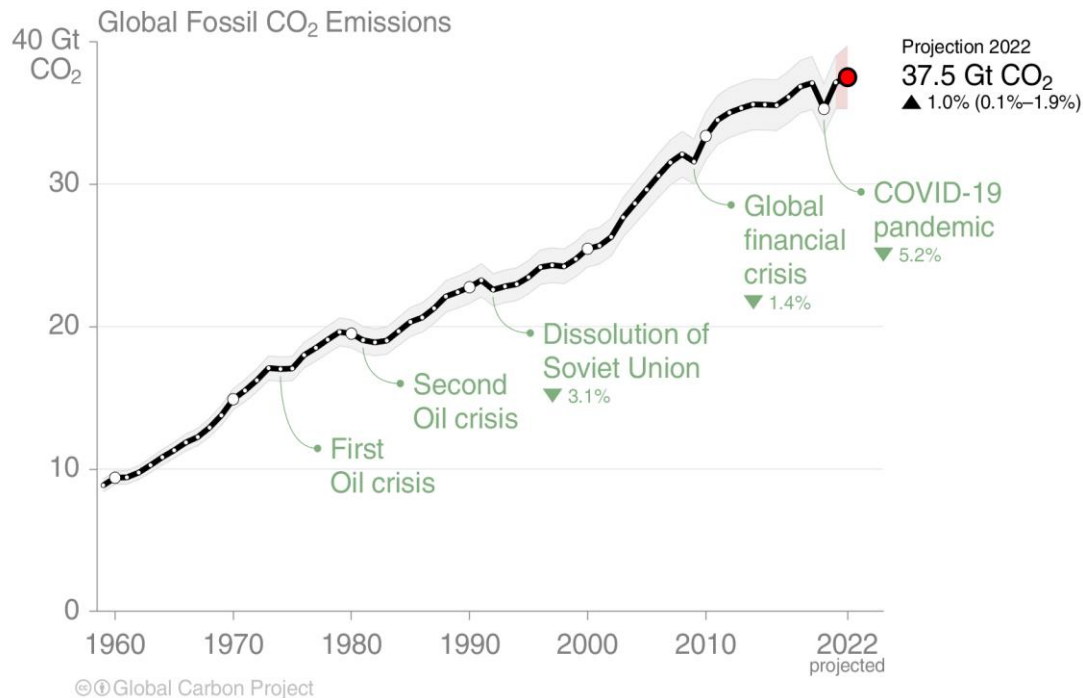
Institute for Climate, Energy & Disaster Solutions and Crawford School of  
Public Policy

ANU



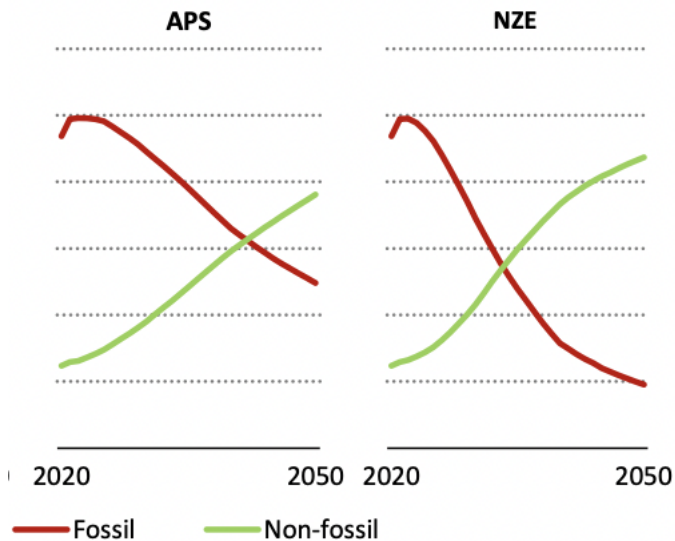
29 Nov 2022  
Australian  
National  
University

# Global emissions trajectories

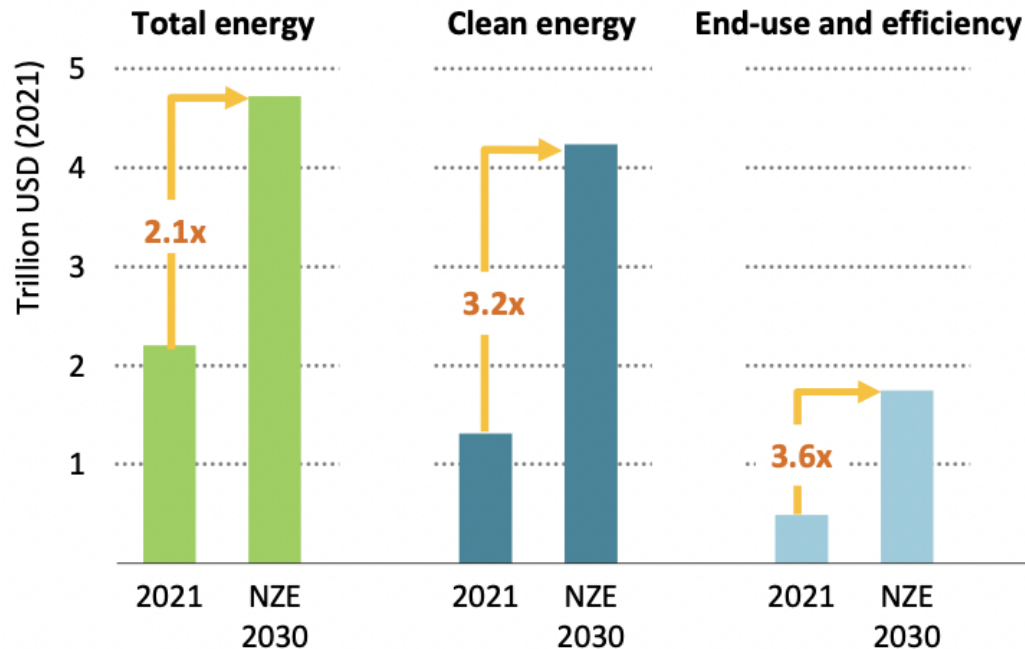


# The clean energy investment wave

Global energy supply, IEA scenarios



Global energy investment, IEA Net Zero scenario



# Geopolitics



## Energy security concerns

→ domestic energy investment in importing countries, largely renewables

## High energy prices

→ investment in energy efficiency, fuel switching, new energy supply

## Strategic competition

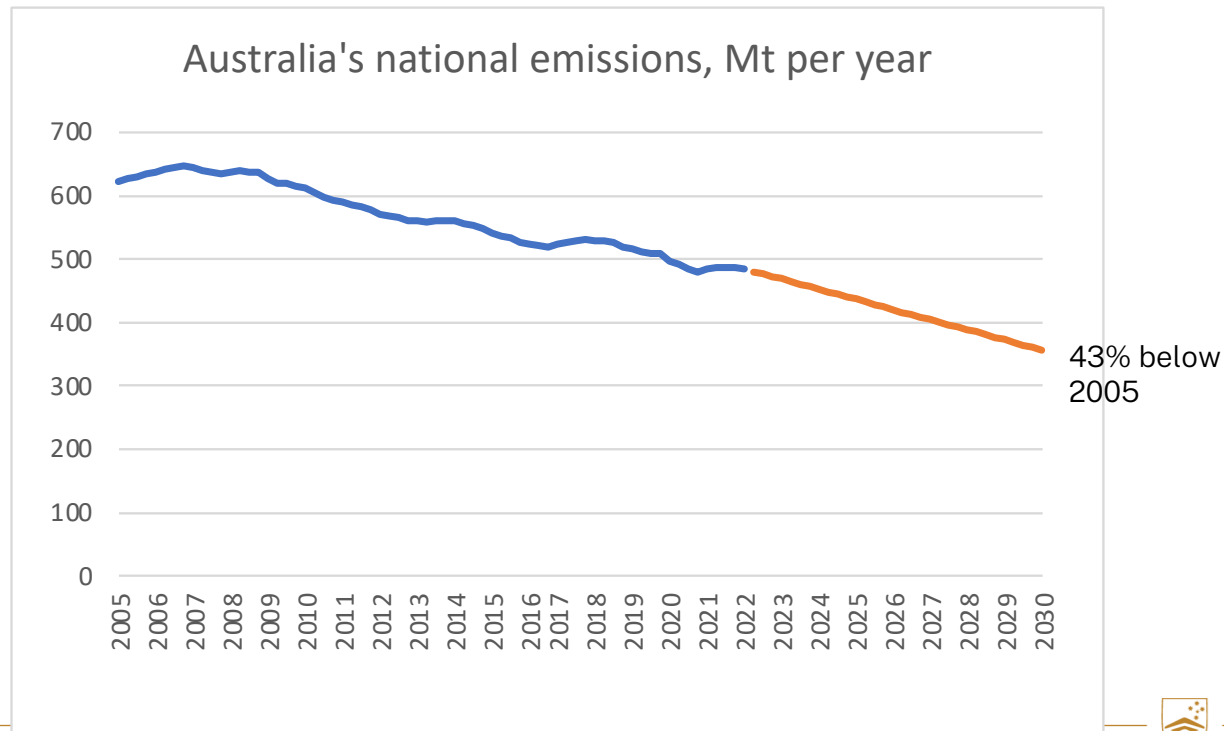
→ a new era of industry policy for zero-emissions energy, industry, transport  
US IRA, EU, China...

# Australia's GHG emissions trajectory and target

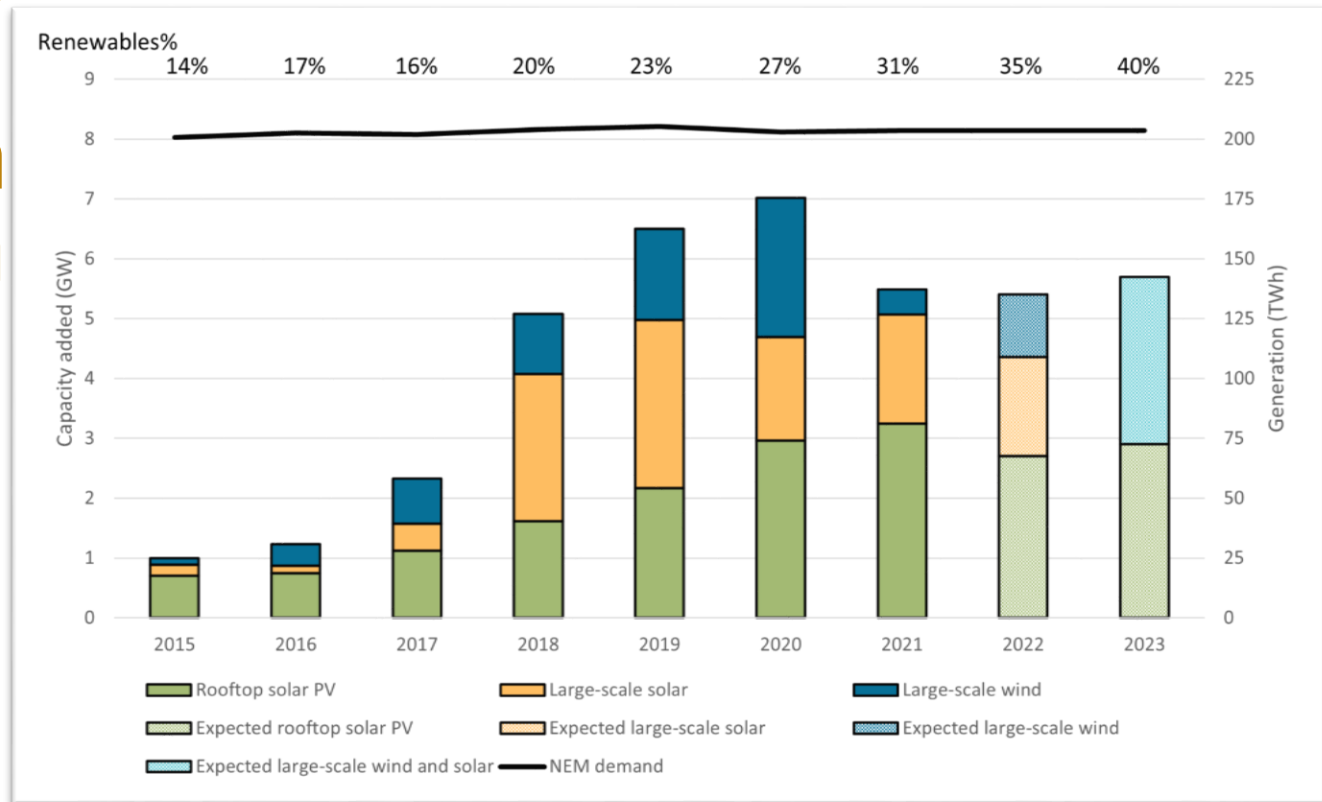
269Mt/yr CO<sub>2</sub>-e reduction 2005-30 for 43% target

~140Mt/yr reduced 2005-21, of which 129Mt from LULUCF

~129Mt/yr to go for 43%; electricity avg -7Mt/yr over last 3 years



# Renewables deployment, Australia



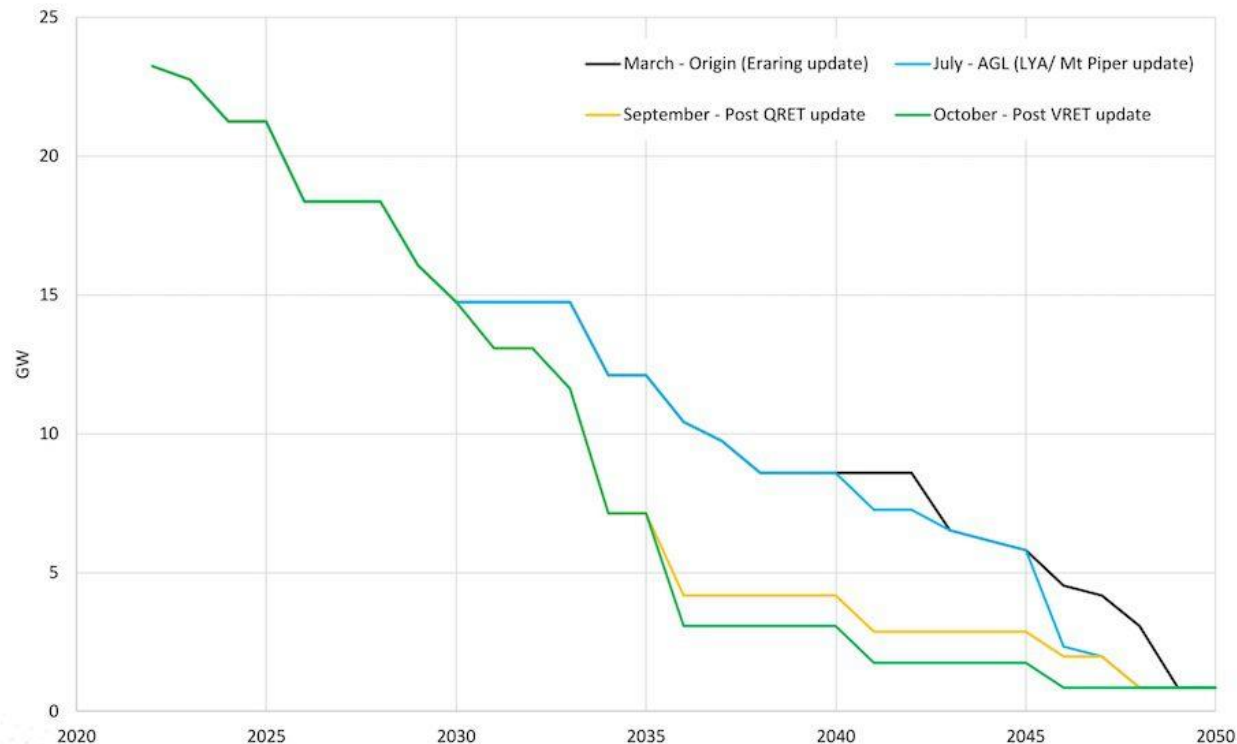
Source: Clean Energy Regulator



# Coal exit plans accelerate

## NEM Operational Coal Capacity

GW



Source: Rystad Energy research and analysis

# Energy investment in Australia



## Electricity investment needs

- Generation – wind incl offshore
- Storage – pumped hydro, batteries
- Transmission
- Decentralized energy integration

## Zero-emissions energy exports?

- Hydrogen/ammonia, green iron/steel...

## Corporate developments

- Brookfield-Origin-CWP takeover bids
- AGL changes
- Offshore wind



# Policy

## Industry

- Safeguard Mechanism – emissions price incentive

## Electricity

- State-level schemes for RE investment, coal exit – coordination?
- Federal govt investment in transmission, storage
- Greater role for public ownership
- Lack of carbon price



## Transport

- EVs: tax concessions/subsidies vs standards
- Road tax reform

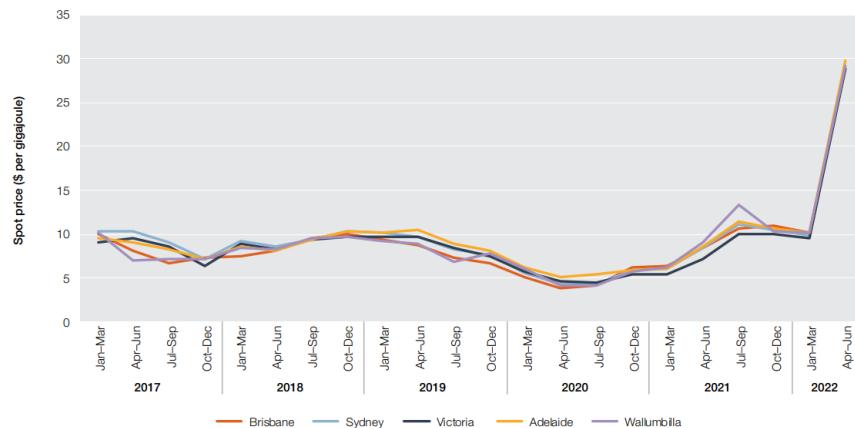


# Policy

## Energy price shocks

- Argument for bill support, not price suppression
- Fossil fuel prices inherently volatile – not so for RE

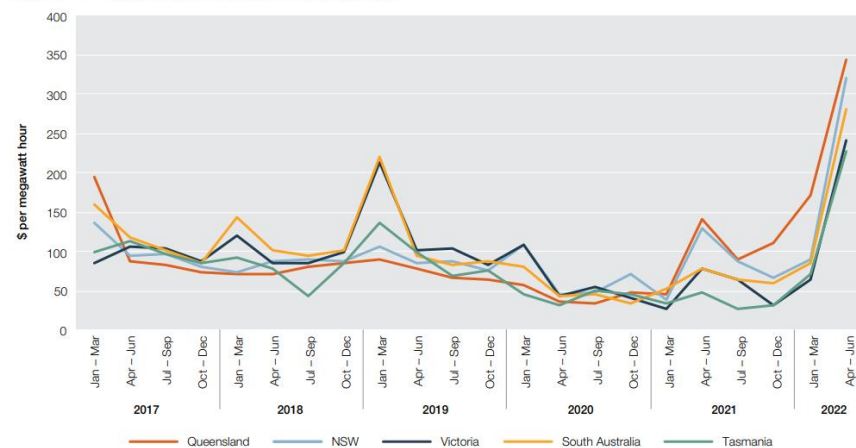
Figure 4.2 Eastern Australia gas market prices



Note: The Wallumbilla price is the volume weighted average price for day-ahead, on-screen trades at the Wallumbilla gas supply hub. Brisbane, Sydney and Adelaide prices are ex-ante. The Victorian price is the 6 am schedule price.

Source: AER analysis of gas supply hub, short term trading market and Victorian declared wholesale gas market data.

Figure 2.4 Quarterly wholesale electricity prices



Note: Prices are volume weighted quarterly averages.

Source: AER; AEMO (data).



# Thank you

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