

The National Energy Guarantee – solving the trilemma

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Some background



Climate policy, technology costs and demand

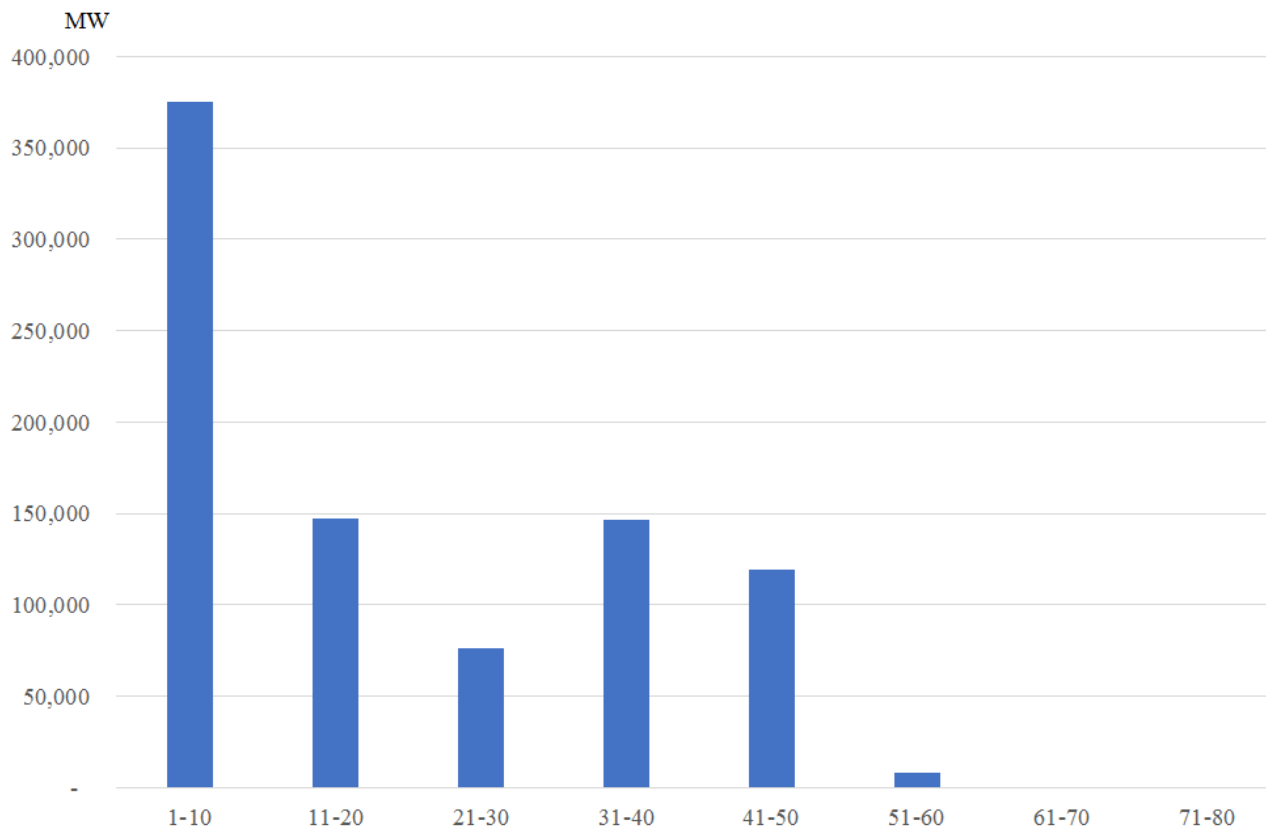
These three variables have fundamentally shifted investment in new power generation capacity



1. Australia has failed to integrate energy and climate change policy for at least 20 years
 - Hilmer Reforms did not address climate change
 - This is despite climate change first being considered by Commonwealth Cabinet in 1989
2. Technology costs have now fundamentally shifted
 - Renewables are now the cheapest form of *energy*
 - But they require 'firming' as they aren't dispatchable
3. Demand is changing
 - Peak demand is relatively stable
 - Energy demand is declining

Significant new investment is required

To both reduce emissions and replace an ageing generation fleet

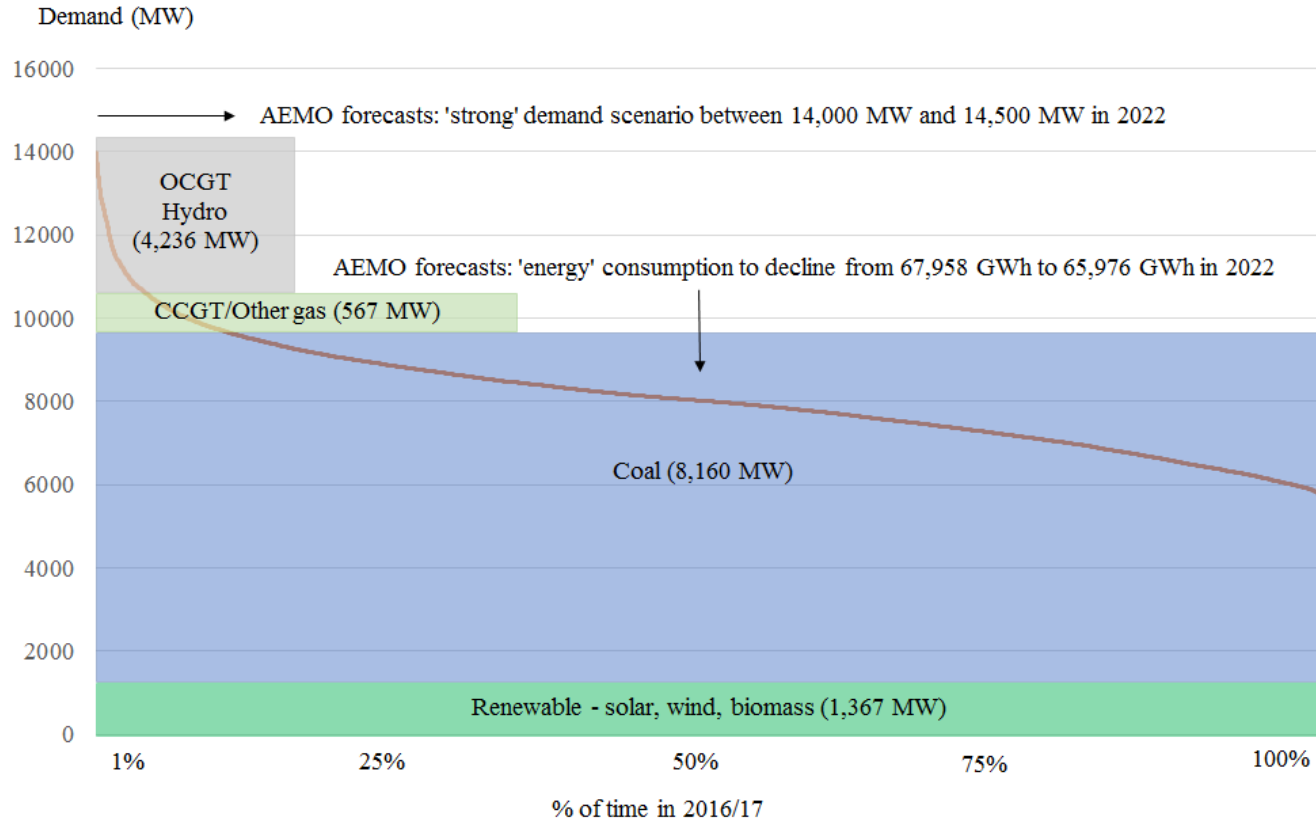


Only 1% of power stations operate beyond 50 years

Approximately 75% of Australian thermal fleet is beyond its original design life

And then there is renewable energy

Renewable energy is not 'firm' but still provides energy (in a market with declining *energy* consumption)




Source: AEMO

But investment will be in renewables and low CF firming technologies

To minimize cost, reduce emissions and replace an ageing generation fleet



Category	Optimal	Actual (2022)	Imbalance	Weighting
Baseload	7,295	8,160	865	overweight
Intermediate	1,669	567	-1,102	underweight
Peaking	5,022	4,236	-786	underweight
	13,986	12,963	-1,023	

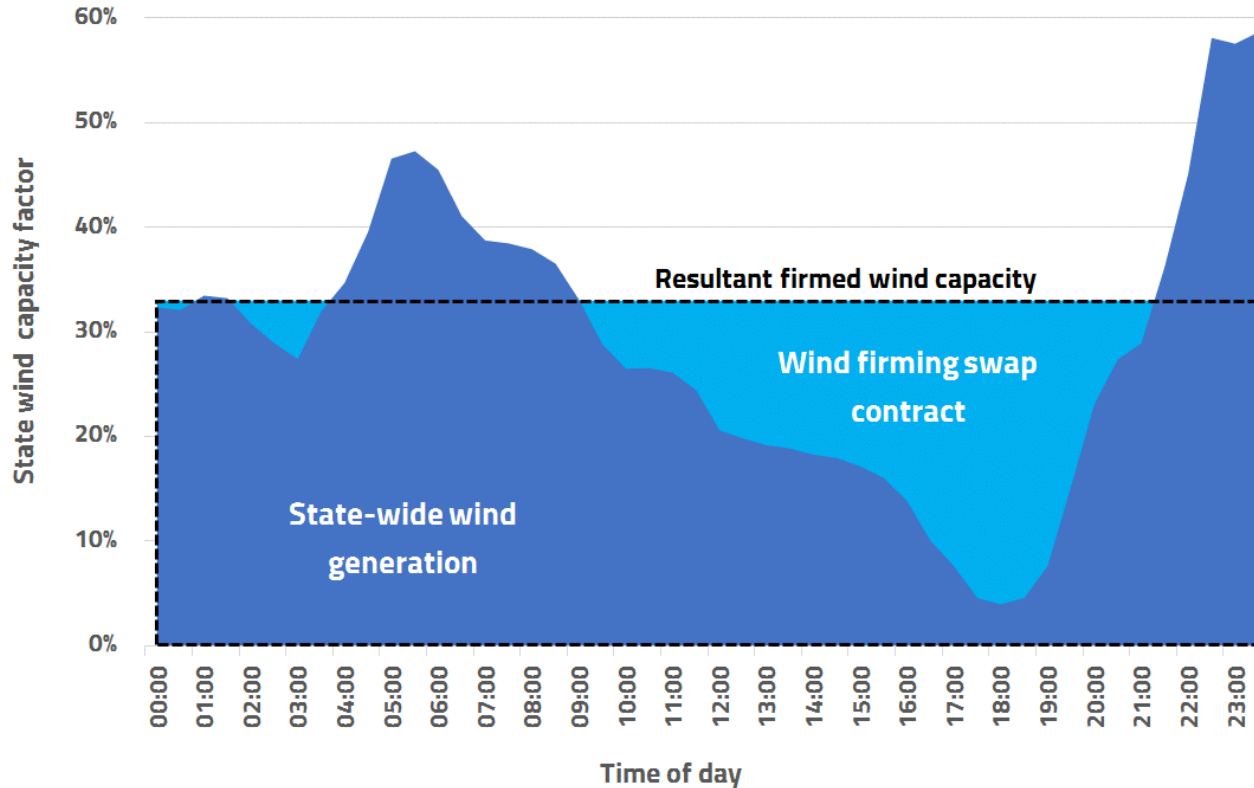
 This assumes no new investment apart from plant under construction. It also assumes Liddell power station is closed.

The NEG



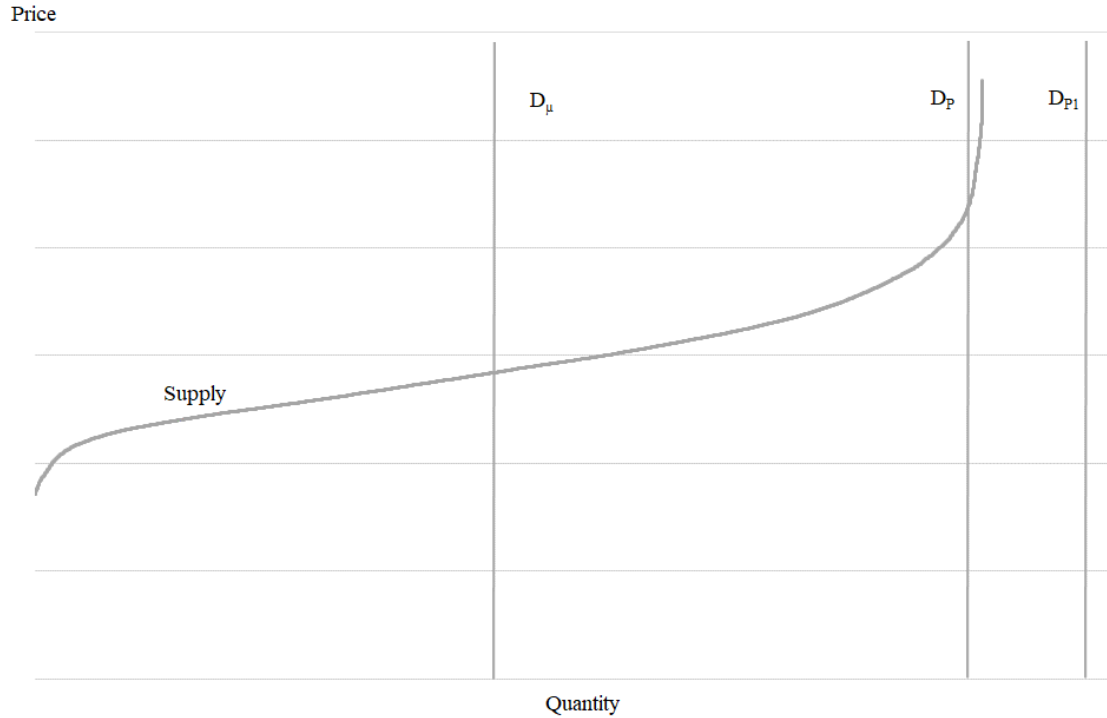
How the NEG can drive innovation

New dispatchable renewable derivative products now being offered to facilitate compliance with NEG



But a word of caution.....

There are two types of 'peak demand' we need to think about



But a word of caution.....

There are two types of 'peak demand' we need to think about



1. Supply side solutions (e.g. new generation) are likely to be economic for *average* summer peak demand
 - Existing focus on transparent and commonly traded (e.g. swaps, caps etc) products is likely to be sufficient, when combined with the recent advanced notice closure rule change submitted by the ESB to the AEMC
 - Important that the focus of the reliability obligation here be 'light handed'
2. But a different approach is likely to be required for extreme low probability but high consequence peak demand events (e.g. POE10 – 1 in 10 year demand event)
 - Industry unlikely to build for this demand given infrastructure would only be used once in ten years
 - Demand response likely to be a better option

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