

# Harmonising Electric Vehicles with Electricity Supply and Demand

Victorian Economy and Infrastructure Committee inquiry

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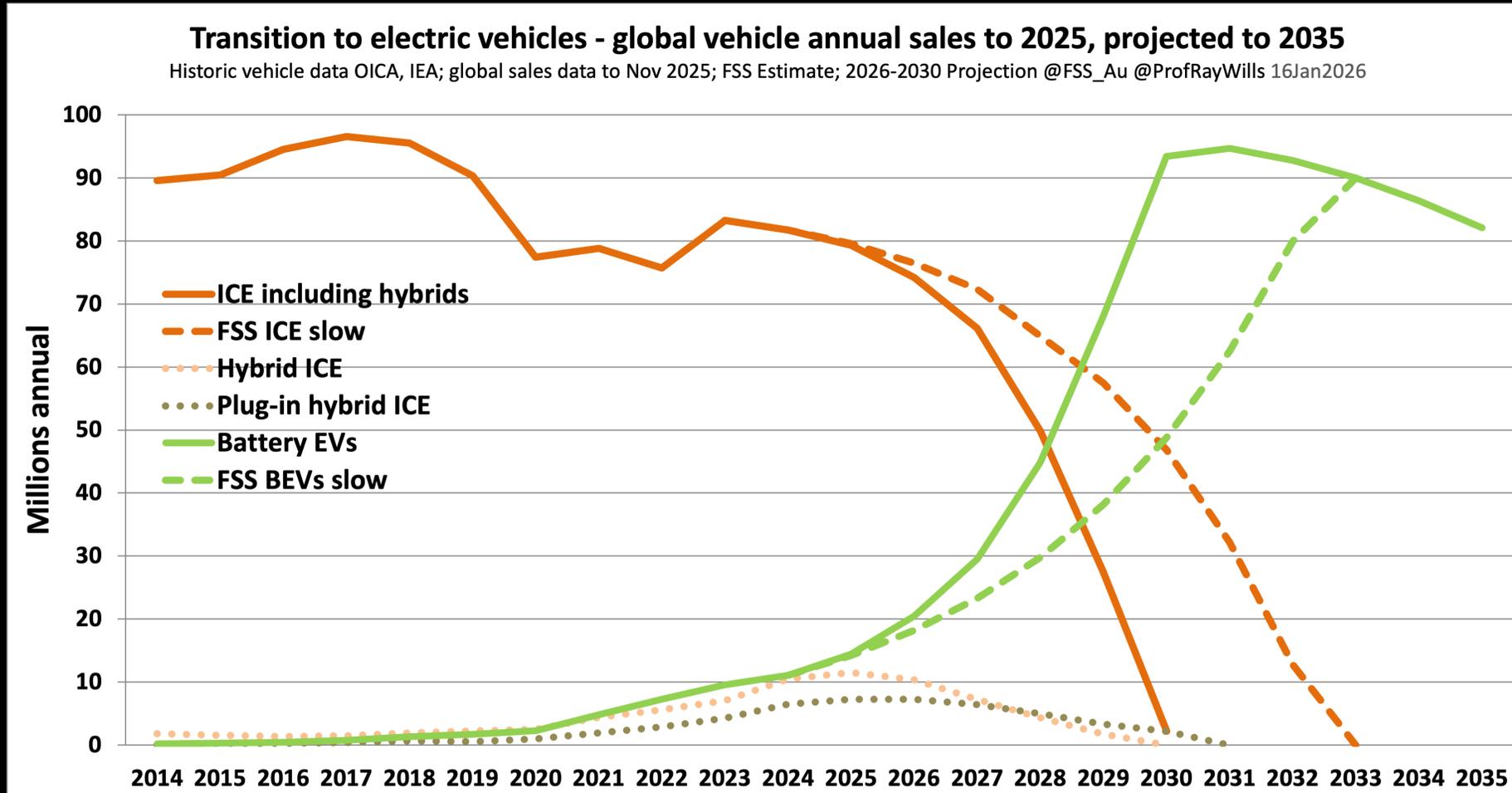
## Core points (1/2)

- EVs should not be seen as a “new problem load” but as a key enabler of a high-renewables, low-cost energy system. They provide flexible, schedulable demand at a significant scale, located precisely where Victorians live and work.
- Victoria has surpassed approximately 50% renewable generation over the past year, though wind and solar curtailment remains significant. EVs are the most obvious form of controllable demand to absorb this energy and improve asset utilisation.

## Core points (2/2)

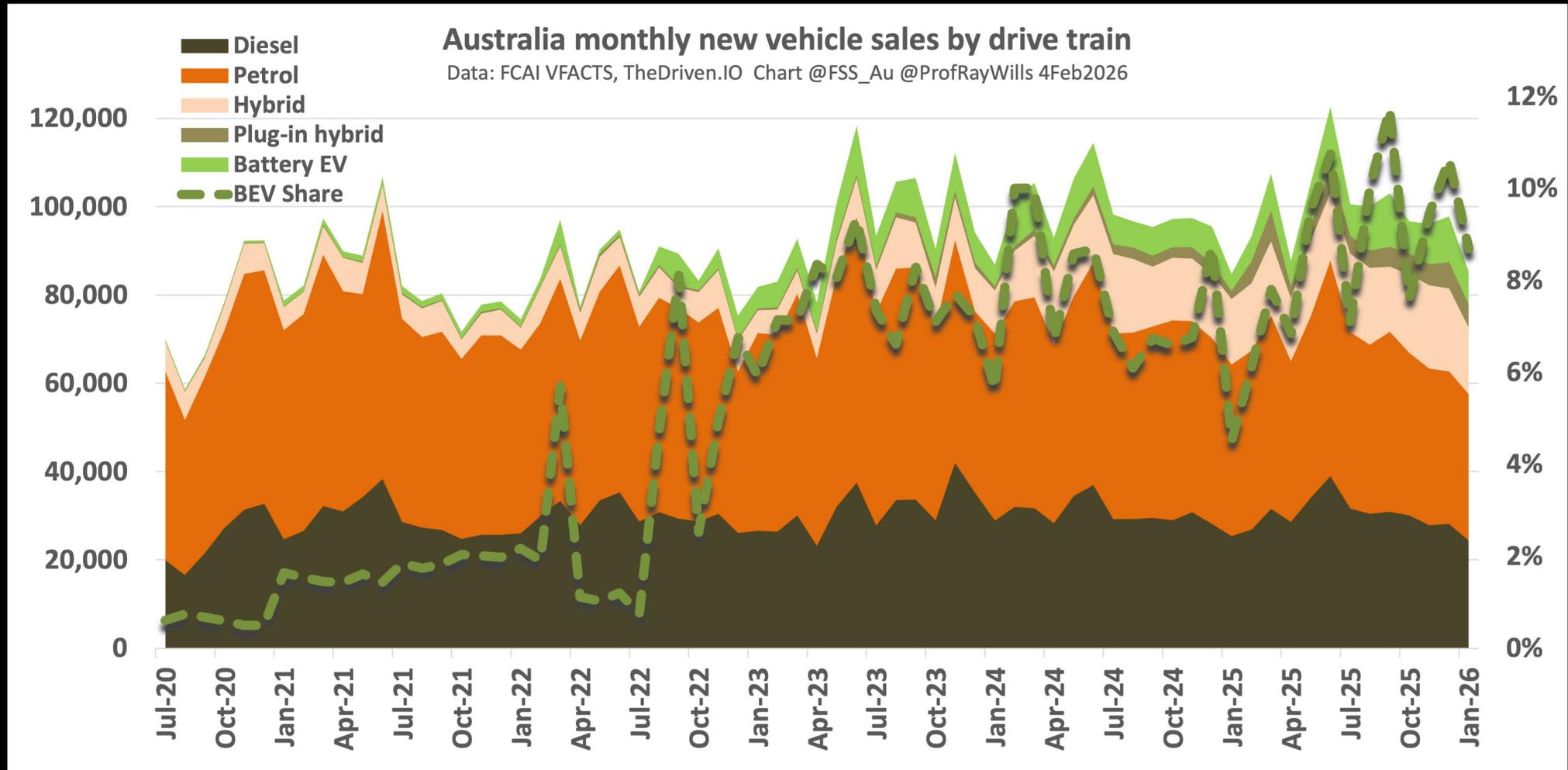
- Since the initial submission, EV uptake has accelerated, validating projections: in 2025, Australian battery electric vehicle (BEV) sales exceeded 100,000 for the first time, and the national plug-in share reached the mid-teens in some months, with Victoria leading the way.
- The main constraint today is not technical but relates to governance and tariff design. Smart charging, vehicle-to-grid (V2G)/vehicle-to-home (V2H) capabilities, and distributed energy resource (DER)-centric planning can allow Victoria to defer or avoid major investments in transmission and peaking infrastructure, while also improving reliability.

# FSS 2025 EVs projections



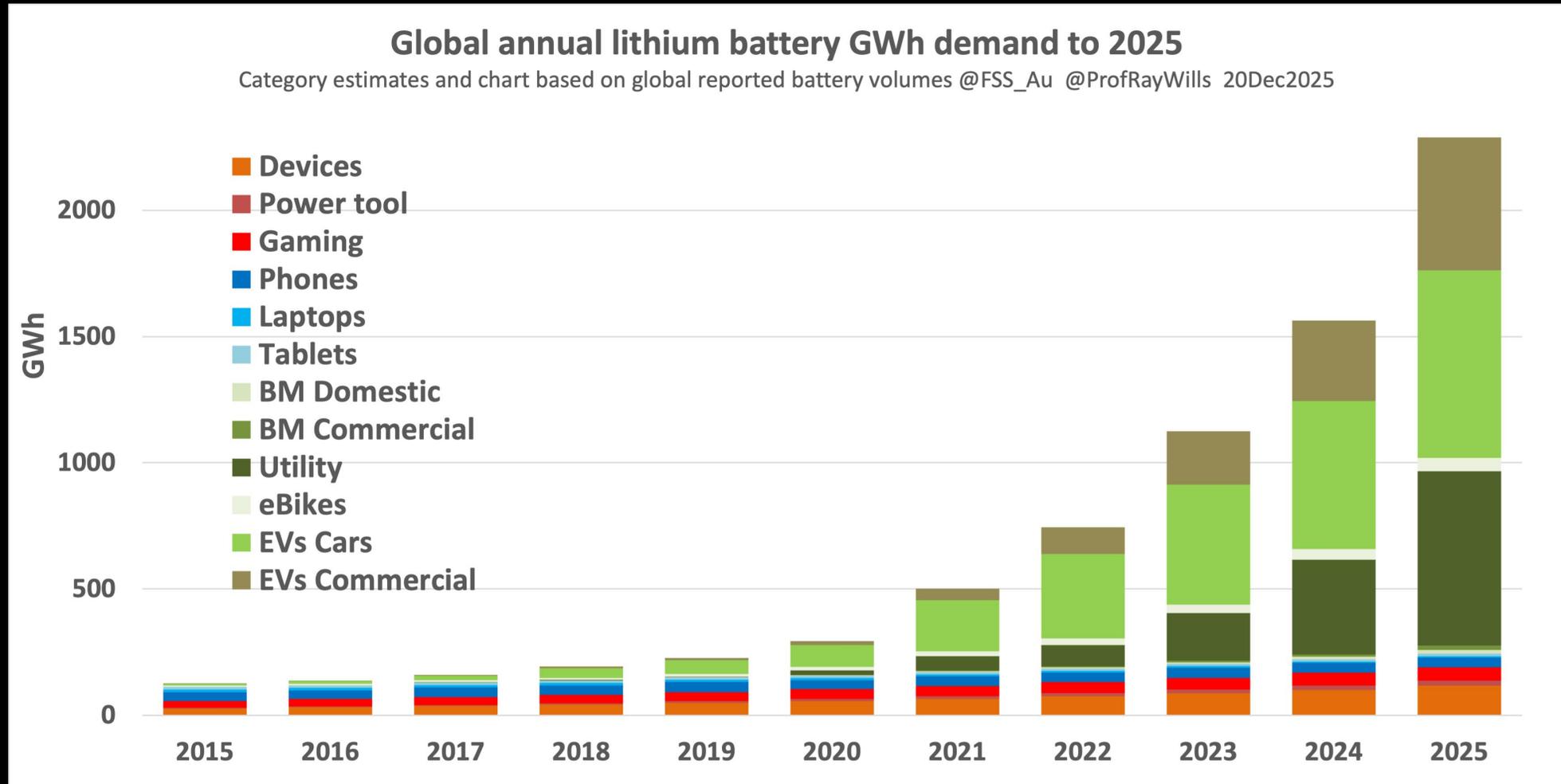
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# Vehicle sales Australia by drivetrain and EV share



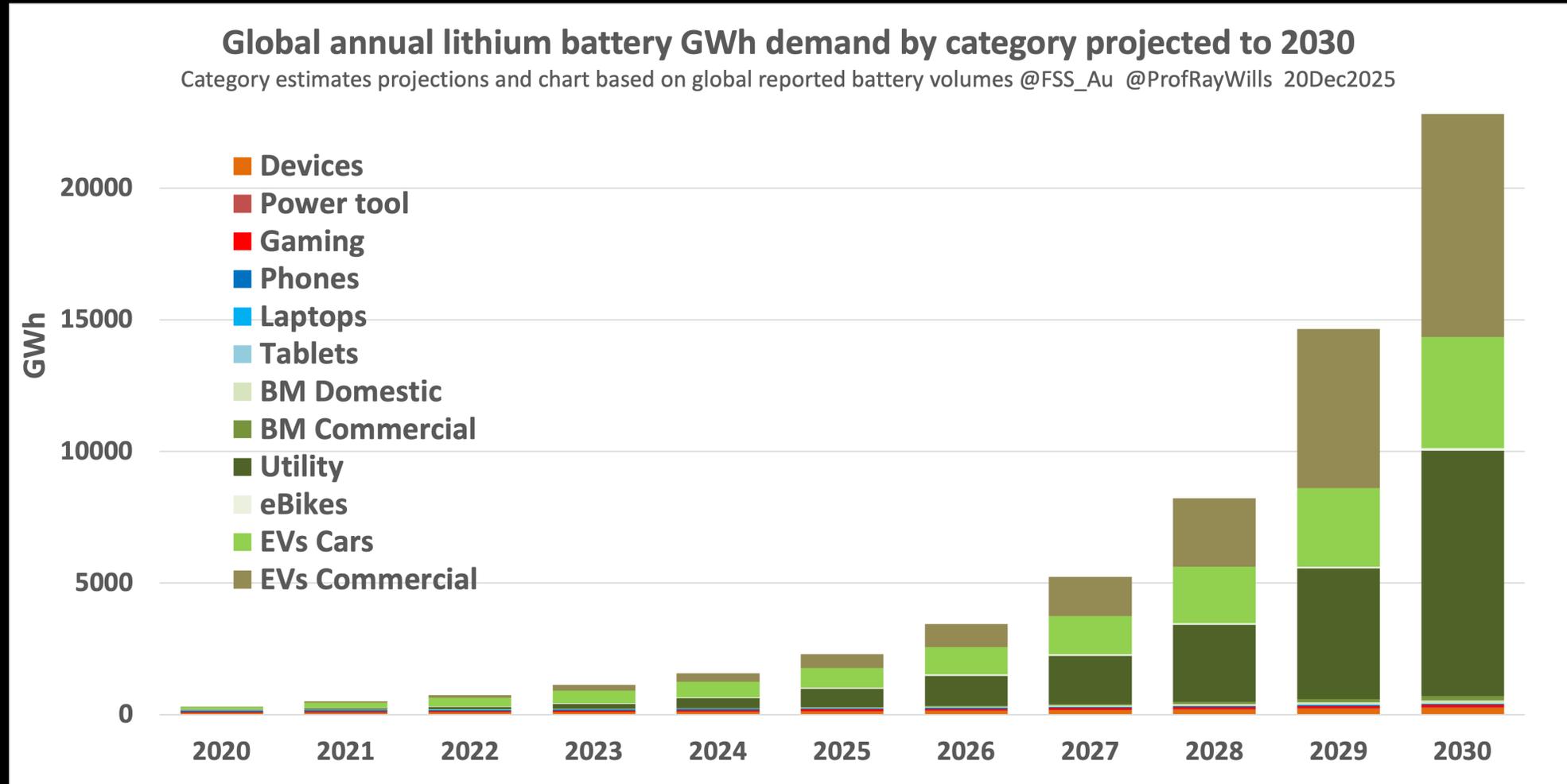
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# Battery demand global to 2025



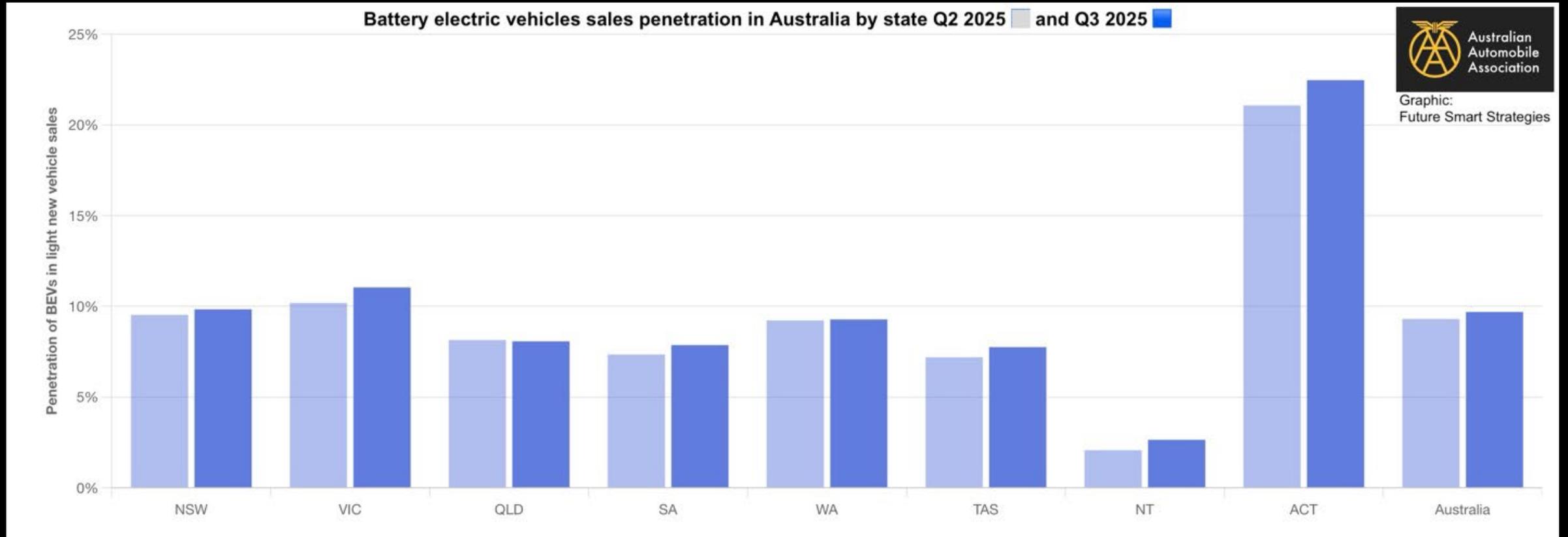
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# Battery demand global to 2030



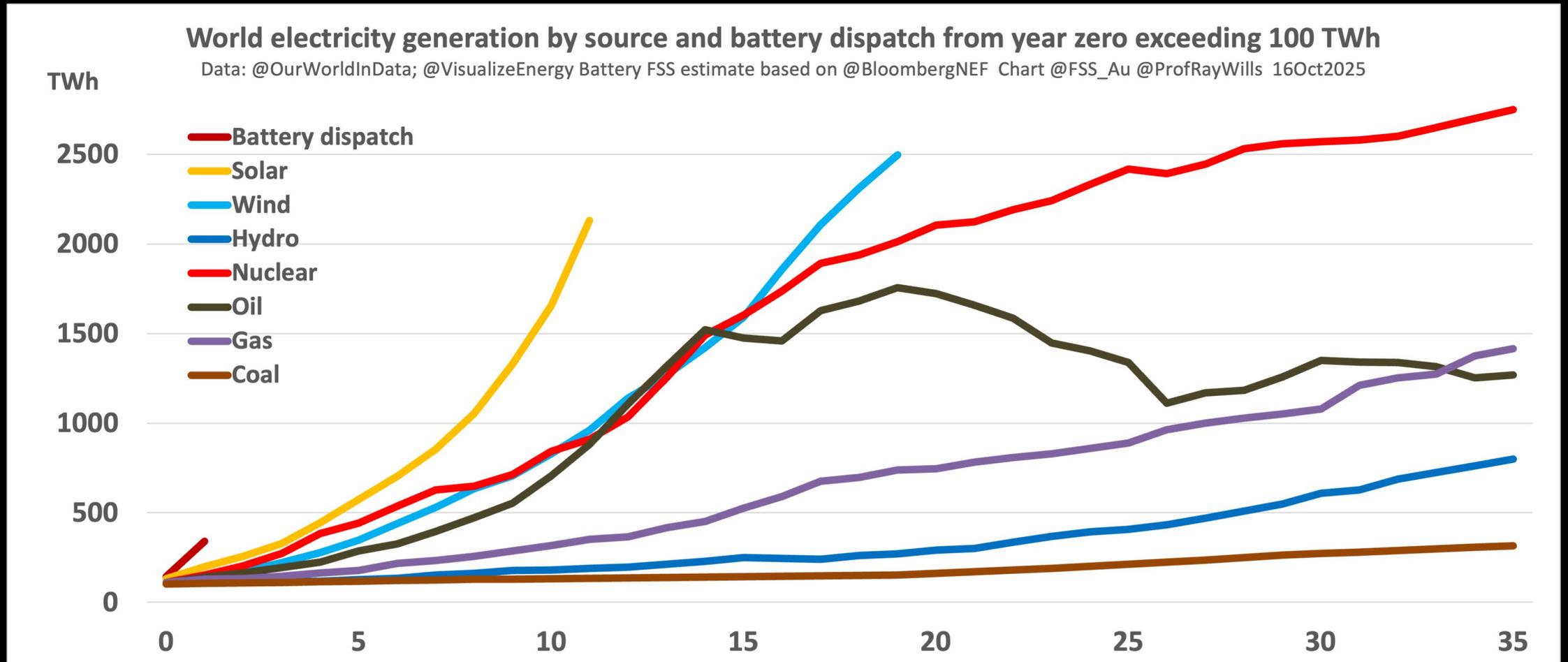
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# EV deployment in Australia by State



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# It's the fastest change in human history



Wind fast. Solar faster. Batteries faster again

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# Developments Since Submission (1/3)

**EV uptake is tracking at or above the 'fast' scenario.**

- BEV sales exceeded 100,000 nationally in 2025, with BEVs now representing over 8% of new vehicle sales. By the end of 2025, the monthly plug-in share reached approximately 16–17%.
- This underscores the need for Victoria to plan for rapid EV penetration this decade, rather than viewing it as a distant issue for 2040.

# Developments Since Submission (2/3)

**System operators and Distribution Network Service Providers (DNSPs) now formally assume high EV penetration in planning.**

- AusNet's published EV strategy relies on AEMO scenarios and treats EVs as a material future load component.
- AEMO's latest ESOO and Victorian planning documents highlight the challenges of minimum demand caused by solar and stress the need for flexible demand and DER integration, roles ideally suited for EVs.
- This strengthens the case for integrating EV flexibility into the Integrated System Plan (ISP), ESOO, and Victorian Annual Planning Report (VAPR), rather than treating it as an externality.

# Developments Since Submission (3/3)

**Real-world V2G and kerbside trials in Victoria and nationally are underway.**

- Victoria's CPU kerbside charging and V2G trial, with ring-fencing waivers, shows the regulator is already permitting DNSPs to deploy EV infrastructure to help manage network constraints.
- AGL's national residential V2G trial and Amber's V2G work demonstrate growing commercial interest and identify remaining barriers—OEM warranties, standards, data access—which the above recommendations address directly.

# Conclusion - three immediate levers

- Mandate smart, network-connected charging with dynamic pricing and pro-renewables defaults.
- Fast-track V2G/V2H standards and redirect funding from pilots to large-scale fleet and neighbourhood deployments.
- Require AEMO and DNSPs to publish planning scenarios where high EV-DER utilisation materially reduces the need for new transmission and firming, making the full value of harmonising EVs with supply and demand visible to policymakers.

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