

Parliament of Victoria

Inquiry into Nuclear Prohibition

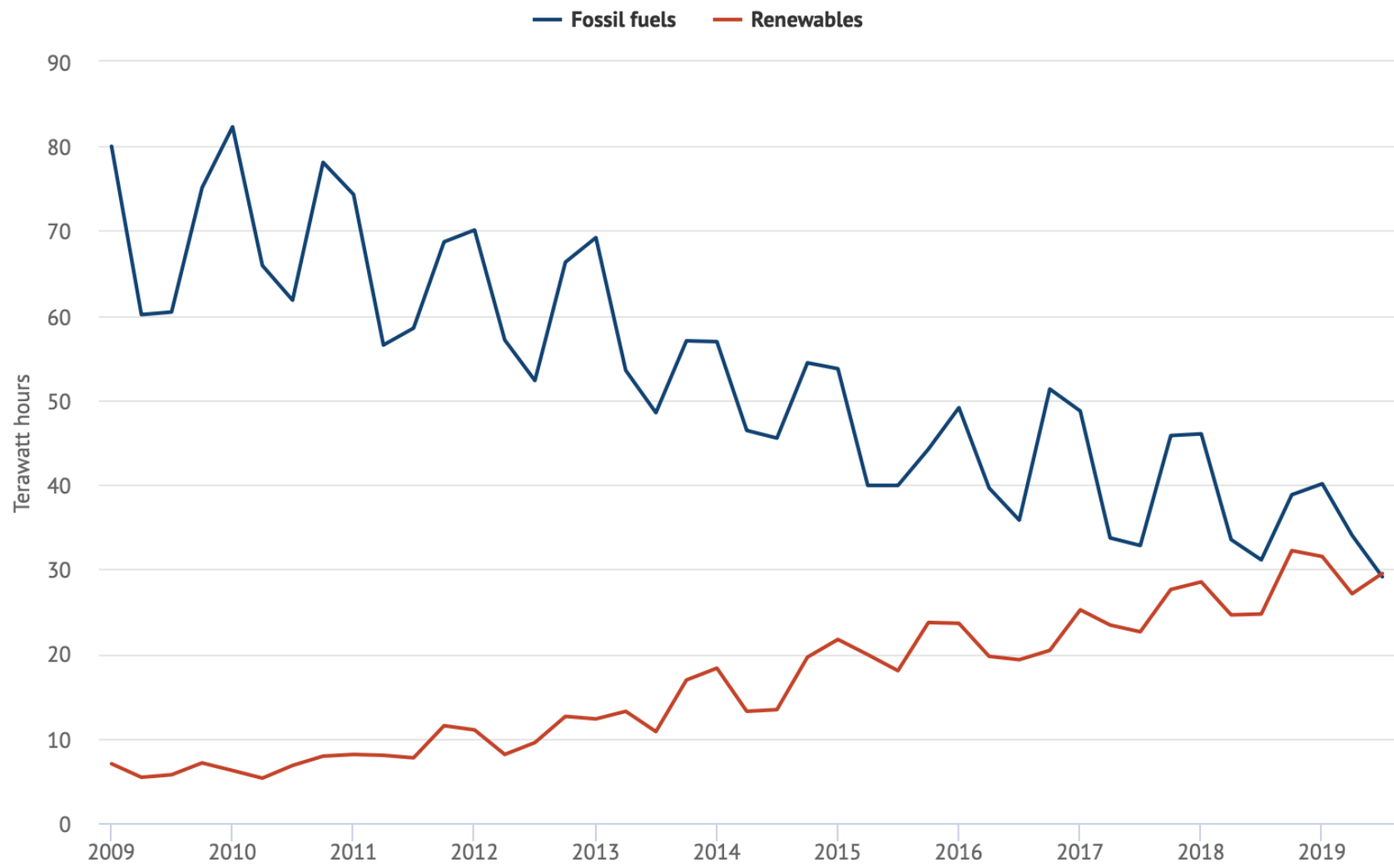
Public Hearing — Supplementary Slides

Simon Holmes à Court

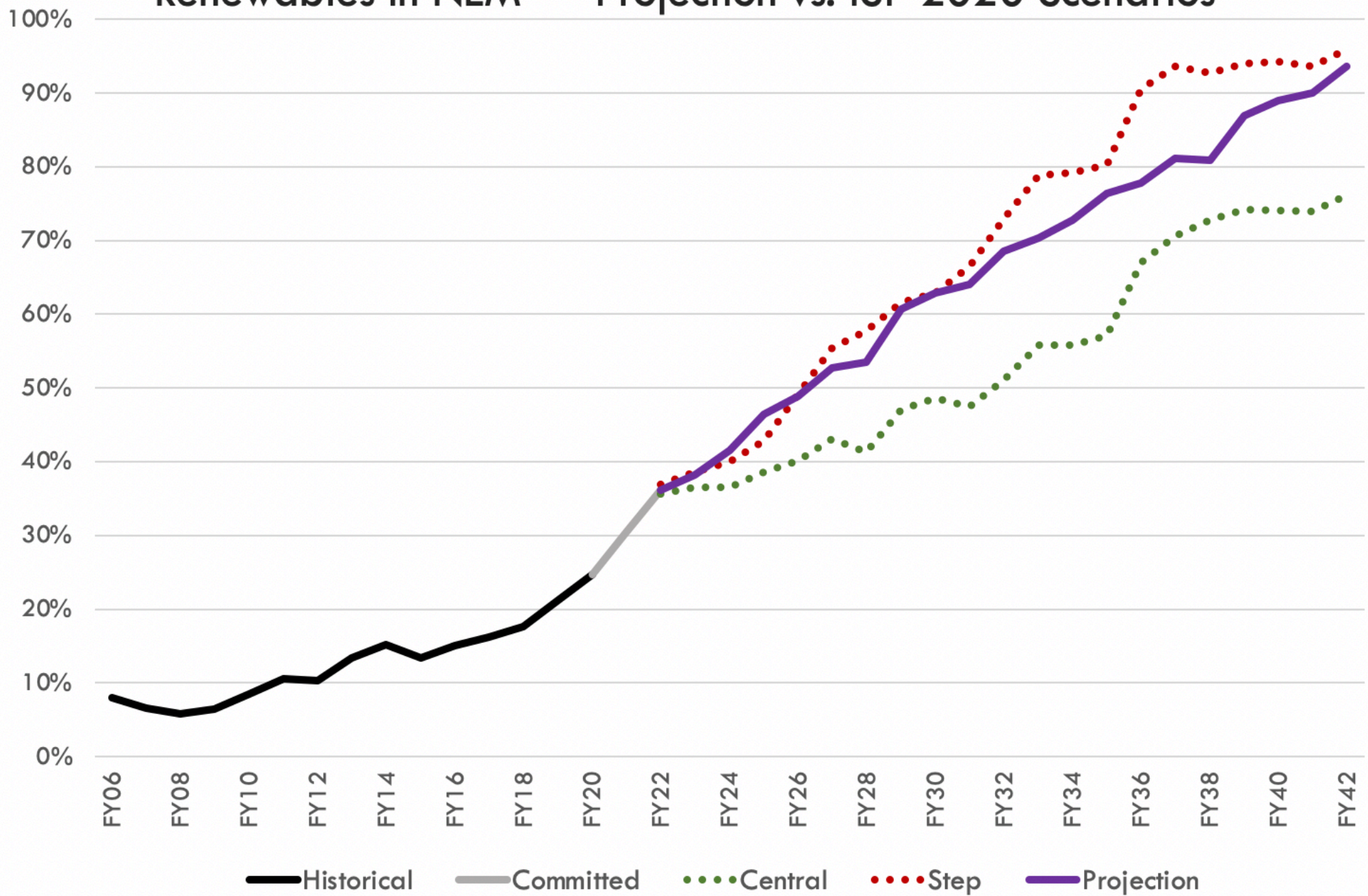
11 September 2020

UK renewables generated more electricity than fossil fuels for the first time

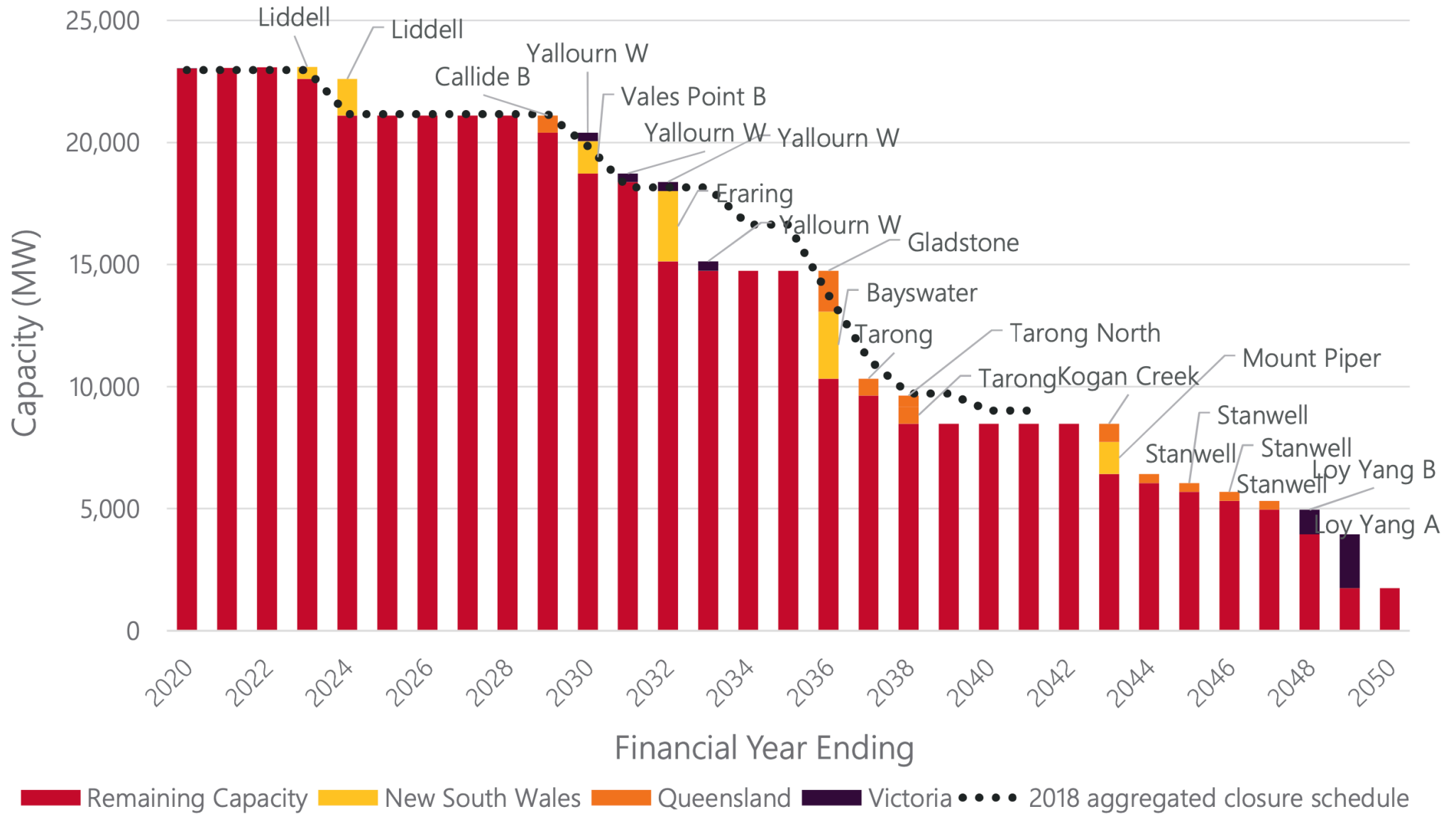
The third quarter of 2019 was the first ever to see this switch



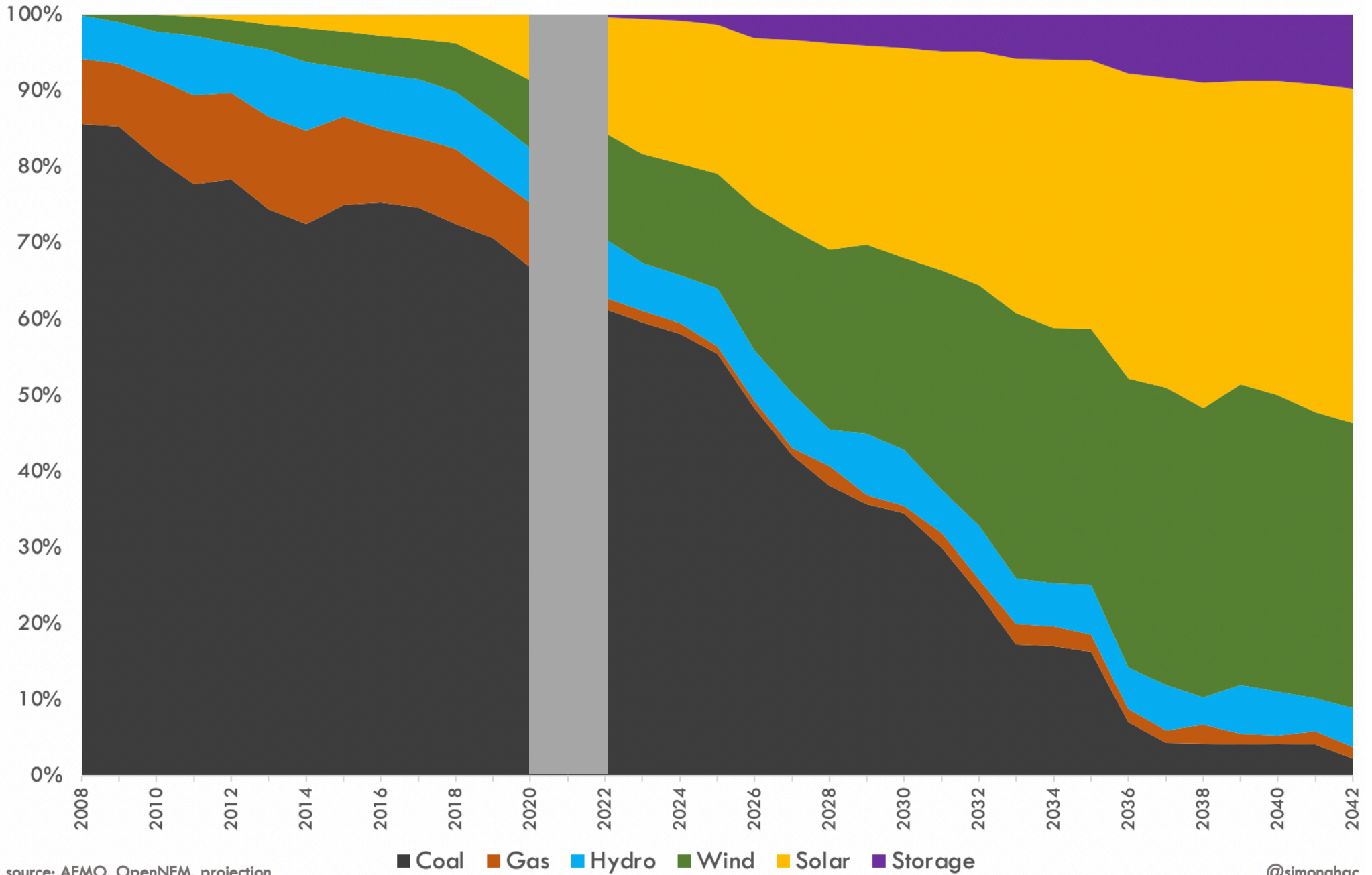
Renewables in NEM — Projection vs. ISP 2020 Scenarios



source: AEMO, OpenNEM, projection



Composition of Energy Generation — Step Change Scenario



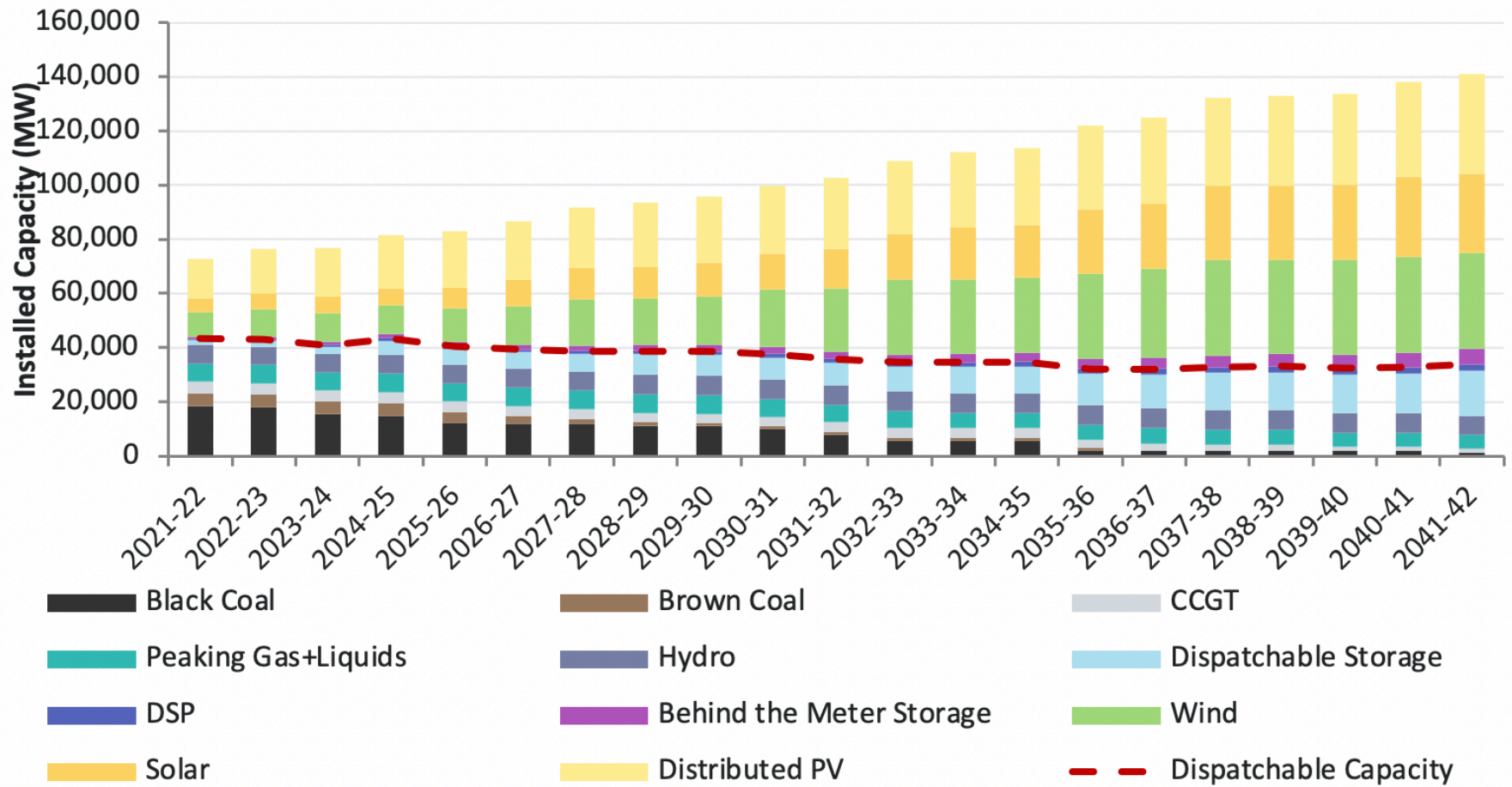
source: AEMO, OpenNEM, projection

@simonahac

NEM capacity by year

Select region

NEM



Liddell replacement is AGL's preferred option compared to the proposal to extend the life of Liddell



Liddell replacement

Preferred option

Liddell Power Station closed in 2022 and repurposed with series of investments in new, low emissions generation and upgrades to existing generation

- Staged approach to bring new investment online ahead of Liddell retirement
- Each phase will track timing, deliverables and completion dates of each new investment



Newcastle gas peaker
250MW or other NSW sites



Renewables
1600MW



Bayswater upgrade
100MW



NSW pumped hydro
Feasibility



NSW gas peaker
500MW



Demand response
up to 150MW



Liddell battery
250MW



Liddell synchronous condenser
Inertia and reactive power

Total capital investment: ~\$1,360m
(of which ~\$490m in stage 1 projects)

Levelised cost of energy: \$83/MWh

Asset life: 15 to 30 years

Liddell extension

Work undertaken at Liddell Power Station to enable AGL to operate the station beyond 2022

- Extending Liddell's life by five years to deliver 1000MW of peak capacity at reduced availability
- Analysis has been done to examine the costs and other risks associated with extending Liddell

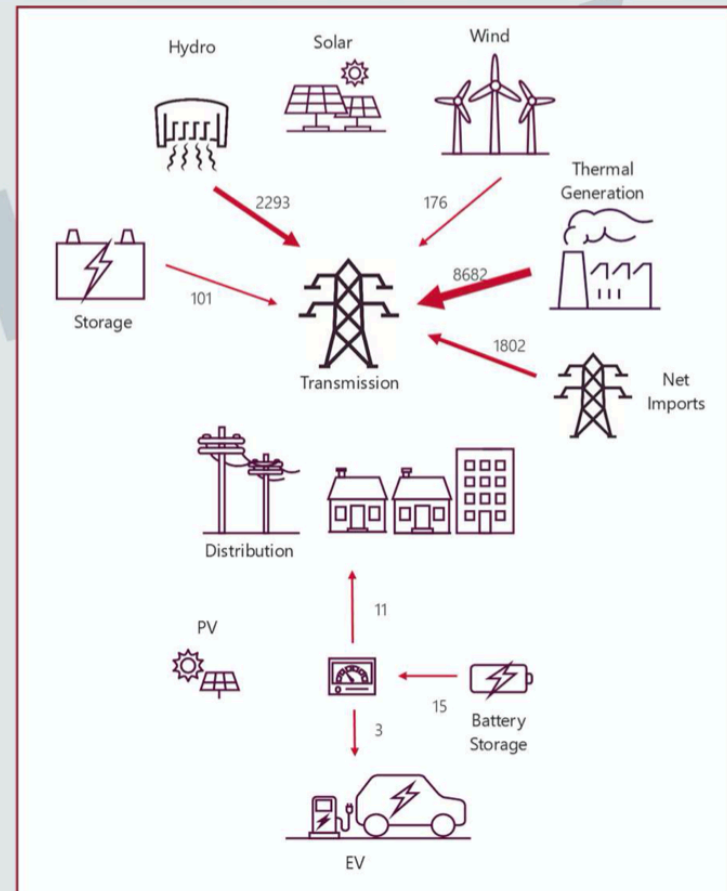
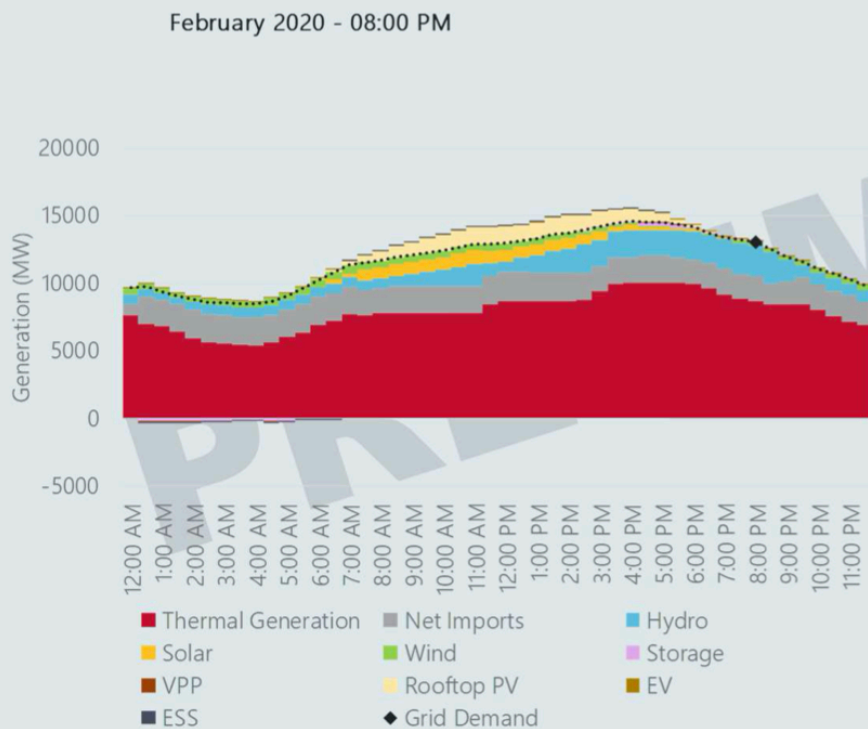


Total capital investment: ~\$920m

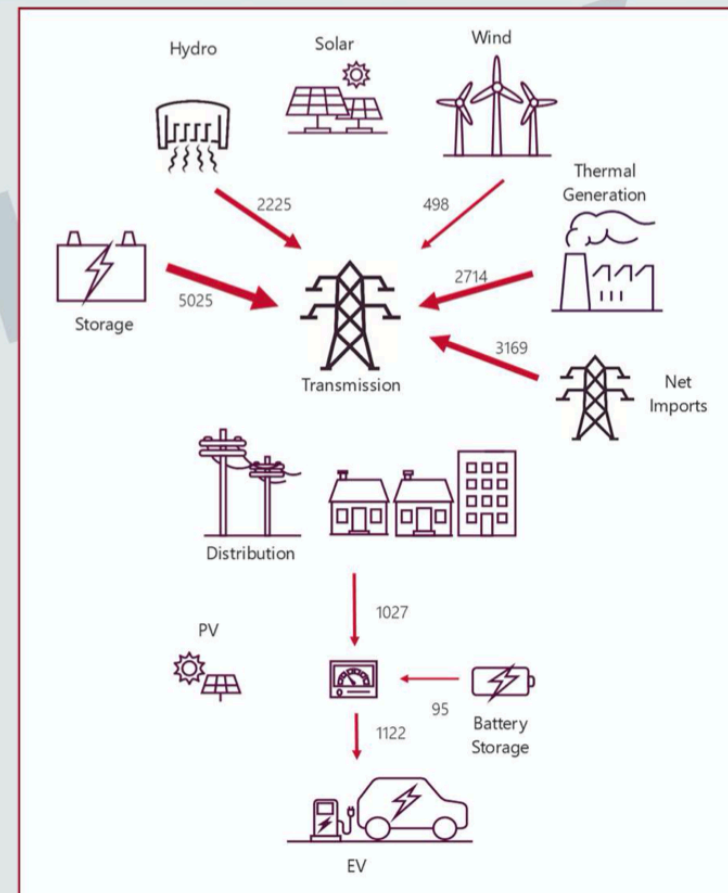
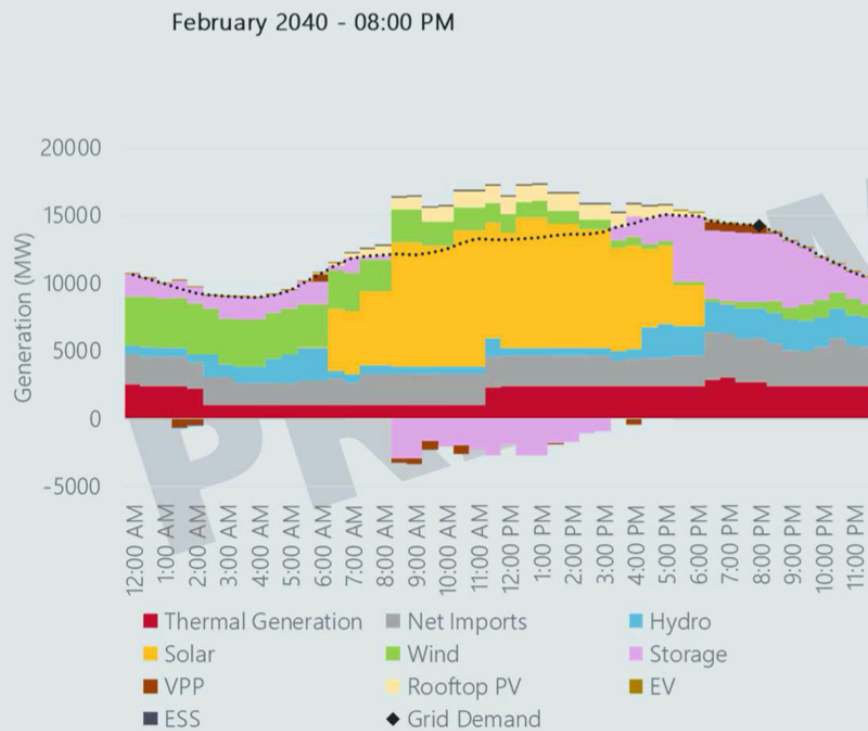
Levelised cost of energy: \$106/MWh

Asset life: five years

Changing load patterns will impact the need for traditional baseload, mid-merit and peaking generation



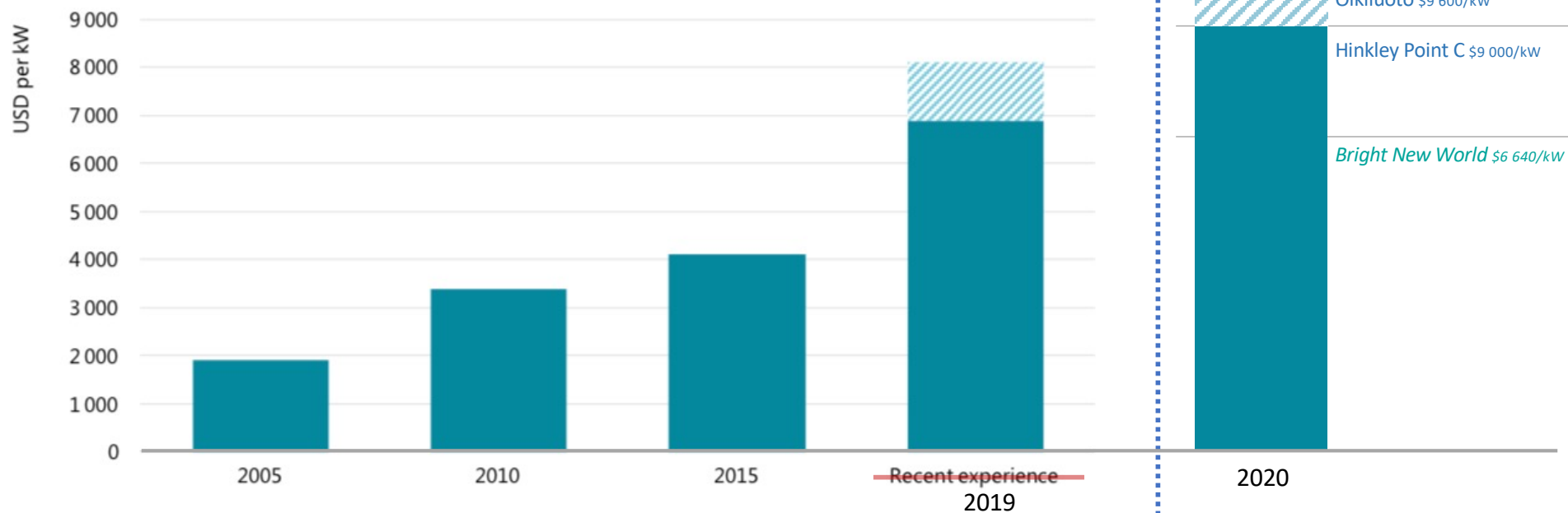
Changing load patterns will impact the need for traditional baseload, mid-merit and peaking generation



Plant	Capacity	Announced	Initial works	Initial projected completion	Initial projected cost (bn)	Current projected completion	Latest projected cost (bn)	AUD (bn)	AUD/W (bn)	Over budget	Years end-to-end	Years late
Flamanville, France	1650	2004	2007	2012	€ 3.30	2022	€ 19.1	31.5	19.100	479%	18.0	10
Olkiluoto, Finland	1600	2005	2005	2010	€ 3.00	2023	€ 11.0	18.2	11.344	267%	18.0	13
Hinkley Point C, UK	3260	2006	2014	2017	£ 16.00	2027	£ 22.9	41.9	12.855	43%	21.0	10
Vogtle, GA, USA	2234	2006	2009	2016	\$ 14.00	2022	\$ 27.5	38.2	17.097	96%	16.0	6
VC Summer, SC, USA	2234	2008		2017	\$ 9.80	<i>cancelled</i>						

source: media reports

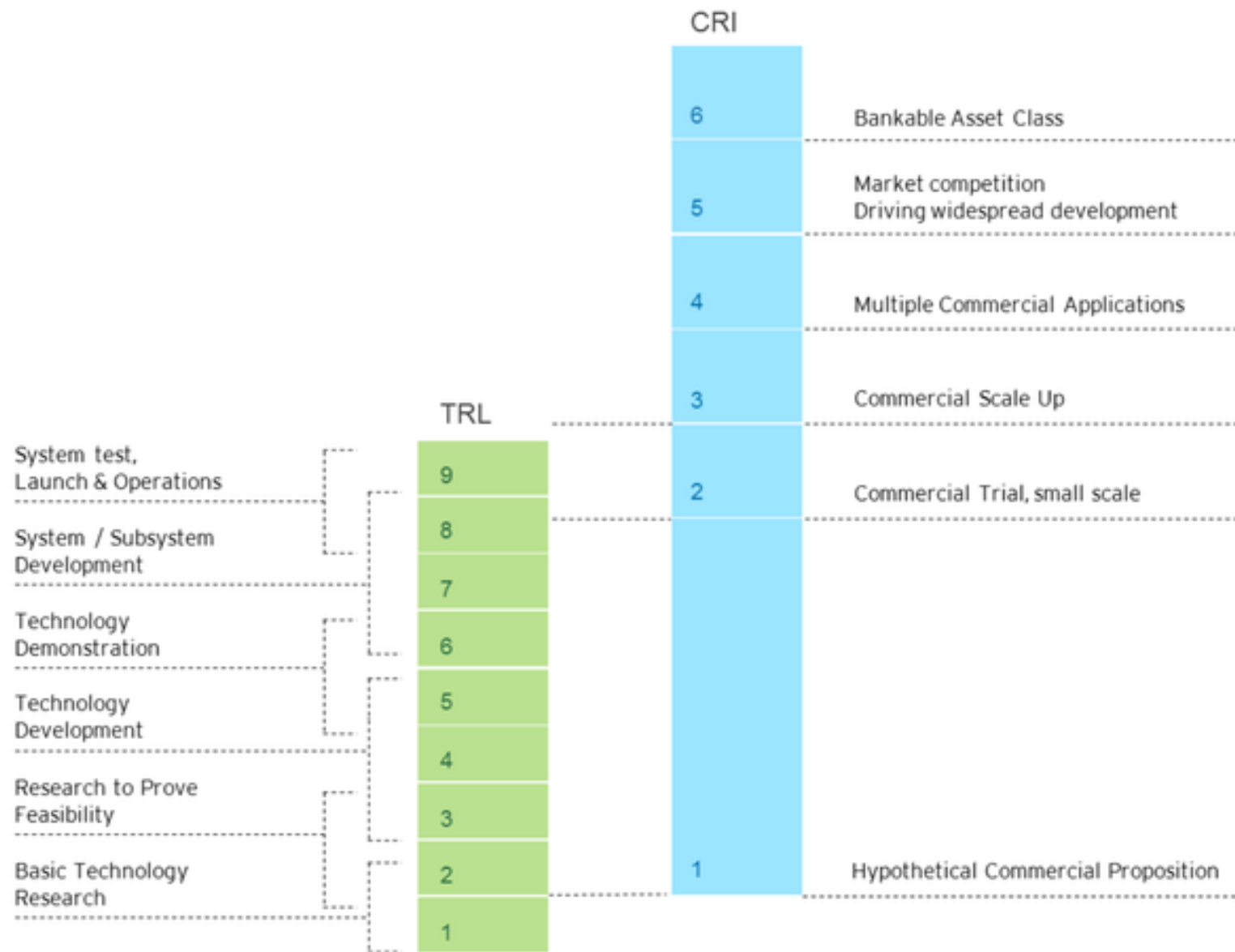
Figure 9. Projected overnight construction cost of nuclear power capacity and recent United States and Western European experience



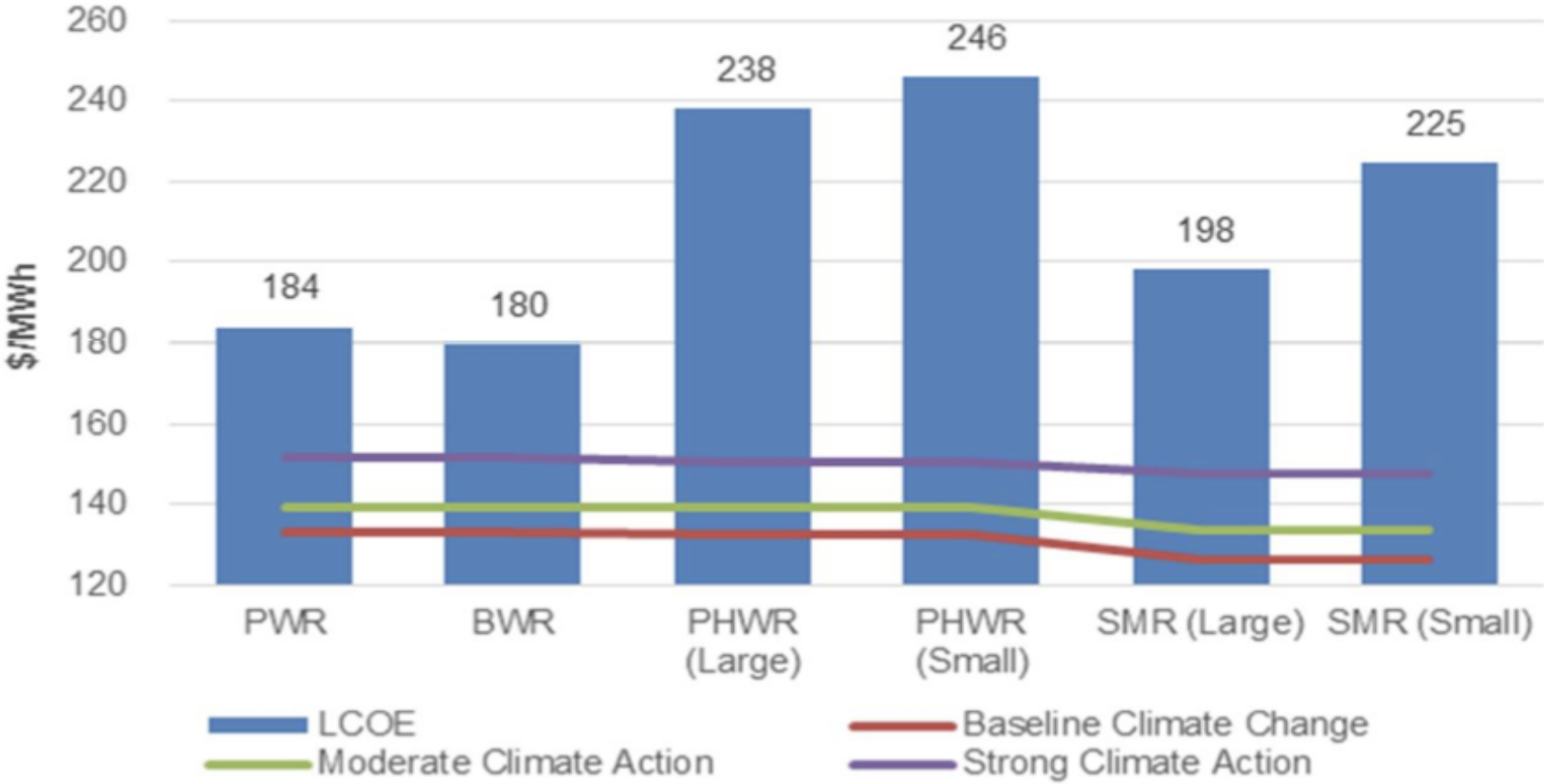
Source: IEA analysis based on IEA/NEA (2005, 2010 and 2015 editions), Projected Costs of Generating Electricity.

Source: media reports

Construction costs of new nuclear power plants in the United States and Western Europe have turned out to be much higher than projected.



LCOE / LPOE Comparison



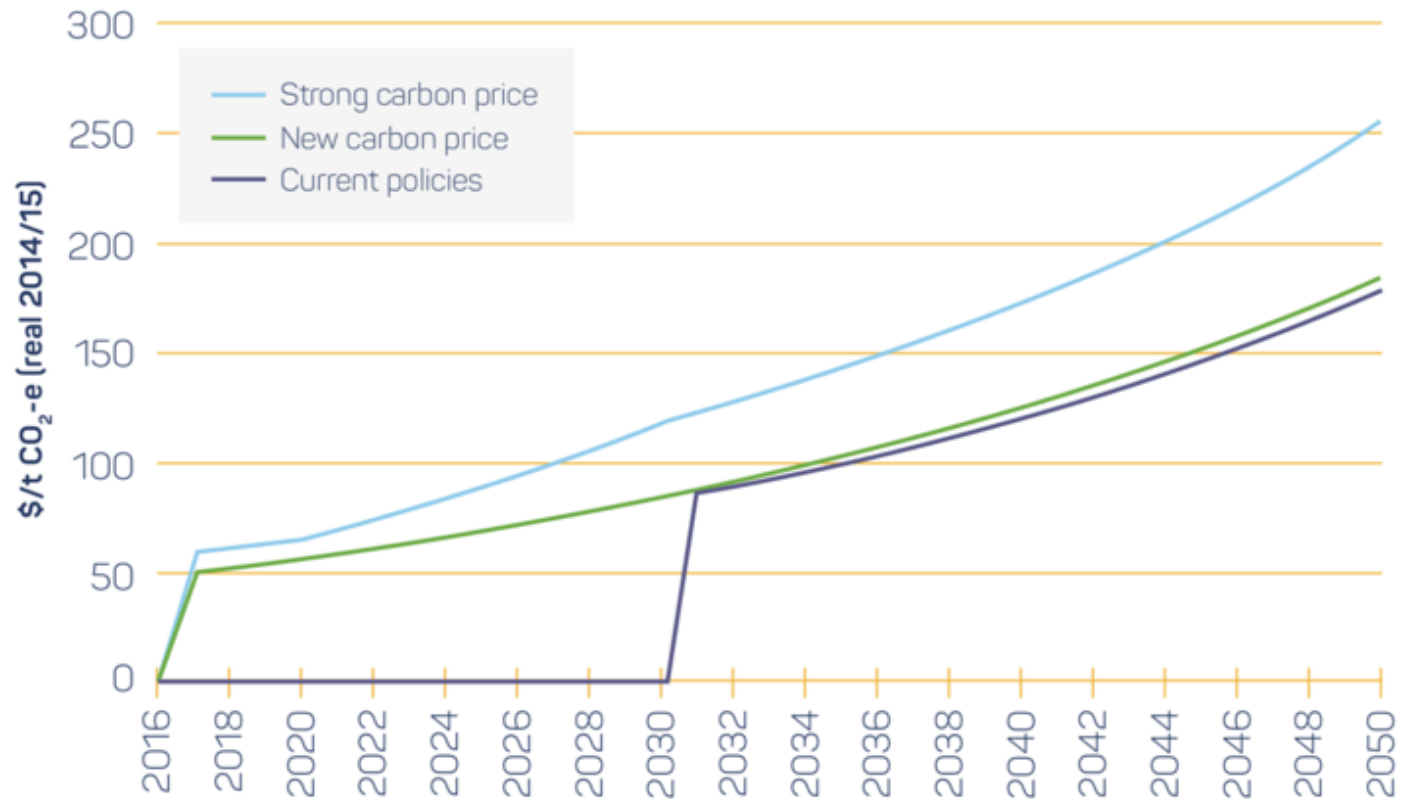


Figure G.2: Assumed carbon prices under the Current Policies, New Carbon Price and Strong Carbon Price scenarios

Source: Ernst & Young