Why Australia must lead on residential batteries and how

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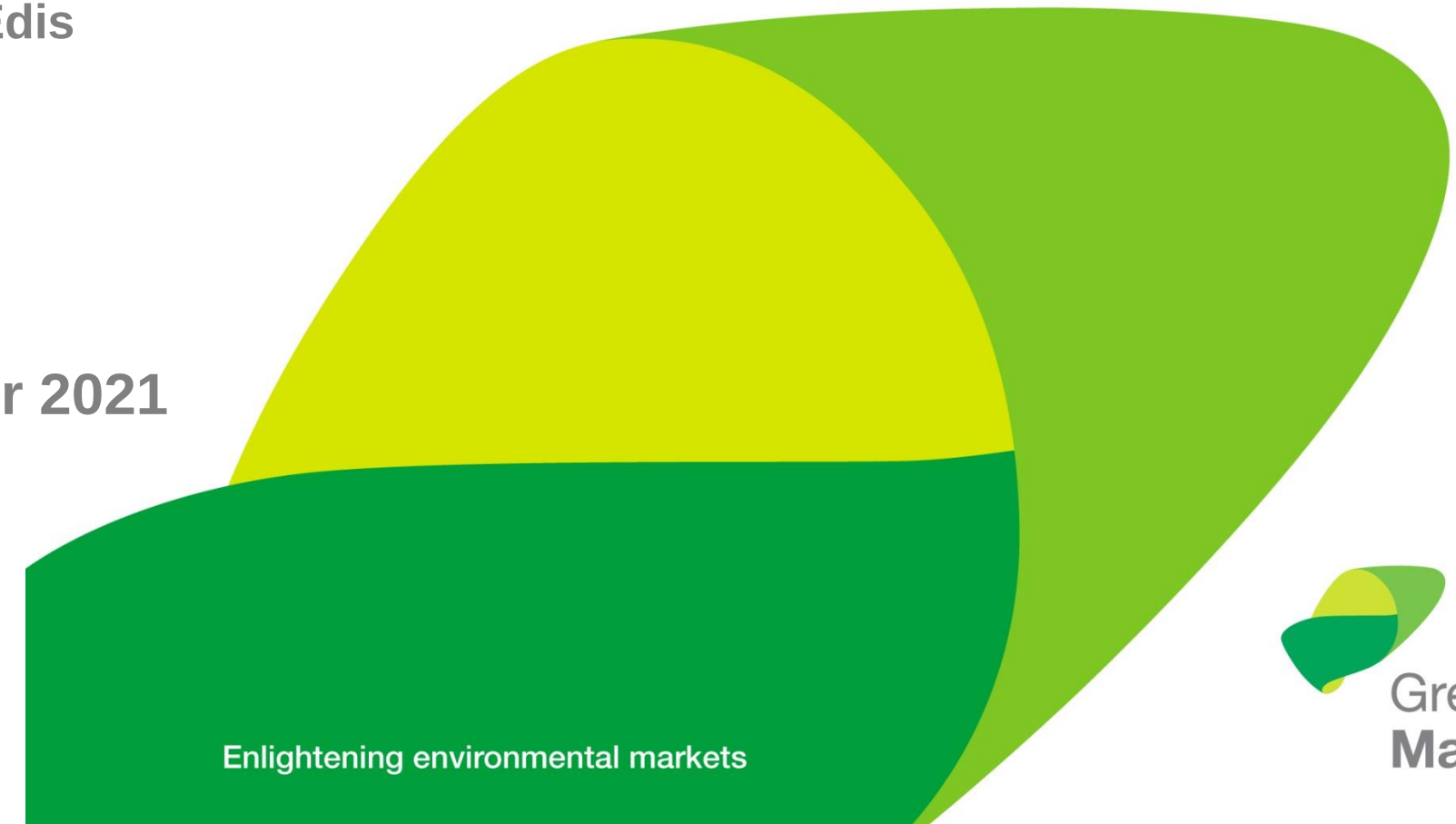
October 2021



Green Energy Markets

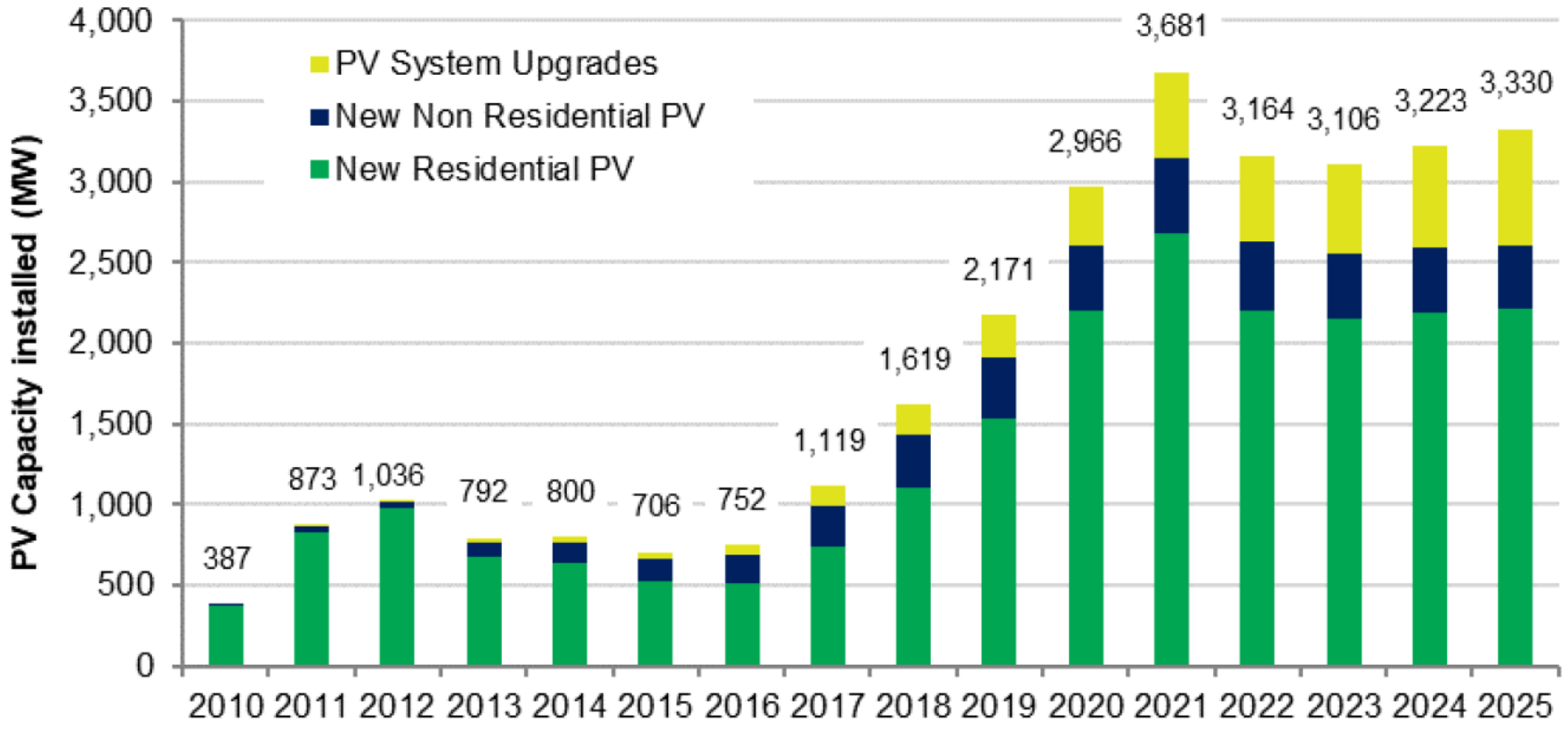
Introduction

- **The amount of solar installed in Australian main grids will soon approach a level where system constraints limit how much can be absorbed and spillage will become increasingly significant.**
- **Battery uptake has so far been too small to make a meaningful difference and must be accelerated so we can effectively harness further growth in solar generation.**
- **The existing SRES scheme provides a fast and easy to implement national mechanism to encourage uptake of behind-the-meter battery systems that is likely to be superior to current rebate programs.**

Rooftop solar – now in the big league

- **Green Energy Markets projecting over 3GW per annum of rooftop solar installs**

Annual installations of rooftop solar in Australia (sub 100kW systems)

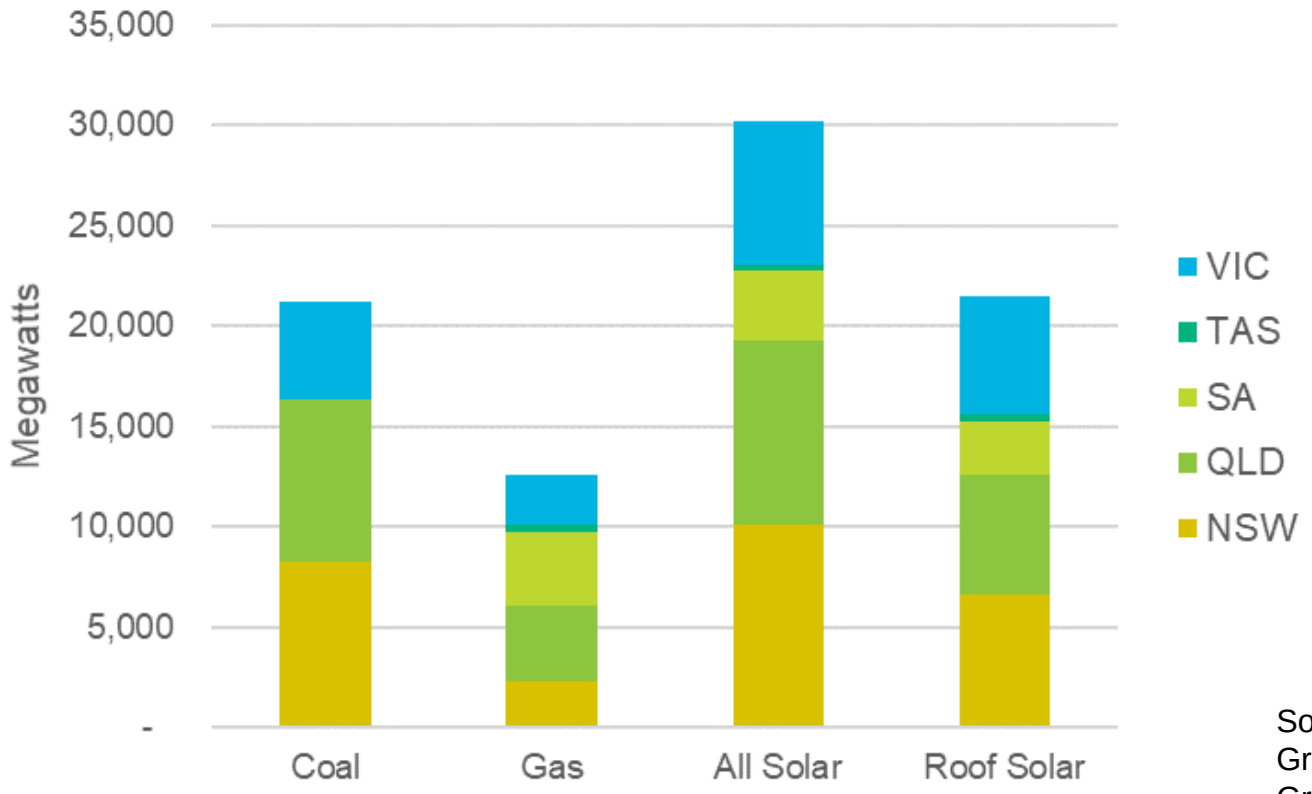


Source: Green Energy Markets (2021) Updated STC forecast 2021-2025 Report to the Clean Energy Regulator

Rooftop solar – now in the big league

- **By 2025 solar capacity in the NEM will be more than double that of gas power generators and almost a third larger than coal.**

Installed cumulative capacity in NEM by fuel type in 2025



Sources:
Green Energy Markets DER Projections for AEMO - 2021;
Green Energy Markets Power Project Database

The past: solar and wind easily accommodated

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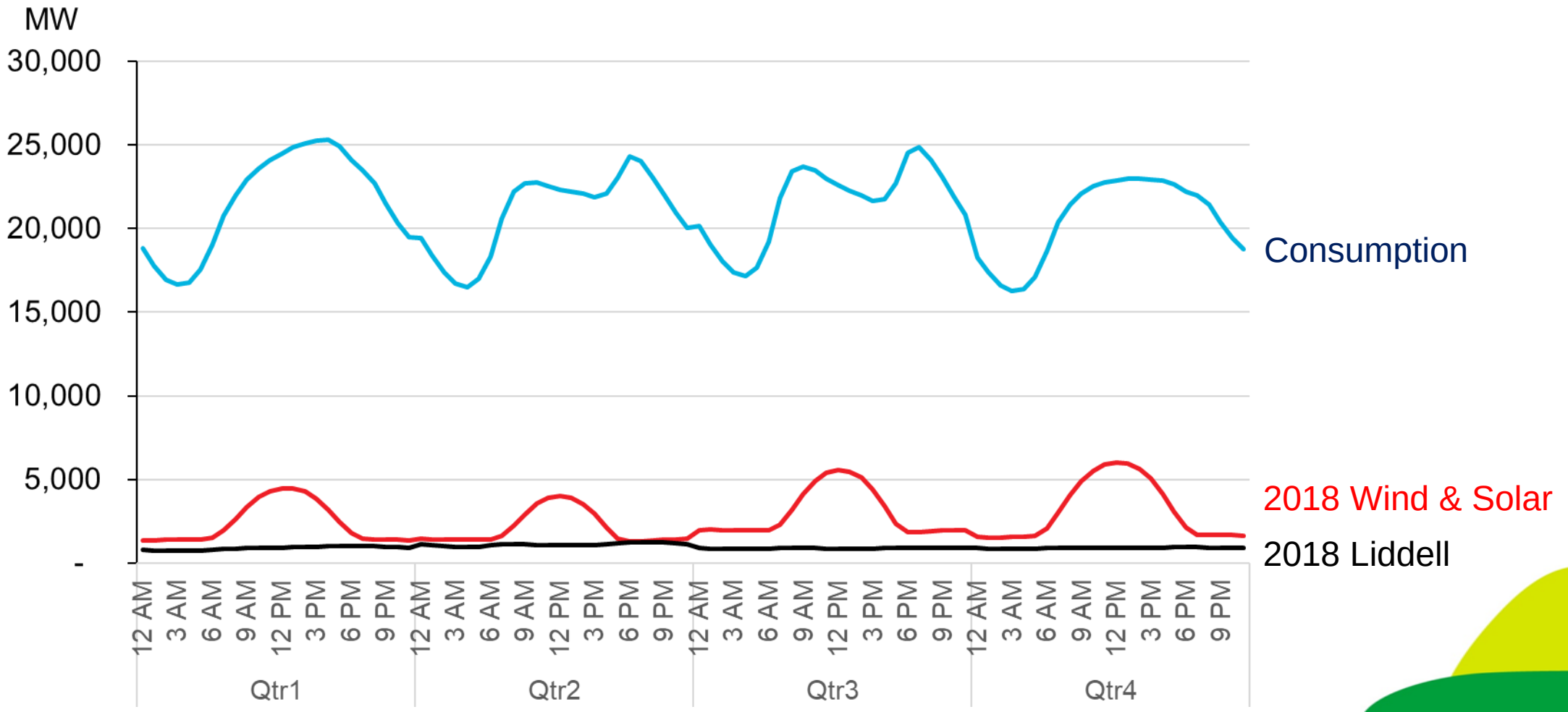
- **Back in 2018 wind and solar were significant but small relative to consumption**

Hourly profile of power supply and consumption by quarter in NEM - 2018



Future: Approaching limits without large storage roll-out

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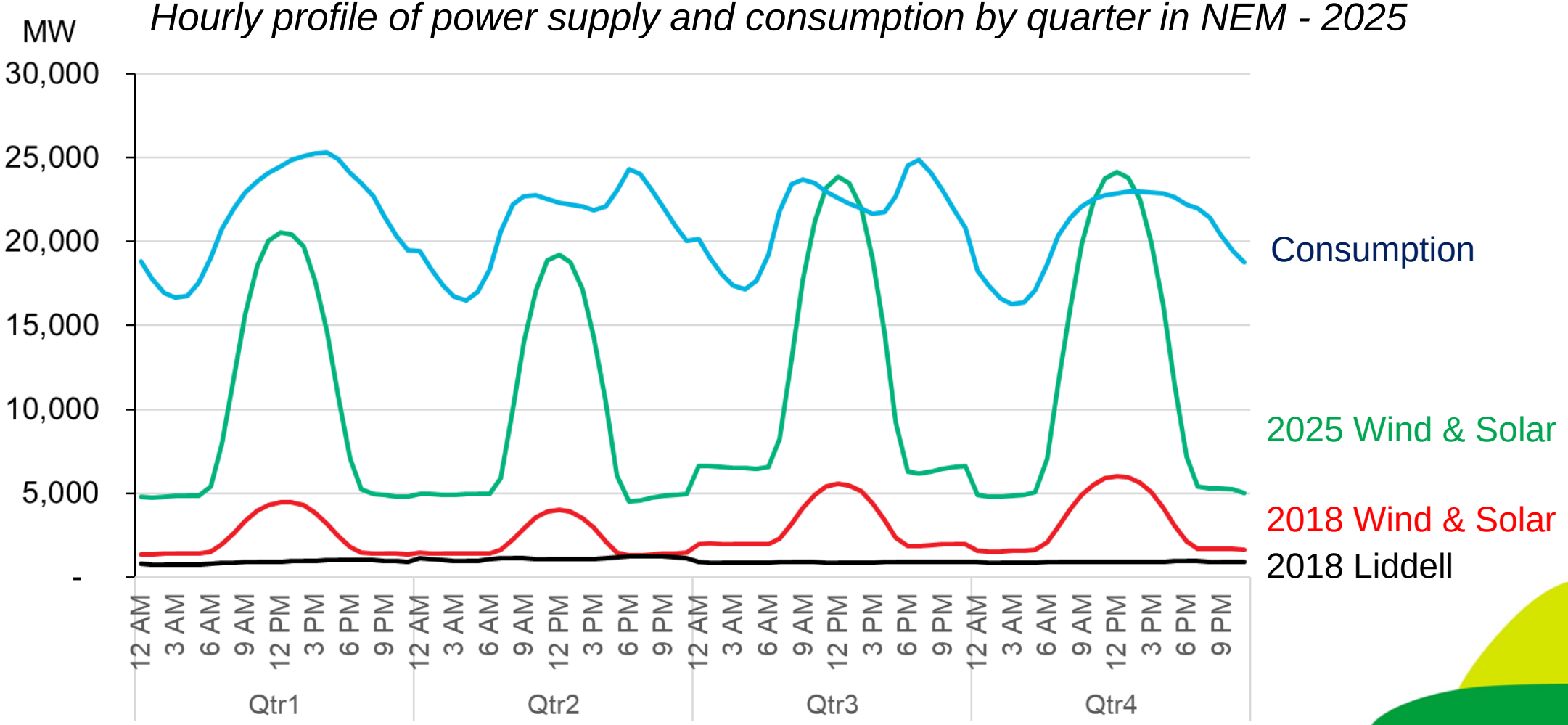
- **By 2025 wind and solar average output will exceed total NEM consumption in Q3 and Q4 in the middle of the day.**

Hourly profile of power supply and consumption by quarter in NEM - 2025



Meanwhile prices after sun goes down are high

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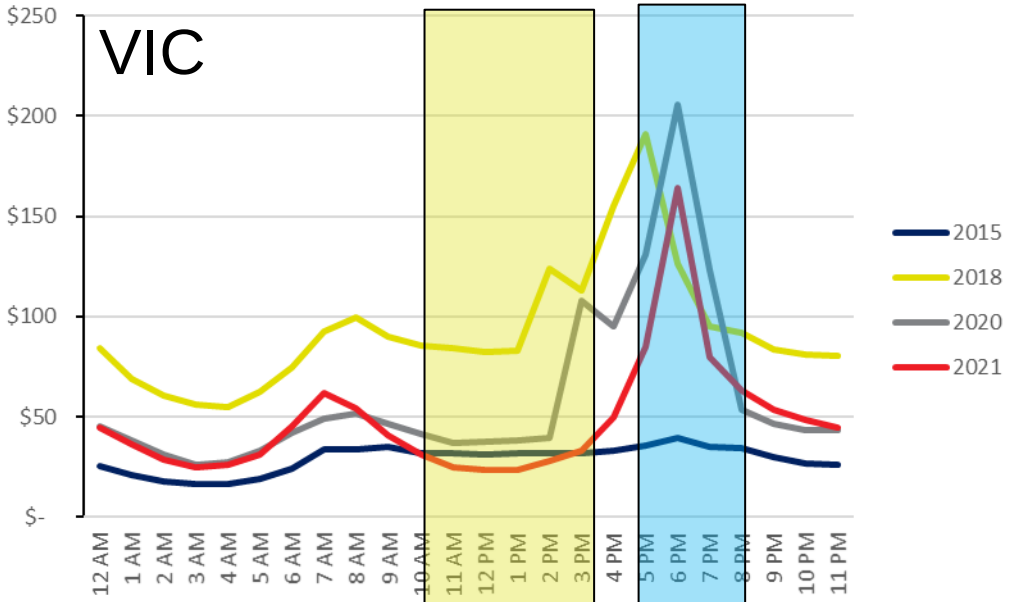
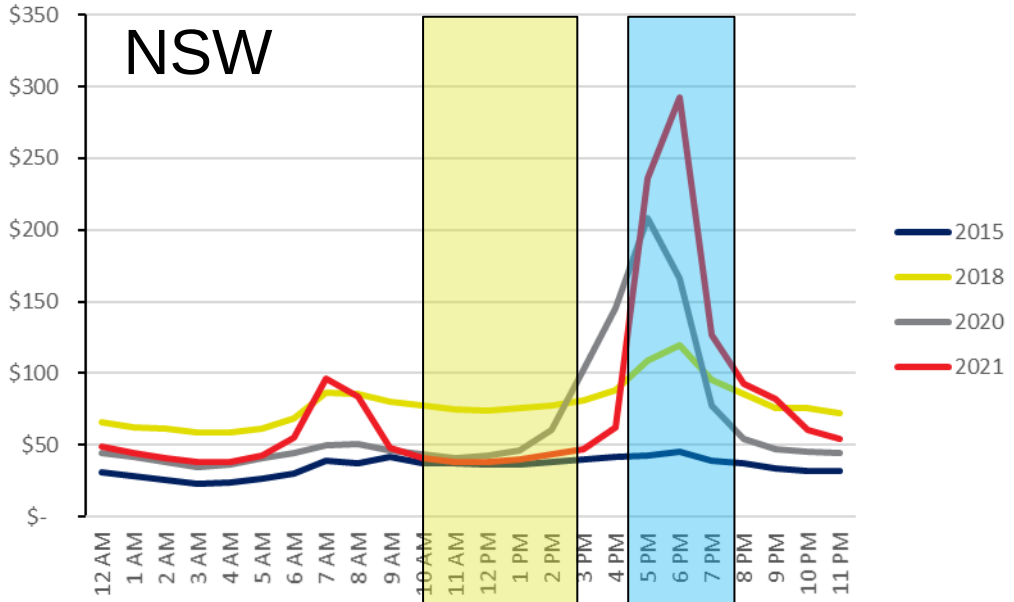
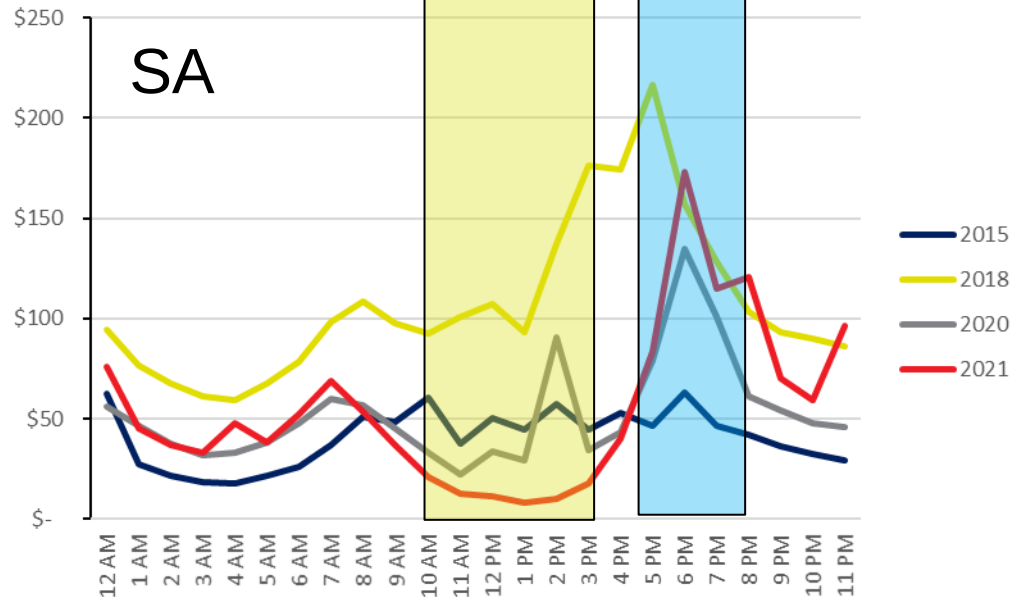
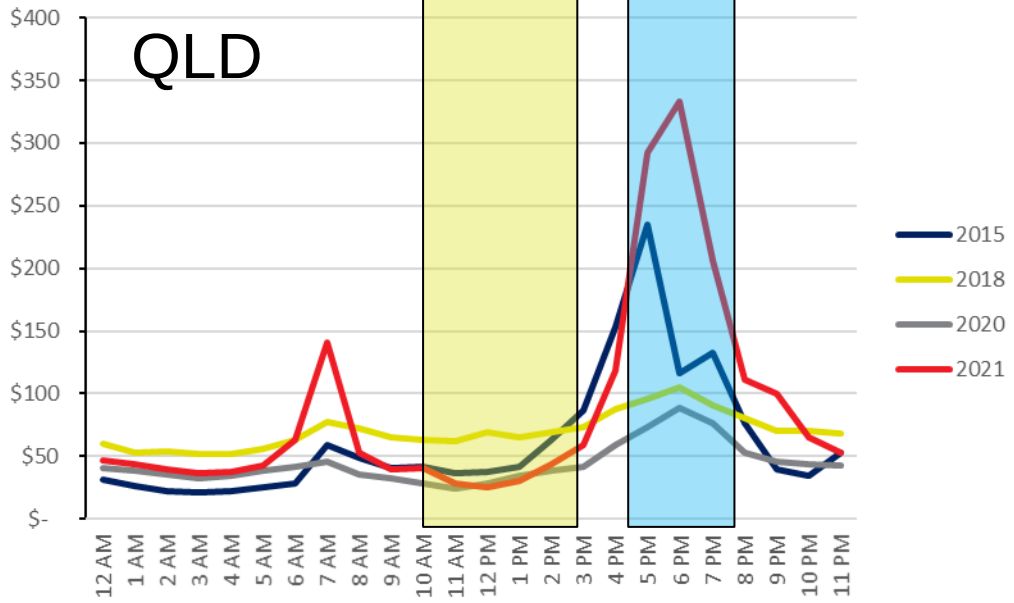




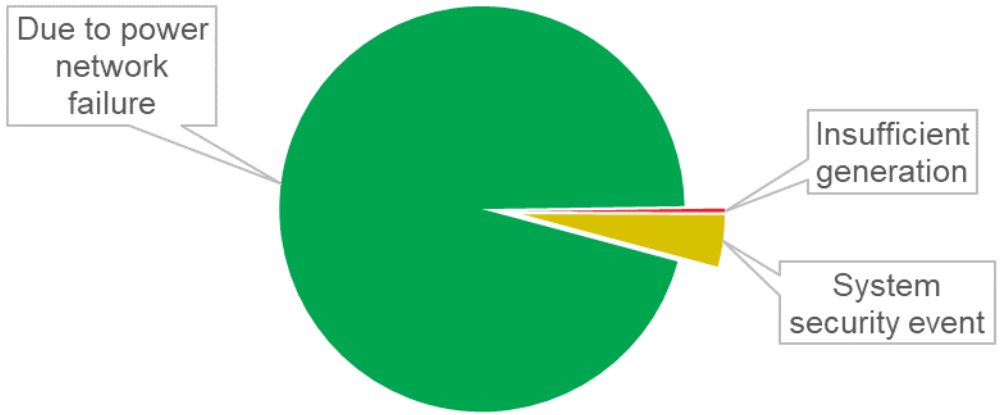




Why accelerate battery roll-out

- **Ongoing growth of solar generation & greenhouse gas abatement requires increased energy storage. Alternative is increasing spillage and very low feed-in tariffs.**
- **Continue to exploit economic efficiencies from upsizing residential systems.**
- **Batteries are characterised by learning by doing cost reductions which leads to a first-mover disadvantage. First movers deliver a positive externality that should be rewarded.**
- **Australia has a distinct need for smaller, behind the meter batteries due to our world-leading uptake of rooftop solar systems and long, skinny grid. We can and need to lead.**
- **If politicians were genuinely worried about reliability (rather than using as an excuse to slow/avoid phase out coal) – batteries at customer site deal with biggest cause of outages**

Causes of blackouts between FY 2009 to FY 2018



Source: AEMC Reliability Panel (2020) Information Paper: The Reliability Standard: Current Considerations

How to accelerate battery roll-out

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- **Use the existing SRES program of awarding STCs.**
- **If customer installs a battery system with solar they receive the original 15 years of deeming for solar system. Otherwise deeming rate for solar STCs continues to degrade to 2030.**
- **In 2023 for a 6.6kW system the difference in STC benefit would be about $2,100.**
- **By 2025 the difference would be about $2,800.**
- **Minimum size of battery system to receive 15 years deeming tied to size of solar system. Table below is a starting point to spur discussion:**

Solar system module capacity (kW)	Minimum battery capacity (kWh)
3 or less	3
3.01 - 5	5
5.01 - 7	8
7.01 - 10	10
10.01 - 15	14

How to accelerate battery roll-out

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- **Need to introduce battery performance standards and testing regime for eligibility just as we did for compact fluorescent bulbs prior to incandescent phase out.**
- **Standards and testing would need to cover such things as:**
  - Round-trip efficiency
  - Warranted number of charge-discharge cycles
  - Ensuring usable capacity is as specified
  - Maximum acceptable rates of degradation
  - VPP communications capability
- **To qualify for inclusion in program battery systems would need to be sold fully installed to customer for a price below a regulator-set threshold. This threshold would decline steadily over time.**
- **This maximum price threshold is necessary to avoid the phenomenon of suppliers using the government support to increase their margins rather than support increased sales volumes.**

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