

Ms Anna Collyer | AEMC, Chair

How pricing reform could support transport electrification

Australia's electricity system has changed faster than network pricing

A little about Australia

- The majority of Australia is served by the firms operating under 'National Electricity Market' (NEM) regulations, covering five out of seven jurisdictions
- In the 1990s, Australia disaggregated its vertically integrated energy businesses, which included separation of the monopoly network function from competitive retail.
- This was intended to:
 - focus economic regulation on the efficient and prudent provision of network infrastructure and services
 - allow competition to drive innovation in retail products and energy services.
- Before vertical disintegration, consumers paid a bundled tariff covering the whole supply chain.

Our network tariff journey: from separation, 2014 reforms to 2026

- After addressing vertical integration, various networks had a range of approaches to setting the fixed aspect ('daily supply charge'). In general, the fixed rates appear to reflect levels each network historically charged and those being charged by networks in similar global economies.
- Prior to 2014, the fixed tariff was mainly complemented by a flat kWh charge (with some controlled load tariffs to support network – and coal generation – use at night).
- Widescale uptake of air-conditioning from late 2000s led to a steep increase in forecasted peak demand and network spend.
- The 2014 reforms sought to introduce more cost-reflective network pricing.
- Implementation has predominantly produced time-of-use tariffs and some demand tariffs.
- These reforms have delivered a very gradual increase in the fixed charge component.
- This was an important step at the time. But tariffs remain relatively static and often provide only a broad approximation of when and where network costs arise.

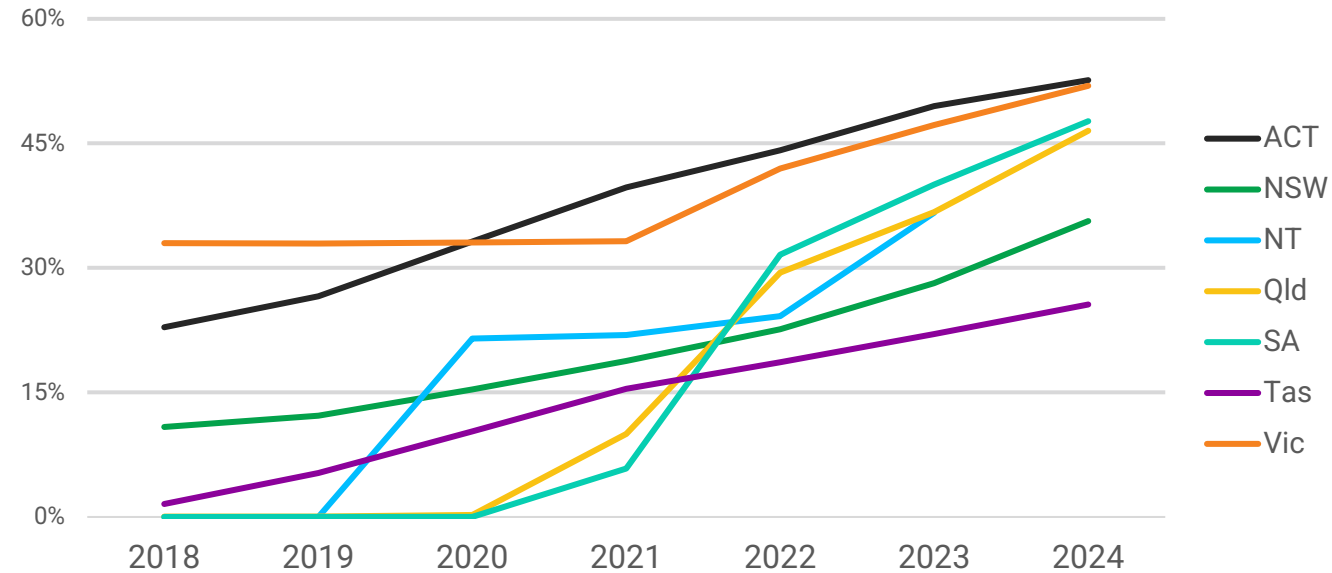
Australia's electricity system has changed faster than network pricing

The system continues to change rapidly:

- significant uptake of rooftop solar, with batteries and EVs following
- smart-meter coverage
- growing climate and resilience requirements
- high and rising renewable penetration across the interconnected NEM, creating a more complex system for system operators and networks to operate.

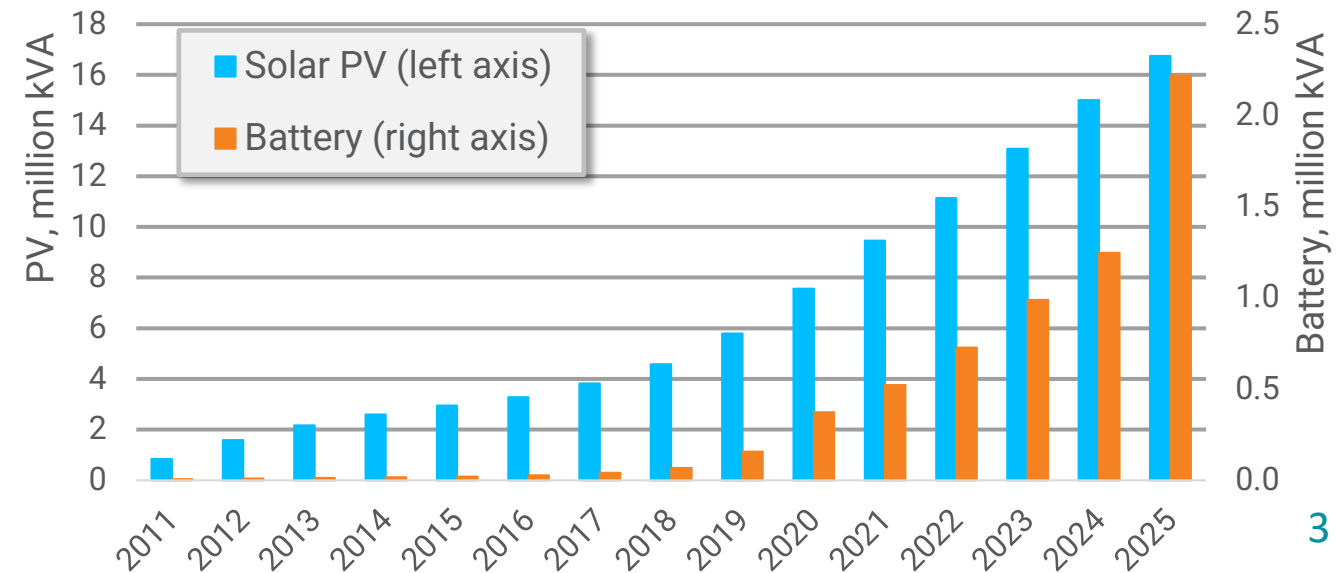
Residential customers on cost-reflective tariffs

Source: AER, [State of the energy market 2025](#)



Installed CER capacity by technology (kVA)

Source: AEMO, [DER Data Dashboard \(2026\)](#)



The AEMC's pricing review identified three primary problems arising from the current tariff framework



1 Equity

- Consumers can reduce their contribution to shared network costs without necessarily reducing the underlying costs they impose on the network.
- This allows for cost-shifting between those who can and cannot respond.

2 Efficiency

- Existing tariffs provide relatively blunt signals about the network costs created or avoided by consumption, exports and flexibility.
- This means a lack of rewards for more targeted contributions to network efficiency.
- It also means network use was being *undercharged* at peak periods and *overcharged* at non-peak periods

3 Experience

- The consumer experience of network tariffs was that they were often passed straight through to bills
- This raised risks and complexity that consumers did not know how to manage.

Volumetric tariffs signal consumers to use the network less at all times, undermining equity and efficiency

CER has made network pricing more consequential over time

- **Bigger impact:** CER enables much larger shifts in energy use than traditional load management, such as controlled water heating.
- **Bigger equity challenge:** those opportunities are not distributed equally, they depend on capital-intensive technologies and suitable property – for example, apartments generally have less access to solar PV).

But CER technology also creates a massive opportunity to deliver benefits to all consumers where tariffs encourage the right investments and behaviours

What does the economic theory tell us?



- 01 | Tariffs should communicate the 'marginal cost' of using the network. This works to best align the cost consumers see with the value they receive from using the network.
- 02 | Marginal cost tariffs will not be sufficient to ensure networks recover their necessary revenue.
- 03 | That additional revenue should be recovered in ways that **do not distort** consumer behaviour.

Our network tariff recommendations have three components



Fixed prices

Changing the recovery of fixed network costs

- Recover a greater proportion of residual or shared network costs through fixed or otherwise low-distortion charges.
- Allocate those costs more equitably, taking account of the consumer characteristics and the benefits consumers can receive from the shared network.
- Do not use the shared network access charge as a general signal to consume less electricity.

Dynamic prices

Better links between tariff signals and network needs

- Networks to progressively introduce dynamic prices that better reflect how demand and exports affect network costs at different times and locations.
- These signals apply in both directions:
 - ▢ Demand congestion: consume → pay more
discharge → be rewarded
 - ▢ Export congestion: discharge → pay more
consume → be rewarded

See next slide

Retailer's role

Networks design efficient signals for retailers, not products for consumers.

- Retailers translate those signals into simple consumer products.
- Some limits to retailer ability to pass-through network tariffs changes and ongoing monitoring to protect consumers.
- Network tariff reform paced so that efficient retailers can cost-effectively manage complex tariffs.

Dynamic tariffs: symmetry (1/2)



Why symmetry matters

Technology agnostic: the price signal reflects the type of constraint being experienced:

- if demand is too high, consumers are rewarded for reducing net demand
- if exports are too high, consumers are rewarded for local demand

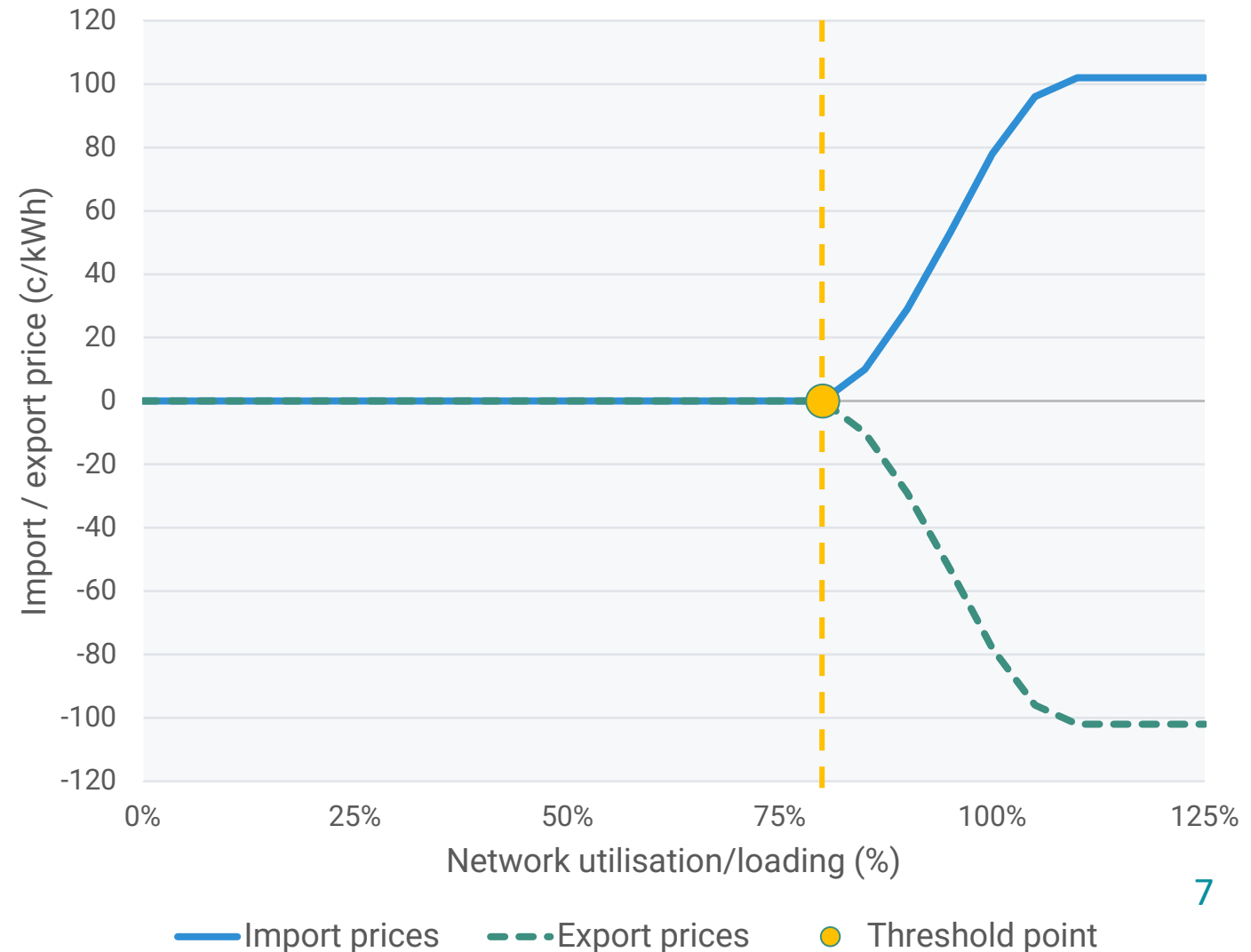
More efficient: signals can be targeted to the exact time and place of congestion.

Fairer: rewards and charges are better linked to actual network costs and benefits.

Supports effective exchange: the price one consumer pays to use a constrained network is the same price another receives for reducing the constraint.

There are more opportunities to respond: unlike standard household devices, battery/EV use does not mean changes to a household's behaviour or comfort. This means batteries and EVs can be much more responsive to dynamic signals.

Stylised dynamic import and export prices as a function of network loading during demand-based congestion



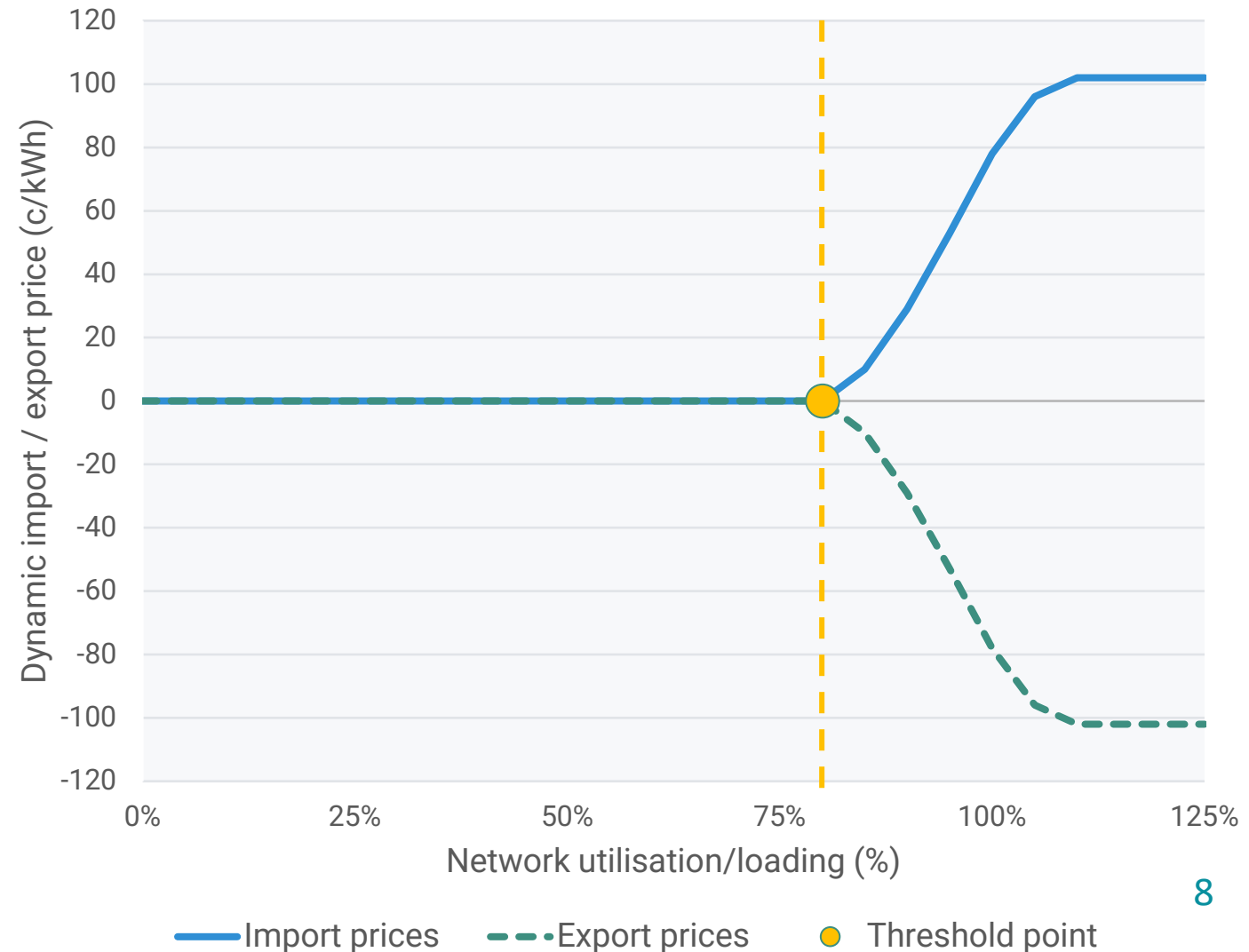
Dynamic tariffs: symmetry (2/2)



The stylised example raises a few points

- Because congestion is effectively binary (that is, a network is either congestion or it is not), a network/regulator needs to determine when to begin charging dynamic prices / offering dynamic rewards.
- In this example, dynamic prices start when the loading on the network is at 80% of its capacity.
- Our [Pricing review](#) discusses why a more gradual increase in dynamic prices supports better market outcomes. To 'warm up' nascent markets, this could include commencing dynamic signals months or years ahead of genuine congestion.

Stylised dynamic import and export prices as a function of network loading during demand-based congestion



Dynamic tariffs: how do we get there? (1/2)



Flexibility markets and network procurement are likely to play a role

- In our view, dynamic prices are the ‘first best’ tool for managing network capacity. Dynamic pricing avoids the need for ‘baselining’ and pre-emptive contracts:
 - Baselining methodologies estimate impact rather than rewarding actual impact
 - Longer-term contracts can reduce CER proponents’ ability to respond to changing market and network conditions — for example, by locking capacity into network services when it could deliver greater value in the wholesale market.
- However, where prices cannot guarantee the required response, networks – or distribution system operators (DSOs) – will need to use flexibility markets and contracts.
- As responses to dynamic pricing become more predictable, the need for these tools should decline. In the near term, however, DSO tools will still be needed to manage uncertainty and ensure networks get the response they need.

Dynamic tariffs: how do we get there? (2/2)



The AEMC's Pricing Review provides an illustrative pathway to dynamic tariffs

Illustrative pathway for tariffs, non-tariff tools and the role of ESPs

*AEMC
(2026)
Pricing
review:
final report,
p. 103*

Current State	Iterate, adapt (2030-40)	Embed (2040+)
Only some customers can benefit from responding to network needs. Networks and ESPs rely on flexibility procurement to improve network outcomes.	Consumer flexibility grows easier to access, and tariffs easier for ESPs to manage, without requiring significant effort or attention from users.	Increasingly autonomous flexibility, with consumers setting preferences rather than changing behaviours. Networks using more dynamic signals

Increasing customer-side flexibility & real-time data, ESP and network data, process and technology

Network tariffs in use:	- Mainly flat, volumetric network tariffs, with some broad-based signals, e.g. time of use tariffs - Some innovative approaches available and in trials¹	- Innovative approaches begin to move beyond trials into broader implementation - Some areas retain broad-based volumetric tariffs	Increasing use of symmetrical, dynamic network tariffs reflecting the time and location of network congestion
Non-tariff tools in use:	- Firm export limits - Some network-controlled dynamic operating envelopes (DOEs) - Some contracted flexibility²	- Some ESP-coordinated DOEs - DSO-type approaches such as flex markets and flex procurement becoming more common	- DSO approaches such as flex markets increasingly replacing hard limits - Mature ESP DOE coordination
ESPs' role and customer offerings	- Network tariffs designed for end consumers - ESPs largely pass through network tariff; customer offerings mostly reflect network tariff structure	- Network tariff becoming more complex, and increasingly managed by ESPs - New, simpler consumer offerings emerging, alongside more complex plans with associated opportunities and rewards	- ESPs consulted to support efficient path to increasingly granular dynamic network pricing - ESPs manage associated risks, presenting a range of consumer-centric offerings, using DOEs and flex markets

An EV is more than just its battery



Large batteries

EV batteries are generally much larger than home batteries, creating substantial potential to support the grid.

Transport comes first

Consumers primarily buy EVs to drive, so energy services will always be secondary. They may therefore retain a minimum state of charge rather than make the full battery available.

Battery degradation matters

Consumers may also factor in the effect of additional charging and discharging on battery life when deciding whether the reward is worthwhile.

V2G is not limited to homes with off-street parking

Consumers without home charging can still participate, but they will need access to suitable charging and discharging points and will need to engage with a:

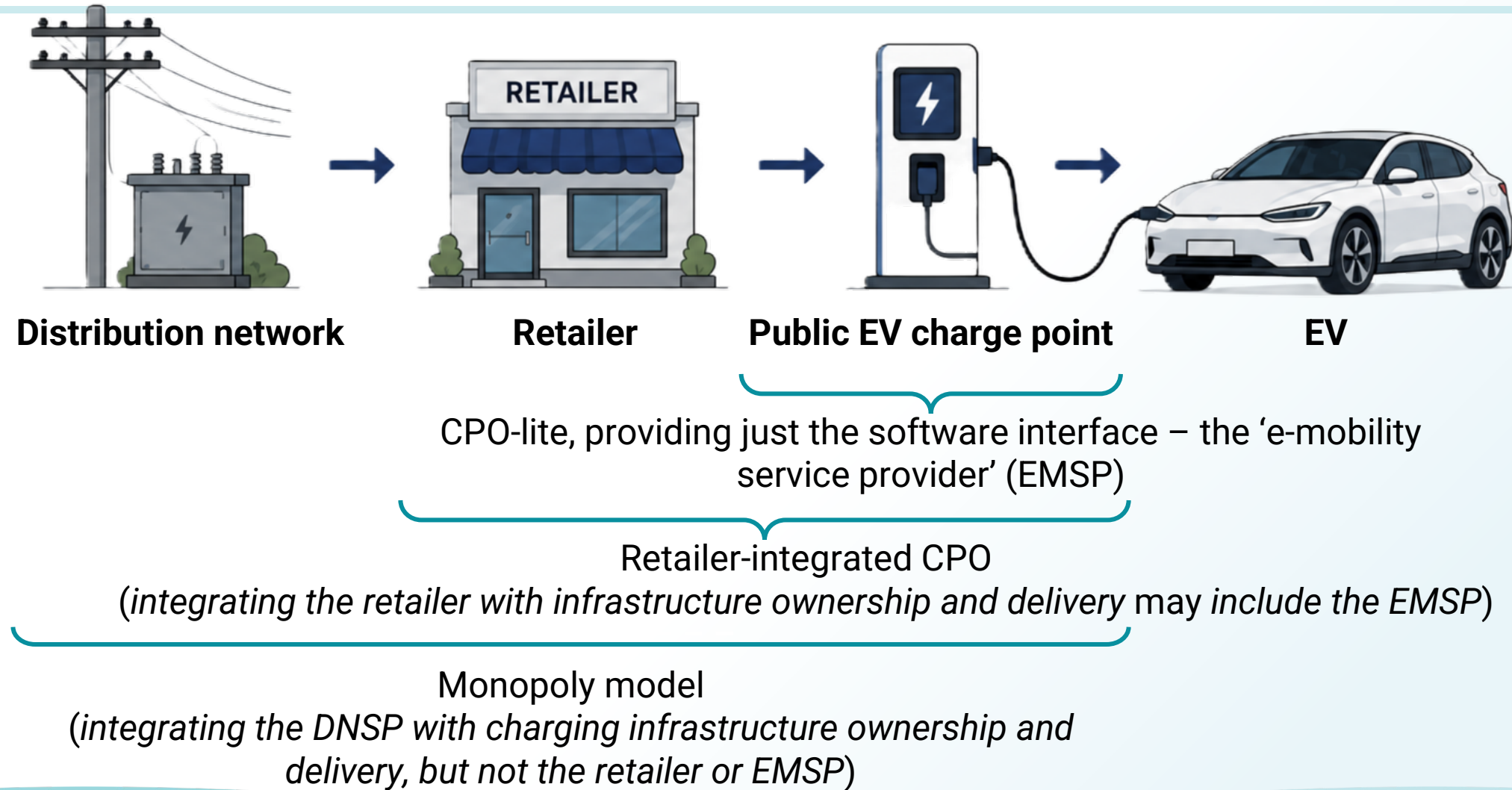
- regulated; or
- profit-seeking; or
- government-provided charge point operator (CPO).

Mobility can also create flexibility

Unlike a stationary battery, an EV can potentially connect at different locations, creating opportunities to respond to network needs where they arise.

See further on next slide

Who is the 'charge point operator' (CPO) connecting public EV charging to tariffs?



This is a **highly simplified description** of the potential components the EVCI supply chain with the following roles also undertaken by relevant parties: charging infrastructure owner (CIO), charging infrastructure provider (CIP), charging infrastructure maintainer (CIM). This draws from HoustonKemp (2025) [Creating accessible and affordable public EV charging networks for Australia – A report for Energy Consumers Australia](#)

Pricing reform will provide opportunities for EVs and improve their integration into the system



Improvements for EVs

- Moving residual costs out of volumetric charges reduces unnecessary discouragement to use the network.
- Better congestion management can reduce the need to constrain EV charging and exports, giving consumers greater ability to use their EVs flexibly.

Opportunities for CPOs

- Stronger and clearer rewards will support new CPO products and automated charging, giving consumers more reason to participate in V2G.
- DSO markets and contracts present new revenue opportunities for EV owners and charge-point operators.
 - For EVs, this procurement might look like annual contracts with a DSO to ensure a share of a vehicle's [or fleet's] battery capacity is available at specified times and notice periods.

Improvements for the grid

- Dynamic import and export signals can better align EV behaviour to help reduce network costs over time. It does this by encouraging charging when capacity is available and rewarding exports when the grid is constrained.

Further reading



On Australian reforms to address vertical integration (slide 2)

- *Industry Commission* (1991) [Energy Generation and Distribution, Volume 11: Report](#)
- [‘The Hilmer Review’](#) (1993)

Australian CER data (slide 3)

- AEMO, [DER Data Dashboard \(2026\)](#)
- AER, [State of the energy market 2025](#)

The AEMC’s pricing review (slides 4-6)

- [Distributional impact analysis](#)
- [Final report](#)

On DSO and flexibility procurement (slide 9)

- On ‘baselining’ methodologies see further discussion of this in AEMC (2025) [Review of the Wholesale Demand Response Mechanism: final report](#).
- On DSO model development in Australia, see Consumer Energy Resources Taskforce (2025) [Redefining roles and responsibilities for power system and market operations in a high CER future – Final advice to Ministers to progress M3/P5 priority of the National CER Roadmap](#)

EV infrastructure ownership and operation models (slide 11)

- HoustonKemp (for Energy Consumers Australia) (2025) [Creating accessible and affordable public EV charging networks for Australia A report for Energy Consumers Australia](#)
- Current AEMC rule change, [‘Enabling distribution network service provider led electric vehicle charging infrastructure’](#)



WFER IX



CEER
Council of European
Energy Regulators



NARUC
National Association of Regulatory
Utility Commissioners