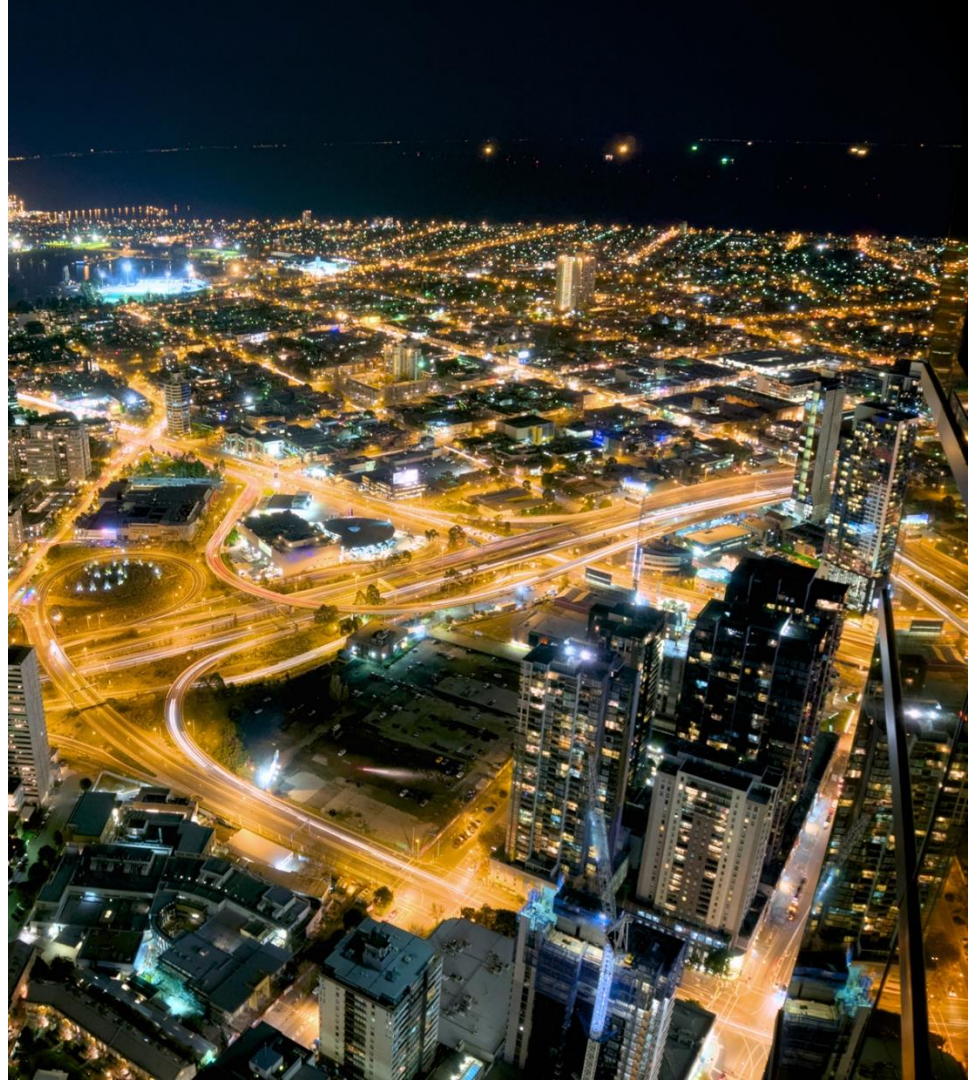




# Scale and timing of the electricity transition challenge for Australia

AARES Pre-conference workshop |  
6 February 2024



Scale and timing of the electricity transition challenge for Australia

The answer is quite simple!?

The scale of the transition is **significant to very significant**

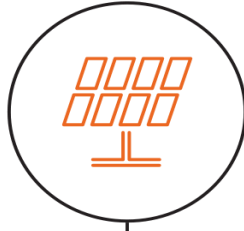
... and the timing is becoming **more and more pressing**

The challenge of the transition **should not be underestimated**

# Four pillars of decarbonisation



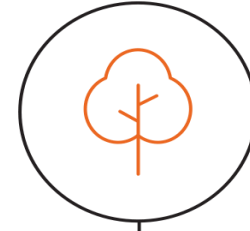
**Energy waste reduction, including through energy productivity and a shift away from energy-intensive products and services**



**100% renewable electricity**



**Electrification and a shift away from fossil fuels to zero- or near-zero emissions alternatives**

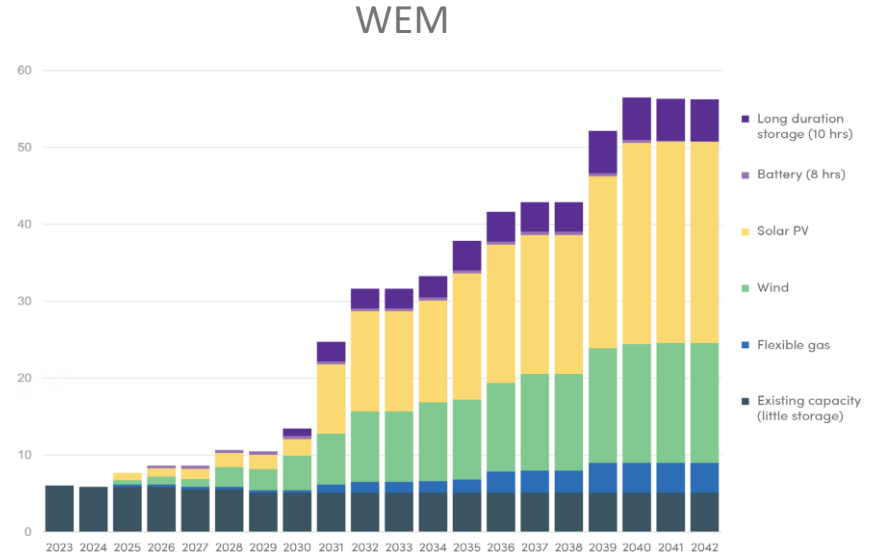
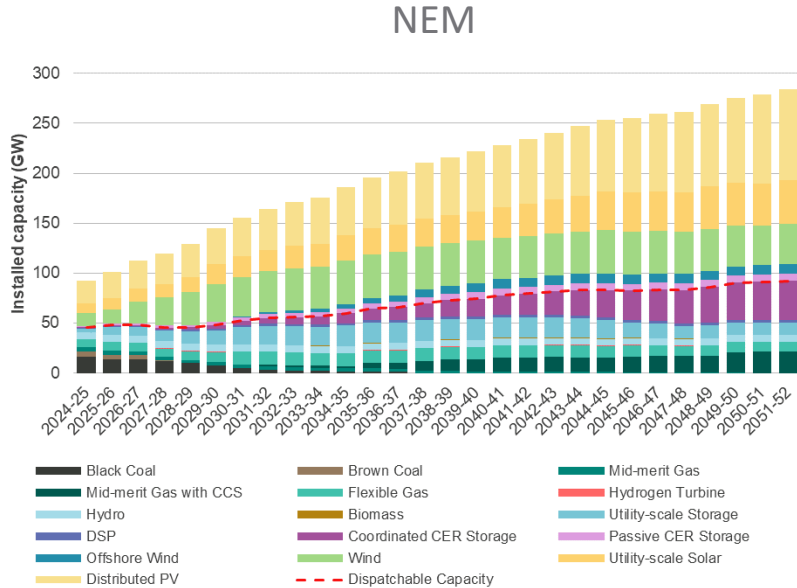


**Non-energy emissions reductions and offsetting of residual emissions**

Source: ClimateWorks Australia et al. (2014)

Decarbonisation of electricity supply coupled with growth in capacity of the electricity system to meet increased demand is central to meeting net zero emissions

# Scale and timing of the transition



# Historical perspective

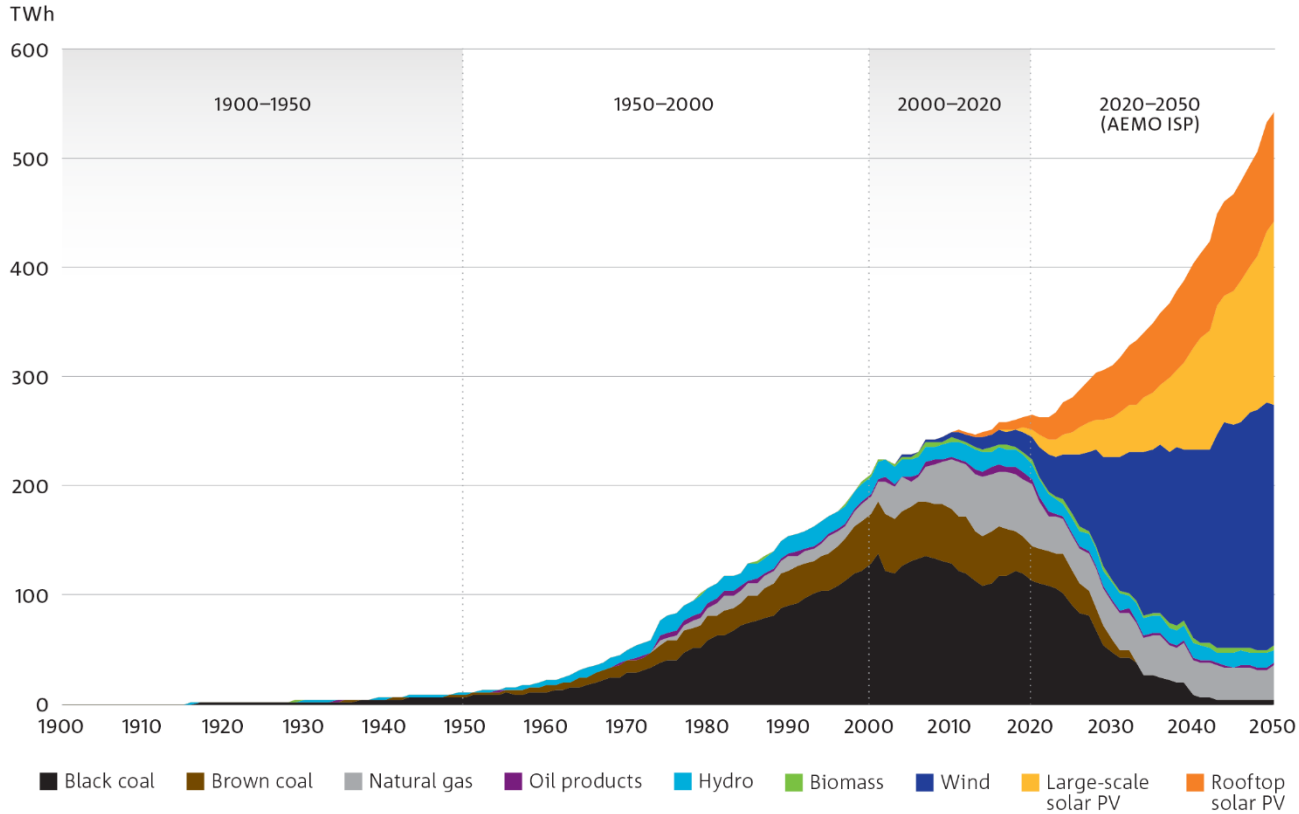


Figure 1: Total Australian electricity generation 1900 to 2050

Source: <https://doi.org/10.25919/wy2n-7x38>

# Historical perspective

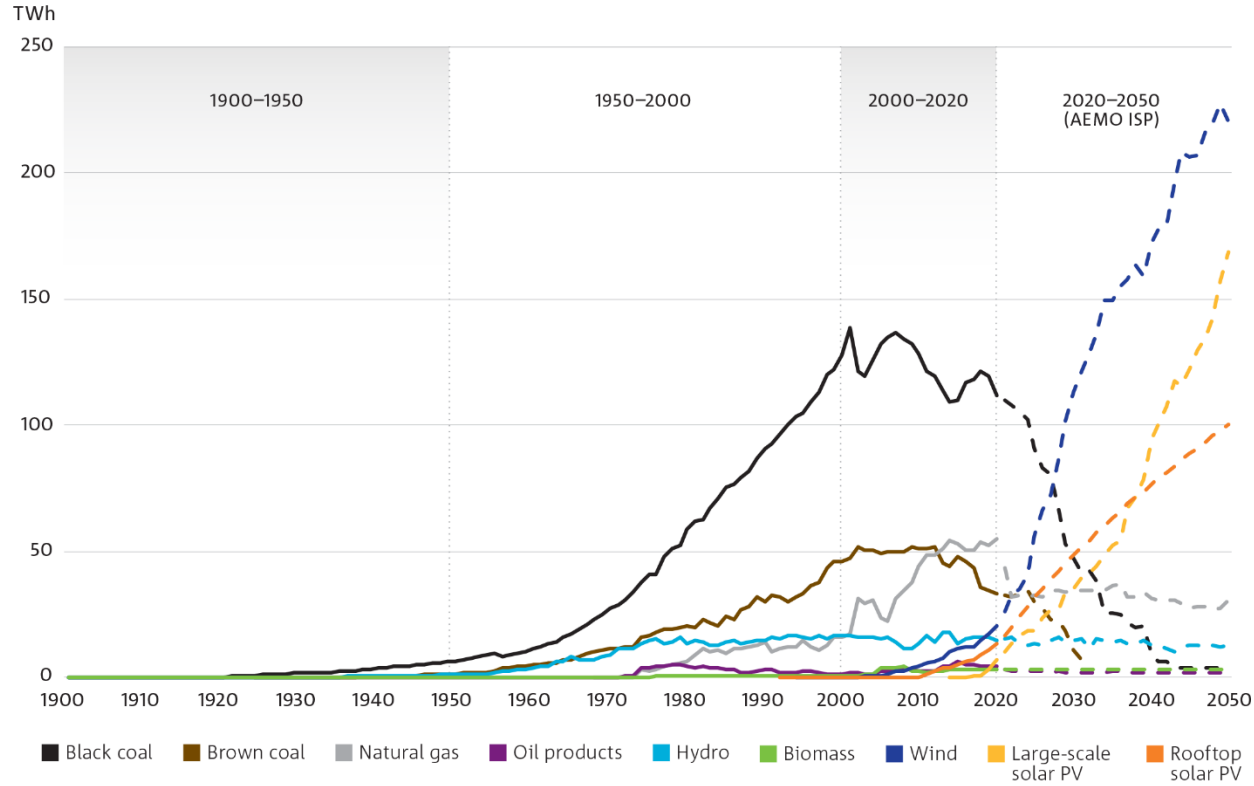


Figure 2: Australian electricity generation by fuel and technology 1900 to 2050

Source: <https://doi.org/10.25919/wy2n-7x38>

# Capacity additions

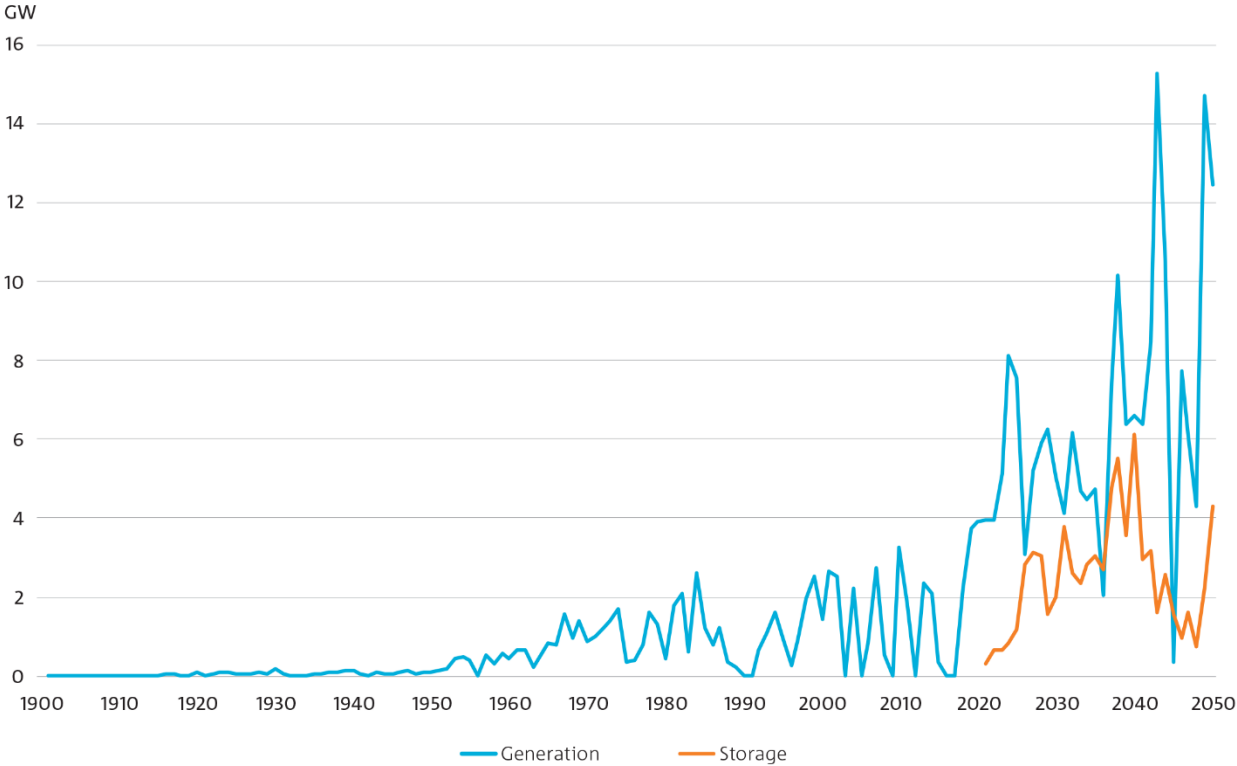


Figure 7: Historical and projected electricity generation capacity deployment 1900–2050, MW per year Source: <https://doi.org/10.25919/wy2n-7x38>



# Key takeaways

Scale of the transition is unprecedented

Need for acceleration in the near-term

Much activity on the customer side of the meter

Other developments in the energy system will have an impact





# Thank you

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Australia's National Science Agency