

# Defining target system, desired performance and system needs studies

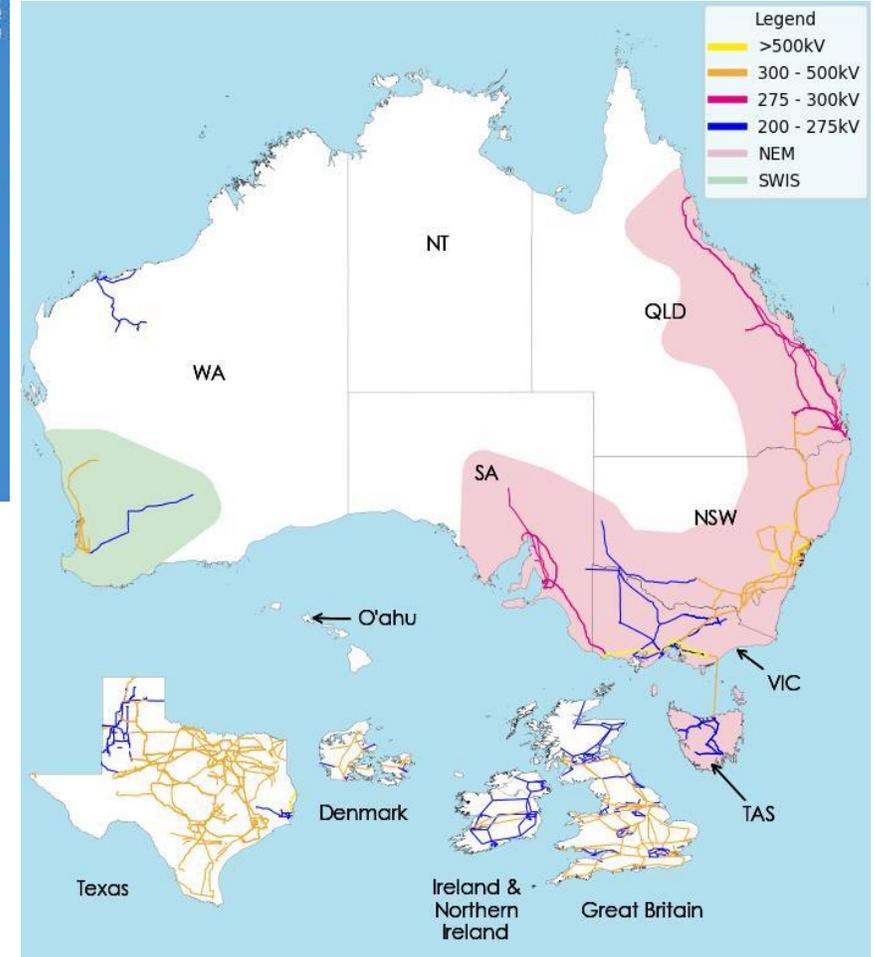


Nilesh Modi  
James Lindley  
Chris Davies  
Samantha Christie

June 2022



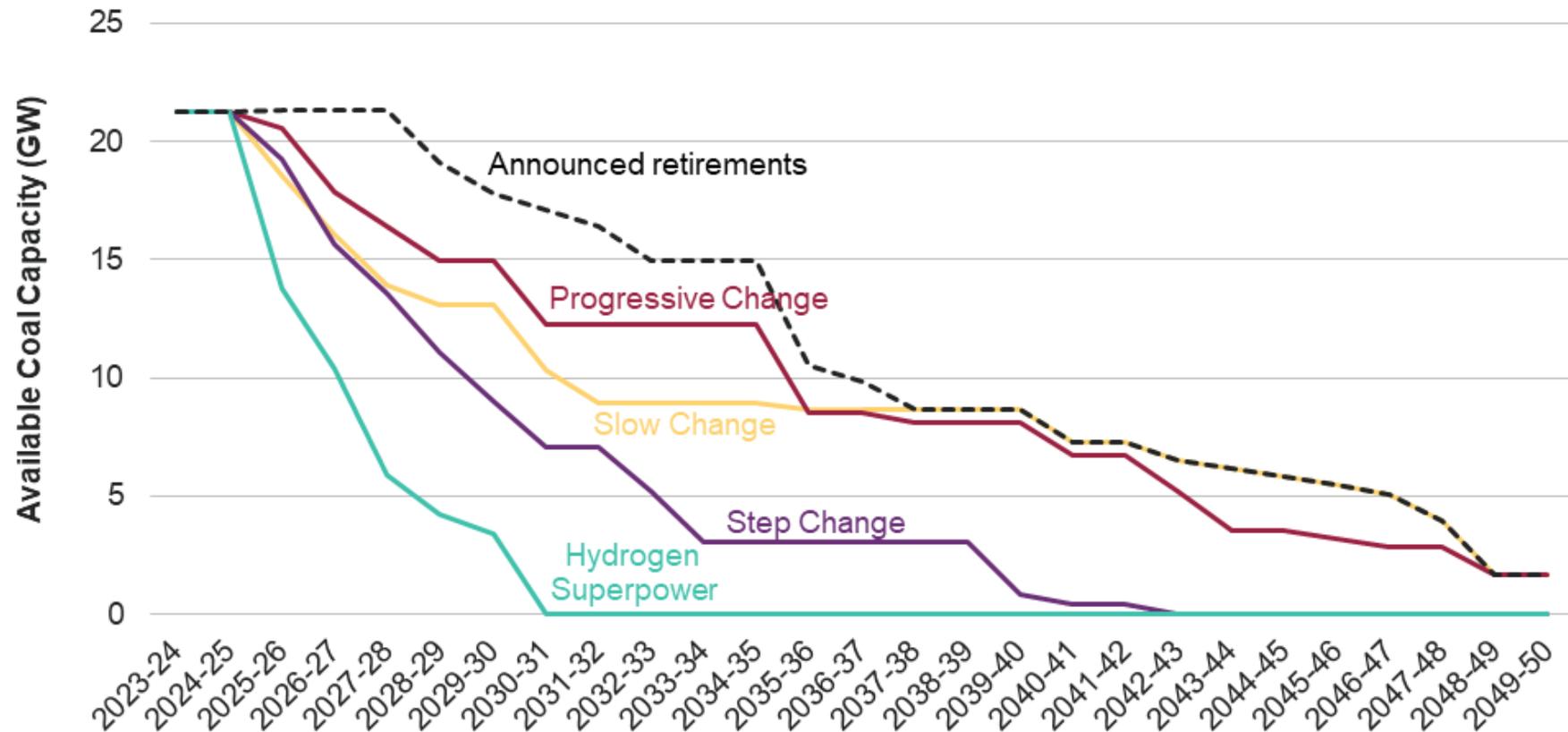
# How big is Australia?



- Continent, Country and Island

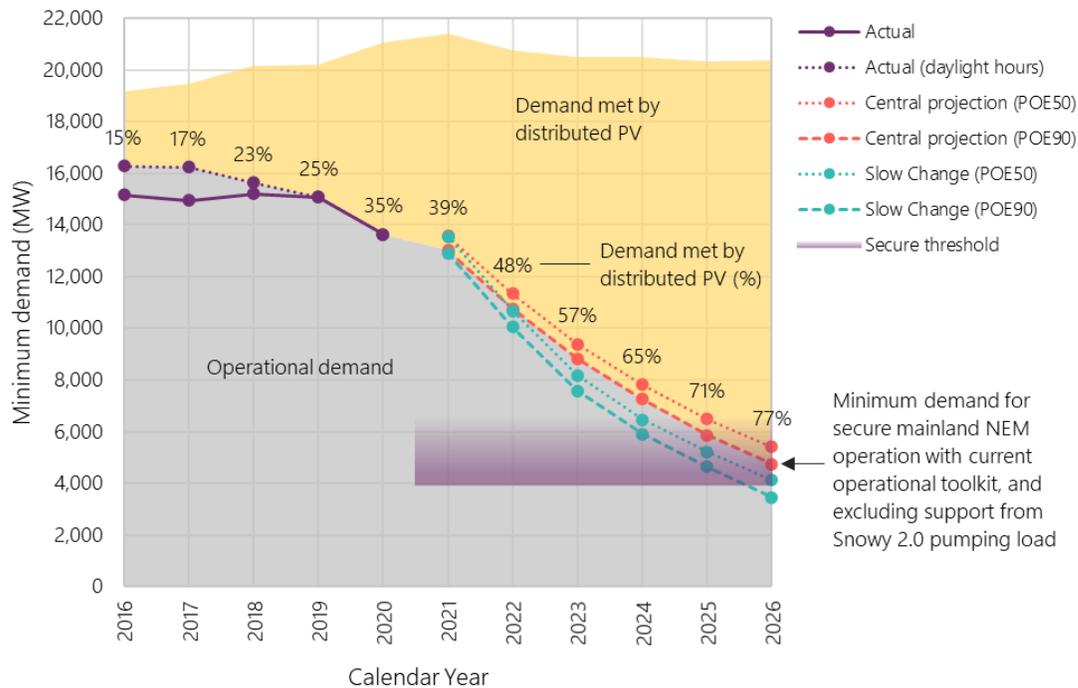
# What's happening in Australia?

Traditional generation fleet is retiring at a faster rate than expected

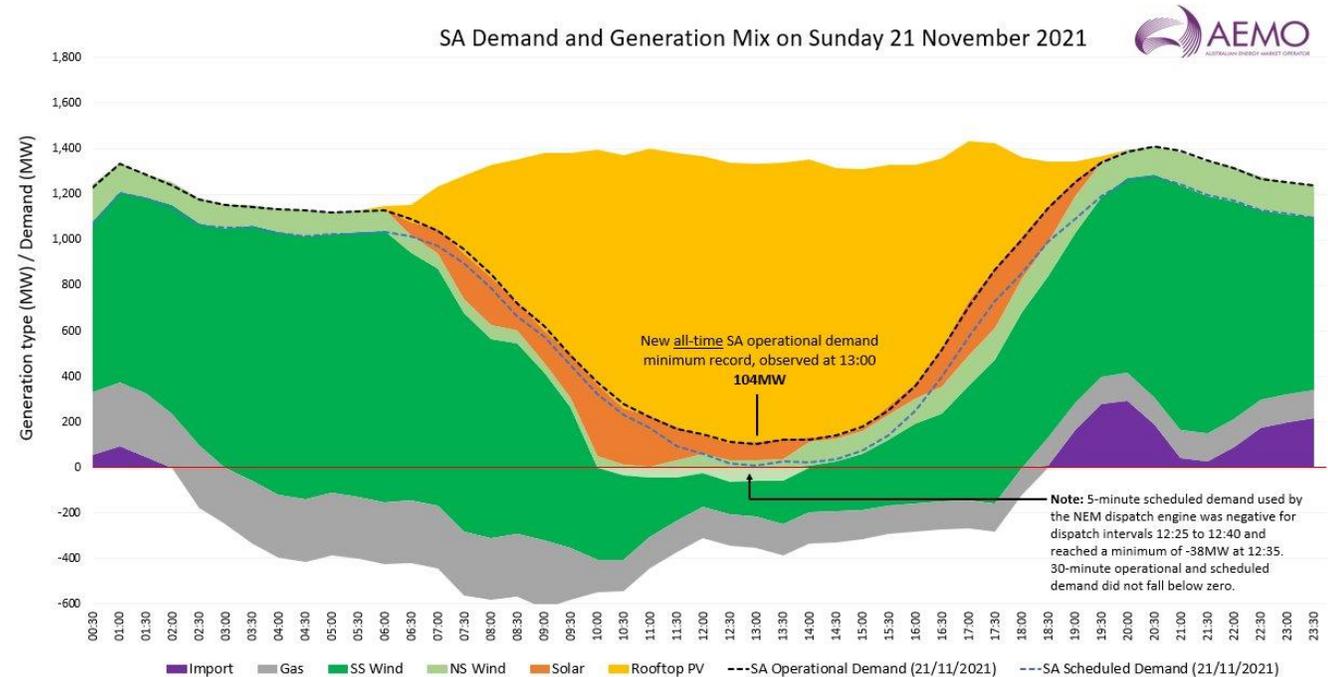


# What's happening in Australia?

- Operational demand is reducing
- Traditional generation fleet spending more time at or close to their minimum stable operation levels



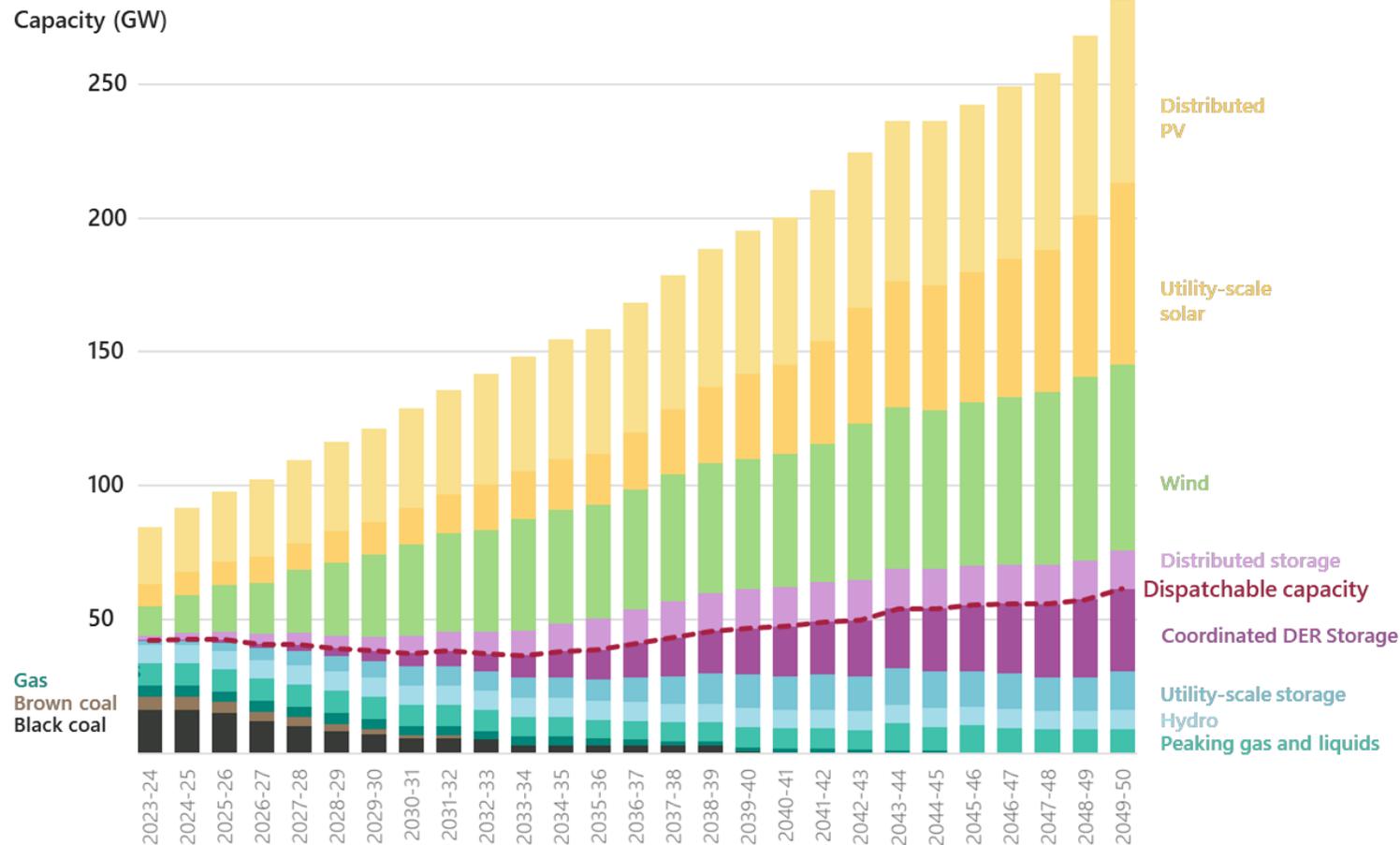
2021 NEM ESOO Summary



# What's happening in Australia?

- Coal generation is expected to retire two to three times faster than anticipated
- Wind, solar (transmission and distribution) and storage dominating the outlook

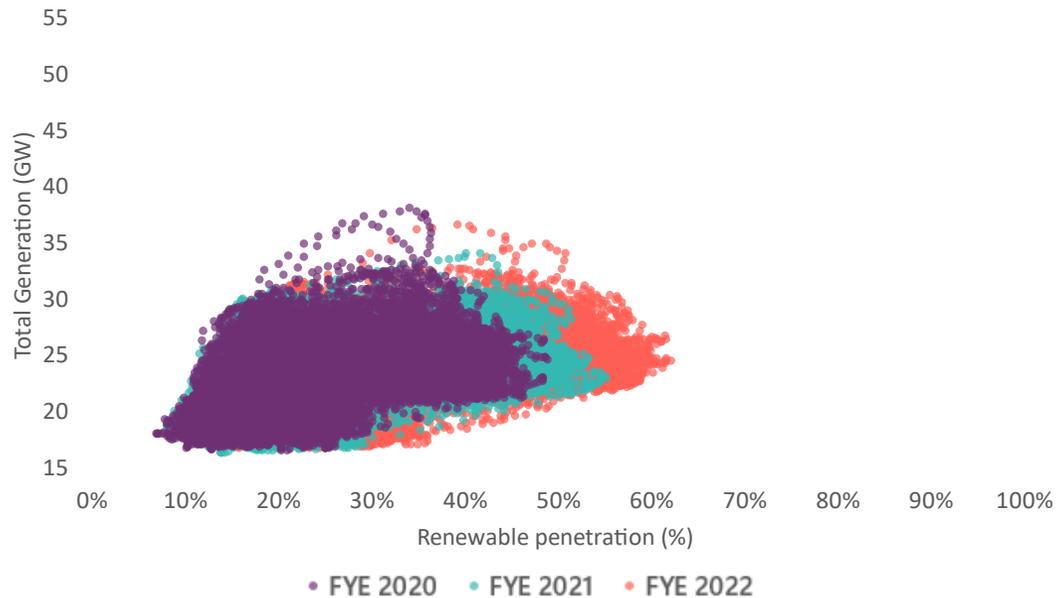
### Forecast NEM capacity to 2050, Step Change scenario, with transmission



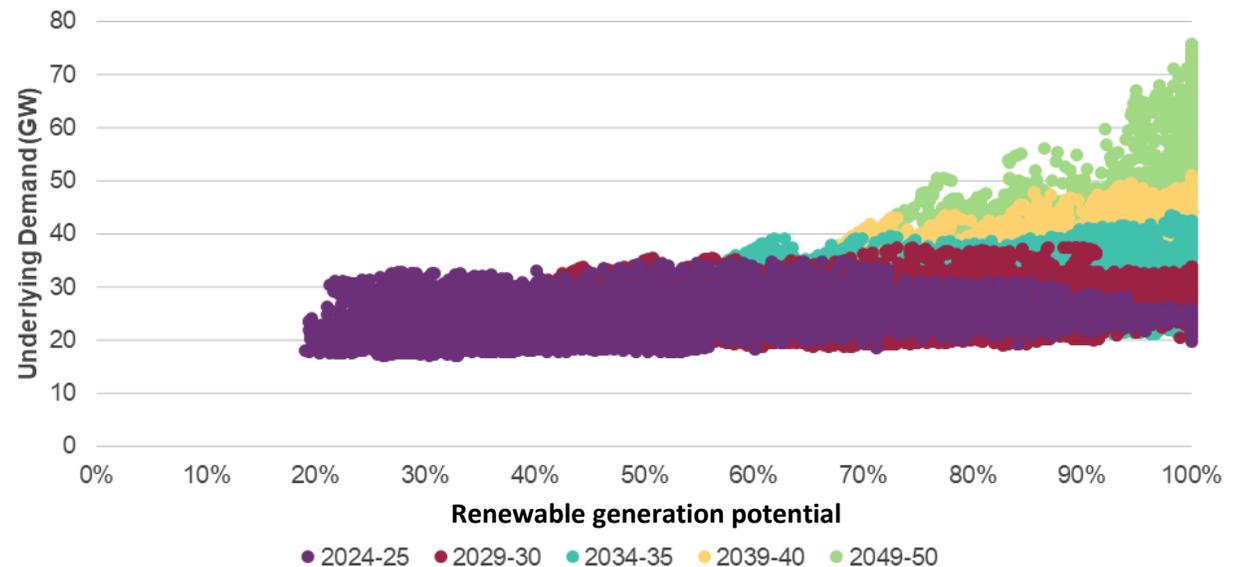
Source: Draft 2022 Integrated System Plan

# What's happening in Australia?

Historically, instantaneous renewable energy is measured using renewable penetration, which is the proportion of renewable energy generation compared to total generation over a 30-minute period. Includes constraints.



ISP projections calculate renewable resource potential, which includes renewable generation not limited by system constraints or economic dispatch. As with historical penetration, it is measured as a proportion of total generation over 30-minutes.



# Target system

An energy system that's capable of handling 100% instantaneous penetration of renewables by 2025





For more information visit

[aemo.com.au](http://aemo.com.au)