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Economy and
Infrastructure Committee

Electricity supply for electric vehicles

Inquiry

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Georgie Purcell
Northern Victoria



DEPUTY CHAIR
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John Berger
Southern Metropolitan



Gaelle Broad
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(from 4 December 2025)



Katherine Copsey
Southern Metropolitan



Moira Deeming
Western Metropolitan



Tom McIntosh
Eastern Victoria



Evan Mulholland
Northern Metropolitan



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Participating members

Georgie Crozier, Southern Metropolitan
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Michael Galea, South-Eastern Metropolitan
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Dr Sarah Mansfield, Western Victoria
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About the Committee

Functions

The functions of the Legislative Council Economy and Infrastructure Standing Committee are to inquire into and report on any proposal, matter or thing concerned with agriculture, commerce, infrastructure, industry, major projects, public sector finances, transport and education.

The Committee consists of members of the Legislative Council from the government, opposition, and other parties.

Secretariat

Michael Baker, Committee Manager
Alyssa Topy, Inquiry Officer
Jamie Huffer, Research Assistant
Julie Barnes, Senior Administrative Officer

Contact details

Address Legislative Council Committees Office
Parliament of Victoria
Parliament House, Spring Street
East Melbourne Victoria 3002

Phone +61 3 8682 2869

Email electricvehicleinquiry@parliament.vic.gov.au

Web parliament.vic.gov.au/electricvehicleinquiry

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Terms of reference

Inquiry into electricity supply for electric vehicles

On 15 May 2025, the Legislative Council agreed to the following motion:

That this House requires the Economy and Infrastructure Committee to inquire into, consider and report, by 27 March 2026,* on how Victoria can best harmonise electric vehicles (EVs) with electricity supply and demand, including but not limited to –

- (1) strategies to reduce EV charging during periods of peak demand on the grid and increase charging during periods of peak supply;
- (2) whether public charging infrastructure is being installed at a sufficient rate in different parts of Victoria, including older suburbs where most people do not have access to off-street parking;
- (3) the best role for electricity distribution businesses in rolling out EV charging infrastructure, and how distribution network tariffs should be set for EV chargers;
- (4) strategies to facilitate the take-up of EV ownership, including the facilitation of bidirectional charging;
- (5) whether old EV batteries could have a second life as household or community batteries after removal from vehicles;
- (6) the barriers and opportunities to the manufacture, reconditioning and recycling of EV batteries, or other elements of the EV supply chain, in Victoria; and
- (7) any other related matters the Committee considers relevant.

* On 17 February 2026, the Legislative Council resolved to extend the reporting date to 31 May 2026.

Chair's foreword

According to the International Energy Agency, the electric car market reached new highs globally in 2025, growing by 20% from 2024 to exceed 20 million sales. The sales share of electric cars in the overall car market increased to 25%. This marked the fifth consecutive year in which annual electric car sales increased by about 3.5 million.

While Australia has lagged behind other countries in this transition, it is clear that the uptake of electric vehicles is rapidly gathering pace. Electric vehicles (EVs) have seen a massive surge in Australia, making up 13.4% of all new car sales to date in 2026. Momentum is building rapidly, with EV market share peaking at 16.4% in April, meaning roughly one in every six new cars sold across the country is fully electric.

One of the obstacles to Australian uptake has been a lack of public charging infrastructure. While this is less of an issue for the majority of people who can charge at home, it has a substantial impact on the willingness of people who have no way of charging at home to transition to an electric car. This may be because they live in an apartment or a house with no off street parking or they rent and are unable to instal a home charger.

These equity issues, along with some of the other limitations of the public charging infrastructure in Victoria, have been a focus of the Inquiry. However, the Committee has also seen great opportunities to enhance the electricity grid through bi-directional charging, as electric vehicles are energy storage systems on wheels. So, in addition to reducing greenhouse gas emissions, electric vehicles have the potential to not only greatly reduce the costs of personal and commercial transport, but also the cost of energy in the home and businesses.

I would like to thank all of the members of the community and the businesses who made submissions and gave evidence to the Inquiry. Their insights and expertise helped the Committee understand the complex issues being examined.

I would also like to thank all of the Committee members who approached the Inquiry in a collegiate and professional manner, and despite some holding different views worked collaboratively throughout the Inquiry.

As always I would like to thank the Committee's secretariat for their professional and diligent work. I want to thank Committee Manager Michael Baker for his on-going work in managing the Inquiry process. In particular, I would like to thank Alyssa Topy, the Inquiry Officer, and Jamie Huffer, the Research Assistant, for their excellent work during the Inquiry and in their assistance in drafting a complex and detailed report.

Chair's foreword

Finally, I would like to thank the Committee Office Administrative team, Julie Barnes, Sylvette Bassy and Monique Riordan-Hill for their tireless work in supporting all of the Council committees.

A handwritten signature in black ink that reads "Georgie Purcell". The signature is written in a cursive, flowing style.

Georgie Purcell MLC
Chair

Findings and recommendations

3 EV harmonisation with the electricity grid

FINDING 1: Electric vehicles and associated charging infrastructure can strengthen the electricity system, but this requires strategic and coordinated planning across federal, state and local levels of governments.

32

FINDING 2: Electric vehicles exist at the intersection of two major policy areas, transport and energy, operating within a highly interconnected governance system involving policy and regulations at different levels of government.

32

FINDING 3: A policy and regulatory environment that supports the harmonisation of electric vehicles with the electricity system is one that:

- encourages the uptake of electric vehicles and manages its impact on the electricity system
- promotes accurate information and education on electric vehicles
- delivers an equitable and grid-aligned rollout of electric vehicle charging infrastructure
- develops a circular, low waste electric vehicle supply chain.

34

FINDING 4: A policy and regulatory environment that supports the harmonisation of electric vehicles with the electricity system requires strategic and coordinated planning across federal, state and local levels of government and will ensure:

- alignment on strategic and regulatory frameworks
- clarity on roles and responsibilities
- clear direction and guidance to decisionmakers
- collaboration across the electricity system.

34

FINDING 5: Aligned frameworks encourage governments at all levels to work cooperatively in implementing electric vehicle policy and regulations, which supports long-term planning, investment certainty, and equitable outcomes.

36

FINDING 6: Misaligned frameworks create complexity and uncertainty for decision-makers, undermining confidence and increasing the risk of fragmented or inefficient EV policy implementation. 36

FINDING 7: Clearly defined roles and responsibilities across all levels of government establishes clear accountability and authority arrangements for the delivery of electric vehicle policy. 37

FINDING 8: Clearly defined roles and responsibilities across all levels of government reduces the risk of fragmented or consistent delivery of electric vehicle policy, particularly where overlaps exist. 37

FINDING 9: Clear and consistent policy and regulatory guidance and direction give industry and private sector actors confidence to invest and manage risks and opportunities associated with electric vehicles. 38

FINDING 10: Without clear and consistent direction, industry and private sector actors may delay investment or pursue fragmented approaches, which undermines efforts to harmonise electric vehicles with the electricity system. 38

FINDING 11: Clear guidance and direction from all levels of government provides consistent expectations and standards for electric vehicle products and services, contributing to strong accountability arrangements across the electricity system. 39

FINDING 12: Collaboration across all levels of government encourages coordination where roles and responsibilities overlap and supports efficient delivery of overarching policy frameworks for electric vehicles. 40

FINDING 13: Collaboration between government, industry, and the private sector supports more efficient and better-aligned investment and policy delivery for electric vehicles. 40

FINDING 14: To effectively harmonise electric vehicles with the electricity system, consumers need to understand that:

- electric vehicles are both a mode of transport and a consumer-owned distributed energy resource
- the way electric vehicles are used within the electricity system will determine how beneficial they are to consumers and the broader electricity system.

43

FINDING 15: Effective consumer understanding of electric vehicles and their interaction with the electricity system builds community confidence, supports increased adoption, and ensures that electric vehicle uptake delivers benefits for both consumers and the State's electricity system.

43

FINDING 16: The mass uptake of electric vehicles, combined with grid-aligned charging practices, ensures that electric vehicles enhance supply and demand patterns within Victoria's electricity system.

45

FINDING 17: Strategically located and affordable electric vehicle charging infrastructure is essential to build consumer confidence and accelerate electric vehicle uptake.

47

FINDING 18: An effective electric vehicle charging infrastructure rollout will support greater renewable energy integration and improved management of peak electricity demand in Victoria.

47

FINDING 19: The rollout of electric vehicle charging infrastructure must be equitable and context-sensitive, ensuring fair access across rural, regional and metropolitan areas, diverse housing types, and different user circumstances such as renters and homeowners.

47

FINDING 20: A circular, low-waste approach to electric vehicle is important to support effective harmonisation with Victoria's electricity system.

48

FINDING 21: Electric vehicle batteries retain significant value after their first use in vehicles and can be repurposed in second-life applications.

48

4 Increasing EV ownership and supporting EV owners

FINDING 22: Electric vehicle sales are increasing in Victoria, but overall fleet penetration remains low, indicating that Victoria is still in the early stages of transition toward mainstream adoption. **52**

FINDING 23: Accelerating electric vehicle uptake can strengthen Australia's energy security by reducing reliance on imported liquid fuels and exposure to global oil prices. **52**

FINDING 24: While the supply of electric vehicles in Australia has expanded significantly, consumer concerns about upfront cost, charging infrastructure, resale value, as well as strong preferences for larger vehicles continue to impact the uptake of electric vehicles. **55**

FINDING 25: Without coordinated action across all levels of government to accelerate electric vehicle uptake, federal and state electric vehicle targets are at risk of not being met. **60**

FINDING 26: Accelerating electric vehicle uptake depends on coordinated policy responses from all levels of government that address affordability, charging infrastructure, regulatory constraints, consumer confidence, and fleet transition. **60**

FINDING 27: Accelerating electric vehicle uptake in Victoria requires clear and sustained demand-side incentives alongside supply-side policies, to de-risk investment for industry and build consumer confidence to purchase electric vehicles. **62**

FINDING 28: Government fleet electrification is critical to de-risk investment for industry and to build consumer confidence to purchase electric vehicles. **62**

RECOMMENDATION 1: That the Victorian Government strengthen targeted demand-side incentives such as purchase subsidies, stamp duty relief, registration discounts and advocate to the Commonwealth Government. **62**

RECOMMENDATION 2: That the Victorian Government expand fleet electrification programs to improve affordability and accelerate electric vehicle uptake. **62**

FINDING 29: Electric vehicle ownership should be accessible to all households, regardless of income or housing type, and achieving this will require a combination of financial incentives, legislative reform, and infrastructure expansion. **65**

FINDING 30: The growth of a strong second-hand EV market depends on fleet turnover, particularly from government, to improve affordability and support equitable access to electric vehicles. **65**

RECOMMENDATION 3: That the Victorian government use its procurement power to promote uptake of electric vehicles by increasing purchases for its fleet. **65**

FINDING 31: Misinformation and misconceptions about electric vehicles and electric vehicle charging infrastructure are affecting Victoria's ability to accelerate uptake of electric vehicles. **69**

RECOMMENDATION 4: That the Victorian government undertake a public education campaign to address misinformation and misconceptions about electric vehicles. **69**

FINDING 32: The current rollout of electric vehicle charging infrastructure is restricting consumer confidence and resulting in slower electric vehicle uptake rates in Victoria. **71**

FINDING 33: Deployment of technologies that improve visibility and accessibility to electric vehicle charging infrastructure would strengthen consumer confidence about the availability of EV charging infrastructure and improve uptake of EVs in Victoria. **71**

FINDING 34: Targeted engagement from automotive dealerships can strengthen consumer confidence to purchase electric vehicles. **72**

FINDING 35: Automotive dealerships need support to communicate the benefits of electric vehicles to consumers in Victoria. **72**

RECOMMENDATION 5: That the Victorian Government work with the automotive peak body to improve understanding of electric vehicles operation, charging, costs, and benefits, including the most cost effective times to charge with greatest benefit to the grid. **73**

FINDING 36: Consumer protections and dispute resolution frameworks for EV-related services are currently fragmented and incomplete, risking reduced consumer confidence as EV uptake increases. 74

RECOMMENDATION 6: That the Victorian Government expand and clarify consumer protection frameworks to cover EV charging infrastructure and related services. 74

RECOMMENDATION 7: That the Victorian Government work with the EWOV to establish a complaints mechanism, including:

- Enabling the Energy and Water Ombudsman to investigate EV charger installation
- DNSPs to inform new connection customers of the Ombudsman’s complaints mechanism

75

FINDING 37: Adoption of grid-aligned charging behaviours from electric vehicle owners requires consumer education and engagement from government and industry. 77

RECOMMENDATION 8: That the Victorian Government develop guidelines and resources about electric vehicle charging and behaviours that align with electricity system needs for the automotive industry and consumers across the electricity system. 77

FINDING 38: Time-of-use and dynamic tariffs can effectively shift electric vehicle charging to off-peak periods or periods of high renewable generation, improving networks utilisation. 83

FINDING 39: Current network tariff structures in Victoria do not reward or encourage electric vehicle charging behaviour that supports the electricity grid. 83

FINDING 40: Network tariff reform is needed to better align electric vehicle charging with renewable energy availability and grid capacity, to ensure that charging occurs during low-demand, high-supply periods. 83

RECOMMENDATION 9: That the Victorian government work with the industry, including the DNSPs and retailers, to reform tariffs to smooth the load on the grid from EV charging and give consumers choice and lower costs. This should include:

- EV charging Tariffs and ToU tariffs which encourage the use of cheap daytime power;
- Encourage the AER to support regulatory settings that promote EV uptake. 83

FINDING 41: Bidirectional charging technologies offer significant benefits to consumers and Victoria’s electricity system, enabling electric vehicles to act as mobile energy assets that can strengthen grid reliability and capacity. **87**

FINDING 42: Accelerating the uptake of bidirectional charging will require targeted financial incentives and policy measures from the State Government to build industry and consumer confidence to adopt these technologies. **87**

RECOMMENDATION 10: That the Victorian Government fund targeted programs, trials, research or demonstration projects for bidirectional technologies to build market and consumer confidence. **87**

5 Delivering EV charging infrastructure

FINDING 43: There is a strong preference for home-based charging among EV drivers in Australia. **93**

FINDING 44: A distributed network that blends private charging at homes with slow, fast, and ultra-fast public chargers is essential to allowing broad end-user access while maximising benefits and preventing grid stress. **93**

FINDING 45: Public EV charging benefits the grid as its load profile broadly aligns with daytime periods of peak solar generation when curtailment is currently common. **93**

FINDING 46: EV charging technology gives EV drivers flexibility in how they charge their vehicles, meaning charging behaviour is very different to refuelling an ICE vehicle. **93**

FINDING 47: A state-wide public charging network is essential to unlocking the Victorian road network not only for passenger car drivers, but also for electrified commercial transport. **93**

RECOMMENDATION 11: That the Victorian Government provides education, incentives, and support for large employers and accommodation providers to provide charging for employees at Victorian workplaces and guests at accommodation providers. **93**

FINDING 48: Equitable, reliable, and accessible public charging infrastructure is foundational to driving confidence in EVs and increasing consumer uptake. **98**

FINDING 49: EV charging infrastructure is not being installed quickly enough in Victoria to meet current and projected demand. **98**

RECOMMENDATION 12: That the Victorian government implement policy settings that speed and scale up the deployment of public EV charging. **98**

FINDING 50: There is no definitive understanding of how much public charging capacity has been installed in Victoria to date due to lack of centralised data about chargers under 25 kilowatts. **98**

RECOMMENDATION 13: That the Victorian Government work with the Commonwealth, States and Territories to develop a definitive understanding of total national public charging capacity. **98**

RECOMMENDATION 14: That the Victorian Government collaborate with the Commonwealth, States and Territories to ensure there is a database that maps where public charging is and communicates information about availability and uptime for use by EV drivers, and that mapping software providers make this information available to the public. **99**

FINDING 51: An international benchmark for a developed public EV charging infrastructure network is a 1:1 ratio of kilowatts of public charging capacity per EV on the road. **99**

FINDING 52: In late 2025, Victoria’s ratio of public charging capacity in kilowatts to registered EVs was approximately 0.37:1. **99**

RECOMMENDATION 15: That the Victorian Government develop coverage and incremental targets for EV charging to reach a 1:1 ratio of public charging capacity in kilowatts to registered EVs. This should run parallel to the aspirational targets for EV uptake in the Climate Action Plan 2026–2030. **99**

FINDING 53: The Victorian Government has no dedicated strategy for deploying a state-wide EV charging network. **103**

RECOMMENDATION 16: That the Victorian Government must develop a statewide EV charging strategy and implementation plan in consultation with key stakeholders that establishes charging network coverage targets, a standardised site identification methodology, infrastructure standards, and clear responsibilities for all levels of government with consideration of funding mechanisms. **103**

FINDING 54: The Victorian Government committed to delivering reforms that make public charging affordable, speed up EV charging infrastructure delivery, remove barriers to delivering kerbside charging, and promote bidirectional charging. **103**

RECOMMENDATION 17: That the Victorian Government collaborate with the Commonwealth Government towards the development of a coordinated, national EV charging infrastructure delivery strategy. **103**

FINDING 55: Local governments are important facilitators of the EV transition but require additional support and better coordination to deliver it at scale. **107**

RECOMMENDATION 18: That the Victorian Government ensure that local councils develop parking restrictions for EV charging bays that:

- allow drivers to stay long enough to meaningfully charge
- prevent non-EV drivers from parking

107

FINDING 56: High up-front infrastructure costs associated with fleet electrification, including wiring upgrades at depots, are preventing local governments from transitioning their fleets sooner and accessing cost savings earlier. **107**

RECOMMENDATION 19: That the Victorian Government support local government fleet electrification with targeted investment. **107**

FINDING 57: Best practice examples from EV charging rollouts in other countries demonstrate that it is important to invest in building technical capacity in local governments as well as co-funding infrastructure projects. **107**

RECOMMENDATION 20: That the Victorian Government develop a framework for state-local government cooperation for EV charging infrastructure delivery with reference to the United Kingdom's Local Electric Vehicle Infrastructure (LEVI) scheme. **107**

FINDING 58: Charging stations regional Victoria currently have lower average utilisation rates than those in metropolitan areas but also need to have enough charging stations and capacity to accommodate seasonal demand peaks associated with tourism travel. **110**

FINDING 59: The private market is not currently delivering sufficient charging infrastructure in regional and rural areas away from main intercity or interstate routes, which risks creating 'black holes' in the network and leaving these communities behind. **110**

FINDING 60: Government co-funding can have a 'multiplier effect' for private charge point operators (CPOs) and can address commerciality gaps and support infrastructure delivery. **111**

RECOMMENDATION 21: That the Victorian Government works with industry and local government to ensure there is sufficient investment for charging infrastructure in areas where installation is more complex or has longer returns on investment, prioritising rural or disadvantaged areas that are undersupplied. **111**

RECOMMENDATION 22: That the Victorian Government develop a model that recognises regional, rural and disadvantaged areas that are undersupplied by the private market acknowledging private and government investment. **111**

FINDING 61: The availability of appropriate, affordable high-power charging infrastructure along major routes or in peri-urban depots is fundamental to giving logistics businesses the confidence to electrify their fleets. **111**

RECOMMENDATION 23: That strategic charging network planning undertaken by the Victorian Government incorporates all relevant stakeholders, consider the specific needs of heavy electric vehicles and remove barriers to electrification. **111**

FINDING 62: Overnight operational curfews do not currently distinguish between electric and internal combustion engine trucks, meaning that heavy electric vehicles are prohibited from operating overnight despite their significantly reduced sound emissions. **111**

FINDING 63: If electric heavy vehicles could operate overnight, they would charge during periods of strong renewable energy generation. **111**

RECOMMENDATION 24: That the Victorian Government should commission a trial to understand the effects of allowing heavy electric vehicles to operate overnight. **111**

FINDING 64: Councils in metropolitan Melbourne are currently unable to grant licence agreements to Charge Point Operators for the installation and operation of EV charging stations in Council-managed parking bays located on Urban Arterial Road Reserves. **112**

RECOMMENDATION 25: The Department of Transport and Planning should transfer the licensing function for Council-managed parking bays located on Urban Arterial Road Reserves to councils on a case-by-case basis, with the consent of the Head of Transport for Victoria. **112**

FINDING 65: Long-term policy certainty underpins market confidence among investors and consumers alike and will support the transition to the electrification of transport. **114**

FINDING 66: Modelling suggests that Australia will not have enough electrical contractors to meet demand for electrification works in 2030. **114**

RECOMMENDATION 26: The Victorian Government must create pathways for young people to undertake electrical apprenticeships, especially groups that are underrepresented in these cohorts, such as women and mature-aged learners, and incentivise improved apprenticeship completion rates. **114**

FINDING 67: EV charging infrastructure proponents do not learn whether there is sufficient network capacity to accommodate for their projects to be viable until after they have submitted their application to the DNSP and paid associated costs. **121**

FINDING 68: A 2024 report found Victorian DNSPs to be among the worst in the country regarding dedicated teams to support EV connections, second lines of supply, and connection timeliness **121**

FINDING 69: Unlike their counterparts in New South Wales, Queensland and South Australia, DNSPs in Victoria do not have dedicated teams to facilitate EV charging infrastructure connection requests. **121**

RECOMMENDATION 27: That the Victorian government requires the Victorian DNSPs to establish dedicated teams to streamline the connection process, enable installations within set timeframes and set transparent connection prices. **121**

FINDING 70: Contestability frameworks for connection services like the Accredited Service Provider scheme in New South Wales can improve the tempo of EV charging infrastructure deployment and transparency of data. **121**

RECOMMENDATION 28: That the Victorian Government develop a contestable works framework for connection services in Victoria. **121**

FINDING 71: In Victoria, EV charging infrastructure connection applications are frequently rejected by DNSPs because of insufficient grid capacity or the deterioration of the physical asset power poles. **125**

FINDING 72: There is little clarity about where the electricity grid has capacity for EV charging infrastructure and limited collaboration between market participants. **125**

FINDING 73: Current network data is insufficient for mapping possible sites to install EV charging infrastructure as it does not go down to the low-voltage network **125**

FINDING 74: The Victorian Government has committed to taking regulatory action to ensure DNSPs publish data on connection processes, timeframes and costs, and report publicly on their performance against these metrics **125**

RECOMMENDATION 29: That the Victorian Government require Victorian DNSPs to develop the necessary data infrastructure to create network plans that show fine-grained capacity data and provide an indication of connection costs. **126**

FINDING 75: Facilities Access Agreements for DNSP-owned assets are not standardised nationally. **128**

FINDING 76: Third-party access to distribution infrastructure, including for use by CPOs to operate kerbside charging infrastructure, will be regulated by the AER from 1 July 2026. **128**

FINDING 77: From 1 July 2026, the AER will be able to resolve disputes over facilities access agreements, make binding determinations about pricing, ensure that negotiations between CPOs and DNSPs are conducted on fair, reasonable, and cost reflective terms. **128**

FINDING 78: The Victorian Government has committed to monitoring the AER's reform of facilities access agreements and evaluating whether further regulation is required in Victoria should disputes continue between DNSPs and CPOs. **128**

RECOMMENDATION 30: That the Victorian Government monitors the ring-fencing waiver granted to CPU to ensure that competitive neutrality is maintained and that it advises the AER on any identified barriers to the private sector. **133**

FINDING 79: In strata-managed complexes, major changes like electrical retrofitting works for EV charger installation require a special resolution with approval from 75 per cent of lot owners. **136**

FINDING 80: Victoria's *Owners Corporation Act 2006* is out-of-step with equivalent legislation in other Australian states and territories as it does not include provisions that facilitate the installation of EV charging infrastructure and requires approval by 75 per cent of lot owners. **136**

RECOMMENDATION 31: That the Victorian Government amend *the Owners Corporation Act 2006* to include provisions that:

- prohibit unreasonable objection to the installation of electric vehicle charging infrastructure.
- reduce the approval threshold for sustainability works from 75 per cent to 50 per cent.

136

FINDING 81: Electrical retrofitting works for EV charging can be expensive, but costs can be mitigated by using demand management technologies. **136**

RECOMMENDATION 32: That the Victorian Government establish a grants program or subsidy for the retrofitting of multi-unit residential buildings for EV charging readiness. **136**

FINDING 82: Having EV charging facilities installed is likely to make apartments or rental properties more attractive to renters. **136**

RECOMMENDATION 33: That the Victorian Government establish regulatory mechanisms that require or incentivise landlords to provide accessible, affordable charging options for renters to ensure equitable access to home-like charging convenience. **136**

FINDING 83: Provisions for EV-readiness for new Class 1 buildings (houses, townhouses and terraced houses) were removed from the National Construction Code 2025, which will not be updated until mid-2029. **136**

RECOMMENDATION 34: That the Victorian Government advocate for the reversal of the decision to remove the provisions for EV-readiness for new Class 1 buildings (houses, townhouses and terraced houses) from the National Construction Code 2025. **137**

FINDING 84: Established national minimum operating standards for EV chargers currently only apply to those that have received government support. **138**

FINDING 85: DC charging providers often require the use of specific apps and account creation prior to use. This can make using on public chargers less accessible and less convenient. **138**

RECOMMENDATION 35: That the Victorian Government develop an accessibility and reliability framework for all public charging infrastructure that:

- establishes and enforces uptime targets
- sets maintenance requirements
- ensures that real-time data is accessible for EV drivers via an online mapping platform
- ensures that EV charging infrastructure complies with accessibility standards for people with disabilities
- standardises the payment experience such that drivers are not required to register or download an app prior to arriving at the charging station. **139**

6 Developing an EV battery supply chain and circular economy in Victoria

FINDING 86: Lithium iron phosphate (LFP) batteries are now commonplace in mass-market EVs, having grown from having grown from a single-digit market share globally in 2015 to 44 per cent in 2023. **142**

FINDING 87: Evolutions in battery technology have reduced reliance on nickel, cobalt and aluminium, improved energy performance and made batteries safer, more durable and cost-effective. **142**

FINDING 88: Behind-the-meter batteries are being used to support EV charging systems and energy resilience in regional areas or in commercial settings where high-power outputs are required but grid capacity is limited. **144**

FINDING 89: EV batteries have a longer lifespan than the other components of the car they are housed in, retaining between 70–80% of their original capacity after around 15 years of use **144**

FINDING 90: End-of-life EV batteries are being recovered and recycled in Victoria. **144**

FINDING 91: Around 95–97 per cent of a battery’s components are recyclable. Recovered materials can be infinitely recycled and reconstituted into new batteries. **145**

FINDING 92: Domestic battery recycling capacity helps preserve valuable minerals such as lithium, cobalt, and nickel, which are critical to Australia’s supply chain security, especially as global access to rare earth minerals becomes increasingly disrupted. **145**

FINDING 93: Recovered EV batteries reduce reliance on imported battery packs without substantial investment in local cell production. **145**

FINDING 94: Victoria does not have a strategy or regulatory framework for managing end-of-life EV batteries, which present different challenges to the small consumer batteries covered by existing government policies. **149**

FINDING 95: The amount of EV batteries arriving for materials recovery in Victoria is set to increase from around 1,500 tonnes per year to over 20,000 tonnes per year in the next decade. 149

FINDING 96: Australia has limited capacity to process lithium-ion batteries onshore. This leads to large volumes of end-of-life lithium-ion batteries being stored in warehouses and scrapyards. 149

FINDING 97: Many companies ship batteries offshore because of lower environmental and labour standards that allow for cheaper processing. This has safety and long-term supply chain security risks. 149

RECOMMENDATION 36: That the Victorian Government advocate to the Commonwealth Government to designate EV batteries as a priority product under the *Recycling and Waste Reduction Act 2020 (Cth)* as part of a coordinated national product stewardship scheme. 149

FINDING 98: EV batteries can have second-life stationary storage applications in residential, commercial or industrial settings. 151

FINDING 99: Power control management software systems that keep a second-life EV battery being used in a residential setting between 40 and 60 per cent of its total charge can extend its lifespan by preventing it from reaching end ranges. 151

FINDING 100: Although current diagnostic tools cannot automate safety verifications for second-life batteries, it is possible to analyse battery cells to ensure a pack is safe for use in a second-life application. 151

FINDING 101: Battery producers are not obligated to publicly disclose end-of-life management information. 154

FINDING 102: The ability to access the software and technical information necessary to safely diagnose and assess battery systems would enable more batteries to be safely repaired for second-life applications or safely recycled. 154

FINDING 103: The European Union has introduced a Battery Passport framework, a mandatory digital record system that has requirements for sustainability, safety, labelling, processing, and recycling for designated batteries that enter the European market from February 2027. This includes batteries for e-rideables, EV batteries and industrial batteries with a capacity over 2 kilowatt hours. **154**

RECOMMENDATION 37: That the Victorian Government advocate to the Commonwealth Government to implement a national Battery Passport framework that has requirements for sustainability, safety, labelling, processing, and recycling for all e-rideable batteries, EV batteries, and industrial batteries with over 2 kilowatt hours of capacity. **154**

FINDING 104: Battery recycling is a nascent industry in Australia, but the country's two operational lithium-ion battery recycling facilities are in Victoria. **155**

FINDING 105: Australia currently exports around 1,000 tonnes of 'black mass' annum for materials recovery. **156**

FINDING 106: Full hydrometallurgical plants that can recover valuable materials from 'black mass' require feedstocks of around about 10,000 to 20,000 tonnes per annum to be economically viable **156**

FINDING 107: If adequate domestic recycling not built in time, Australia would have to export 'black mass' for processing, which risks having insufficient feedstock for a domestic recycling industry. **156**

RECOMMENDATION 38: That the Victorian Government provide grants, incentives, or subsidies to facilitate the construction of battery recycling facilities to manage future demand projections. **156**

FINDING 108: End-of-life EV batteries are routinely transported around Australia in trucks under a dangerous goods classification, meaning that battery recycling businesses face high logistics costs. **157**

FINDING 109: There are no nationally coordinated standards for safe end-of-life battery handling in Australia **157**

RECOMMENDATION 39: That the Victorian Government collaborate with the Commonwealth, State and Territory Governments to develop national minimum standards for safe end-of-life battery handling and management. **157**

RECOMMENDATION 40: That the Victorian Government invest in safe battery handling skills training for the Victorian workforce. **157**

What happens next?

There are several stages to a parliamentary inquiry.

The Committee conducts the Inquiry

This report on the Inquiry into electricity supply for electric vehicles is the result of extensive research and consultation by the Legislative Council Economy and Infrastructure Committee.

The Committee received written submissions, spoke with people at public hearings, reviewed research evidence and deliberated over a number of meetings. Experts, government representatives and individuals expressed their views directly to us as Members of Parliament.

A parliamentary committee is not part of the Government. The Committee is a group of members of different political parties (including independent members). Parliament has asked us to look closely at an issue and report back. This process helps Parliament do its work by encouraging public debate and involvement in issues.

You can learn more about the Committee's work at: <https://parliament.vic.gov.au/get-involved/committees/legislative-council-economy-and-infrastructure-committee>.

The report is presented to Parliament

This report was presented to Parliament and can be found at: <https://www.parliament.vic.gov.au/get-involved/inquiries/electricvehicleinquiry/reports>.

A response from the Government

The Government has six months to respond in writing to any recommendations made in this report.

The response is public and put on the inquiry page of Parliament's website when it is received at: <https://www.parliament.vic.gov.au/get-involved/inquiries/electricvehicleinquiry/reports>.

In its response, the Government indicates whether it supports the Committee's recommendations. It can also outline actions it may take.

Chapter 1

Introduction

1.1 Background to the Inquiry

On 15 May 2025, the Legislative Council agreed to the following motion:

That this House requires the Economy and Infrastructure Committee to inquire into, consider and report, by 27 March 2026, on how Victoria can best harmonise electric vehicles (EVs) with electricity supply and demand, including but not limited to —

1. strategies to reduce EV charging during periods of peak demand on the grid and increase charging during periods of peak supply;
2. whether public charging infrastructure is being installed at a sufficient rate in different parts of Victoria, including older suburbs where most people do not have access to off-street parking;
3. the best role for electricity distribution businesses in rolling out EV charging infrastructure, and how distribution network tariffs should be set for EV chargers;
4. strategies to facilitate the take-up of EV ownership, including the facilitation of bidirectional charging;
5. whether old EV batteries could have a second life as household or community batteries after removal from vehicles;
6. the barriers and opportunities to the manufacture, reconditioning and recycling of EV batteries, or other elements of the EV supply chain, in Victoria; and
7. any other related matters the Committee considers relevant.

As a result of two other inquiries being undertaken at the time, The Committee sought an extension of the tabling date and on 17 February 2026, the Legislative Council resolved to extend the reporting date to 31 May 2026.

1.2 Submissions and public hearings

The Committee commenced the Inquiry by writing to more than 130 organisations and individuals with a specific interest or expertise in electric vehicle charging. In addition, the Committee advertised and publicised the inquiry in both social and mainstream media. By the deadline for submissions, the Inquiry received 126 submissions.

In February 2026, the Committee commenced a series of 5 days of public hearings, taking evidence from private companies engaged in EV charging, academics, various associations and advocacy groups, electricity distribution and retailing organisations and experts in managing fire risk.

A list of submitters and witnesses that appeared at public hearings for this Inquiry is included in Appendix A.

1.3 Scope of the Inquiry

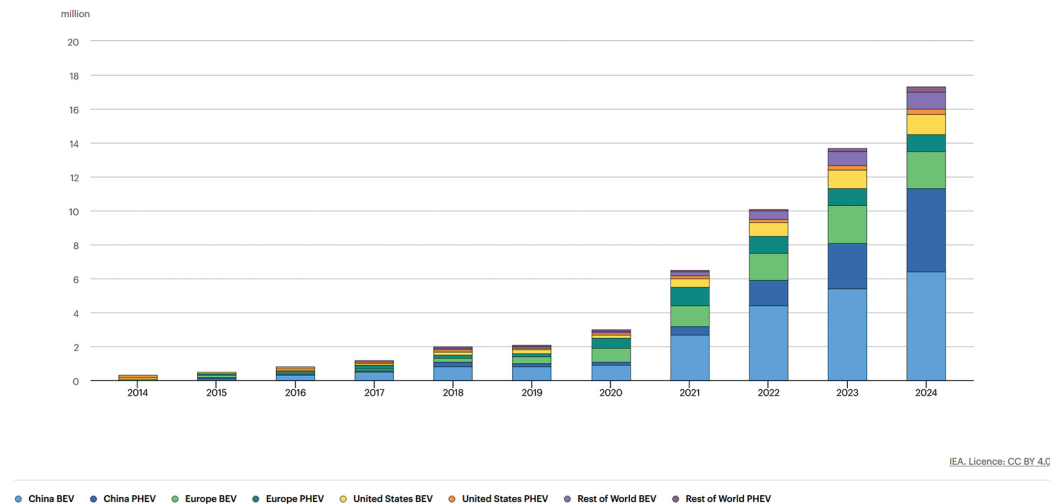
As is the case with many new technologies, electric vehicles (EVs) have enthusiastic advocates and detractors. It is not the Committee’s intention to explicitly engage with the debate about the relative merits of EVs. The Committee has undertaken this Inquiry based on the terms of reference which are predicated on the fact that EVs are a rapidly growing section of the transportation market and that indications are that the growth will continue into the future.

While figures vary, it is generally agreed that global battery electric vehicle (BEV) sales surpassed 4 million in Q4 2025 for the first time, with over 20% of vehicles sold globally being BEVs and full-year growth of 30%.¹ According to the International Energy Agency (IEA):

For the full year 2025, electric car sales are expected to increase by 25% globally, which is similar to the growth rate from the 2024. As a result, electric car sales top 20 million worldwide. While sales volumes may be impacted by economic and policy uncertainties, more than one in four cars sold in 2025 is expected to be electric.²

Fluctuations of sales in different markets and at different times can be caused by changes in tax credits and other incentives, however it is accepted that the EV market is not a fad, which has been claimed in the past, and sales will continue to grow.

Figure 1.1 Growth in global Electric Vehicle Sales 2014–2024



Source: International Energy Agency, *Global EV Outlook 2025: Expanding sales in diverse markets*, International Energy Agency, Paris, 2025, p. 15.

1 Harald Wimmer and Dr. Jörn Neuhausen, *Electric Vehicle Sales Review Q4-2025*, 2026, <<https://www.strategyand.pwc.com/de/en/industries/automotive/electric-vehicle-sales-review-q4-2025.html>> accessed 6 March 2026.

2 International Energy Agency, *Global EV Outlook 2025: Expanding sales in diverse markets*, Paris, 2025, p. 26.

It is clear from the available data, as well as the growing evidence on our roads, that EVs are already an important sector of our road transport mix and will increasingly become so. Therefore, it is important that the infrastructure that supports their use is in place, is widely accessible and equitable and is not an impediment to their ongoing uptake.

1.4 Overview of the Report

This Report covers the wide-ranging terms of reference over five chapters. Following this introductory Chapter, Chapter 2 provides some background on Victoria's electricity system and the changes to electricity supply and demand trends. It provides some guidance on electric vehicle terminology and the importance of harmonising electric vehicles with the electricity system, including the risks and significant opportunities that this presents. The Chapter also describes the policy and legislative context, both within Victoria and in Australia more broadly.

Chapter 3 of the Report discusses the broader issues concerning the harmonisation of electric vehicles with the electricity grid. Issues covered include the different roles and responsibilities and the need for collaboration by government and private industry; consumers understanding of electric vehicles and the impact it has on the system; the potential that electric vehicles have in supporting the electricity grid; and the importance of a circular electric vehicle battery supply chain.

Chapter 4 looks in more detail at EV uptake and ownership trends and addresses some of the challenges that may be an obstacle to EV ownership. The need to increase consumer confidence by addressing some of the misconceptions about EVs is also addressed in this Chapter. The Chapter also considers the impacts of the current rates of rollout of charging infrastructure and of the current tariff regimes on EV owners.

In Chapter 5, the Committee considers some of the ways that charging infrastructure can be delivered to maximise the benefits of electric vehicles including who is delivering the infrastructure and what role state and local government can play. The Chapter examines the role of Victorian distribution network service providers, which manage the distribution of electricity across the state, in facilitating the rollout of charging infrastructure and the challenges faced by charge point operators. The Chapter also considers issues of equitable access to electric vehicle charging infrastructure.

Chapter 6 looks at the life cycle of EV batteries, including the risks and opportunities for Victoria in adopting a circular and low-waste supply chain for electric vehicle batteries.

While the term electric vehicle (EV) is used somewhat interchangeably in this Report, it should be noted that for the purposes of this Inquiry the term EV refers to battery electric vehicles (BEVs). While plug-in hybrid vehicles (PHEVs) have an electric component, they are not considered full electric vehicles as they still use petrol or diesel in their drive train. Hydrogen fuel cell vehicles are electric vehicles but do not comprise a large enough share of the market to be considered in this Report.

Chapter 2 Victoria’s electricity system

2.1 Victoria’s electricity system is evolving

The whole system of the electricity network is changing fundamentally, and very, very quickly.

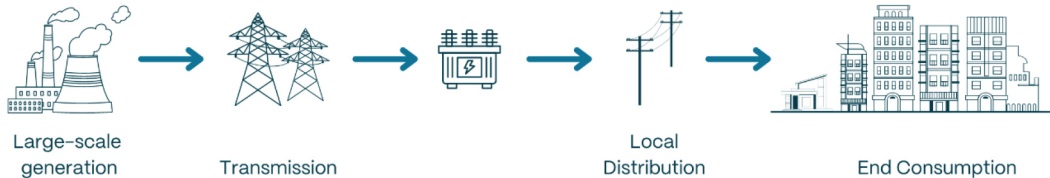
Renate Vogt, General Manager, CitiPower, Powercor and United Energy, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 1.

2.1.1 Energy flow in Victoria’s electricity supply-chain is changing

Victoria operates within a multijurisdictional electricity system known as the National Electricity Market (NEM). The NEM includes South Australia, Tasmania, New South Wales, the Australian Capital Territory and Queensland. It allows states to generate, use and trade electricity across regions.¹

Energy has historically flowed in one direction in Victoria’s electricity system, with supply moving from generators to end users via the transmission and distribution networks.² Figure 2.1 depicts the traditional electricity supply-chain model.

Figure 2.1 Energy has historically flowed one way in Victoria’s electricity supply chain



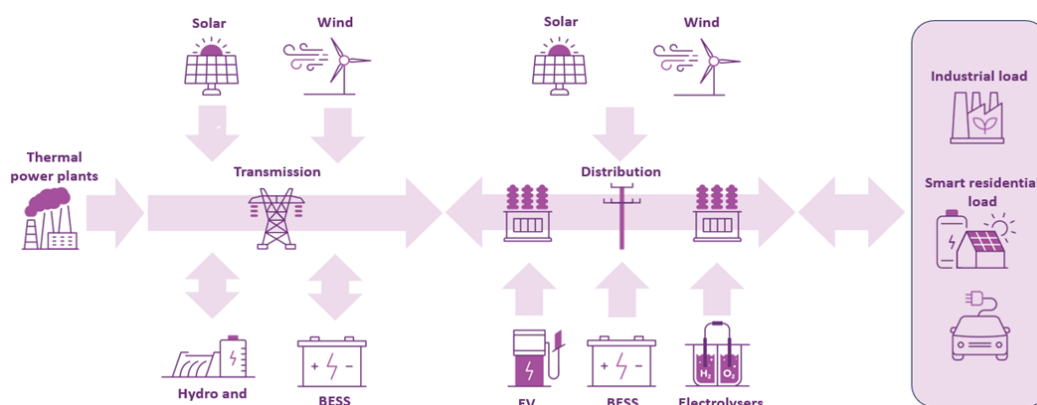
Source: Department of Climate Change, Energy, the Environment and Water, *National Consumer Energy Resources Roadmap*, Canberra, 2024, p. 7.

1 Australian Energy Market Commission, *National Electricity Market*, 2026, <<https://www.aemc.gov.au/energy-system/electricity/electricity-system/NEM>> accessed 25 March 2026.
 2 Australian Energy Market Operator, *Victorian Annual Planning Report: October 2025*, Australian Energy Market Operator Victorian Planning, Victoria, 2025, p. 20.

Throughout this Inquiry, stakeholders expressed to the Committee that Victoria's electricity system is evolving.³ The Committee received evidence noting that the growth of two-way energy flows (bi-directional) is changing traditional energy flow patterns in the electricity supply-chain.⁴

The Australian Energy Market Operator Victorian Planning's *2025 Victorian Annual Planning Report* (VAPR) provides insight on the State's changing energy landscape relevant to network planning.⁵ The report stated that bi-directional energy flow is increasing due to 'continued growth of renewable energy generation, consumer energy resources (CER) and storage systems across Victoria – in both the transmission and distribution networks' (shown in Figure 2.2).⁶

Figure 2.2 Energy is flowing bi-directionally and generation is becoming less centralised in Victoria's electricity system



Source: Australian Energy Market Operator, *Victorian Annual Planning Report: October 2025*, p. 20.

³ myenergi, *Submission 8*, p. 5; Radha Claridge, *Submission 68*, p. 2; Associate Professor Roger Dargaville, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, pp. 30, 38; Associate Professor Zsuzsanna Csereklyei, RMIT University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 46; Dr Alina Dini, Head of Energy, Infrastructure and Commercial, Electric Vehicle Council, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, pp. 1-3; Ralph Griffiths, General Manager, Policy and Regulation, AGL, public hearing, 27 February 2026, *Transcript of evidence*, p. 34; Oliver Hill, Program Leader, Electric Vehicles, RACE for 2030, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, pp. 4, 13; Michael Oke, Unit Manager, Sustainability, Yarra City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 20; Michael Weekes, Manager, Technical, National Electrical and Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 49; Catherine Wolthuizen, Ombudsman and Chief Executive, Energy and Water Ombudsman Victoria, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, pp. 51-52; AGL, *Submission 82*, p. 4; bp Australia, *Submission 91*, pp. 3-4; Nissan, *Submission 125.1*, p. 1.

⁴ myenergi, *Submission 8*, p. 5; Professor Ray Wills, Managing Director, Future Smart Strategies, Adjunct Professor, The University of Western Australia, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 54; Origin Energy, *Submission 74*, p. 1; Ralph Griffiths, *Transcript of evidence*, p. 34; Radha Claridge, *Submission 68*, p. 1; Renate Vogt, General Manager, CitiPower, Powercor and United Energy, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 2; Dr Alina Dini, *Transcript of evidence*, pp. 2-3; Catherine Wolthuizen, *Transcript of evidence*, pp. 51-52; Oliver Hill, *Transcript of evidence*, p. 7.

⁵ Australian Energy Market Operator, *Victorian Annual Planning Report: October 2025*, Australian Energy Market Operator Victorian Planning, Victoria, 2025, p. 2.

⁶ Australian Energy Market Operator, *Victorian Annual Planning Report: October 2025*, p. 4.

2.1.2 Victorian consumers are increasingly generating, supplying and storing energy

The 2025 VAPR also noted that Victoria's 'generation supply has become more distributed ... with generation now diversified on both the supply and user sides' and energy progressively flowing to and from consumers.⁷

Stakeholders also affirmed that Victorian households and businesses increasing uptake of CERs such as rooftop solar, electric vehicles (EVs) and battery electric storage systems (BESS) has enabled consumers to generate, supply and store energy with growing capacity.⁸ As a result, the State's electricity-supply chain has become less centralised as energy generation supply has become more distributed amongst consumers.⁹

Table 2.1 describes the phases in Victoria's electricity supply chain, noting the evolving role of consumers in energy generation supply. Box 2.1 provides an explanation of CERs.

Table 2.1 Phases in Victoria's electricity supply-chain

Electricity supply-chain phase	Description	Infrastructure or process involved
Generation	Generators produce electricity from energy sources such as gas or solar.	High voltage large-scale generators or smaller generation units.
Transmission	The transmission network transports electricity at high voltages from generators to major demand centres.	Towers, wires, underground cables, transformers, switching equipment, reactive power devices and monitoring and telecommunications equipment.
Distribution	The distribution network transports electricity at lower voltages from transmission networks to end users.	Poles, overhead lines, underground cables, sub-transmission lines, zone substation transformers, distribution feeds, distribution transformers.
Energy retailers	Retailers sell electricity to consumers and manage customers account.	Issue consumers/end users' electricity bills.
End users or consumers	Use the electricity sold via energy retailers. May also be generator-suppliers too.	May operate small-scale generation units and/or storage systems.

Source: Australian Energy Market Commission, National Electricity Market, 2026, <<https://www.aemc.gov.au/energy-system/electricity/electricity-system/electricity-supply-chain>> accessed 25 March 2026; Powercor Australia Ltd, *Powercor Distribution Annual Planning Report*, 2024, pp. 11, 15.

⁷ Ibid., p. 20.

⁸ myenergi, *Submission 8*, p. 5; ChargePost, *Submission 83*, p. 1; Nexa Advisory, *Submission 89*, p. 11; Radha Claridge, *Submission 68*, p. 1; Catherine Wolthuizen, *Transcript of evidence*, p. 51; National Electrical and Communications Association, *Submission 57*, p. 10; Master Electricians Australia, *Submission 69*, p. 1; Origin Energy, *Submission 74*, p. 1.

⁹ Radha Claridge, *Submission 68*, pp. 1–3; Nexa Advisory, *Submission 89*, p. 11; Master Electricians Australia, *Submission 69*, p. 1.

Box 2.1 What is a consumer energy resource?

The Commonwealth Government defined consumer energy resources in its *National Consumer Energy Resources Roadmap* as:

A diverse range of small to medium scale energy resources that are located behind the meter at residential, commercial and industrial premises and are owned or operated by the customer. These resources generate or store electricity and includes flexible loads that can alter demand in response to external signals.

Department of Climate Change, Energy, the Environment and Water, *National Consumer Energy Resources Roadmap*, Department of Climate Change, Energy, the Environment and Water, Canberra, 2024, p. 28.

In 2022 the Victorian Government produced *Harnessing Victoria's distributed energy resources*, which focused on distributed energy resources (DER).

In its *Facilitating CER in Australia's two-way energy system - Export services network performance report 2025*, the Australian Energy Regulator explained that 'consumer energy resources (CER) are a type of distributed energy resource (DER) that is privately owned (typically by consumers), rather than owned by a DNSP or for collective use'.

Examples of consumer energy resources include solar photovoltaic (PV) installed on a residential rooftop, electric vehicles, bi-directional electric vehicle chargers and small-scale battery storage systems including community battery storage.

Source: Australian Energy Regulator, *Facilitating CER in Australia's two-way energy system: Export services network performance report 2025*, Canberra, 2025, p. 3; Department of Climate Change, Energy, the Environment and Water, *National Consumer Energy Resources Roadmap*, Canberra, 2024, p. 28.

2.1.3 Electricity supply and demand patterns are changing

The Committee heard that continued uptake of CERs is changing Victoria's electricity supply and demand patterns.¹⁰ Stakeholders highlighted that consumers are generating and supplying energy from rooftop solar, which is reducing demand on the electricity grid.¹¹ While other stakeholders expressed that Victoria's growing uptake of electric vehicles increases demand for electricity.¹²

¹⁰ Dr Alina Dini, *Transcript of evidence*, p. 2; Catherine Wolthuizen, *Transcript of evidence*, pp. 51-52; Origin Energy, *Submission 74*, p. 1; Australian Academy of Technological Sciences and Engineering, *Submission 65*, pp. 1-2; Australian Energy Market Operator, *Victorian Annual Planning Report: October 2025*, p. 20; Australian Academy of Technological Sciences and Engineering, *Submission 65*, pp. 1-2.

¹¹ Associate Professor Julie Karel, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 3; Associate Professor Zsuzsanna Csereklyei, *Transcript of evidence*, p. 46; Radha Claridge, *Submission 68*, p. 1.

¹² myenergi, *Submission 8*, p. 5; Australian Academy of Technological Sciences and Engineering, *Submission 65*, p. 2.

The 2025 VAPR affirmed these observations in its supply and demand forecasts for Victoria, which it provides in relation to network planning. The report stated that 'Minimum demand from the grid continues to decline ... as consumers distributed photovoltaic (PV) investments keep growing and meeting more of their energy needs'.¹³ It also noted forecasts which indicated 'growth in electricity maximum demand for the next five years, driven by homes and businesses switching from gas to electricity and electrification of transport like electric vehicles'.¹⁴

Stakeholders emphasised that the growing uptake of EVs presents opportunities and risks for the State's electricity system, but they can deliver broad benefits if effectively integrated within Victoria's electricity system.¹⁵

Chapter 2 discusses the benefits that growing EV uptake can deliver for Victoria in further detail.

2.2 Electric vehicle and electric vehicle charging infrastructure terminology

2.2.1 What is an electric vehicle?

There are several electric vehicle models, which operate differently in relation to how they use electricity and fuel. In addition, terminology used in State and Commonwealth policy and strategy can include refer to multiple vehicle model types. Table 2.2 provides an overview of the terminology.

Table 2.2 Overview of electric vehicle terminology

Terminology	Definition origin	Definition
Electric Vehicle (EV)	Commonwealth Government	Defined in the <i>National Electric Vehicle Strategy</i> as 'plug-in vehicles powered at least partly by electricity'.
	Victorian Government	'Electric vehicle (includes both BEVs and PHEVs)'.
	Electric Vehicle Council	'Electric Vehicles (EVs) specifically refer to vehicles that use electric motors for propulsion and can be recharged from an external power source'. EVs include Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs)'.
Battery Electric Vehicles (BEVs)	Commonwealth Government	'An electric vehicle that exclusively uses chemical energy stored in rechargeable battery packs to power at least one electric motor with no secondary source of propulsion'.
	Victorian Government	'Battery electric vehicle - sometimes known as a "pure" EV'.
	Electric Vehicle Council	'Vehicles that are powered exclusively by electricity stored in onboard batteries and use electric motors for propulsion'.

¹³ Australian Energy Market Operator, *Victorian Annual Planning Report: October 2025*, Victoria, 2025, p. 3.

¹⁴ Ibid.

¹⁵ Dr Alina Dini, *Transcript of evidence*, p. 2; Hyundai Motor Company Australia, *Submission 50*, p. 2.

Terminology	Definition origin	Definition
Plug-in hybrid electric vehicle (PHEV)	Commonwealth Government	'hybrid electric vehicle whose battery can be recharged by plugging it into an external source of electric power, as well as by its on-board engine and generator'.
	Victorian Government	'Plug-in hybrid electric vehicle – i.e. a vehicle with an electric battery-powered drivetrain, but also a small petrol engine (range extender)'.
	Electric Vehicle Council	'Vehicles that combine an internal combustion engine with an electric propulsion system. These vehicles can be charged externally to run on electricity before switching to fuel'.
Hydrogen fuel cell electric vehicle (FCEV)	Commonwealth Government	'An electric vehicle that uses electricity from a fuel cell powered by compressed hydrogen, rather than electricity from batteries'.
	Victorian Government	No specified definition. <i>Victoria's Zero Emissions Vehicle Roadmap</i> describes FCEV as another form of EV 'but one which uses compressed hydrogen via a fuel cell to power their motors'.
Zero emissions vehicles (ZEVs)	Commonwealth Government	'A vehicle that emits no pollutants from its operation. Electric-only vehicles (both BEVs and FCEVs are zero-emissions vehicles'.
	Victorian Government	'vehicles which do not use petroleum fuels and therefore do not emit greenhouse gas (GHG) emissions while operating'. ZEV is defined to include 'only BEVs (which have no tailpipe) and hydrogen FCEVs (which produce only water as a by-product)'.

Source: Department of Energy, Environment and Climate Action, *Victoria's Zero Emissions Vehicle Roadmap*, 2021, pp. 20, 84; Electric Vehicle Council, *State of Electric Vehicle 2025*, Victoria, 2025, p. 104; Department of Climate Change, Energy, the Environment and Water, *The National Electric Vehicle Strategy*, Canberra, 2023, p. 37.

Clarifying misconceptions: what an Electric Vehicle is not

The Electric Vehicle Council's *State of Electric Vehicle 2025* report states that terminology describing vehicles as 'hybrid' refer to vehicles with 'an engine with a small electric motor and battery, charged only through regenerative braking and the engine itself' and 'cannot be plugged in' and charged with electricity.¹⁶

In addition, the Committee heard from Brendan Davies, Secretary of the Australian Electric Vehicle Association's Victorian Branch, who provided clarification on e-rideables and electric vehicles.¹⁷ Mr Davies noted that e-rideables and electric vehicles 'are two different things' which can be confused.¹⁸ Mr Davies noted that EV battery management systems are far more sophisticated compared to e-rideables which have 'numerous cases of fires due to poor charging, poor battery management systems'.¹⁹ This terminology distinction will be relevant in Chapter 3, which discusses how misconceptions about EVs are a barrier to increasing EV ownership.

¹⁶ Electric Vehicle Council, *State of Electric Vehicle 2025*, Victoria, 2025, p. 26.

¹⁷ Brendan Davies, Secretary, Victorian Branch, Australian Electric Vehicle Association, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 20.

¹⁸ Ibid.

¹⁹ Ibid.

2.3 Harmonising electric vehicles with the electricity system will deliver broad benefits for Victorians

The transition to electric vehicles is going to be fundamental to achieving not just national and global emissions reduction goals but also improving the livelihoods of people every day in terms of their health and wellbeing. It has the potential to create a wide range of benefits for Australia and is an incredibly complex challenge.

Oliver Hill, Program Leader, Electric Vehicles, RACE for 2030, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 2.

2.3.1 Growing uptake of electric vehicles presents opportunities and risks for Victoria's electricity system

The Committee heard from stakeholders that Electric Vehicle uptake is increasing in both Victoria and Australia more broadly.²⁰ Professor Ray Wills told the Committee that 'BEV sales in Australia have exceeded 100,000 nationally', accounting for around 8% of new vehicle sales in 2025.²¹ Professor Wills predicted that Australia's share will increase to around 16–17% at the end of 2025 if plug-in share is also included.²² Similarly Nexa Advisory estimated in its submission that '260,000 EVs [are] on the road today [in Australia]' and 'this will approach 4 million by the start of next decade [2030]'.²³

Professor Wills emphasised that 'Victoria is leading the way with uptake' with 'battery electric vehicles well over 10 per cent in Victoria'.²⁴

²⁰ Professor Ray Wills, Managing Director, Future Smart Strategies, Adjunct Professor, The University of Western Australia, public hearing, Melbourne, 26 February 2027, *Transcript of evidence*, p. 54; Jo Oddie, Acting National President, Australian Electric Vehicle Association, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 15; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 33.

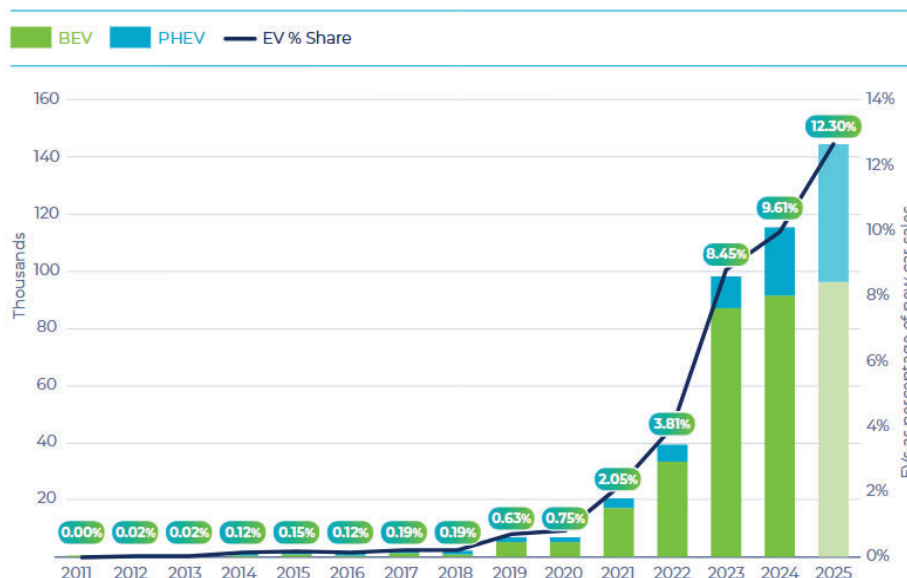
²¹ Professor Ray Wills, *Transcript of evidence*, p. 54.

²² Ibid.

²³ Nexa Advisory, *Submission 89*, p. 1.

²⁴ Professor Ray Wills, *Transcript of evidence*, p. 54.

Figure 2.3 Electric Vehicle Sales overtime in Australia including projections for full year 2025



Sources: EVC Vehicles Sales Report, AAA EV Index, VFACTS. Includes projections for full year 2025.

Source: Jo Oddie, Acting National President, Australian Electric Vehicle Association, *AEVA – Presentation*, supplementary evidence received 12 February 2026, p. 1.

The Electric Vehicle Council's *State of Electric Vehicle 2025* report highlighted that from January to June 2025 the combined sale of Battery Electric Vehicles (BEV) and Plug-in Hybrid Electric Vehicles (PHEV) accounted for 12.9% of new vehicle sales in Victoria.²⁵ Most significantly, the report detailed that Victoria's EV share has grown by 40% since 2024, indicating rapid growth of EV uptake over a short period of time.²⁶

Many stakeholders emphasised that growing EV uptake presents opportunities for Victoria's electricity system, but growth needs to be managed to ensure that risks are managed.²⁷ Hyundai Motor Company Australia suggested that 'Without deliberate planning, widespread EV charging could add to peak demand pressures and network congestion'.²⁸ While, Dr Alina Dini, Head of Energy, Infrastructure and Commercial at the Electric Vehicle Council told the Committee that 'EVs represent the largest new electrical load to household generation, but managed strategically, they also represent one of the greatest distributed storage resources available to the grid.'²⁹

AGL indicated in its submission that 'the impact of EV charging on peak energy demand is expected to be modest in the near term' according to 'current data and projections'.³⁰ AGL emphasised that EVs can deliver benefits if charging occurs outside

²⁵ Electric Vehicle Council, *State of Electric Vehicle 2025*, Victoria, 2025, p. 21.

²⁶ Ibid.

²⁷ Hyundai Motor Company Australia, *Submission 50*, p. 2; AGL, *Submission 82*, p. 2; Victorian Greenhouse Alliances, *Submission 85*, p. 1.

²⁸ Hyundai Motor Company Australia, *Submission 50*, p. 2.

²⁹ Dr Alina Dini, *Transcript of evidence*, p. 2.

³⁰ AGL, *Submission 82*, p. 2.

peak demand, stating that EV charging 'can increase network utilisation and reduce unit prices for all customers'.³¹

Consequently, stakeholders emphasised that integration of electric vehicles into the electricity system requires harmonisation of EVs with electricity supply and demand to ensure that grid capacity is supported.³² The Committee repeatedly heard evidence that transport electrification can deliver broad benefits for Victorians, if EVs are effectively integrated into the electricity system.³³ Moreover, Stakeholders reinforced that growing uptake of electric vehicles supports the broader policy context of Victoria's legislated emissions reductions targets.³⁴

2.3.2 Electric vehicles can deliver broad benefits to Victorians

Many stakeholders consistently observed that increased uptake of electric vehicles can offer significant advantages to both Victorian households and businesses, and the State's electricity grid. Stakeholders described how effective integration of EVs with the electricity system can achieve the following benefits

- household, community and grid energy resilience
- economic savings
- energy security
- carbon emissions reductions.³⁵

Stakeholders noted that electric vehicles can deliver substantial economic saving both for consumers and the broader electricity system.³⁶ AGL explained in its submission to the Committee how economic benefits can be delivered for EV owners and non-owners, stating:

When electricity prices are low and renewable generation is high, EVs can charge cheaply and reduce prices for all customers by increasing utilisation of the distribution network. Later, they can discharge to power homes and/or be paid to export surplus energy back to the grid— a win-win that increases value for the EV customer and reduces costs for all other customer by helping to meet peak demand.³⁷

³¹ Ibid.

³² Oliver Hill, Program Leader, Electric Vehicles, RACE for 2030, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 5; Associate Professor Roger Dargaville, *Transcript of evidence*, pp. 30, 38.

³³ AGL, *Submission 82*, p. 2; Oliver Hill, *Transcript of evidence*, p. 2; Associate Professor Zsuzsanna Csereklyei, *Transcript of evidence*, p. 46; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 30.

³⁴ Oliver Hill, *Transcript of evidence*, p. 2; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 38; Professor Ray Wills, *Transcript of evidence*, p. 56.

³⁵ Jo Oddie, *Transcript of evidence*, p. 15; Oliver Hill, *Transcript of Evidence*, p. 12; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 38; Brendan Davies, *Transcript of evidence*, p. 21; Professor Hai L. Vu, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 31; Energy Consumers Australia, *Submission 80*, p. 2; Dr Alina Dini, *Transcript of evidence*, p. 11; Tim Camilleri, Director, e-Mobility Solutions, Volvo Group Australia, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 31; Pete Mercouriou, Chair, Barwon South West Climate Alliance, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 3; Ralph Griffiths, *Transcript of evidence*, p. 39.

³⁶ Oliver Hill, *Transcript of evidence*, p. 12; Monash Energy Institute, *Submission 77*, p. 3; Professor Hai Vu, *Transcript of evidence*, p. 31.

³⁷ AGL, *Submission 82*, p. 4.

Other stakeholders noted that EVs ability to serve as battery storage systems could increase energy capacity and storage, reducing the need for network infrastructure upgrades.³⁸ Oliver Hill, Program Leader Electric Vehicles for RACE for 2030 Cooperative Research Centre explained that EVs ability to serve 'as a dispatchable resource, as a battery on wheels' could achieve 'up to \$2.4 billion in network savings, up to \$2.7 billion in wholesale market benefits'.³⁹

Stakeholders noted that EVs enable consumers to use the distributed generation supply network more efficiently, which increases system resilience.⁴⁰ Associate Professor Roger Dargaville explained to the Committee that if EVs charge when rooftop solar generation is available, 'It provides more efficient use of the available infrastructure, because you are using distribution networks at a higher percentage'.⁴¹ Jo Oddie, Acting National President, Australian Electric Vehicle Association, reinforced the point, noting that EVs can 'absorb abundant low-cost renewable energy during the day' and serve as a 'potential reservoir of energy', reducing consumers reliance on the grid as a result.⁴²

The Committee also heard evidence which explained that electric vehicles ability to serve as battery storage systems increases household and community resilience during major power outage events.⁴³ Mr Hill expressed that 'particularly in regional areas ... the ability to actually use the vehicle itself to power your home, to power your communications, to power health centres' during major events offers energy security benefits.⁴⁴

In addition, many stakeholders emphasised that increasing uptake of electric vehicles is critical to achieving emissions reductions goals.⁴⁵ Stakeholders noted that the transport sector is one of the largest contributors of carbon emissions and expressed that transport electrification represents a significant opportunity to reduce emissions.⁴⁶

Chapter 4 continues the discussion concerning how growing uptake of EVs will deliver broad benefits in further detail.

³⁸ Oliver Hill, *Transcript of evidence*, pp. 11-12; Alpine Energy, *Submission 93*, pp. 2-3.

³⁹ Oliver Hill, *Transcript of evidence*, p. 11.

⁴⁰ Associate Professor Roger Dargaville, *Transcript of evidence*, p. 30; Jo Oddie, *Transcript of evidence*, p. 15; Oliver Hill, *Transcript of evidence*, p. 11;

⁴¹ Associate Professor Roger Dargaville, *Transcript of evidence*, p. 30.

⁴² Jo Oddie, *Transcript of evidence*, p. 16.

⁴³ Oliver Hill, *Transcript of evidence*, p. 12; Professor Ray Wills, *Transcript of evidence*, p. 61.

⁴⁴ Oliver Hill, *Transcript of evidence*, p. 12.

⁴⁵ Oliver Hill, *Transcript of evidence*, p. 2; Jo Oddie, *Transcript of evidence*, p. 15; Roger Dargaville, *Transcript of evidence*, p. 38; Professor Ray Wills, *Transcript of evidence*, p. 56.

⁴⁶ Victorian Greenhouse Alliances, *Submission 85*, p. 6.

2.4 Policy and legislative context for electric vehicles in Victoria

2.4.1 Victorian Government's *Zero Emissions Vehicle Roadmap*

In 2021, the Victorian Government launched *Victoria's Zero Emissions Vehicle Roadmap*, which is a strategic plan designed to transition the state's road transport sector to net-zero emissions by 2050.⁴⁷ The roadmap acknowledges the long-term emissions reductions targets legislated in the *Climate Action Act 2017* and expresses that transitioning to zero emissions vehicles (ZEVs) is essential as transport accounts for 25% of Victoria's emissions.⁴⁸

The plan focuses on accelerating the adoption of zero emissions vehicles (ZEVs), which include both battery electric vehicles (BEVs) and hydrogen fuel cell electric vehicles (FCEVs).⁴⁹ The roadmap established the following targets:

- 400 vehicles in VicFleet to be replaced by ZEVs by 2023
- Electric vehicle charging stations to be installed across regional Victoria by 2024
- All public transport bus purchases to be ZEVs from 2025
- 50 per cent of light vehicle sales to be ZEVs by 2030.

The roadmap notes several key barriers to EV uptake including consumer concerns about access to charging infrastructure, range anxiety, the up-front cost of an EV compared to an internal combustion engine (ICE) vehicle, limited choice of models, and the lack of a mature second-hand EV market.⁵⁰

The roadmap proposes a series of strategic investments and targets to support key policy actions of:

- Public education to address concerns about EVs and their performance
- Advocating for harmonised approach to vehicle emissions standards and parallel imports from other right-hand drive markets
- Improvements to EV charging infrastructure
- Electrification of the government fleet
- Integrating EVs into the energy system through V2G charging technology
- Transitioning the Victorian workforce to support mass vehicle electrification.

⁴⁷ Department of Energy, Environment and Climate Action, *Zero Emissions Vehicle Roadmap*, Melbourne, 2021, p. 6.

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ Department of Energy, Environment and Climate Action, *Zero Emissions Vehicle Roadmap*, pp. 33–34.

2.4.2 The *Climate Action Act 2017*

The *Climate Action Act 2017* (formerly the *Climate Change Act 2017*) is the legislative foundation for Victoria's transition to a net zero emissions economy by 2045 by embedding climate change considerations into government decision-making.

Updates made to the Act in 2024 brought Victoria's previous legislated target for reaching net-zero emissions by 2050 forward to 2045. The Act

- requires 5 yearly interim targets be set, to keep Victoria on track to meet its net zero emissions target.
- introduces a set of policy objectives and guiding principles to embed climate change in Victorian Government decision making.
- requires the Victorian Government to develop a Climate Change Strategy every 5 years, which will set out how Victoria will meet its targets and adapt to the impacts of climate change.
- requires Adaptation Action Plans for key systems that are either vulnerable to the impacts of climate change or essential to ensure Victoria is prepared.
- establishes a pledging model to reduce emissions from the Victorian Government's own operations and from across the economy.
- establishes a system of periodic reporting to provide transparency, accountability and ensure the community remains informed.

Victoria also has legislated energy storage capacity targets of at least 2.6 GW by 2030 at least 6.3 GW by 2035 under the Renewable Energy (Jobs and Investment) Act 2017.

Table 2.3 summarises other relevant Victorian Government policies and strategies concerning electric vehicles. Table 2.4 summarises State Government strategic planning initiatives and policies impacting the energy grid and Table 2.5 provides an overview of other relevant energy legislation.

Table 2.3 Other State Government policies and strategies related to electric vehicles

Policy	Description
Transport Climate Change Adaptation Action Plan 2022-26	<p>A requirement under the <i>Climate Action Act 2017</i> (Vic), the <i>Transport Climate Change Adaptation Action Plan 2022-26</i> focuses on the state's existing transport infrastructure and how it may be adapted to mitigate the impacts of climate change, including extreme weather events.</p> <p>The plan addresses electric vehicles and associated charging infrastructure on one occasion, noting that chargers should be placed on roadways to not obstruct footpath movement.</p>

Policy	Description
Driving down emissions: accelerating Victoria's zero emission vehicle uptake	<p>Infrastructure Victoria published this report in 2021 to address barriers to the EV transition. It found that Australia has fallen behind other advanced economies in the EV transition and noted 'an absence of strong action from the Australian Government' to support EV uptake.</p> <p>It recommended that the Victorian Government:</p> <ul style="list-style-type: none"> • develop a statewide charging network strategy that considers the needs of all road users • Monitor and review the effectiveness of financial incentives for encouraging EV purchases • Transition its fleet to zero emissions vehicles • Commit to no longer registering new internal combustion engine vehicles by 2035.

Source: Department of Transport, *Transport Climate Change Adaptation Action Plan 2022–26*, 2022; Infrastructure Victoria, *Driving down emissions: accelerating Victoria's zero emission vehicle uptake*, August 2021.

Table 2.4 State Government strategic planning initiatives and policies impacting the energy grid

Policy	Description
Climate Change Strategy 2026–30	<p>This strategic document was published in November 2025 as part of the Government's obligations under the <i>Climate Action Act 2017</i>. It references the government's target of 50% of new vehicle sales to be ZEVs by 2030 and to fully electrify the government fleet (passenger cars and vans) by 2035.</p> <p>The document also notes the importance of the VTP, planned increases to battery storage infrastructure, and changes to planning legislation in the energy transition. The next Adaptation Action Plan will be released in late 2026 to address the period 2027–2031.</p>
Plan for Victoria's Electricity Future	<p>This plan outlines the actions being taken by the Government to meet its renewable energy targets. If targets set out in the plan are met by 2035:</p> <ul style="list-style-type: none"> • electricity use will have increased 50% or more through electrification of gas use and transport • Around 8TWh of this is forecast to be used for electric vehicles • around 4.8GW of emissions-intensive coal-fired power generation will have closed • around 11.4GW of new grid-scale renewables will be installed, including 4GW of offshore wind • there will be around 7.6GW of additional rooftop solar • at least 6.3GW of short and long duration storage • the VNI West and Marinus Link interconnectors will be online, exporting Victorian renewables and providing access to firming resources in the National Electricity Market. <p>The report cites modelling indicating that Victoria will need an additional 1.4 million EVs and 1.4 million charge points between 2024 and 2035 to meet target demand.</p> <p>The plan acknowledges that widespread V2G/bidirectional charging capability allows EVs to become distributed energy storage devices that help to stabilise the grid and electricity prices.</p> <p>The plan notes that the Victorian Government is currently reviewing regulations relating to distributed energy resources, such as rooftop solar, to improve functioning of these markets. It adds that the Victorian Government is a 'strong advocate for the Australian Energy Regulator's trials of DNSP data-sharing requirements, which would make it easier to establish a market-wide view of DER data.'</p>

Policy	Description
Victorian Renewable Energy Targets Capacity Investment Scheme	<p>Victoria's renewable energy targets were legislated in the Renewable Energy (Jobs and Investment) Act 2017 (Vic). They are:</p> <ul style="list-style-type: none"> • 25% renewables supply by 2020 (achieved) • 40% by 2025 • 65% by 2030 • 95% by 2035. <p>These targets include offshore wind energy generation targets of</p> <ul style="list-style-type: none"> • at least 2 gigawatts (GW) of offshore generation capacity by 2032 • 4 GW by 2035 • 9 GW by 2040. <p>Victoria's legislated energy storage targets are:</p> <ul style="list-style-type: none"> • at least 2.6 GW of energy storage capacity by 2030 • at least 6.3 GW by 2035. <p>The 2024–25 progress report notes that Victoria had met its 2025 renewable energy generation target (42.4%). As of 30 June 2025, Victoria had 21 energy storage projects with a combined capacity of over 2.3 GW under construction or undergoing commissioning as of 30 June 2025.</p>
Victoria's 30-year infrastructure strategy 2025–2055	<p>Recommendation 33 of Infrastructure Victoria's 30-year strategy calls on the Government to invest in home, neighborhood and 'big batteries' to increase Victoria's distributed energy storage capacity to create a robust network and the state's capacity to capture and store renewable energy.</p> <p>It warns that without this capacity, Victoria could face electricity shortages when coal-fired power stations closed if there have been delays in transmission projects, poorly managed distribution network flows or low battery storage capacity.</p> <p>The strategy also notes the importance of Virtual Power Plants, made up of CERs like home batteries or EVs, to ease congestion in transmission infrastructure and improve electricity reliability.</p>

Source: Department of Energy, the Environment and Climate Action, *Victoria's Climate Change Strategy 2026–30*, November 2025; Department of Energy, the Environment and Climate Action, *Cheaper, Cleaner, Renewable: Our Plan for Victoria's Electricity Future*, November 2025, p. 2; Infrastructure Victoria, *Victoria's 30-year infrastructure strategy 2025–2055*, November 2025, p. 122.

Table 2.5 Other State legislation relevant to energy

Act	Description
<i>Electricity Industry Act 2000</i>	<p>This Act regulates the Victorian electricity supply industry. It requires persons who generate, transmit, distribute, supply or sell electricity to obtain a licence from the Essential Services Commission of Victoria or a licence exemption.</p> <p>Key provisions include a consumer safety net for domestic and small business customers.</p>
<i>Electrical Safety Act 1998</i>	<p>This Act regulates the safety of electricity supply and uses in Victoria and the efficiency of electrical equipment. It is administered by Energy Safe Victoria.</p>
<i>Energy Safe Victoria Act 2005</i>	<p>This Act establishes Energy Safe Victoria as the safety regulator for Victoria for electricity and gas.</p>
<i>Fuel Emergency Act 1977</i>	<p>This Act provides for the preservation and allocation of fuel supplies during proclaimed fuel emergencies.</p>
<i>Essential Services Commission Act 2001</i>	<p>This Act establishes the Essential Services Commission of Victoria and generally provides its functions and powers to independently oversee the state's retail electricity industry.</p>

Source: Department of Energy, the Environment and Climate Action, *Our Regulatory Framework*, <<https://www.energy.vic.gov.au/about-energy/legislation/our-regulatory-framework>> accessed 12 January 2026.

2.4.3 A note on Department engagement with this Inquiry topic

The Committee did not receive a submission from the State's Department of Transport and Planning or other relevant State Government Departments. The Committee invited relevant State Departments to appear at the Inquiry's public hearings, but departments chose not to participate.

This has affected the Committee's ability to consider the State's progress in implementing its policies and strategies on electric vehicles and the transport electrification more broadly. The Committee emphasises that department engagement is integral to supporting the work of Inquiries and encourages participation in the future.

2.4.4 Commonwealth Government policies and legislation relevant to Victoria's approach to electric vehicles

Table 2.6 provides a summary of Commonwealth legislation and policies that shape Victoria's approach to electric vehicles and Table 2.7 strategic planning initiatives and policies impacting the energy grid.

Table 2.6 Commonwealth legislation and policies concerning electric vehicles

Policy	Description
National Electric Vehicle Strategy (NEVS)	<p>The National Electric Vehicle Strategy was published by the Commonwealth government in 2023. The strategy's goal is to increase EV uptake in Australia to reduce emissions and improve wellbeing. It outlines three key objectives for achieving this goal:</p> <ol style="list-style-type: none"> 1. Increase the supply of affordable and accessible EVs, including through batteries manufactured domestically. 2. Establish the resources, systems and infrastructure to enable rapid EV uptake 3. Encourage increase in EV demand through tax benefits and financing schemes. 4. A review of the strategy will be undertaken in 2026.
<i>National Vehicle Efficiency Standard Act 2024</i> (Cth)	<p>This Act came into effect on 1 January 2025 and introduced the New Vehicle Efficiency Standard (NVES). The NVES sets emissions targets for new passenger cars and light commercial vehicles entering the Australian market from 1 July 2025.</p> <p>Regulated entities (such as car manufacturers and suppliers that hold a vehicle type approval) must comply with set emissions targets for all new vehicles they bring into Australia. The emissions target is gradually lowered over time. To continue to meet the target, entities must provide more choices of fuel-efficient, low or zero emissions vehicles across their fleet.</p> <p>The Act also established the New Vehicle Efficiency Standard Regulator to monitor compliance with the Act.</p>

Policy	Description
National Roadmap for Bidirectional EV Charging	<p>Published in February 2025, the National Roadmap for Bidirectional EV Charging was commissioned by the Australian Renewable Energy Agency (ARENA) in partnership with the RACE for 2030 Cooperative Research Centre.</p> <p>The roadmap outlines the path to achieving the commercial adoption of bidirectional EV charging in Australia. The roadmap argues that Australia's widespread uptake of rooftop solar gives it an advantage over other jurisdictions as a prospective market for rolling out bidirectional charging.</p> <p>The roadmap calls for a national policy commitment to bidirectional charging, as well as the implementation of:</p> <ul style="list-style-type: none"> • Fair value export tariffs • Nationally consistent smart grid • Clear policy direction on interoperability standards. • It argues this will accelerate community uptake of both EVs and bidirectional charging.
National Consumer Energy Resources Roadmap	<p>The National Consumer Energy Resources Roadmap is a strategic framework designed to integrate household technologies like rooftop solar, batteries, and electric vehicles into Australia's electricity grid to lower energy costs and emissions.</p> <p>A key focus of the roadmap is establishing nationally consistent technical standards and removing regulatory barriers to enable vehicle-to-grid (V2G) capabilities, allowing EVs to feed electricity back into homes or the grid.</p>
Australian Standards AS/NZS 4777.2:2020 and AS/NZS 4777.1:2024	<p>On 23 August 2024, Standards Australia published an update to AS/NZS 4777.2, the standards that cover product requirements for inverters. This was due to be phased in over a 12-month period, coming into effect on 23 August 2025.</p> <p>Clauses in the updated standards now allow for bidirectional charging in Australia.</p>
<i>Treasury Laws Amendment (Electric Car Discount) Act 2022</i>	<p>On 1 January 2023, this Act brought the Electric Car Discount into effect. It consists of a fringe benefits tax (FBT) exemption and an exemption from tariffs on eligible electric cars.</p> <p>The Commonwealth Government announced a statutory review of the first three years of the scheme in December 2025.</p>
National Construction Code 2022	<p>As part of the new requirements under the National Construction Code 2022 energy efficiency standards (commencing in Victoria on 1 May 2024) there must be space for switchboards and EV charging infrastructure in new builds for:</p> <ul style="list-style-type: none"> • 100% of parking car spaces in apartment buildings • 10% of spaces in offices and retail • 20% of spaces in other commercial buildings. <p>Draft changes to the National Construction Code 2025, which are due to be published in 2026, mandate the installation of EV chargers in buildings of class 3 (hotels), 5 (offices), 6 (retail/restaurants), 7b (storage/wholesale display), 8 (factories/labs), and 9 (healthcare, aged care, schools, community centres).</p>
Australian Energy Market Operator Recommendations paper: Electric Vehicle Data	<p>In this paper, released on 12 May 2025, AEMO sought to establish a non-regulatory framework for collecting, managing, and utilising EV-related data across the industry to enhance grid stability, operational planning (such as for new connection placement), and energy demand forecasting accuracy at the distribution and market level.</p> <p>The paper indicated that accurate and efficient EV data gathering will be particularly important for energy industry stakeholders as the EV transition gathers pace over the next three to five years. The report highlighted the potential for the creation of a national collaboration framework for EV data to improve operational efficiency and data reliability across the sector.</p> <p>In addition to the monthly EV registration data AEMO receives from National Exchange of Vehicle and Driver Information System (NEVDIS), AEMO has proposed to acquire a 'nationally representative sample' of vehicle telematic data, which covers driver charging behaviour, location, and load profiles across all charging modes. AEMO hopes this data can be used to train EV detection algorithms.</p>

Policy	Description
Accelerating electrification of Australia's trucking fleet	On 23 December 2025, the Commonwealth Government's Clean Energy Finance Corporation announced a \$70 million package as part of a partnership with Volvo Group Australia designed to accelerate the electrification of the Australian logistics and haulage fleet by using a discounted loan facility to reduce the cost of purchasing an electric truck. Volvo Group Australia has committed to manufacturing electric trucks at a Queensland facility from 2026.
Realising Electric Vehicle-to-Grid Services	Between 2020 and 2025, the Australian Renewable Energy Agency partially funded <i>Realising Electric Vehicle-to-Grid Services</i> , a trial of 51 bidirectional chargers and a fleet of 51 V2G-capable vehicles in the ACT, 50 of which were part of the ACT Government fleet. The project was concluded on 21 November 2025 after publishing 12 reports into findings, which addressed problems encountered in establishing V2G charging, its grid impact, creating value from V2G, and qualitative social research into public attitudes towards V2G technology.

Source: Department of Climate Change, Energy, the Environment and Water, *National Electric Vehicle Strategy*, Canberra 2023; *National Vehicle Efficiency Standard Act 2024* (Cth); Australian Renewable Energy Agency (ARENA) and RACE for 2030, *National Roadmap for Bidirectional EV Charging*, 12 February 2025; Department of Climate Change, Energy, the Environment and Water, *National Consumer Energy Resources Roadmap*, Canberra, July 2024; Australian Standards AS/NZS 4777.2:2020 and AS/NZS 4777.1:2024 Clean Energy Council, *2024 inverter standards update and inverter products listings*, <<https://cleanenergycouncil.org.au/industry-programs/products-program/inverters/standards-change>> accessed 14 January 2026; *Treasury Laws Amendment (Electric Car Discount) Act 2022* (Cth); National Construction Code 2022; Australian Energy Market Operator, *Recommendations paper: Electric Vehicle Data*, April 2025; Department of Climate Change, Energy, the Environment and Water, *Accelerating electrification of Australia's trucking fleet*, 23 December 2025 <<https://www.energy.gov.au/news/accelerating-electrification-australias-trucking-fleet>> accessed 14 January 2026; Volvo Group Australia, *Submission 101*, p. 4; Australian Renewable Energy Agency, *Realising Electric Vehicle-to-Grid Services*, <<https://arena.gov.au/projects/realising-electric-vehicle-to-grid-services>> accessed on 14 January 2025.

Table 2.7 Commonwealth strategic planning initiatives, policies and legislation impacting the energy grid

Policy	Description
National Battery Strategy	Developing a mature battery manufacturing capacity in Australia is the target of the Commonwealth Government's National Battery Strategy, announced in May 2024. Central to this strategy is the Government's commitment of \$523.2 million to incentivise high-value battery production products, such as static storage, as well as other contributions to research, manufacturing precincts and innovation.
Rewiring the Nation Fund	The Department of Climate Change, Energy, the Environment and Water's Rewiring the Nation program makes investments into grid infrastructure, such as transmission lines, by providing finance at concessional rates through the Clean Energy Finance Corporation to reduce costs. In Victoria, \$2.25 billion has been pledged towards the six Renewable Energy Zones detailed in the 2025 VTP, as well as the Victoria-New South Wales Interconnector. A further investment of up to \$1 billion has been pledged to progress transmission and distribution projects in Victoria that were identified as part of the Renewable Energy Transformation Agreement (RETA) from December 2024. As part of RETA, the Commonwealth Government agreed to underwrite at least 11.0 TWh of variable renewable generation and 1.7GW (6.8GWh) of dispatchable capacity.
<i>Renewable Energy (Electricity) Act 2000</i> (Cth)	This Act establishes the Renewable Energy Target (RET) scheme. The scheme encourages renewable electricity generation and aims to reduce greenhouse gas emissions from the electricity sector.

Source: Department of Industry, Science and Resources, *National Battery Strategy*, May 2024; Department of Climate Change, Energy, the Environment and Water, *Rewiring the Nation Fund*, 15 October 2025 <<https://www.dcceew.gov.au/energy/renewable/rewiring-the-nation>> accessed 14 January 2026; Department of Climate Change, Energy, the Environment and Water, *Renewable Energy Transformation Agreements*, 28 January 2026, <<https://www.dcceew.gov.au/energy/renewable/renewable-energy-transformation-agreements>> accessed 2 February 2026; *Renewable Energy (Electricity) Act 2000* (Cth).

2.5 Roles and responsibilities in Victoria's electricity system

2.5.1 Who determines energy policy?

Energy policy is determined by states and territories but coordinated nationally. All states and territories and the Commonwealth have been signatories of the Australian Energy Market Agreement (AEMA), which sets out how energy policy is developed nationwide, since 2004.

2.5.2 National Electricity Market Governance

The National Electricity (Victoria) Act 2005 provides the basis for the regulation of Victoria's wholesale electricity market.⁵¹ This Act is part of a national scheme (originating from the National Electricity (South Australia) Act 1996) that gives effect to the National Electricity Law and the National Electricity Rules (NER) made under it.⁵²

Table 2.8 outlines the functions of the three regulatory entities that oversee Victoria's energy market. The Energy and Climate Change Ministerial Council (ECMC) has oversight body of the three bodies.

Table 2.8 Energy market regulatory oversight bodies

Name	Function
Australian Energy Market Commission (AEMC)	Responsible for making and amending the National Electricity Rules, National Gas Rules, National Energy Retail Rules that underpin the National Electricity Market (NEM), which allows the States and Territories of Australia to trade electricity (excluding Western Australia and the Northern Territory). It also provides strategic and operational advice on energy issues to the ECMC.
Australian Energy Market Operator (AEMO)	Responsible for the day-to-day management of wholesale and retail energy market operations. It also operates the electricity power system, which is largely integrated with its role as market operator of the National Electricity Market (NEM)
Australian Energy Regulator (AER)	Regulator of the wholesale electricity and gas markets in Australia. It forms part of the Australian Competition and Consumer Commission (ACCC) and enforces the rules established by the AEMC.

Source: Australian Energy Market Commission, *National Energy Governance*, <<https://www.aemc.gov.au/regulation/national-governance>> accessed 15 January 2026; Australian Energy Market Commission, *About Us*, <<https://www.aemc.gov.au/about-us>> accessed 15 January 2026.

The Act states that the NER must fulfill the National Energy Retail Objective (NERO), the National Electricity Objective (NEO), and the National Gas Objective (NGO).⁵³

⁵¹ Australian Energy Market Commission, *Legislation*, <<https://www.aemc.gov.au/regulation/legislation>> accessed 15 January 2026.

⁵² Ibid.

⁵³ Australian Energy Market Commission, *National Energy Governance*, <<https://www.aemc.gov.au/regulation/national-governance>> accessed 15 January 2026.

As stated in the Act, the NEO is 'to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to:

- price, quality, safety, reliability and security of supply of electricity; and
- the reliability, safety and security of the national electricity system; and
- the achievement of targets set by a participating jurisdiction—
- for reducing Australia's greenhouse gas emissions; or
- that are likely to contribute to reducing Australia's greenhouse gas emissions.⁵⁴

2.5.3 Victoria's transmission network

Victoria's transmission network, known as Declared Shared Network (DSN), is operated by Declared Transmission System Operators (DTSOs) who are also registered as Transmission Network Service Providers (TNSPs).⁵⁵ DTSOs build, own and operate transmission network infrastructure in Victoria and consist of:

- Australian Energy Operations
- Ausnet Transmission Group
- Lumea.⁵⁶

In Victoria, Australian Energy Market Operator (AEMO) has been delegated the function of Transmission Network Service Provider (TNSP), responsible for providing shared network services.

Transfer of responsibility for transmission infrastructure to VicGrid

Prior to 1 November 2025, Australian Energy Market Operator (AEMO) was responsible for the maintenance, development, and delivery of transmission infrastructure in Victoria.⁵⁷ This responsibility has since passed to VicGrid, which also:

- coordinates the planning and development of renewable energy zones
- plans the declared shared network and all associated functions
- performs energy market modelling.⁵⁸

⁵⁴ Ibid.

⁵⁵ VicGrid, *Transmission connections process*, <<https://www.vicgrid.com.au/industry/access-and-connections/transmission-connections-process>> accessed 8 May 2026.

⁵⁶ Australian Energy Market Operator, *Victorian transmission planning and connections*, <<https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/participate-in-the-market/network-connections/victorian-transmission-connections/proponent-toolkit/victorian-dtsos>> accessed 25 March 2026.

⁵⁷ Ibid.

⁵⁸ VicGrid, *About VicGrid*, 13 November 2025 <<https://www.vicgrid.com.au/about/about-vicgrid>> accessed 15 January 2026.

In August 2025, VicGrid published its first Victorian Transmission Plan (VTP), addressing its strategic direction for the development of the state's transmission infrastructure for the next 15 years.⁵⁹ The parameters that must be considered in developing a VTP are set out in Sections 59 and 60 of the Act.⁶⁰

2.5.4 Victoria's distribution network

Five privately owned businesses known as Distribution Network Service Providers (DNSPs) operate Victoria's distribution network. Each DNSP owns and operates infrastructure within a specific geographic region in Victoria. DNSPs have a responsibility to:

- deliver a reliable electricity supply to customers
- connect homes to the grid
- maintain infrastructure.⁶¹

Table 2.9 Victorian DNSPs area of responsibility and assets

Victorian DNSP	Remit
Powercor Australia	Distributes to western suburbs and western Victoria.
Ausnet Services	Distributes to outer northern and eastern suburbs and eastern Victoria.
United Energy Distribution	Distributes to South-east Melbourne and Mornington Peninsula.
CitiPower	Distributes to Melbourne CBD and inner suburbs.
Jemena	Distributes to northern and north-western suburbs.

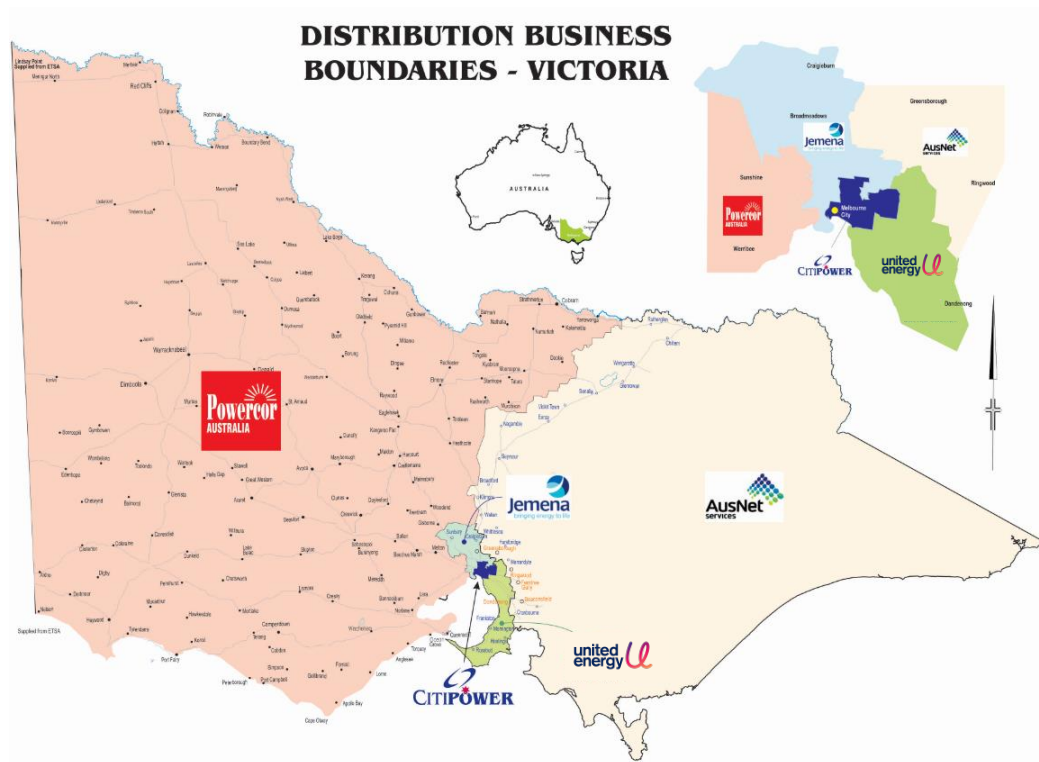
Source: Department of Energy, Environment and Climate Action, *Find your energy distributor*, 23 October 2025, <<https://www.energy.vic.gov.au/households/find-your-energy-distributor>> accessed 18 March 2026.

⁵⁹ VicGrid, *2025 Victorian Transmission Plan*, 2025.

⁶⁰ Ibid., p. 30.

⁶¹ Australian Energy Market Commission, *Electricity Supply Chain*, <<https://www.aemc.gov.au/energy-system/electricity/electricity-system/electricity-supply-chain>> accessed 8 May 2026.

Figure 2.4 Coverage of Victoria's five DNSPs



Source: Powercor Australia Ltd, *Powercor Distribution Annual Planning Report, Victoria, 2025* p. 10.

Regulation of Distribution Network Service Providers

The Australian Energy Regulator (AER) is responsible for setting the maximum prices that energy network owners can charge, or the maximum amount of revenue that DNSPs can earn as natural monopoly businesses.

DNSPs must periodically apply to the AER to determine the maximum amount of revenue they can earn from consumers over a 5-year regulatory period (the regulatory process known as Network revenue determinations). DNSPs are also required to submit a tariff structure statement (TSS) as part of their revenue proposal, proposing strategies to progress network tariff reform.

DNSPs are required to submit pricing proposals to the AER each year, which show the network tariffs they propose to charge their customers. The tariffs follow the revenue path set out in the DNSPs Network revenue determination.

Network tariffs are targeted at energy retailers who package them with other costs, such as the cost of wholesale energy, in their service offerings to electricity customers. As such, the retail electricity tariff may not directly reflect the network tariff.

Clause 6.18.5 of the National Electricity Rules, which establishes the network pricing objective, requires DNSPs to make their tariffs reflect the costs of serving their customers, for example, transitioning single rate usage tariffs to a time-of-use tariff that reflects different peak and off-peak times.

Ring-fencing

The activities of DNSPs are subject to a 'ring-fencing' guideline, which is developed and updated by the Australian Energy Regulator (AER).⁶²

Ring-fencing refers to the separation of regulated services provided by a DNSP, which includes the installation and/or maintenance of network poles and wires, from the provision of contestable services, such as the installation of smart meters or electric vehicle charging infrastructure.

The objective of the ring-fencing guideline is to provide a regulatory framework that promotes the development of efficient, competitive markets by determining the extent to which DNSPs can provide contestable energy services to establish a level playing field for third-party providers.

⁶² Australian Energy Regulator, *Ring-fencing Guideline Electricity Distribution Version 4 – February 2025*, p. 7.

Chapter 3

EV harmonisation with the electricity grid

3.1 Introduction

Chapter 2 noted that the State Government has identified transport electrification as critical to achieving its net-zero targets by 2050 and has set targets to increase uptake of zero emissions vehicles. Electric vehicle uptake is growing, which AEMO forecasts indicate will increase demand for electricity. The Committee heard that electric vehicles could place strain on the electricity grid and reduce grid capacity if this demand is not strategically managed.

However, stakeholders emphasised that the electric vehicle transition can deliver significant benefits for Victoria if electric vehicle are integrated effectively into the electricity system. Electric vehicles growth could enhance grid stability and capacity and deliver further benefits such as household and grid resilience, energy security and cost savings throughout the electricity supply-chain.

Stakeholders told the Committee that an effective electric vehicle transition that supports Victoria's electricity grid requires:

- strategic and coordinated planning and leadership across all levels of government
- consumers understanding of electric vehicles and their impact on the electricity system
- mass uptake of electric vehicles and grid-aligned use of charging infrastructure
- electric vehicle charging infrastructure rollout that supports electric vehicle owners and the grid
- circular and low-waste electric vehicle supply chain.

By implementing these objectives, the Committee heard that Victoria can effectively harmonise electric vehicles with electricity supply and demand. In doing so, Victoria would strengthen the stability, capacity and resilience of the electricity grid, which would improve the state's ability to accelerate the adoption of electric vehicles and progress on its emissions reduction targets.

Consequently, this Chapter considers each of the five objectives, noting that each point represents an individual principle. Put together, these can support the harmonisation of electric vehicles with Victoria's electricity system.

3.2 Harmonisation requires strategic and coordinated planning and leadership across federal, state and local levels of government

Witnesses emphasised that, if effectively integrated, electric vehicles could enhance the state's electricity system, but this requires coordinated planning and leadership.¹ Dr Alina Dini, Head of Energy, Infrastructure and Commercial for the Electric Vehicle Council, told the Committee that effective integration requires 'decisive government leadership, accelerated public charging deployment, transparent infrastructure data and coordinated energy system planning'.²

Similarly, Associate Professor Roger Dargaville of Monash University told the Committee that electric vehicles can 'become a powerful asset to the energy transition', but only with 'coordinated action' across 'policy, infrastructure design, tariffs and consumer engagement'.³ Evidence suggested that alignment across these areas 'can unlock lower costs, higher renewable utilisation and more equitable outcomes for Victorian households'.⁴

Aaron Gray, Projects Energy Lead from South East Councils Climate Change Alliance and representative of Victorian Greenhouse Alliances, told the Committee that although initiatives from local governments 'have been successful in addressing barriers to the early adoption of EVs' ...

policy and planning leadership and coordination from state and federal governments is needed to accelerate EV demand and charging infrastructure while managing the impact on electricity supply.⁵

Dr Dini indicated that electric vehicles are shifting from the early adoption phase to the mainstream, and this requires 'a different level of interaction from government'.⁶ It 'requires persistence with the existing support and more integrated work with the existing ecosystem' to address barriers.⁷ Dr Dini noted that electrification will continue to grow and that 'the question is whether Victoria will lead in integrating it coherently'.⁸

1 Dr Alina Dini, Head of Energy, Infrastructure and Commercial, Electric Vehicle Council, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 3; Associate Professor Roger Dargaville, Monash Energy Institute, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 32.

2 Dr Alina Dini, *Transcript of evidence*, p. 3.

3 Associate Professor Roger Dargaville, Monash Energy Institute, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 32.

4 Ibid.

5 Aaron Gray, Lead, Projects Energy, South East Councils Climate Change Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 2.

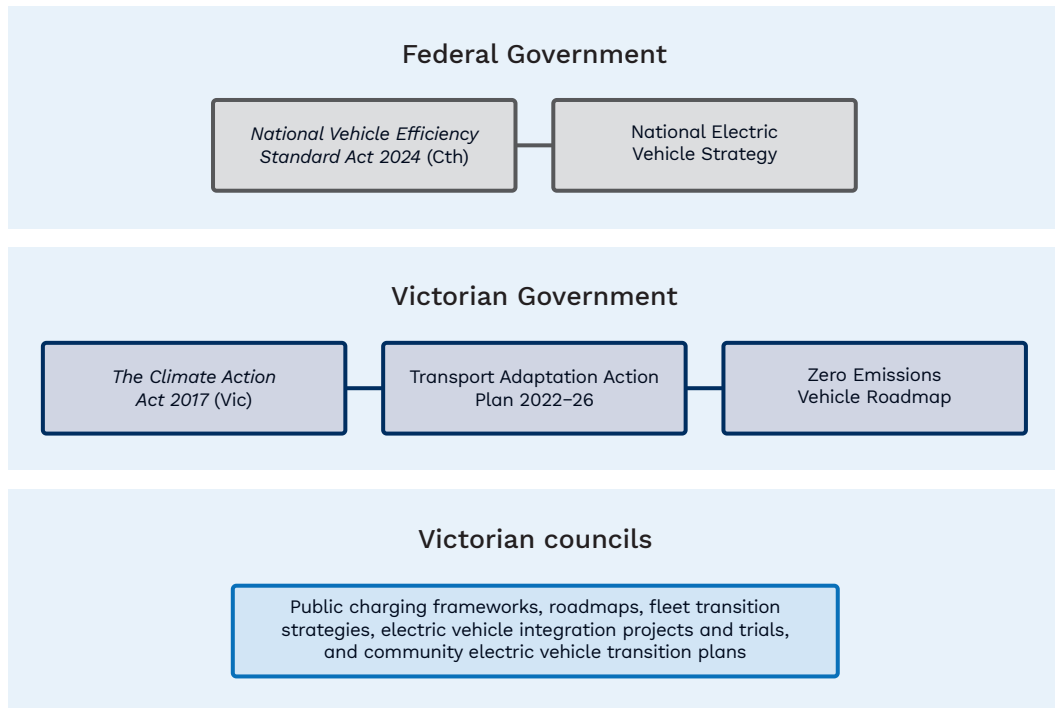
6 Dr Alina Dini, *Transcript of evidence*, p. 3.

7 Dr Alina Dini, *Transcript of evidence*, p. 5.

8 Dr Alina Dini, *Transcript of evidence*, p. 3.

The overarching strategic frameworks for electric vehicles operates at federal and state levels, with local governments implementing policies and plans at the municipal level.⁹ Figure 3.1 broadly demonstrates the key pieces of legislation and policy concerning electric vehicles.

Figure 3.1 Policy and legislation concerning electric vehicles across different levels of government



Source: Department of Energy, Environment and Climate Action, *Zero Emissions Vehicle Roadmap*, Melbourne, 2021; Department of Climate Change, Energy, the Environment and Water, *The National Electric Vehicle Strategy*, Canberra, 2023; Victorian Greenhouse Alliances, *Submission 85*, p. 1.

Victoria sits within a ‘multijurisdictional framework’, the ‘national electricity market legal framework’ and its own state regulatory framework, both of which inform decision-making around electricity.¹⁰

Associate Professor Anne Kallies of RMIT University spoke to the Committee about the ‘legal frameworks that enable or provide barriers’ to the electric vehicle transition, providing expertise ‘around national electricity market legal frameworks and ... the interfacing legal frameworks for electricity industries in the states as well, in particular in Victoria’.¹¹ Associate Professor Kallies noted that the *Electricity Industry Act 2000 (Vic)* as a framework ‘overlaps quite heavily in terms of content with the multijurisdictional framework of the national electricity market’.¹²

⁹ Victorian Greenhouse Alliances, *Submission 85*, p. 1; Dr Alina Dini, *Transcript of evidence*, p. 4; Associate Professor Anne Kallies, RMIT University, public hearing, Melbourne, 12 February 2026, pp. 48–49; Ralph Griffiths, General Manager Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

¹⁰ Associate Professor Anne Kallies, *Transcript of evidence*, pp. 47–49.

¹¹ Associate Professor Anne Kallies, *Transcript of evidence*, p. 41.

¹² Associate Professor Anne Kallies, *Transcript of evidence*, p. 49.

Associate Professor Kallies further observed that the Victorian Government retains significant policy levers within this framework, including the ability to make regulations or depart from aspects of the national framework where appropriate.¹³ Beyond electricity-specific legislation, Associate Professor Kallies emphasised that additional levers sit with the state, particularly in planning and owners corporation laws, noting that ‘a lot has happened already’ within Victoria’s planning framework.¹⁴

Evidence suggested that electric vehicles sit within a regulatory environment that can be confusing to navigate.¹⁵

Moreover, electric vehicles cross two major areas of policy: transport and energy.¹⁶ Dr Dini told the Committee that electric vehicles sit ‘at the intersection of transport and energy policy’, and represent ‘a structural shift in both the transport fleet and the electricity system’.¹⁷ Oliver Hill, Program Leader for Electric Vehicles at the RACE for 2030, elaborated on the scale of this cross-sector intersection, describing electric vehicles as

the flashpoint for the integration of two exceptionally large systems, transport and power, both of which are distinct billion-dollar systems of infrastructure and assets that impact every aspect of our day-to-day lives.¹⁸

Stakeholders indicated that Victoria currently lacks effective mechanisms to co-plan electricity and transport systems, an issue that will need to be addressed as electrification accelerates.¹⁹

Moreover, as discussed in Chapter 2, Victoria’s electricity system is evolving, with electricity flows becoming increasingly bi-directional. Overarching federal and state policy documents note that electric vehicles impact on the electricity grid is complex, where consumers, charging infrastructure and electric vehicles are shape electricity supply and demand.²⁰ Figure 3.2 illustrates these dynamics within the electricity system.

¹³ Associate Professor Anne Kallies, *Transcript of evidence*, pp. 48–49.

¹⁴ Ibid.

¹⁵ Emma Sutcliffe, Director, EV FireSafe, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 27.

¹⁶ Dr Alina Dini, *Transcript of evidence*, pp. 1–2; Oliver Hill, Program Leader, Electric Vehicles, RACE for 2030 Cooperative Research Centre, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 2.

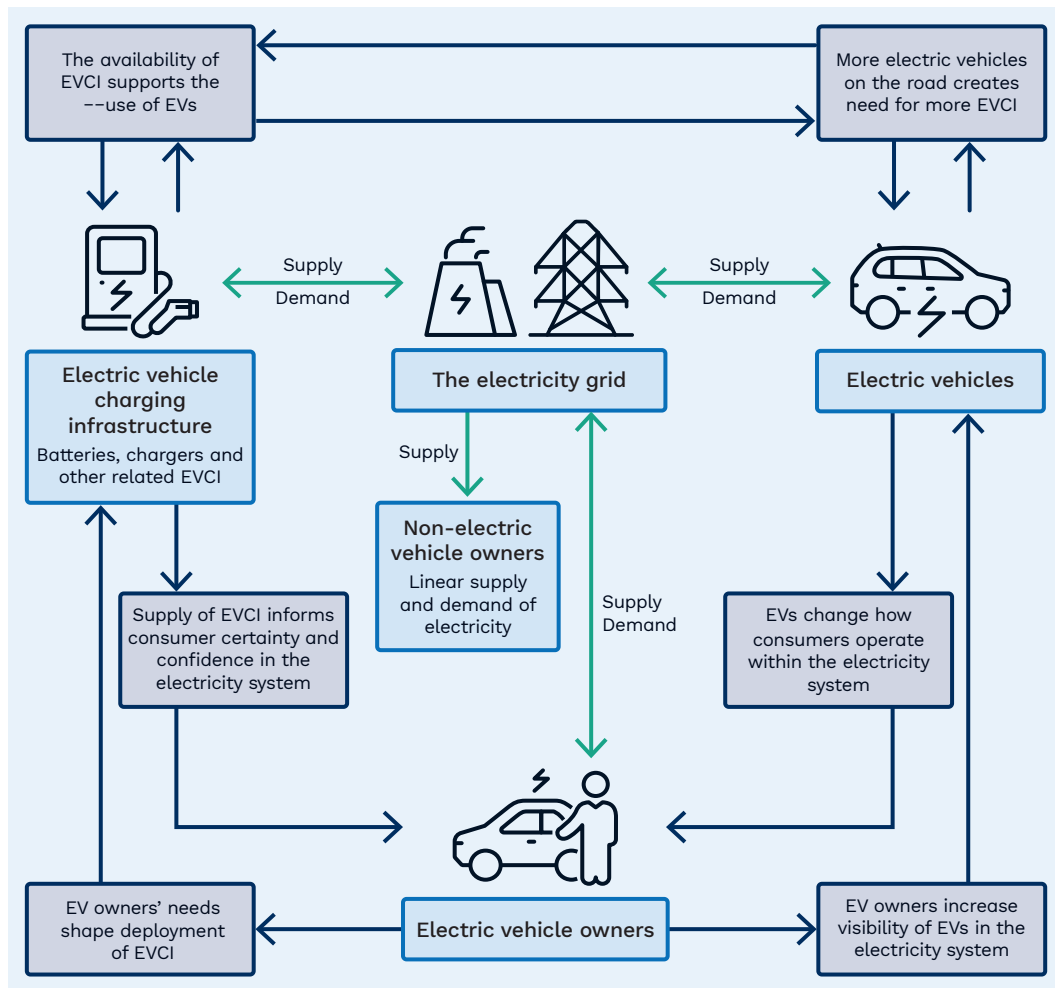
¹⁷ Dr Alina Dini, *Transcript of evidence*, pp. 1–2.

¹⁸ Oliver Hill, *Transcript of evidence*, p. 2.

¹⁹ Associate Professor Anne Kallies, RMIT University, public hearing, Melbourne, 12 February 2026, pp. 48–49.

²⁰ Department of Energy, Environment and Climate Action, *Zero Emissions Vehicle Roadmap*, Melbourne, 2021; Department of Climate Change, Energy, the Environment and Water, *The National Electric Vehicle Strategy*, Canberra, 2023.

Figure 3.2 Interactions across the electricity system: relationship between electric vehicles, owners and charging infrastructure, noting the impact on the grid



Source: Legislative Council Economy and Infrastructure Committee.

Stakeholders emphasised that the policy and regulatory environment must consider these interdependencies and how they collectively shape electricity supply and demand.²¹

As a result, electric vehicles exist within a highly interconnected policy and regulatory environment. In this context, strategic and coordinated planning and leadership across all levels of government are essential to supporting the harmonisation of electric vehicles with the electricity system.

21 Aaron Gray, *Transcript of evidence*, p. 2; Pete Mercouriou, Chair, Barwon South West Climate Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 13; Daniel Bye, Head of Customer Connections and Requests, CitiPower, Powercor and United Energy, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 9; Jonathon Clark, Executive Director, Connected Kerb, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 17.

FINDING 1: Electric vehicles and associated charging infrastructure can strengthen the electricity system, but this requires strategic and coordinated planning across federal, state and local levels of governments.

FINDING 2: Electric vehicles exist at the intersection of two major policy areas, transport and energy, operating within a highly interconnected governance system involving policy and regulations at different levels of government.

The Committee heard that strategic and coordinated leadership and planning across all levels of government is essential to create a policy and regulatory environment that supports the harmonisation of electric vehicles with the electricity system.²² A policy and regulatory environment that supports the harmonisation of electric vehicles with the electricity system should:

- encourage the uptake of electric vehicles and manages its impact on the electricity system²³
- promotes accurate information on electric vehicles²⁴
- delivers an equitable and grid-aligned rollout of electric vehicle charging infrastructure²⁵
- develop a circular, low waste electric vehicle supply chain.²⁶

Consequently, leadership and planning across all levels of government should deliver on these objectives to harmonise electric vehicles with the electricity system.

²² Ralph Griffiths, General Manager Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

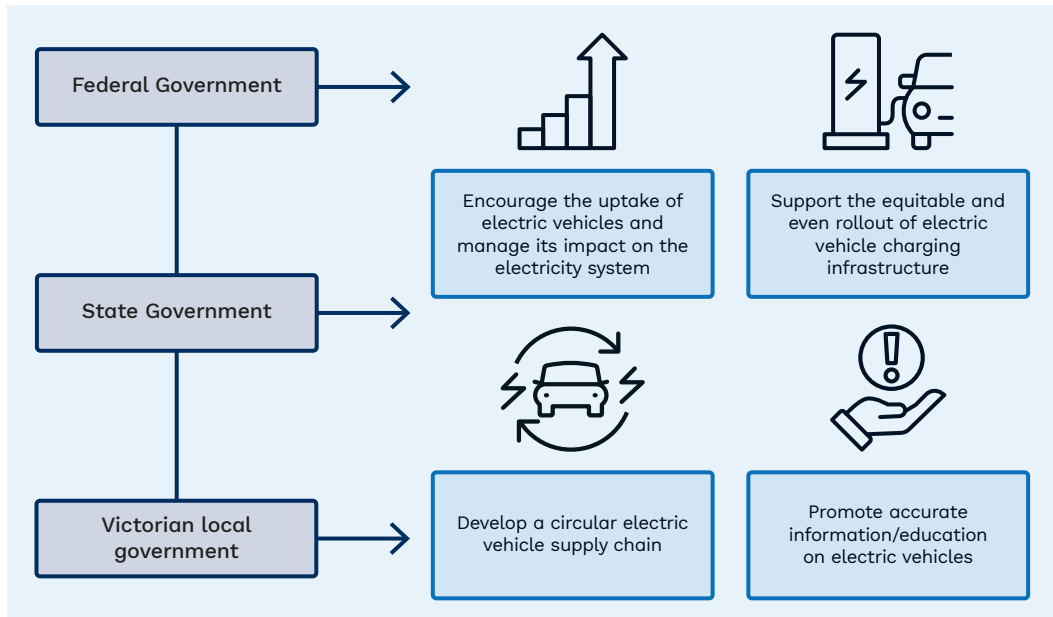
²³ Aaron Gray, *Transcript of evidence*, pp. 2, 10–11; Ralph Griffiths, *Transcript of evidence*, p. 35; John Khoury, Manager, Industry Policy, Victorian Automotive Chamber of Commerce, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 13; Kent Johns, Head of Government Relations and Policy, National Electrical and Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 38.

²⁴ Yarra Ranges Council, *Submission 72*, p. 2; Melissa Dimovski, Director, Policy and Advocacy, Automotive Dealer Association, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 16; Peter Griffin, Director State and Territory Advocacy and Communication, Federal Chamber of Automotive Industries, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, pp. 17, 22; Brendan Davies, Secretary, Victorian Branch, Australian Electric Vehicle Association, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 18; Professor Hai L. Vu, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 36.

²⁵ Aaron Gray, Lead, Projects Energy, South East Councils Climate Change Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 2; Ralph Griffiths, General Manager Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

²⁶ Katherine Hole, Chief Executive Officer, Association for the Battery Recycling Industry, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 26; Yarra Ranges Council, *Submission 72*, p. 4; John Khoury, Manager, Industry Policy, Victorian Automotive Chamber of Commerce, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, pp. 13–14; Dr Peter Sherrell, Senior Vice Chancellors Research Fellow, Applied Chemistry and Environmental Science, RMIT University, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 36; Steven Marshall, Chief Operating Officer, Livium, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 31.

Figure 3.3 Strategic and coordinated planning across different levels of government to enable harmonisation



Source: Legislative Council Economy and Infrastructure Committee.

Strategic, coordinated leadership and planning across all levels of government can effectively harmonise electric vehicles with the electricity system, as it enables:

- alignment on strategic and regulatory frameworks
- clarity on roles and responsibilities
- clear direction and guidance to decision-makers
- collaboration across the electricity system.²⁷

²⁷ Dr Alina Dini, *Transcript of evidence*, p. 2; Aaron Gray, *Transcript of evidence*, pp. 2, 10–11; Pete Mercuriou, *Transcript of evidence*, p. 7; Victorian Greenhouse Alliances, *Submission 85*, p. 1; Oliver Hill, *Transcript of evidence*, pp. 6–7; Melissa Dimovski, *Transcript of evidence*, p. 16; Mike Fisher, Manager, City Planning and Sustainability, Port Phillip City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 17; Sam Sampanthar, Head of Sustainable Futures, Knox City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, pp. 15–16; Lauren Pulitano, Vice President Public Affairs, Volvo, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 26; Peter Griffin, Director State and Territory Advocacy and Communication, Federal Chamber of Automotive Industries, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 14; Ralph Griffiths, General Manager Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

FINDING 3: A policy and regulatory environment that supports the harmonisation of electric vehicles with the electricity system is one that:

- encourages the uptake of electric vehicles and manages its impact on the electricity system
- promotes accurate information and education on electric vehicles
- delivers an equitable and grid-aligned rollout of electric vehicle charging infrastructure
- develops a circular, low waste electric vehicle supply chain.

FINDING 4: A policy and regulatory environment that supports the harmonisation of electric vehicles with the electricity system requires strategic and coordinated planning across federal, state and local levels of government and will ensure:

- alignment on strategic and regulatory frameworks
- clarity on roles and responsibilities
- clear direction and guidance to decisionmakers
- collaboration across the electricity system.

Alignment on policy and regulatory frameworks

The Committee heard that strategic and coordinated planning and leadership across all levels of government enables alignment of policy and regulatory frameworks, which is essential to harmonising electric vehicles with the electricity system.²⁸ Evidence indicated that framework alignment encourages governments to work cooperatively in harmonising electric vehicles with the electricity system, which is critical given that electric vehicles sit within an interconnected and evolving policy and regulatory environment.²⁹

Dr Dini explained that ‘regulatory clarity, streamlined approvals and nationally consistent technical standards’ are important for the electric vehicle transition, noting that ‘we have come very far on these’.³⁰

²⁸ Associate Professor Anne Kallies, RMIT University, public hearing, Melbourne, 12 February 2026, pp. 48–49; Aaron Gray, *Transcript of evidence*, pp. 1–2; Kent Johns, Head of Government Relations and Policy, National Electrical and Communications Association, Inquiry into Electricity Supply for Electric Vehicles public hearings, response to questions on notice received 5 March 2026, pp. 1–2.

²⁹ Catherine Wolthuizen, Ombudsman and Chief Executive, Energy and Water Ombudsman Victoria, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 52; Renate Vogt, General Manager Regulation, CitiPower, Powercor and United Energy (CPU), public hearing, Melbourne, 12 March 2026, p. 13; Justin Oliver, *Transcript of evidence*, p. 43.

³⁰ Dr Alina Dini, *Transcript of evidence*, p. 2; Bernhard Conoplia, Chief Networks Officer, Evie Networks, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 3.

Stakeholders told the Committee that framework alignment encourages governments at each level to pursue policies and regulations that complement and reinforce each other's ability to harmonise electric vehicles with the electricity system.³¹ Evidenced explained that this is critical given the interconnected environment where actions at one level of government will impact others.³²

Evidence suggested that misaligned frameworks may undermine confidence and certainty across the electricity system,³³ and create 'bottlenecks' for policymakers pursuing outcomes for electric vehicles.³⁴

Framework alignment strengthens confidence and certainty across all levels of government to deliver electric vehicle outcomes, as it provides a shared understanding of objectives.³⁵ Evidence indicates that alignment between state and federal frameworks delivers clear and consistent high-level policy and regulatory signals on electric vehicles, strengthening local governments' confidence to act as strategic frameworks can be grounded within broader policy settings.³⁶

Michael Oke, Unit Manager, Sustainability, Yarra City Council, told the Committee that 'a coordinated strategy can help' avoid 'missteps and [investing significant] ... effort into solutions that are not going to be viable in a short number of years to come perhaps'.³⁷

Other stakeholders noted that alignment between local and state frameworks strengthens consistency in electric vehicle objectives and targets across Victoria, while also ensuring that local, context-specific issues are considered.³⁸ This supports efficient, long-term planning and investment for electric vehicles across the policy and regulatory environment, as governments at each level can act with greater certainty knowing that strategic and regulatory goals are shared.³⁹

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- 31 Brendan Wheeler, Chief Executive Officer, EVSE, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 19; Katherine Hole, *Transcript of evidence*, p. 29; Steven Marshall, *Transcript of evidence*, pp. 30–31; Justin Oliver, *Transcript of evidence*, p. 43; Monash Energy Institute, Monash University, *Submission 77*, p. 7; The RACE for 2030 Cooperative Research Centre, *Submission 62*, p. 3.
- 32 Aaron Gray, *Transcript of evidence*, pp. 2, 10–11; Melissa Dimovski, *Transcript of evidence*, p. 16; Bernhard Conoplia, *Transcript of evidence*, p. 3; The RACE for 2030 Cooperative Research Centre, *Submission 62*, p. 3.
- 33 Bernhard Conoplia, *Transcript of evidence*, pp. 7–8, 10; Aaron Gray, *Transcript of evidence*, p. 2.
- 34 Stephanie Bashir, Chief Executive Officer, Nexa Advisory, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, pp. 51–52; Aaron Gray, *Transcript of evidence*, p. 2.
- 35 Aaron Gray, *Transcript of evidence*, p. 3; Michael Oke, Unit Manager, Sustainability, Yarra City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 15.
- 36 Michael Oke, *Transcript of evidence*, p. 15; Ralph Griffiths, General Manager Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35; Aaron Gray, *Transcript of evidence*, p. 2; Pete Mercouriou, *Transcript of evidence*, p. 7; Victorian Greenhouse Alliances, *Submission 85*, p. 1; John Khoury, *Transcript of evidence*, p. 13; Justin Oliver, *Transcript of evidence*, p. 43.
- 37 Michael Oke, *Transcript of evidence*, p. 18.
- 38 Victorian Greenhouse Alliances, *Submission 85*, p. 1; Dr Alina Dini, *Transcript of evidence*, pp. 2, 4–5; Aaron Gray, *Transcript of evidence*, pp. 10–11; John Khoury, *Transcript of evidence*, p. 13; Michael Oke, *Transcript of evidence*, p. 15; Yarra Ranges Council, *Submission 72*, pp. 2–3; Merri-Bek City Council, *Submission 76*, p. 1; Monash Energy Institute, Monash University, *Submission 77*, pp. 5–6; AGL, *Submission 82*, p. 5.
- 39 Stephanie Bashir, *Transcript of evidence*, p. 52; Dr Alina Dini, *Transcript of evidence*, p. 3; Michael Oke, *Transcript of evidence*, p. 15; Aaron Gray, *Transcript of evidence*, p. 2.

Bernhard Conoplia, Chief Networks Officer, Evie Networks, expressed to the Committee:

We just need the right planning and regulatory framework to make sure that we have a thriving competitive environment. If we have that, then everyone will win, especially consumers – all consumers will then have lower electricity bills.⁴⁰

Stakeholders emphasised that framework alignment delivers consistent and equitable electric vehicle outcomes across Victoria and the broader electricity system as local priorities are considered within overarching frameworks, ensuring that targeted action can be applied where necessary.⁴¹ Without alignment, Councillor Tom Crook, Deputy Mayor, East Gippsland Shire Council, warned that the electric vehicle transition risks becoming a ‘patchwork of market-driven outcomes and individual council plans’.⁴²

Consequently, alignment of policy and regulatory frameworks is essential for the effective harmonisation of electric vehicles with the electricity system, as it promotes a system-wide approach that considers the impacts of electric vehicles across local, state, and federal contexts. This encourages cooperation and complementary action, enabling more efficient and timely progress towards harmonisation.

FINDING 5: Aligned frameworks encourage governments at all levels to work cooperatively in implementing electric vehicle policy and regulations, which supports long-term planning, investment certainty, and equitable outcomes.

FINDING 6: Misaligned frameworks create complexity and uncertainty for decision-makers, undermining confidence and increasing the risk of fragmented or inefficient EV policy implementation.

3.2.1 Clarity of roles and responsibilities

Stakeholders suggested that strategic and coordinated planning and leadership across all levels of government provides clarity on roles and responsibilities, which is essential to harmonising electric vehicles with the electricity system.⁴³ Clarity on roles and responsibilities provides certainty across all levels of government to act, which is critical given the complexity of the regulatory and policy environment that electric vehicles exist within.⁴⁴

⁴⁰ Bernhard Conoplia, *Transcript of evidence*, p. 3.

⁴¹ Oliver Hill, *Transcript of evidence*, p. 4; Associate Professor Julie Karel, Deputy Director, Research, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 29; Councillor Tom Crook, Deputy Mayor, East Gippsland Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 28; Brendan Wheeler, *Transcript of evidence*, p. 16; Yarra Ranges Council, *Submission 72*, p. 2; City of Yarra, *Submission 120*, pp. 1–2.

⁴² Councillor Tom Crook, *Transcript of evidence*, p. 28.

⁴³ Oliver Hill, *Transcript of evidence*, pp. 6–7; Aaron Gray, *Transcript of evidence*, p. 2; Pete Mercouriou, *Transcript of evidence*, p. 7; Victorian Greenhouse Alliances, *Submission 85*, p. 2; West Wimmera Shire Council, *Submission 16*, p. 1; Gannawarra Shire Council, *Submission 31*, p. 2.

⁴⁴ Steven Marshall, *Transcript of evidence*, p. 31; Katharine Hole, *Transcript of evidence*, p. 29; Pete Mercouriou, *Transcript of evidence*, p. 7.

The Committee heard that clearly defined roles and responsibilities across all levels of government gives governments greater confidence and certainty in their authority to deliver electric vehicle policy and regulation.⁴⁵ Clarity helps governments understand the full extent of their responsibilities, which reduces the risk of fragmented policy implementation and mismatches between responsibility and authority.⁴⁶

As noted in Section 3.2, electric vehicles exist within an evolving policy and regulatory environment, posing large-scale change to the electricity system. Evidence indicated that clarity on roles and responsibilities helps different levels of government to understand their respective roles in managing risks and to take advantage of opportunities associated with the electric vehicle transition.⁴⁷ This supports clear accountability arrangements, reducing ambiguity for governments about their responsibilities.⁴⁸

Consequently, clearly defined roles and responsibilities are critical to strengthening accountability arrangements across all levels of government for the delivery of electric vehicle policy and regulations. Governments are empowered to pursue outcomes that aligned with their respective authority when roles and responsibilities are clearly defined.

FINDING 7: Clearly defined roles and responsibilities across all levels of government establishes clear accountability and authority arrangements for the delivery of electric vehicle policy.

FINDING 8: Clearly defined roles and responsibilities across all levels of government reduces the risk of fragmented or consistent delivery of electric vehicle policy, particularly where overlaps exist.

3.2.2 Clear direction and guidance for the industry and private sector

The Committee heard that industry and private-sector actors rely on clear guidance to understand and manage the risks and opportunities associated with electric vehicles.⁴⁹ This supports more efficient investment as private sector and industry actor

⁴⁵ Michael Oke, *Transcript of evidence*, p. 15; Sam Sampanthar, Head of Sustainable Futures, Knox City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 16; Mike Fisher, Manager, City Planning and Sustainability, Port Phillip City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 17.

⁴⁶ Catherine Wolthuizen, Ombudsman and Chief Executive, Energy and Water Ombudsman Victoria, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 52; Sam Sampanthar, *Transcript of evidence*, p. 16; Mike Fisher, *Transcript of evidence*, p. 17; Pete Mercouriou, *Transcript of evidence*, p. 7.

⁴⁷ Dr Alina Dini, *Transcript of evidence*, p. 2; Oliver Hill, *Transcript of evidence*, pp. 6–7; Victorian Greenhouse Alliances, *Submission 85*, p. 4.

⁴⁸ Pete Mercouriou, *Transcript of evidence*, p. 10.

⁴⁹ Andrew Forster, Chief Executive Officer, EVX, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, pp. 14–15; Dr Alina Dini, *Transcript of evidence*, p. 3.

can invest confidently with a comprehensive understanding of the risk.⁵⁰ This allows decision-makers to operate effectively within the policy and regulatory environment, enabling them to address challenges and opportunities in alignment with overarching frameworks concerning electric vehicles.⁵¹

Stakeholders further suggested that clear direction and guidance empower decision-makers to communicate risks and opportunities associated with electric vehicles across the electricity system, including to intersecting industries and consumers.⁵² This supports more coordinated responses to managing electric vehicles, enabling actors across the electricity system to encourage behaviours that support harmonisation and strengthen certainty and confidence across the electricity system.⁵³

The Committee heard that coordinated planning and leadership across all levels of government to provide clear direction and guidance on standards and expectations for industry and the private sector, particularly for those delivering electric vehicle related products and services, establishes consistent expectations across the electricity system.⁵⁴ Such clarity enables decision-makers to identify when standards are not being met and supports consistent management of issues by clarifying required service and performance standards.⁵⁵ This should contribute to more equitable outcomes across Victoria as decision-makers are guided to deliver consistent products and services across the state's electricity system.⁵⁶

Consequently, strategic and coordinated leadership and planning across all levels of government provides clear guidance and direction that enables industry and private-sector decision-makers to act with confidence and certainty within the electricity system, ensuring that actions support overarching frameworks. Clear guidance and direction encourage coordinated and equitable actions by industry and private-sector actors, ensuring that actions contribute to the harmonisation of electric vehicles with the electricity system.

FINDING 9: Clear and consistent policy and regulatory guidance and direction give industry and private sector actors confidence to invest and manage risks and opportunities associated with electric vehicles.

FINDING 10: Without clear and consistent direction, industry and private sector actors may delay investment or pursue fragmented approaches, which undermines efforts to harmonise electric vehicles with the electricity system.

⁵⁰ Pete Mercouriou, *Transcript of evidence*, p. 7; Andrew Forster, *Transcript of evidence*, pp. 14–15; Dr Alina Dini, *Transcript of evidence*, p. 3.

⁵¹ Pete Mercouriou, *Transcript of evidence*, p. 7; Dr Alina Dini, *Transcript of evidence*, p. 3.

⁵² Victorian Greenhouse Alliances, *Submission 85*, p. 5; Monash Energy Institute, *Submission 77*, p. 10; Australian Energy Regulator, *Submission 118*, p. 1.

⁵³ Ibid.

⁵⁴ Andrew Forster, *Transcript of evidence*, pp. 14–15.

⁵⁵ Ibid.

⁵⁶ Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

FINDING 11: Clear guidance and direction from all levels of government provides consistent expectations and standards for electric vehicle products and services, contributing to strong accountability arrangements across the electricity system.

Collaboration across the electricity system

The Committee heard that strategic and coordinated planning and leadership across all levels of government enables collaboration, which is essential to effectively harmonising electric vehicles with the electricity system.⁵⁷ Collaboration is critical to ensuring that governments across all levels work together to deliver electric vehicle policy and regulation across the electricity system in a cohesive and streamlined way, empowering each other and industry to deliver outcomes.⁵⁸

Noting the interconnected policy and regulatory landscape, collaboration is critical to coordinating and streamlining overlapping roles in delivering electric vehicle policy and regulation across all levels of government and the broader electricity system.⁵⁹ This ensures that where roles overlap, governments work collectively and efficiently to deliver electric vehicle policy, reducing ambiguity around responsibilities and managing the complexity in the policy and regulatory landscape.⁶⁰

Stakeholders also noted that collaboration is integral in contexts where the agency and capacity of different levels of government and industry actors is shaped by other levels of government.⁶¹ Collaboration enables governments to recognise their direct and enabling roles in supporting other levels of government and industry and private sector actors to deliver electric vehicle policy and regulation across the electricity system.⁶² This ensures that all levels of government and industry actors are empowered to work in alignment with overarching frameworks on electric vehicles.⁶³

Collaboration is particularly critical where industry and private sector actors are involved in delivering products and services that influence the effectiveness of electric vehicle harmonisation with the electricity system.⁶⁴ Collaboration between governments, industry and private sector actors across the electricity system ensures that risks and opportunities associated with electric vehicles are collectively addressed,

⁵⁷ Dr Alina Dini, *Transcript of evidence*, p. 2; Oliver Hill, *Transcript of evidence*, pp. 6–7.

⁵⁸ Michael Oke, *Transcript of evidence*, pp. 15, 18; Pete Mercouriou, *Transcript of evidence*, p. 7; Dr Alina Dini, *Transcript of evidence*, p. 2; Oliver Hill, *Transcript of evidence*, pp. 6–7.

⁵⁹ Pete Mercouriou, *Transcript of evidence*, p. 7; Dr Alina Dini, *Transcript of evidence*, p. 2; Ralph Griffiths, *Transcript of evidence*, p. 35; Michael Oke, *Transcript of evidence*, p. 15.

⁶⁰ Dr Alina Dini, *Transcript of evidence*, p. 2; Michael Oke, *Transcript of evidence*, pp. 15, 18; Ralph Griffiths, *Transcript of evidence*, p. 35.

⁶¹ Pete Mercouriou, *Transcript of evidence*, p. 7; Dr Alina Dini, *Transcript of evidence*, p. 2.

⁶² Michael Oke, *Transcript of evidence*, p. 15; Pete Mercouriou, *Transcript of evidence*, p. 7; Dr Alina Dini, *Transcript of evidence*, p. 2.

⁶³ Michael Oke, *Transcript of evidence*, p. 15; Dr Alina Dini, *Transcript of evidence*, p. 2.

⁶⁴ Dr Alina Dini, *Transcript of evidence*, p. 2; Oliver Hill, *Transcript of evidence*, pp. 6–7.

with actors supported to deliver streamlined and efficient actions that align with overarching frameworks.⁶⁵

This provides clearer signals to industry and private sector actors, whose decisions on electric vehicles are shaped by the regulatory and policy environment and subsequently contribute to the effectiveness of harmonisation.⁶⁶ Evidence also indicated that collaboration supports more efficient investment and policy delivery, as government, industry and private sector actions are better coordinated and mutually reinforcing across the electricity system.⁶⁷

Collaboration accelerates the delivery of electric vehicle policy and regulation across the electricity system as it enables cohesive and streamlined approaches and encourages governments to empower each other and industry to deliver outcomes.

FINDING 12: Collaboration across all levels of government encourages coordination where roles and responsibilities overlap and supports efficient delivery of overarching policy frameworks for electric vehicles.

FINDING 13: Collaboration between government, industry, and the private sector supports more efficient and better-aligned investment and policy delivery for electric vehicles.

3.3 Consumer understanding of electric vehicles and their impact on the electricity system

The Committee heard that consumer understanding of electric vehicles and their impact on the electricity system is pivotal to achieving effective harmonisation.⁶⁸ An effective understanding requires that consumers recognise that:

- electric vehicles are both a mode of transport and a consumer-owned distributed energy resource.⁶⁹
- the way electric vehicles are used within the electricity system will determine how beneficial they are to consumers and the broader electricity system.⁷⁰

⁶⁵ Ibid.

⁶⁶ Dr Alina Dini, *Transcript of evidence*, p. 2; Oliver Hill, *Transcript of evidence*, pp. 6–7.

⁶⁷ Ibid.

⁶⁸ Australian Electric Vehicle Association, *Submission 114*, pp. 2–3; RACE for 2030, *Submission 62*, p. 4; Monash Energy Institute, *Submission 77*, p. 6.

⁶⁹ Ibid.

⁷⁰ Ibid.

Stakeholders told the Committee that an effective understanding of electric vehicles achieves two things:

- builds community confidence, increasing electric vehicle adoption⁷¹
- electric vehicles benefit both the consumer and the state's electricity system.⁷²

3.3.1 Electric vehicles are both a mode of transport and a consumer-owned distributed energy resource

The Committee heard that effective understanding depends on consumers recognising electric vehicles' dual role as both a mode of transport and a consumer-owned distributed energy resource.⁷³ When consumers better understand electric vehicles, particularly their environmental and economic benefits, uptake of electric vehicles increases.⁷⁴ The Committee heard that without this understanding, adoption would likely remain slower.⁷⁵

Electric vehicles can operate as 'mobile energy assets', which consume, store, and supply electricity within the State's electricity system.⁷⁶ Evidence highlighted that an effective understanding depends on consumers recognising electric vehicle's multifunctional role in relation to supply and demand power flow.⁷⁷

Justin Oliver, Deputy Chair of the Australian Energy Regulator, told the Committee that electric vehicles 'will serve many of the same functions and same opportunities and challenges as household batteries as well'.⁷⁸

Stakeholders noted that electric vehicle equipment and infrastructure, such as bidirectional chargers and battery energy storage systems, are new and complex, which contributes to increased consumer uncertainty.⁷⁹ Comprehensive consumer understanding of how these technologies interact with the electricity network, and their role in supply, demand and storage, is critical to building community confidence.⁸⁰ The Committee heard that greater consumer confidence in managing electricity use and storage is likely to support increased uptake of electric vehicles and stronger engagement with the electricity system.⁸¹

⁷¹ Aaron Gray, *Transcript of evidence*, p. 3.

⁷² Associate Professor Roger Dargaville, *Transcript of evidence*, p. 30; Oliver Hill, *Transcript of evidence*, p. 2.

⁷³ Dr Alina Dini, *Transcript of evidence*, p. 3; Aaron Gray, *Transcript of evidence*, p. 3.

⁷⁴ Pete Mercouriou, *Transcript of evidence*, p. 3; Professor Hai L. Vu, *Transcript of evidence*, p. 31; Professor Ray Wills, Managing Director, Future Smart Strategies, Adjunct Professor, The University of Western Australia, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 52.

⁷⁵ Pete Mercouriou, *Transcript of evidence*, p. 3.

⁷⁶ Ibid.

⁷⁷ Professor Hai L. Vu, *Transcript of evidence*, p. 31; Justin Oliver, *Transcript of evidence*, p. 43.

⁷⁸ Justin Oliver, *Transcript of evidence*, p. 43.

⁷⁹ Catherine Wolthuizen, *Transcript of evidence*, pp. 51–52.

⁸⁰ Ibid.

⁸¹ Ibid.

The Committee heard that where consumers have a comprehensive understanding of electric vehicles and associated infrastructure and equipment, misinformation and misconceptions can be moderated, improving community confidence and certainty to invest in an electric vehicle.⁸² This includes misconceptions and misinformation relating to range anxiety, battery degradation, and fire safety, which may otherwise deter uptake.⁸³

Dr Dini told the Committee that ‘at the heart of the transition to EVs is absolutely the end user, and we have seen in Australia an emerging trend around misinformation around EVs’.⁸⁴

Consequently, an effective consumer understanding of how electric vehicles interact with the electricity system is foundational to building the community confidence required for widespread uptake, and also reinforces broader goals required to achieve effective harmonisation of electric vehicles with the electricity system.

3.3.2 How electric vehicles are used within the electricity system will determine their benefits

Stakeholders told the Committee that the benefits of electric vehicles for both consumers and the electricity system depend on consumers understanding that how they use electric vehicles within the system shapes outcomes for both.⁸⁵ Evidence indicated that when consumers understand how their behaviours influence electric vehicles’ impact on the electricity system, they are able to participate in the system in an active and informed way, delivering benefits for both consumers and the broader electricity system.⁸⁶

Stakeholders suggested that consumers need to understand that when and how they charge their electric vehicles directly affects their energy costs.⁸⁷ Consumers during off-peak periods or during times of surplus solar generation, when electricity is more abundant and cheapest, can significantly reduce their energy costs.⁸⁸ The Committee heard that when consumers understand this, they can adjust their behaviour to optimise the benefits of electric vehicle ownership.⁸⁹

The ability of electric vehicles to benefit Victoria’s electricity grid relies on consumers understanding how their charging behaviour directly influences the stability, capacity,

⁸² Oliver Hill, *Transcript of evidence*, p. 3.

⁸³ Ibid.

⁸⁴ Dr Alina Dini, *Transcript of evidence*, p. 3.

⁸⁵ Monash Energy Institute, *Submission 77*, pp. 2–3; Associate Professor Julie Karel, *Transcript of evidence*, p. 29; AGL, *Submission 82*, pp. 2–3; Dr Alina Dini, *Transcript of evidence*, p. 3; Professor Hai L. Vu, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 31.

⁸⁶ Ibid.

⁸⁷ Ibid.

⁸⁸ Ibid.

⁸⁹ Ibid.

and cost of the electricity system.⁹⁰ Consumer understanding that charging during off-peak periods reduces individual energy costs while also avoiding strain on the grid and the need for expensive infrastructure upgrades is critical.⁹¹ Consumers who understand the impacts of unmanaged or convenience-based charging are better able to participate in the electricity system in ways that enable electric vehicles to deliver broader system benefits.⁹²

Evidence also highlighted that when consumers understand the impact of electric vehicles on the electricity system, they are better equipped to use complex technologies such as Vehicle-to-Home (V2H) and Vehicle-to-Grid (V2G).⁹³ These technologies enable more dynamic use of electric vehicles stored electricity, allowing power to be supplied to homes or exported back to the grid.⁹⁴ Consumer understanding of how to dynamically manage power from electric vehicles could deliver greater benefits for both consumers and the wider electricity system.⁹⁵

Consumer understanding of electric vehicles and their benefits is considered the ‘next frontier’ of electric vehicle adoption, as consumers across Victoria need to understand that electric vehicle ownership involves more active engagement with the electricity system.⁹⁶ Consumer understanding of electric vehicles and their impact is critical to ensuring that increased uptake results in positive outcomes for both consumers and the electricity system.⁹⁷

FINDING 14: To effectively harmonise electric vehicles with the electricity system, consumers need to understand that:

- electric vehicles are both a mode of transport and a consumer-owned distributed energy resource
- the way electric vehicles are used within the electricity system will determine how beneficial they are to consumers and the broader electricity system.

FINDING 15: Effective consumer understanding of electric vehicles and their interaction with the electricity system builds community confidence, supports increased adoption, and ensures that electric vehicle uptake delivers benefits for both consumers and the State’s electricity system.

⁹⁰ Dr Alina Dini, *Transcript of evidence*, p. 3; Associate Professor Julie Karel, *Transcript of evidence*, p. 29; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 30; Professor Hai L. Vu, *Transcript of evidence*, p. 31.

⁹¹ Ibid.

⁹² Australian Electric Vehicle Association, *Submission 114*, p. 4.

⁹³ Ibid.

⁹⁴ Oliver Hill, *Transcript of evidence*, p. 6.

⁹⁵ Ibid.

⁹⁶ Dr Alina Dini, *Transcript of evidence*, p. 5.

⁹⁷ Associate Professor Julie Karel, *Transcript of evidence*, p. 29; Pete Mercouriou, *Transcript of evidence*, p. 3.

3.4 Mass uptake of electric vehicles together with grid-aligned charging behaviours provides robust support to the State's electricity grid

The Committee received evidence that the mass uptake of electric vehicles together with grid-aligned use of electric vehicle charging infrastructure is critical to achieving effective harmonisation of electric vehicles with the electricity system,⁹⁸ and that mass uptake of electric vehicles, when combined with grid-aligned charging, would provide robust support to Victoria's electricity system.

Stakeholders noted that electric vehicle charging behaviour differs significantly from internal combustion engine (ICE) refuelling due to the flexible nature of electricity use.⁹⁹ Electric vehicle charging loads are flexible, allowing owners to coordinate charging with available network capacity and renewable energy supply, or to shift demand to off-peak periods.¹⁰⁰

Evidence indicated that grid-aligned charging shifts demand to periods that are more beneficial for the electricity system, helping to avoid peak demand increases associated with convenience-based charging.¹⁰¹ Grid-aligned charging that coincides with widespread electric vehicle uptake, can deliver:

- increased renewable energy integration
- improved grid stability and more efficient use of infrastructure
- lower costs for all energy users.¹⁰²

In addition, large-scale uptake of electric vehicles combined with grid-aligned charging, would increase renewable energy integration as electric vehicles can consume and store excess generation during periods of high supply and low demand.¹⁰³ Grid-aligned charging where electric vehicles act as a 'solar sponge' and absorb excess renewable energy during the middle of the day when solar generation peaks and demand is lower would help manage electricity supply and demand as charging is shifted to periods when the grid has surplus capacity and that surplus can be captured and stored to be potentially supplied during periods of peak demand.

Aaron Gray told the Committee 'That daytime charging is critical as it aligns with solar generation, reduces grid strain and supports equitable access'.¹⁰⁴

⁹⁸ Monash Energy Institute, *Submission 77*, pp. 2-3.

⁹⁹ Brendan Davies, *Transcript of evidence*, p. 26.

¹⁰⁰ Brendan Wheeler, *Transcript of evidence*, p. 17; Professor Ray Wills, *Transcript of evidence*, p. 53; Jo Oddie, *Transcript of evidence*, p. 16; Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

¹⁰¹ Monash Energy Institute, *Submission 77*, pp. 2-3.

¹⁰² Ibid.

¹⁰³ Dr Kazi Hasan, Senior Lecturer and Research Lead, Transport Electrification, RMIT University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence* p. 47.

¹⁰⁴ Aaron Gray, *Transcript of evidence*, p. 2.

The more efficient use of existing network infrastructure by shifting electricity demand to off-peak periods and spreading it more evenly throughout the day can reduce the need for costly infrastructure upgrades.¹⁰⁵ Stakeholders also noted that the existing cost of the electricity network is therefore spread across a greater volume of electricity use, which helps to lower prices for all consumers in the electricity system.¹⁰⁶

It could also create significant dispatchable capacity across Victoria's electricity system. Viewing electric vehicles as 'batteries on wheels' would encourage electric vehicle owners to use their stored energy to help balance supply and demand more effectively, where technologies, such as bidirectional charging, allow electric vehicles to supply electricity back to the grid during periods of high demand.

Chapter 4 discusses the importance of electric vehicle uptake combined with grid-aligned behaviours to support the State's electricity system in greater detail.

FINDING 16: The mass uptake of electric vehicles, combined with grid-aligned charging practices, ensures that electric vehicles enhance supply and demand patterns within Victoria's electricity system.

3.5 An electric vehicle charging infrastructure rollout that supports electric vehicle owners and the electricity system

This is not a “cart and horse” situation, EVs and public charging are like the two rails of a train track, without both rails the train won't go anywhere.

JOLT Charge Pty Limited, *Submission 123*, p. 5.

The Committee heard that a harmonised rollout of charging infrastructure meets both the needs of electric vehicle owners while also improving grid stability and reducing overall system costs.

The rollout out of public and private electric vehicle charging infrastructure needs to support both electric vehicle owners needs and the grid, where the deployment of electric vehicle charging infrastructure should:

- encourage grid-aligned charging behaviours
- account for different journey length
- avoid reliance on one charging infrastructure type.¹⁰⁷

¹⁰⁵ Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

¹⁰⁶ Ibid.

¹⁰⁷ Associate Professor Julie Karel, *Transcript of evidence*, p. 29; Monash Energy Institute, *Submission 77*, pp. 2-3.

Stakeholders also emphasised that the rollout must be equitable and account for context-specific differences, including the distinct needs of:

- rural, regional, and metropolitan areas
- variations in housing types (apartments versus houses)
- occupation (renters versus homeowners).¹⁰⁸

Dr Dini told the Committee that ‘Deployment must also be geographically strategic. It is not simply about total numbers; it is about equitable, reliable and usable access’.¹⁰⁹

Electric vehicle charging infrastructure is critical for community confidence, where many consumers adoption of electric vehicles relies on the visibility and reliability of charging options.¹¹⁰ Dr Dini explained that ‘consumer experience drives adoption. Infrastructure that is reliable, interoperable and transparently priced accelerates uptake; fragmented systems inhibit it’.¹¹¹

The delivery of electric vehicle charging infrastructure should be fair, competitive and deployed to benefit all Victorians and the broader electricity system.¹¹²

To support electric vehicle owners across Victoria, the rollout of electric vehicle charging infrastructure should:

- prioritise locations where charging is convenient and vehicles are already stationary for extended periods, such as workplaces, train stations, and public destinations
- provide chargers that address accessibility barriers to operating or owning electric vehicle charging infrastructure
- provide affordable charging options, where owners can access low-cost energy generated from surplus renewables.¹¹³

At the same time, the rollout of electric vehicle charging infrastructure must support Victoria’s electricity grid and should:

- Moderate peak demand by encouraging slow forms of charging and charging during off-peak periods.

¹⁰⁸ Monash Energy Institute, *Submission 77*, p. 6; Michael Oke, *Transcript of evidence*, p. 23; Andrew Forster, *Transcript of evidence*, p. 15; Dr Alina Dini, *Transcript of evidence*, p. 2; Bass Coast Shire Council, *Submission 115*, pp. 1–2; Victorian Greenhouse Alliances, *Submission 85*, pp. 2–3.

¹⁰⁹ Dr Alina Dini, *Transcript of evidence*, p. 2.

¹¹⁰ Ibid.

¹¹¹ Dr Alina Dini, *Transcript of evidence*, p. 3.

¹¹² Victorian Greenhouse Alliances, *Submission 85*, pp. 2–3; Bernhard Conoplia, *Transcript of evidence*, p. 3; Jo Oddie, *Transcript of evidence*, p. 17; Ross De Rango, *Submission 73*, pp. 4–5.

¹¹³ Monash Energy Institute, *Submission 77*, pp. 2–3; National Electrical and Communications Association, *Submission 57*, p. 7; Federal Chamber of Automotive Industries, *Submission 92*, p. 7; City of Greater Bendigo, *Submission 121*, p. 6; Victorian Greenhouse Alliances, *Submission 85*, p. 3; Australian Electric Vehicle Association, *Submission 114*, p. 6; Oliver Hill, *Transcript of evidence*, p. 9; AGL, *Submission 82*, pp. 3–4.

- Encourage daytime charging to absorb excess renewable energy, increasing renewable integration into the electricity system.¹¹⁴

Consequently, a coordinated rollout of electric vehicle charging infrastructure must consider both consumers' needs and the broader electricity system to ensure that consumers are confident to invest in and use electric vehicles, and that increased electricity demand improves rather than strains the grid.

Chapter 5 discusses the importance of an electric vehicle charging infrastructure rollout that both supports electric vehicles owners and the electricity system in greater detail.

FINDING 17: Strategically located and affordable electric vehicle charging infrastructure is essential to build consumer confidence and accelerate electric vehicle uptake.

FINDING 18: An effective electric vehicle charging infrastructure rollout will support greater renewable energy integration and improved management of peak electricity demand in Victoria.

FINDING 19: The rollout of electric vehicle charging infrastructure must be equitable and context-sensitive, ensuring fair access across rural, regional and metropolitan areas, diverse housing types, and different user circumstances such as renters and homeowners.

3.6 An electric vehicle supply chain that is circular and low-waste

Stakeholders told the Committee that a circular and low-waste electric vehicle supply chain is critical to supporting harmonisation of electric vehicles with the electricity system.¹¹⁵ A circular, low-waste supply chain would include:

- opportunities for battery second-life applications in household and community energy storage¹¹⁶
- reconditioning and recycling across the electric vehicle supply chain.¹¹⁷

¹¹⁴ Aaron Gray, *Transcript of evidence*, p. 1; AGL, *Submission 82*, pp. 3–4; Dr Kazi Hasan, *Transcript of evidence*, p. 47; Oliver Hill, *Transcript of evidence*, p. 9.

¹¹⁵ Dr Alina Dini, *Transcript of evidence*, p. 3; Tim Camilleri, *Transcript of evidence*, p. 29; Peter Sherrell, *Transcript of evidence*, p. 36; Professor Ray Wills, *Transcript of evidence*, p. 62; Steven Marshall, *Transcript of evidence*, p. 31; Ross De Rango, *Transcript of evidence*, p. 60.

¹¹⁶ Associate Professor Mahdokht Shaibani, RMIT University, correspondence, 12 March 2026, p. 1; Dr Peter Sherrell, *Transcript of evidence*, pp. 36–37; Hyundai Motor Company Australia, *Submission 50*, p. 4; Australian Energy Council, *Submission 66*, p. 4; Frankston City Council, *Submission 70*, p. 2; East Gippsland Shire Council, *Submission 79*, p. 3; Victorian Greenhouse Alliances, *Submission 85*, p. 5; Alpine Energy, *Submission 93*, p. 2; City of Greater Geelong, *Submission 98*, p. 2; Volvo Group Australia, *Submission 101*, pp. 9–10; Professor Ray Wills and Professor Peter Newman, *Submission 105*, p. 10; Tesla Motors Australia, *Submission 110*, p. 7; Australian Electric Vehicle Association, *Submission 114*, p. 12; Moyne Shire Council, *Submission 117*, pp. 3–4.

¹¹⁷ Steven Marshall, *Transcript of evidence*, pp. 32–33; Volvo Group Australia, *Submission 101*, p. 12; Katharine Hole, *Transcript of evidence*, p. 30.

Developing a circular approach to electric vehicle batteries is both an economic and environmental necessity for Victoria. Electric vehicle batteries retain significant value after their first use and can be repurposed rather than immediately recycled.¹¹⁸

Rather than being discarded or immediately recycled, which is energy-intensive, these batteries can be reused in a ‘second life’ as stationary storage systems. Second-life battery systems can support renewable energy integration by storing excess generation and improving grid reliability. This extends their economic life, reduces waste, and increases overall asset value.¹¹⁹

Stakeholders called for the development of a circular economy approach to electric vehicles batteries, where they are first used in vehicles, then repurposed for stationary storage, and only recycled once fully depleted. The Committee heard that electric vehicle batteries can become play a key role in the broader clean energy transition and critical minerals strategy rather than a waste challenge with appropriate policy, safety regulation, and industry development, which Victoria can contribute to.

Chapter 6 discusses the importance of a circular and low-waste electric vehicle supply chain in greater detail.

FINDING 20: A circular, low-waste approach to electric vehicle is important to support effective harmonisation with Victoria’s electricity system.

FINDING 21: Electric vehicle batteries retain significant value after their first use in vehicles and can be repurposed in second-life applications.

¹¹⁸ Volvo Group Australia, *Submission 101*, p. 12; Dr Peter Sherrell, *Transcript of evidence*, pp. 36–37, 39.

¹¹⁹ Dr Alina Dini, Head of Energy, Infrastructure and Commercial, Electric Vehicle Council, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 3; Tim Camilleri, *Transcript of evidence*, p. 29; Peter Sherrell, *Transcript of evidence*, p. 36; Professor Ray Wills, *Transcript of evidence*, p. 62; Steven Marshall, *Transcript of evidence*, p. 31; Ross De Rango, *Transcript of evidence*, p. 60.

Chapter 4

Increasing EV ownership and supporting EV owners

4.1 Introduction

This Chapter examines electric vehicle uptake trends and the key barriers in Victoria affecting electric vehicle adoption rates. It also explores how consumer and industry confidence can be strengthened and how EV charging behaviour can better align with electricity supply and demand to support the grid.

4.2 Overview of market trends and opportunities for electric vehicle ownership

4.2.1 Overview of electric vehicle uptake and purchasing trends

The Committee heard that battery electric (BEV) and plug-in hybrid electric (PHEV) vehicles together accounted for around 12–13% of new vehicle sales in Australia in 2025, up from 9–10% in 2024.¹ BEVs and PHEVs showed different market trends in 2025, with BEVs leading in total sale volumes.² BEV sales surpassed over 100,000, representing around 8% of new electric vehicle sales nationally.³ PHEVs accounted for a smaller share of total sales in 2025, the ‘national plug-in share [reached] the mid-teens in some months’, although this share reflected ‘a surge in sales’ compared to 2024.⁴

The Committee heard that although national electric vehicle sales are accelerating, the total penetration of electric vehicles on the road in Australia remains low.⁵ Nationally, the total fleet is estimated between 400,000 and 500,000 vehicles,⁶ which accounts for ‘about 1 or 2% of cars on the road’.⁷

1 Electric Vehicle Council of Australia, *Submission 111*, p. 2; Victorian Automotive Chamber of Commerce, *Submission 107*, p. 2.

2 Professor Ray Wills, Managing Director, Future Smart Strategies, Adjunct Professor, The University of Western Australia, public hearing, Melbourne (via videoconference), 26 February 2026, *Transcript of evidence*, p. 52.

3 Ibid.

4 Professor Ray Wills, *Transcript of evidence*, p. 52; Australian Electric Vehicle Association Ltd, *Submission 114*, p. 10.

5 Australian Academy of Technological Sciences and Engineering, *Submission 65*, p. 1; Pete Mercouriou, Chair, Barwon South West Climate Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 3; Associate Professor Roger Dargaville, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, pp. 31–34; Professor Ray Wills, *Transcript of evidence*, p. 52; Catherine Wolthuizen, Ombudsman and Chief Executive, Energy and Water Ombudsman Victoria, public hearing, Melbourne, 28 February 2026, *Transcript of evidence*, p. 51.

6 Ross De Rango, Founder and Director, Vehicle Charging Solutions Australia, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 55; Pete Mercouriou, *Transcript of evidence*, p. 3; Tesla, *Submission 110*, p. 2.

7 Associate Professor Roger Dargaville, *Transcript of evidence*, pp. 31–33.

Australia's electric vehicle growth is also slower compared to countries such as Norway, China, United Kingdom and more broadly Europe, where uptake and sales are all much higher.⁸ The Australian Academy of Technological Sciences and Engineering's submission noted that 'EV adoption both nationally and in Victoria remains below other nations. Nearly one in five cars sold worldwide in 2023 was an EV – double the rate in Australia in 2025'.⁹

The Federal Chamber of Automotive Industries (FCAI) is the 'peak Australian industry organisation' that represents more than '60 global automotive brands that design, manufacture, import, distribute and sell light duty passenger vehicles, light commercial vehicles, and motorcycles'.¹⁰ The FCAI submission stated that 'Victoria represents more than a quarter of new vehicle sales' in Australia and 'any national projections are generally reflective of the Victorian experience' given its share of the total market.¹¹

The Committee heard that 'Victoria has been leading the way in' electric vehicle uptake in Australia.¹² In 2025, the State's electric vehicle sales exceeded the national average.¹³ The Electric Vehicle Council's Head of Energy, Infrastructure and Commercial, Dr Alina Dini noted that '12.9% of new car sales' were electric in Victoria 'compared to the national average which was 12.2%' in 2025.¹⁴ Dr Dini also told the Committee that 'EV sales have grown by more than 40 per cent in Victoria in the last two years [2024 and 2025] alone'.¹⁵

Director of State and Territory Advocacy and Communication for the Federal Chamber of Automotive Industries, Peter Griffin stated that BEVs accounted for 8.3% of all new vehicles sales as of December 2025 in Victoria.¹⁶ Adoption of BEVs 'is slightly higher than the national average' in Victoria.¹⁷ While PHEVs have demonstrated 'quite a significant increase in recent years', accounting for 4.3% of all new vehicles sales as of December 2025 in Victoria.¹⁸

Evidence also noted that uptake of hybrid vehicles (HEVs) is another growing trend both in Victoria and more broadly across Australia.¹⁹ Hybrid vehicles are discussed

8 Pete Mercouriou, *Transcript of evidence*, p. 3; Associate Professor Roger Dargaville, *Transcript of evidence*, pp. 31–34; Professor Ray Wills, *Transcript of evidence*, p. 52; Jo Oddie, Acting National President, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 15.

9 Australian Academy of Technological Sciences and Engineering, *Submission 65*, p. 1.

10 Federal Chamber of Automotive Industries, *Submission 92*, pp. 4, 10.

11 Ibid.

12 Professor Ray Wills, *Transcript of evidence*, p. 52.

13 Dr Alina Dini, Head of Energy, Infrastructure and Commercial, Electric Vehicle Council, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 7; Peter Griffin, Director, State & Territory Advocacy and Communication, Federal Chamber of Automotive Industries, public hearing, Melbourne (via videoconference), 27 February 2026, *Transcript of evidence*, p. 14.

14 Dr Alina Dini, *Transcript of evidence*, p. 7.

15 Ibid., p. 1.

16 Peter Griffin, Director State and Territory Advocacy and Communication, Federal Chamber of Automotive Industries, public hearing, Melbourne, *Transcript of evidence*, p. 14.

17 Ibid.

18 Ibid.

19 Professor Ray Wills, *Transcript of evidence*, p. 52; Peter Griffin, *Transcript of evidence*, p. 14.

in Chapter 2; they are not a full electric vehicle model. Hybrid vehicles accounted for 23.7% of new sales nationally as of December 2025. In Victoria, hybrids accounted for 15.2% of new vehicle sales between January and September 2025.²⁰

The Committee heard that electric vehicles' growing share of market sales aligns with phases: innovators, early adopters, the early majority, late majority and laggards.²¹ Jo Oddie, Acting National President of the Australian Electric Vehicle Association, explained that the current phase aligns with 'early adoption, and we are moving into the early majority'.²² Ms Oddie stated that early majority consumers:

take more time to make the decision than the innovators and the early adopters. They do not like complications; they just want it to work. That is our next challenge. Some incentives are still appropriate for the early majority and are needed, but they may differ to those used to date.²³

Associate Professor Roger Dargaville told the Committee that electric vehicles 'are still quite a way from ... being mainstream', indicating that this status would be achieved when they account for 10–15% of vehicles on the road.²⁴ In Victoria, the electric vehicle fleet has surpassed 50,000 vehicles, which represents about 1.2% of the State's 4.16 million registered passenger vehicles.²⁵ Even so, Associate Professor Dargaville emphasised that 'we will accelerate towards that point'.²⁶

Managing Director of Future Smart Strategies and Adjunct Professor at the University of Western Australia, Professor Ray Wills predicted that BEVs and PHEVs would account for around 16–17% of new vehicle sales nationally by the end of 2026, describing this as 'a midrange' estimate.²⁷

Oliver Hill, Program Leader of Electric Vehicles at the RACE for 2030, outlined predictions based on national and international data, suggesting that electric vehicles and internal combustion engine (ICE) vehicles could reach parity within the national fleet of 20 million as early as 2035–2040.²⁸ Noting this prediction, Mr Hill stressed that the pace of change is driven not only by residential consumers but also by commercial and freight operators, who base decisions on total cost of ownership and overall economic value.²⁹

The Committee heard that electric vehicle uptake would strengthen Australia's energy and national security by reducing reliance on imported liquid fuels and

²⁰ Federal Chamber of Automotive Industries, *Submission 92*, p. 7.

²¹ Australian Electric Vehicle Association, public hearing, Melbourne, 12 February 2026, presentation, p. 2.

²² Jo Oddie, *Transcript of evidence*, p. 15.

²³ *Ibid.*

²⁴ Associate Professor Roger Dargaville, *Transcript of evidence*, pp. 33–34.

²⁵ Nissan, *Submission 125*, p. 3.

²⁶ Associate Professor Roger Dargaville, *Transcript of evidence*, pp. 33–34.

²⁷ Professor Ray Wills, *Transcript of evidence*, p. 53.

²⁸ Oliver Hill, *Transcript of evidence*, p. 4.

²⁹ *Ibid.*

shifting transport energy use to domestically generated electricity.³⁰ This would lower Victorian's exposure to global oil price volatility and geopolitical instability, subsequently increasing the State's energy resilience.³¹ The Committee notes that liquid fuel security is a critical national security issue that is particularly relevant in 2026, and vehicle electrification can address this vulnerability.³²

FINDING 22: Electric vehicle sales are increasing in Victoria, but overall fleet penetration remains low, indicating that Victoria is still in the early stages of transition toward mainstream adoption.

FINDING 23: Accelerating electric vehicle uptake can strengthen Australia's energy security by reducing reliance on imported liquid fuels and exposure to global oil prices.

4.2.2 Key market trends and opportunities shaping electric vehicle ownership

The Committee heard that consumers considering electric vehicles primarily focus on total cost of ownership, which includes insurance, maintenance, running costs, and residual value.³³ Evidence noted that ownership uptake is also informed by electric vehicles' capacity to support consumers travel range needs and consumer confidence regarding the availability of charging infrastructure.³⁴

The supply of electric vehicle models available in Australia has grown significantly, with over 100 electric vehicle models currently on the market.³⁵ This includes battery electric vehicle (BEVs) and plug-in hybrid electric vehicle (PHEVs) models, along with emerging options such as hydrogen fuel cell electric vehicles (FCEVs).³⁶ Peter Griffin told the Committee that 'supply of EVs into the Australian market for consumers who choose to buy them and whose lifestyle they meet is not an issue'.³⁷

Evidence noted that Australian consumers currently favour larger vehicles, such as SUVs and light commercial vehicles like utes. Peter Griffin told the Committee that, nationally, SUVs and light commercials account for over 80% of new vehicles sale, while passenger vehicles are at 13%, the lowest level on record as of December 2025.³⁸

³⁰ Kent Johns, Head of Government Relations and Policy, National Electrical and Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 37; Dr Alina Dini, *Transcript of evidence*, p. 2; Jo Oddie, *Transcript of evidence*, p. 15.

³¹ Dr Alina Dini, *Transcript of evidence*, p. 2; Jo Oddie, *Transcript of evidence*, p. 21.

³² Jo Oddie, *Transcript of evidence*, p. 15.

³³ Peter Griffin, *Transcript of evidence*, p. 15; Electric Vehicle Council of Australia, *Submission 111*, p. 5; Nissan, *Submission 125*, p. 4; FCAI, *Submission 92*, p. 9; Dr Peter Sherrell, Senior Vice Chancellors Research Fellow, Applied Chemistry and Environmental Science, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 39.

³⁴ Peter Griffin, *Transcript of evidence*, p. 15; Electric Vehicle Council of Australia, *Submission 111*, p. 5.

³⁵ Peter Griffin, *Transcript of evidence*, p. 15; Federal Chamber of Automotive Industries, *Submission 92*, p. 6.

³⁶ Hyundai, *Submission 50*, p. 2; Peter Griffin, *Transcript of evidence*, p. 15.

³⁷ Peter Griffin, *Transcript of evidence*, p. 15.

³⁸ *Ibid.*, p. 14.

Mr Griffin noted that EV and plug-in hybrid uptake is increasing within the SUV and larger ute segments, and that these figures are expected to grow further as battery technology improves and costs decline.³⁹

The Federal Chamber of Automotive Industries (FCAI) stated that consumer preference for larger vehicles, along with consumer needs for towing capacity, range, and off-road capability, means that increasing electric vehicle sales will take time.⁴⁰ The submission noted that while electric vehicle options are widely available in some categories, heavier vehicle categories present challenges for widespread uptake due to ‘the use case of vehicles and consumers needs’.⁴¹

Director of Policy and Advocacy for the Australian Automotive Dealer Association (AADA), Melissa Dimovski told the Committee that consumer willingness to purchase an EV ‘has remained steady at around 39% for the past two years’, according to AADA survey data.⁴² Melissa Dimovski stated that affordability and charging availability are consistently identified as the main barriers to electric vehicle uptake.⁴³

Evidence from the Electric Vehicle Council suggested that ‘price parity has been reached in most light vehicle segments when considering total cost of ownership’ but the upfront cost of electric vehicles remains a primary consideration for consumers.⁴⁴ Similarly, Tesla’s submission to the Committee suggested that ‘higher upfront costs remain the primary barrier cited by Australians to EV uptake, more than charging or range concerns’ based on polling from the *Sydney Morning Herald* in October 2025.⁴⁵

The Australian Electric Vehicle Association stated in its submission that increased imports from China and the *New Vehicle Efficiency Standard* have made new electric vehicles in Australia among the cheapest globally, arguing that upfront cost is no longer a major barrier.⁴⁶ Brendan Davies, Secretary, Victorian branch, Australian Electric Vehicle Association, clarified to the Committee that ‘the up-front purchase price compared to how it was in the past is no longer the deal breaker’ for electric vehicle uptake.⁴⁷

Stakeholders noted that resale value is a key factor informing consumers’ decisions about electric vehicle ownership. Ms Dimovski stated that two-year-old EVs hold about 65% of their new value compared to about 85% for passenger vehicles overall, while after five years EVs hold around 42%, compared with 60–70% for passenger vehicles.⁴⁸

³⁹ Peter Griffin, *Transcript of evidence*, p. 21.

⁴⁰ Federal Chamber of Automotive Industries, *Submission 92*, p. 4.

⁴¹ Ibid.

⁴² Melissa Dimovski, Director of Policy and Advocacy, Australian Automotive Dealer Association, public hearing, Melbourne (via videoconference), 27 February 2026, *Transcript of evidence*, pp. 16–17.

⁴³ Melissa Dimovski, *Transcript of evidence*, p. 17.

⁴⁴ Electric Vehicle Council of Australia, *Submission 111*, p. 5.

⁴⁵ Tesla, *Submission 110*, p. 4.

⁴⁶ Australian Electric Vehicle Association, *Submission 114*, p. 10.

⁴⁷ Brendan Davies, Secretary, Victorian branch, Australian Electric Vehicle Association, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 24.

⁴⁸ Melissa Dimovski, *Transcript of evidence*, p. 17.

Ms Dimovski noted that residual values are a key driver of consumer confidence, stating that consumers perception of increase risk regarding residual values often discouraging first-time EV buyers.⁴⁹

The Committee also heard that heavy vehicle electrification is increasing among commercial operators, including delivery and freight companies.⁵⁰ Major companies such as Woolworths and IKEA along with heavy freight providers such as Linfox and TGE are using 'electric vehicle prime movers in their fleet'.⁵¹ Dr Dini stated that 'the market is absolutely moving in [the] direction [of electrification], and the underpinning catalyst for that shift is the need to decarbonise the transport sector'.⁵²

The Electric Vehicle Council stated that electrification will be the primary pathway for decarbonising road transport, noting that electric trucks are already available and improving in range, making them viable for many freight routes, including regional areas.⁵³ Volvo Group Australia similarly noted in its submission that road transport, particularly freight, is a major source of Australia's emissions, accounting for over 80% of freight-related emissions, and emphasised that electrification is essential to meeting national climate goals as freight activity is projected to grow significantly by 2050.⁵⁴ Volvo Group Australia highlighted that heavy electric trucks and buses will play a key role in decarbonisation, especially given the ageing fleet and the opportunity to replace it with zero-emission alternatives.⁵⁵

Volvo Group Australia, which manages the manufacturing, distribution and operation of heavy commercial vehicles including trucks, buses, and industrial engines, indicated that freight electrification concerns multiple elements that must align for a sustainable transition.⁵⁶ These elements include product availability, operational feasibility, total cost of ownership (TCO), charging infrastructure, and green energy supply.⁵⁷

Stakeholders also noted the emergence of bidirectional charging technologies such as Vehicle-to-Grid (V2G) and Vehicle-to-Home (V2H) that will encourage electric vehicle ownership.⁵⁸ These technologies allow electric vehicle owners to operate their vehicle's as distributed energy resources, storing and supplying electricity to households or exporting it back to the electricity grid, enabling consumers to interact with the electricity system more dynamically. The Electric Vehicle Council's *State of Electric*

⁴⁹ Ibid.

⁵⁰ Dr Alina Dini, *Transcript of Evidence*, p. 6.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Electric Vehicle Council of Australia, *Submission 111*, p. 12.

⁵⁴ Volvo Group Australia, *Submission 101*, p. 2.

⁵⁵ Volvo Group Australia, *Submission 101*, p. 2.

⁵⁶ Tim Camilleri, Director, E-Mobility Solutions, Volvo Group Australia, public hearing, Melbourne (via videoconference), 27 February 2026, *Transcript of evidence*, p. 25.

⁵⁷ Ibid.

⁵⁸ Electric Vehicle Council, *Submission 111*, pp. 9-10; Oliver Hill, *Transcript of evidence*, pp. 6, 11; Renate Vogt, General Manager, Regulation, CitiPower, Powercor and United Energy, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 2; Dr Alina Dini, *Transcript of evidence*, p. 2; Ralph Griffiths, General Manager Policy & Regulation, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35; Yarra Ranges Council, *Submission 72*, p. 3; Macedon Ranges Shire Council, *Submission 75*, p. 2.

Vehicles 2025 report indicated that trials by energy companies and partnerships with manufacturers are underway, while bidirectional chargers are progressing through approval and becoming more widely available, signalling that broader rollout is approaching.⁵⁹

FINDING 24: While the supply of electric vehicles in Australia has expanded significantly, consumer concerns about upfront cost, charging infrastructure, resale value, as well as strong preferences for larger vehicles continue to impact the uptake of electric vehicles.

4.3 Addressing challenges in the policy setting to increase EV ownership

The FCAI submission noted the State Government's target to have zero emission vehicles account for 50% of light vehicle sales by 2030 as part of its *Zero Emissions Vehicle Roadmap*, arguing that this 'must be considered as an aspirational target' given current adoption rates in the State.⁶⁰ The FCAI submission added that 'based on current trends, it is likely that the 2030 ambition is at risk'.⁶¹

Stakeholders also noted the Federal Government's target of 5 million electric vehicles on the road by 2035.⁶² Dr Dini stated that 'uptake must accelerate materially over the coming decade to meet that trajectory', noting that government is not currently 'deploying infrastructure or aligning policy at the pace required'.⁶³ The Electric Vehicle Council emphasised that achieving this target would require electric vehicles to account for around half of all new vehicle sales over the next decade, approximately 17 times the amount of BEVs in the national fleet in 2026.⁶⁴

Evidence indicated that electric vehicle sales will likely continue to increase due to federal policies such as the *New Vehicle Efficiency Standard*, which creates 'greater consumer choice and incentives for manufacturers to support EVs'.⁶⁵

The Victorian Automotive Chamber of Commerce (VACC) highlighted state and federal targets for net zero emissions by 2050 and legislated 2030 emissions reductions targets, noting that 'meeting these goals will require meaningful contributions from the automotive industry'.⁶⁶ This includes shifting consumer preference toward BEV and

⁵⁹ Electric Vehicle Council, *State of Electric Vehicles 2025*, pp. 65–66.

⁶⁰ Federal Chamber of Automotive Industries, *Submission 92*, p. 12.

⁶¹ Federal Chamber of Automotive Industries, *Submission 92*, p. 8.

⁶² Dr Alina Dini, *Transcript of evidence*, pp. 1, 5; Electric Vehicle Council of Australia, *Submission 111*, p. 3; Ralph Griffiths, General Manager Policy & Regulation, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

⁶³ Dr Alina Dini, *Transcript of evidence*, p. 2.

⁶⁴ Electric Vehicle Council of Australia, *Submission 111*, p. 3.

⁶⁵ Australian Academy of Technological Sciences and Engineering, *Submission 65*, p. 1; Origin Energy, *Submission 74*, p. 1; John Khoury, *Transcript of evidence*, p. 13; Peter Griffin, *Transcript of evidence*, p. 15; Melissa Dimovski, *Transcript of evidence*, p. 16; Victorian Greenhouse Alliances, *Submission 85*, p. 4.

⁶⁶ Victorian Automotive Chamber of Commerce, *Submission 107*, p. 3.

PHEV models over ICE vehicles.⁶⁷ The Electric Vehicle Council stated that the national electric vehicle fleet must reach 1 million vehicles by 2027 to stay on track for net zero by 2050, requiring adoption rates of ‘around 27% in 2027 and 50% in 2030’.⁶⁸

Stakeholders noted that increasing EV ownership is not just about supply or early incentives, it requires a coordinated, system-wide policy approach that builds consumer trust, infrastructure, affordability, and industry readiness simultaneously.⁶⁹ As noted in Chapter 3, coordinated strategic planning across all levels of government is required to accelerate electric vehicle uptake. Stakeholders identified several areas where coordinated and strategic planning from government is needed to accelerate electric vehicle uptake, consisting of:

- regulatory environment, including planning and approvals processes.⁷⁰
- electric vehicle adoption plans⁷¹
- public education and advocacy⁷²
- electric vehicle supply⁷³
- electric vehicle affordability⁷⁴
- fleet electrification.⁷⁵

Stakeholders stressed that coordinated leadership across all levels of government is critical to sustaining the growth of electric vehicles.⁷⁶

⁶⁷ Ibid.

⁶⁸ Electric Vehicle Council of Australia, *Submission 111*, p. 3.

⁶⁹ Dr Alina Dini, *Transcript of evidence*, p. 5; Pete Mercouriou, Chair, Barwon South West Climate Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 10; Aaron Gray, Lead, Projects Energy, South East Councils Climate Change Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, pp. 10–11; John Khoury, Manager, Industry Policy, Victorian Automotive Chamber of Commerce, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 13.

⁷⁰ Ralph Griffiths, General Manager Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35; Lauren Pulitano, Vice President Public Affairs, Volvo, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 26.

⁷¹ Pete Mercouriou, *Transcript of evidence*, p. 3; Aaron Gray, *Transcript of evidence*, p. 2.

⁷² Aaron Gray, *Transcript of evidence*, p. 11; Dr Alina Dini, Head of Energy, Infrastructure and Commercial, Electric Vehicle Council, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, pp. 5–6.

⁷³ John Khoury, *Transcript of evidence*, p. 13; Ralph Griffiths, General Manager Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

⁷⁴ John Khoury, *Transcript of evidence*, p. 13; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 32.

⁷⁵ Rebecca Lamble, Sustainability Officer, East Gippsland Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 32; Michelle Wyatt, Manager Climate Change and Environment, City of Greater Bendigo, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 32; Simon Woodland, Manager Sustainable Environment, Bass Coast Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 35; Ralph Griffiths, *Transcript of evidence*, p. 35; Dr Alina Dini, *Transcript of evidence*, p. 2; Aaron Gray, Lead, Projects Energy, South East Councils Climate Change Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 2.

⁷⁶ Victorian Greenhouse Alliances, *Submission 85*, p. 1; Pete Mercouriou, Chair, Barwon South West Climate Alliance, Victorian Greenhouse Alliances, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 7; Bernhard Conoplia, Chief Networks Officer, Evie Networks, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 3.

4.3.1 Coordinated and strategic government planning and policy is needed to accelerate electric vehicle ownership

Stakeholders noted federal and state government policy and leadership on electric vehicles. They highlighted the *National Electric Vehicle Strategy*, which demonstrated strong support for electric vehicles by aiming to increase product availability and uptake, and *Victoria's Zero Emissions Vehicle Roadmap*, which set specific sales targets and supporting infrastructure deployment.⁷⁷ Stakeholders expressed that the State's roadmap has laid a 'strong foundation' for both battery electric vehicle (BEV) charging and fleet transition.⁷⁸

Stakeholders emphasised that strong, ongoing government leadership and coordination is essential to increase electric vehicle uptake, with policy and planning addressing barriers and strengthening consumer and industry confidence in electric vehicle ownership.⁷⁹ Stakeholders noted that leadership and coordination should support:

- consumers and industry to match the 'pace of change' and maximise investment opportunities
- equitable application of policy standards and regulations across vehicle models in the transport sector.⁸⁰

While Chapter 5 discusses policy and planning in the context of charging infrastructure, stakeholders highlighted that infrastructure delivery is a critical component that also contributes to consumer and industry confidence regarding electric vehicle ownership.⁸¹

Dr Dini told the Committee that strong government leadership and clear policy signals are critical to accelerating EV uptake, noting that the introduction of a national EV strategy significantly increased vehicle availability and sales by signalling that Australia was 'open for business'.⁸² Dr Dini emphasised that continued leadership from all levels of government is needed to sustain electric vehicle growth.⁸³ Evidence also highlighted the role of local governments in supporting the transition, particularly through the provision of public charging infrastructure in regional areas.⁸⁴

⁷⁷ Hyundai, *Submission 50*, p. 6; AGL, *Submission 82*, p. 5; Peter Griffin, *Transcript of evidence*, p. 14; Dr Alina Dini, *Transcript of evidence*, pp. 4–5; Australian Academy of Technological Sciences and Engineering, *Submission 65*, p. 1; Victorian Greenhouse Alliances, *Submission 85*, p. 4; Federal Chamber of Automotive Industries, *Submission 92*, p. 12; Hyundai Motor Company Australia, *Submission 50*, p. 4.

⁷⁸ Hyundai, *Submission 50*, p. 6.

⁷⁹ Aaron Gray, *Transcript of evidence*, p. 2; Mike Fisher, Manager, City Planning and Sustainability, Port Phillip City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 17.

⁸⁰ RACE for 2030, *Submission 62*, p. 3; Jo Oddie, *Transcript of evidence*, p. 16; Dr Alina Dini, *Transcript of evidence*, p. 10; Oliver Hill, *Transcript of evidence*, pp. 4–5, 8.

⁸¹ Dr Alina Dini, *Transcript of evidence*, p. 2; John Khoury, *Transcript of evidence*, p. 13; Peter Griffin, *Transcript of evidence*, pp. 15–16; Melissa Dimovski, *Transcript of evidence*, p. 17.

⁸² Dr Alina Dini, *Transcript of evidence*, pp. 4–5.

⁸³ Ibid.

⁸⁴ Ibid.

Stakeholders expressed that EV adoption is moving from early uptake to mainstream use, requiring a more integrated and sustained government approach.⁸⁵ This includes maintaining existing policy support measures and addressing smaller barriers such as consumer understanding of how EVs interact with energy systems, which will support broader uptake.⁸⁶

The Victorian Greenhouse Alliance emphasised in its submission that Victoria is significantly behind international leaders in EV adoption, and while existing strategies and emissions standards will improve supply, affordability and consumer demand remain key barriers.⁸⁷ Evidence indicates that even higher-income households show limited intention to purchase EVs, highlighting the need for stronger government action to stimulate demand.

Local councils across Victoria identified that increasing electric vehicle uptake in the State requires coordinated and strategic government action across the following barriers: affordability, charging access, uneven infrastructure provision and regulatory constraints.⁸⁸ Councils indicate that demand for electric vehicles remains low and called for targeted purchase incentives and other demand-side measures to complement existing supply policies and improve affordability for electric vehicles.⁸⁹

Local councils broadly agreed that infrastructure limitations, affordability barriers, and inequitable access, particularly for renters, apartment residents, and regional communities, are key challenges for EV uptake.⁹⁰ Many councils shared support for fleet electrification as a means of increasing second-hand EV supply and improving affordability, as well as the need for financial incentives and targeted support for low-income households.⁹¹

Across metropolitan, regional, and rural areas, council evidence consistently identified high upfront costs and limited access to home or convenient public charging as the primary barriers, particularly for renters, apartment residents, and low-income households.⁹² These challenges are compounded by planning, strata governance, and electrical upgrade constraints in multi-unit and existing buildings.⁹³

⁸⁵ Ibid.

⁸⁶ Dr Alina Dini, *Transcript of evidence*, pp. 4–5.

⁸⁷ Victorian Greenhouse Alliances, *Submission 85*, pp. 4–5.

⁸⁸ Yarra Ranges Council, *Submission 72*, p. 3; Macedon Ranges Shire Council, *Submission 75*, pp. 2–3; City of Stonnington, *Submission 106*, pp. 3–4; Merri-bek City Council, *Submission 76*, pp. 5–6; City of Greater Bendigo, *Submission 121*, p. 6.

⁸⁹ Maroondah City Council, *Submission 41*, p. 1.

⁹⁰ Yarra Ranges Council, *Submission 72*, p. 3; Macedon Ranges Shire Council, *Submission 75*, pp. 2–3; Merri-bek City Council, *Submission 76*, pp. 5–6; City of Stonnington, *Submission 106*, pp. 3–4; Greater Dandenong City Council, *Submission 59*, pp. 2–3; Moyné Shire Council, *Submission 117*, p. 3.

⁹¹ Yarra Ranges Council, *Submission 72*, p. 3; Macedon Ranges Shire Council, *Submission 75*, pp. 2–3; Merri-bek Council, *Submission 76*, pp. 5–6; City of Stonnington, *Submission 106*, pp. 3–4; Greater Dandenong City Council, *Submission 59*, pp. 2–3; Moyné Shire Council, *Submission 117*, p. 3.

⁹² Moonee Valley City Council, *Submission 67*, p. 4; Yarra Ranges Council, *Submission 72*, p. 2; Macedon Ranges Shire Council, *Submission 75*, pp. 2–3; Merri-bek City Council, *Submission 76*, p. 4; Victorian Greenhouse Alliances, *Submission 85*, p. 2; Bass Coast Shire, *Submission 115*, p. 2; City of Yarra, *Submission 120*, p. 1; City of Greater Bendigo, *Submission 121*, p. 6.

⁹³ City of Yarra, *Submission 120*, p. 1; National Electrical and Communications Association, *Submission 57*, p. 7;

City of Stonnington identified limited charging infrastructure as the primary constraint, arguing that expanding public and neighbourhood charging access, particularly in high-density areas, is more important than financial incentives alone.⁹⁴ While Greater Dandenong City Council emphasised that high upfront costs, rather than range anxiety, are the main barrier for lower-income households and calling for targeted subsidies and grants to address exclusion.⁹⁵

Rural and regional perspectives, particularly from Moyne Shire Council, highlighted distinct challenges such as long-distance travel reliability and limited regional charging access.⁹⁶ Moyne Shire Council emphasised the need for bidirectional charging options of V2G and V2H and its potential role in improving energy resilience and supporting rural energy security.⁹⁷ While Macedon Ranges Shire Council called for regulatory reform and expanding vehicle model availability, including V2G-capable vehicles, alongside investment in fleet transition and charging infrastructure for depots and businesses.⁹⁸

Other councils, such as Merri-bek Council and Yarra Ranges Council, identified planning system constraints, particularly the difficulty of retrofitting existing apartment buildings and the need for stronger EV-ready requirements in new developments.⁹⁹

To address these issues, councils called for a coordinated policy response including financial incentives such as subsidies, rebates, tax concessions, and fleet transition support.¹⁰⁰ They also called for expanded and strategically planned charging infrastructure across public, neighbourhood, and regional networks, and regulatory reform to enable EV-ready building standards and streamline installation processes.¹⁰¹ Fleet electrification by government and business was also highlighted as important to increasing supply of affordable second-hand EVs.¹⁰²

Many local councils emphasised the need for improved system-wide coordination through centralised network planning and greater infrastructure transparency to support consumer confidence and accelerate uptake across their municipalities.¹⁰³ Rural and regional councils also called for targeted regional incentives and investment in emerging technologies such as bidirectional charging to enhance energy resilience and grid stability. Evidence emphasised that accelerating EV uptake will depend on

⁹⁴ City of Stonnington, *Submission 106*, pp. 3–4.

⁹⁵ Greater Dandenong City Council, *Submission 59*, pp. 2–3.

⁹⁶ Moyne Shire Council, *Submission 117*, p. 3.

⁹⁷ Ibid.

⁹⁸ Macedon Ranges Shire Council, *Submission 75*, pp. 2–3.

⁹⁹ Merri-bek Council, *Submission 76*, pp. 5–6.

¹⁰⁰ Moonee Valley City Council, *Submission 67*, p. 5; Yarra Ranges Council, *Submission 72*, pp. 2–3; Macedon Ranges Shire Council, *Submission 75*, pp. 2–3; Merri-bek City Council, *Submission 76*, p. 6; East Gippsland Shire Council, *Submission 79*, p. 4; Victorian Greenhouse Alliances, *Submission 85*, pp. 2–3; City of Yarra, *Submission 120*, pp. 1–2; City of Greater Bendigo, *Submission 121*, pp. 5–8.

¹⁰¹ Ibid.

¹⁰² RACE for 2030, *Submission 62*, p. 13.

¹⁰³ Moonee Valley City Council, *Submission 67*, p. 5; Yarra Ranges Council, *Submission 72*, pp. 2–3; Macedon Ranges Shire Council, *Submission 75*, pp. 2–3; Merri-bek City Council, *Submission 76*, p. 6; East Gippsland Shire Council, *Submission 79*, p. 4; Victorian Greenhouse Alliances, *Submission 85*, pp. 2–3; City of Yarra, *Submission 120*, pp. 1–2; City of Greater Bendigo, *Submission 121*, pp. 5–8.

improving affordability, expanding reliable and accessible charging infrastructure, and removing structural and regulatory barriers in housing and planning systems.

FINDING 25: Without coordinated action across all levels of government to accelerate electric vehicle uptake, federal and state electric vehicle targets are at risk of not being met.

FINDING 26: Accelerating electric vehicle uptake depends on coordinated policy responses from all levels of government that address affordability, charging infrastructure, regulatory constraints, consumer confidence, and fleet transition.

4.3.2 Government needs to provide stronger market signals to support electric vehicle uptake across the electricity system

The Committee heard that for Victoria to achieve its electrification goals, the government must provide clear and sustained market signals that address both vehicle affordability and the integration of electric vehicles into the electricity system. Stakeholders from across the electric vehicle industry argued that stronger market signals are needed to de-risk investment for consumers and the private sector and accelerate the electric vehicle transition.¹⁰⁴

Melissa Dimovski emphasised that while supply-side policies like the New Vehicle Efficiency Standard are increasing the availability of EVs, demand-side incentives are essential to actually drive consumer uptake.¹⁰⁵ Evidence noted that international experience shows incentives are typically used alongside supply measures to encourage consumers to choose EVs.¹⁰⁶ Ms Dimovski stated:

Our comments around incentives are that we have got a supply-side measure coming into the market, bringing a lot more low- and zero-emission vehicles into the market available for consumers to purchase. The next step to that is being able to get consumers to actually make the move into that, and the NVES will assist that. It is going to help drive consumers into that.¹⁰⁷

The Committee heard that incentives should focus on making EVs more financially attractive and reducing the barriers that deter buyers, particularly affordability concerns.¹⁰⁸ Melissa Dimovski expressed that the key question for consumers is what support is needed at the point of purchase to make switching to an EV worthwhile, highlighting that without targeted incentives, increased supply alone will not be enough to shift purchasing behaviour.¹⁰⁹

¹⁰⁴ Dr Alina Dini, *Transcript of evidence*, pp. 4–5; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 32; Michelle Wyatt, *Transcript of evidence*, p. 27; Catherine Wolthuizen, *Transcript of evidence*, pp. 51, 57.

¹⁰⁵ Melissa Dimovski, *Transcript of evidence*, pp. 16–17.

¹⁰⁶ Melissa Dimovski, *Transcript of evidence*, p. 22.

¹⁰⁷ Ibid.

¹⁰⁸ Melissa Dimovski, *Transcript of evidence*, pp. 16–17.

¹⁰⁹ Ibid.

Associate Professor Roger Dargaville told the Committee that subsidies are required for electric vehicles to de-risk investment for consumers, noting that they are less necessary once electric vehicles are ‘an established technology that has been de-risked’.¹¹⁰ Associate Professor Dargaville stated:

it is new technology that consumers are not accustomed to, so there is a relatively high risk in the early stages. Early adopters will take the risk, but the mainstream public do not know much about EVs and need a bit more help to be pushed along.¹¹¹

Oliver Hill explained that incentives play an important role in accelerating adoption across different consumer groups, particularly by helping move beyond early adopters to mainstream buyers. Mr Hill noted that using the ‘innovation adoption curve’, subsidies help reach later-stage consumers who might not otherwise purchase EVs. The Committee heard that removing incentives too early or at the wrong stage can slow uptake more noticeably than desired, even if long-term growth remains positive.¹¹²

Stakeholders expressed the need for financial and demand-side signals to support electric vehicle uptake across the electricity system.¹¹³ Incentives such as stamp duty relief, FBT exemptions, registration discounts, and immediate rebates were identified as highly visible market tools that the State Government can implement to improve affordability and strengthen consumer confidence in purchasing EVs.¹¹⁴ Other evidence expressed that immediate rebates, rather than retrospective subsidies, would improve EV affordability and build consumer confidence to purchase electric vehicles.¹¹⁵

The Committee heard that government fleet electrification is a pivotal strategy for accelerating electric vehicle uptake as it sends strong market signals to industry and the private sector.¹¹⁶ Evidence indicated it de-risks investment and provides demand certainty, encouraging manufacturers and infrastructure providers to invest in new models and charging networks.¹¹⁷ It provides market leadership, demand certainty, and a robust supply for the second-hand market.¹¹⁸ It also builds consumer confidence by normalising EV use and demonstrating reliability, which encourages electric vehicle sales and uptake.¹¹⁹

¹¹⁰ Associate Professor Roger Dargaville, Monash Energy Institute, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 32.

¹¹¹ Ibid.

¹¹² Oliver Hill, *Transcript of evidence*, p. 8.

¹¹³ Melissa Dimovski, *Transcript of evidence*, pp. 17, 22.

¹¹⁴ Victorian Automotive Chamber of Commerce, Submission 107, p. 5.

¹¹⁵ Electric Vehicle Council, *Submission 111*, p. 5; Australian Automotive Dealer Association, Electricity Supply for Electric Vehicles hearings, response to questions on notice received 25 March 2026, p. 2.

¹¹⁶ Dr Alina Dini, *Transcript of evidence*, p. 2.

¹¹⁷ Ibid.

¹¹⁸ Ibid.

¹¹⁹ City of Stonnington, *Submission 106*, p. 3.

Other stakeholders noted that targeted support is needed for freight and heavy vehicle electrification, including subsidies for charging infrastructure and depot upgrades.¹²⁰ The Committee notes that in March 2026, the State Government announced *Victoria's freight decarbonisation co-investment program* as part of the *Victorian Freight Plan 2025–30: Victoria Delivers*.¹²¹ Together, they aim to increase electrification across the State's logistics and delivery networks, including building industry capability and knowledge to transition to low-emissions freight vehicles.¹²² The program provides:

- \$8 million through a co-investment model for small and medium freight operators
- Up to \$300,000 for small to medium freight operators to purchase or lease low- and zero-emission freight vehicles and related technologies and infrastructure.¹²³

FINDING 27: Accelerating electric vehicle uptake in Victoria requires clear and sustained demand-side incentives alongside supply-side policies, to de-risk investment for industry and build consumer confidence to purchase electric vehicles.

FINDING 28: Government fleet electrification is critical to de-risk investment for industry and to build consumer confidence to purchase electric vehicles.

RECOMMENDATION 1: That the Victorian Government strengthen targeted demand-side incentives such as purchase subsidies, stamp duty relief, registration discounts and advocate to the Commonwealth Government.

RECOMMENDATION 2: That the Victorian Government expand fleet electrification programs to improve affordability and accelerate electric vehicle uptake.

4.3.3 Ensuring that EV ownership is accessible and possible for all household types and incomes

The Committee heard that electric vehicle ownership should be accessible and possible to all households, regardless of income or housing type, and that achieving this will require a combination of financial incentives, legislative reform, and infrastructure expansion.¹²⁴

¹²⁰ Victorian Greenhouse Alliances, *Submission 85*, pp. 4–5.

¹²¹ Department of Transport and Planning, *The Victorian Freight Plan 2025–30: Victoria Delivers*, 2025; Department of Transport and Planning, *Victorian Freight Decarbonisation Co-Investment Program Guidelines*, March 2026.

¹²² Department of Transport and Planning, *The Victorian Freight Plan 2025–30: Victoria Delivers*, pp. 42–44; Department of Transport and Planning, *Victorian Freight Decarbonisation Co-Investment Program Guidelines*, pp. 4–5.

¹²³ Department of Transport and Planning, *Victorian Freight Decarbonisation Co-Investment Program Guidelines*, p. 4.

¹²⁴ RACE for 2030, *Submission 62*, p. 2; City of Stonnington, *Submission 106*, p. 2; City of Greater Bendigo, *Submission 121*, p. 6; Victorian Greenhouse Alliances, *Submission 85*, pp. 4–5.

Stakeholders highlighted that high upfront costs remain a key barrier to electric vehicle ownership for many households. They identified several financial measures to improve affordability and access, including:

- Targeted subsidies, rebates, or low- or zero-interest loans for low- and middle-income households.¹²⁵
- Incentives for used EV purchases and accelerated government and business fleet turnover to support a more affordable second-hand EV market.¹²⁶

The Committee heard that around one million new vehicles enter the Australian market each year, with EVs accounting for approximately 15% of new sales and increasing annually.¹²⁷ While uptake is growing, evidence suggested this reflects cautious consumer interest due to EVs being a newer and higher-cost technology.¹²⁸ The second-hand EV market is emerging but is expected to grow as the fleet matures, supported in part by government incentives such as fringe benefits tax exemptions.¹²⁹

Evidence expressed that fleet turnover plays a key role in developing the second-hand EV market by supplying more affordable, high-quality vehicles, which addresses affordability barriers for low- and middle-income households.¹³⁰ Stakeholders explained that fleet vehicles are critical to the second-hand market because they are typically turned over faster than private vehicles, often after only 2.5 to 5 years.¹³¹

As government and corporate fleets retire their first-generation EVs, they provide a steady supply of high-quality, used vehicles retailing at lower price points, with evidence indicating that prices are often under \$40,000.¹³² This supply is essential for ensuring the transition is equitable, as many low- and middle-income households rely on the second-hand market rather than buying new.¹³³ In addition, high turnover from fleets allows second-hand buyers to access vehicles while the batteries still retain significant capacity and are still under warranty.¹³⁴

Stakeholders also noted the importance of addressing housing and charging barriers, which may discourage individuals from purchasing electric vehicles.¹³⁵ Approximately 30% of Victoria's population lives in apartments or homes without off-street parking,

¹²⁵ RACE for 2030, *Submission 62*, pp. 12, 16; Victorian Greenhouse Alliances, *Submission 85*, p. 4.

¹²⁶ RACE for 2030, *Submission 62*, p. 13; Victorian Greenhouse Alliances, *Submission 85*, p. 4.

¹²⁷ Dr Alina Dini, *Transcript of evidence*, p. 8.

¹²⁸ Ibid.

¹²⁹ Ibid.

¹³⁰ John Khoury, *Transcript of evidence*, p. 13; Simon Woodland, Head, Sustainable Environment, Bass Coast Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 34; Hyundai Motor Company Australia, *Submission 50*, p. 5.

¹³¹ Oliver Hill, *Transcript of evidence*, p. 13.

¹³² Jo Oddie, *Transcript of evidence*, p. 15.

¹³³ Professor Ray Wills, *Transcript of evidence*, p. 58.

¹³⁴ Oliver Hill, *Transcript of evidence*, p. 13; Professor Ray Wills, *Transcript of evidence*, p. 57.

¹³⁵ Michael Oke, Unit Manager, Sustainability, Yarra City Council, *Transcript of evidence*, p. 14; Associate Professor Anne Kallies, RMIT University, public hearing, 12 February 2026, *Transcript of evidence*, p. 47; Australian Electric Vehicle Association, *Submission 114*, p. 6; Andrew Forster, Chief Executive Officer, EVX, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 15; Monash Energy Institute, *Submission 77*, p. 6.

which evidence indicated can make home charging difficult or impossible.¹³⁶

Stakeholders suggested the following solutions:

- Implementing laws to prevent owners' corporations from unreasonably denying residents the ability to install charging infrastructure, as a critical reform.¹³⁷
- Providing government grants, subsidies, or guidance to assist with the high cost and technical complexity of retrofitting older apartment buildings and multi-unit dwellings with charging capability.¹³⁸
- Expanding the deployment of pole-mounted chargers and other on-street charging infrastructure to ensure convenient access for residents reliant on street parking.¹³⁹

City of Yarra's submission noted that in Yarra and similar inner-city areas, EV uptake is constrained by housing and tenure patterns, with up to 86.5% of households facing difficulties charging at home due to limited off-street parking or living in multi-unit developments, and 51% of residents in rental or social housing.¹⁴⁰ While the National Construction Code now requires EV-ready infrastructure in new apartments, significant barriers remain in retrofitting existing buildings, including limited electrical capacity, high connection costs, and complex governance arrangements.¹⁴¹

Dr Dini told the Committee that ensuring equitable access to electric vehicles requires targeted government action to support apartment residents and lower-income households, including improved access to charging, clearer consumer information, and streamlined processes for installing chargers in strata properties.¹⁴² Dr Dini supported 'right to charge' legislation to enable apartment dwellers to request EV charging infrastructure, and noted that reforming network tariffs could improve access to affordable public charging, particularly fast charging, for those unable to charge at home.¹⁴³

In its submission, the Victorian Greenhouse Alliances emphasised the need for equity-focused policies, including support for renters, regional communities, First Nations peoples, and low-income households, to ensure electric vehicle benefits are not concentrated among higher-income groups.¹⁴⁴ It stressed that local governments are under-resourced to drive equitable uptake without stronger state and federal support.¹⁴⁵

¹³⁶ Stuart Moffatt, General Manager, JOLT Charge, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 3.

¹³⁷ Michael Oke, *Transcript of evidence*, p. 13; Associate Professor Anne Kallies, *Transcript of evidence*, p. 47; Australian Electric Vehicle Association, *Submission 114*, p. 6.

¹³⁸ Victorian Greenhouse Alliances, *Submission 85*, p. 3.

¹³⁹ Andrew Forster, *Transcript of evidence*, p. 15; Monash Energy Institute, *Submission 77*, p. 6.

¹⁴⁰ City of Yarra, *Submission 120*, p. 1.

¹⁴¹ Ibid.

¹⁴² Dr Alina Dini, *Transcript of evidence*, p. 8.

¹⁴³ Ibid.

¹⁴⁴ Victorian Greenhouse Alliances, *Submission 85*, pp. 4-5.

¹⁴⁵ Ibid.

The Committee heard that ensuring equity for regional and rural Victorians in the transition to electric vehicles requires targeted investment, strategic planning, and regulatory reform to overcome unique geographic and technical barriers, which range from fragile grid infrastructure to the risk of being excluded from private investment due to lower commercial viability.¹⁴⁶

FINDING 29: Electric vehicle ownership should be accessible to all households, regardless of income or housing type, and achieving this will require a combination of financial incentives, legislative reform, and infrastructure expansion.

FINDING 30: The growth of a strong second-hand EV market depends on fleet turnover, particularly from government, to improve affordability and support equitable access to electric vehicles.

RECOMMENDATION 3: That the Victorian government use its procurement power to promote uptake of electric vehicles by increasing purchases for its fleet.

4.4 Strengthening consumer confidence to encourage EV uptake

successful EV adoption will depend not only on vehicle supply but on consumer confidence, charging availability, the affordability of these vehicles and then the usability of these vehicles ...

Melissa Dimovski, *Transcript of evidence*, pp. 16–17.

Stakeholders expressed that strengthening consumer confidence is a critical step in increasing electric vehicle adoption among consumers, but building this trust requires a multifaceted approach addressing infrastructure, education, affordability, and consumer protections.¹⁴⁷ Stakeholders expressed that strengthening consumer confidence requires:

- Enhancing infrastructure visibility and reliability
- combating misinformation through education
- strengthening consumer protections.

¹⁴⁶ Victorian Greenhouse Alliances, *Submission 85*, p. 3; Ross De Rango, *Transcript of evidence*, p. 58; Bass Coast Shire Council, *Submission 115*, p. 1; Simon Woodland, *Transcript of evidence*, p. 25; Yarra Ranges Shire Council, *Submission 75*, p. 3; City of Greater Bendigo, *Submission 121*, p. 5.

¹⁴⁷ Catherine Wolthuizen, Ombudsman and Chief Executive, Energy and Water Ombudsman Victoria, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 50; Melissa Dimovski, *Transcript of evidence*, pp. 16–17, Michael Oke, *Transcript of evidence*, p. 17; Electric Vehicle Council of Australia, *Submission 111*, p. 4.

4.4.1 Misinformation and misconceptions about EVs and EV infrastructure are affecting adoption

The Committee heard that community misunderstanding of electric vehicles and the associated technology, driven both by unfamiliarity and misinformation, is impacting Victoria's ability to accelerate consumer uptake of electric vehicles. To identify ways to increase uptake, the Committee notes that it is important to understand the sources of community hesitation. This section outlines common concerns about EVs and provides brief factual responses to address them.

Evidence noted the following common misconceptions and misinformation related to electric vehicles:

- range anxiety and infrastructure availability
- fire safety and reliability
- battery life and resale value
- revenue and funding myths
- environmental benefits.¹⁴⁸

Range anxiety and infrastructure availability

The Committee heard that one of the dominant concerns people expressed about EVs is their limited driving range. Evidence noted that there is a high degree of perceived range anxiety compared to actual range anxiety with prospective EV buyers often believing charging infrastructure is non-existent in their area or that they must charge as frequently as they refuel petrol cars.¹⁴⁹

Concerns about charging time are also often based on the misconception that charging is a slower version of refuelling. In practice, around 80% of EV owners charge at home, typically overnight, reflecting different usage patterns compared to internal combustion engine vehicles. For longer trips, charging speeds and public infrastructure have improved significantly, with many vehicles now capable of rapid charging. Given average daily travel of around 40km, many drivers only need to charge about once a week.

Stakeholders indicated that uptake of PHEV and 'hybrid' models partially stems from consumer hesitancy about BEVs with these models serving as transitional options.¹⁵⁰ Evidence expressed that hybrid uptake is primarily due to concerns regarding charging

¹⁴⁸ Kent Johns, *Transcript of evidence*, p. 37; Oliver Hill, *Transcript of evidence*, pp. 3, 9; Jo Oddie, *Transcript of evidence*, pp. 15–17, 19.

¹⁴⁹ Oliver Hill, *Transcript of evidence*, p. 3; Brendan Davies, *Transcript of evidence*, p. 26.

¹⁵⁰ Melissa Dimovski, *Transcript of evidence*, p. 16.

infrastructure and range anxiety.¹⁵¹ Although early EV models introduced around 2010 had ranges of about 100 km, this is no longer the case. Most modern EVs now offer ranges of 400–500 km, with some exceeding 600 km, and ongoing improvements in battery technology continue to extend this further.

Oliver Hill highlighted that misinformation and poor visibility of charging infrastructure are major barriers to adoption, often more influential than actual infrastructure gaps.¹⁵² Similarly, Dr Dini noted that limited consumer understanding of EV capabilities, including their role as energy storage assets, continues to affect uptake.¹⁵³

Fire safety and reliability

Evidence identified electric vehicle fire risk as another common misconception. Stakeholders expressed that road-registered EVs catch fire significantly less often than internal combustion engine (ICE) vehicles. Evidence suggested that much of the public fear stems from confusion between road-registered EVs and smaller ‘e-rideables’ such as the e-scooters and e-bikes, which have higher fire risks due to less stringent regulation and lower-quality battery management.¹⁵⁴

Data from EV FireSafe shows that globally there have been 772 battery fires among approximately 40 million EVs since 2010, with only 13 recorded in Australia, none of which were caused by spontaneous battery failure.

While EV battery fires can be more complex for emergency responders due to heat and toxic smoke, they are rare and manageable with appropriate training. Comparisons to lithium-ion battery fires in smaller devices are misleading, as EVs use advanced battery management systems designed to prevent thermal runaway. Overall, the evidence suggests that EV fire risks are low and commonly misunderstood.

Concerning the fire safety of electric vehicles, Emma Suttcliffe, Director, EV FireSafe, told the Committee the main risk is lack of knowledge about EVs, particularly among the public and even emergency responders.¹⁵⁵ Evidence noted that misinformation on social media contributes to exaggerated fears about EV fire risk, with confusion between small lithium battery fires, such as those used in e-bikes and power banks, and electric vehicles, leading some to assume EVs are far more dangerous than they are.¹⁵⁶

¹⁵¹ Professor Ray Wills, Managing Director, Future Smart Strategies, Adjunct Professor, The University of Western Australia, public hearing, Melbourne, *Transcript of evidence*, p. 52; Pete Mercouriou, *Transcript of evidence*, pp. 3–4; Associate Professor, Zsuzsanna Csereklyei, RMIT University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 48.

¹⁵² Oliver Hill, *Transcript of evidence*, p. 3.

¹⁵³ Dr Alina Dini, *Transcript of evidence*, p. 3.

¹⁵⁴ Brendan Davies, *Transcript of evidence*, p. 20.

¹⁵⁵ Emma Suttcliffe, Project Director, EV FireSafe, *Transcript of evidence*, p. 32.

¹⁵⁶ Ibid.

Battery life and resale value

Other stakeholders identified persisting misinformation surrounding electric vehicle batteries and their lifespans. Evidence suggested that batteries often outlast the body of the car and retain significant utility of above 70–80% capacity for second-life applications in stationary storage.¹⁵⁷ Concerns about rapidly falling resale values also deter first-time buyers, though evidence suggested this is partially attributed to fast technological advancements and public perception rather than inherent vehicle failure.¹⁵⁸

Stakeholders identified persistent misinformation about electric vehicle battery lifespan and resale value. While concerns about depreciation can deter buyers, these are often driven by rapid technological change and perception rather than actual performance issues.

Contrary to common misconceptions, EV batteries do not require replacement after a few years. Most electric vehicle batteries are covered by warranties of around eight years, to a minimum of around 70% capacity, and are now expected to last 15–20 years or more. There have been a number of reports demonstrating that EV batteries last in excess of 600,000km, with a Tesla Model 3 battery being reported in 2024 as having been replaced at 700,000km.

Revenue and funding myths

Stakeholders noted misconceptions that the increasing uptake of EVs is leading to a decline in fuel excise revenue, which has raised concerns about the long-term funding of road infrastructure. However, witnesses noted that because the tax is no longer directly linked to road spending, EV drivers already contribute to state revenue through other means, such as registration fees, licenses, and stamp duty.¹⁵⁹

The fuel excise tax is Australia's oldest tax, originally created as a revenue generation measure. While a common perception exists that this tax is dedicated to road funding, the sources clarify that it has not been hypothecated for road maintenance since 1992.

As fuel excise revenue diminishes, stakeholders noted ongoing discussions regarding the introduction of a Road User Charge (RUC). Evidence expressed that a RUC should be applied on the basis of equity and mass, with proponents suggesting that a universal RUC should be based on vehicle mass and distance travelled, as heavier vehicles cause significantly more road damage.¹⁶⁰

¹⁵⁷ Electric Vehicle Council and Association for the Battery Recycling Industry, *EV Batteries are refurbished, reused, repurposed, and recycled*, November 2023, <<https://electricvehiclecouncil.com.au/wp-content/uploads/2023/11/20231129-Batteries-ABRI-and-EVC-Collaboration.pdf>> accessed 28 April 2026.

¹⁵⁸ Jo Oddie, *Transcript of evidence*, p. 17.

¹⁵⁹ Jo Oddie, *Transcript of evidence*, p. 16.

¹⁶⁰ Australian Electric Vehicle Association, *Submission 114*, pp. 10–11.

Environmental benefit of electric vehicles

Claims that electric vehicle are less environmentally friendly due to higher manufacturing emissions overlook their full lifecycle impact. While EVs do produce more emissions during production, their zero tailpipe emissions mean they typically offset this emissions production within 1–2 years of driving. Over their lifetime, EVs generate significantly lower total emissions than internal combustion engine vehicles.

FINDING 31: Misinformation and misconceptions about electric vehicles and electric vehicle charging infrastructure are affecting Victoria’s ability to accelerate uptake of electric vehicles.

RECOMMENDATION 4: That the Victorian government undertake a public education campaign to address misinformation and misconceptions about electric vehicles.

4.4.2 Current rollout of public EV infrastructure is impacting consumer confidence

Evidence expressed that the current rollout of public electric vehicle charging infrastructure in Victoria is a primary determinant of consumer confidence, with several stakeholders identifying the visibility, reliability, and accessibility of chargers as foundational to consumer willingness to switch to electric vehicles.¹⁶¹ Evidence stressed that uptake of electric vehicles in Victoria will depend less on vehicle availability and more on whether consumers feel confident they can charge EVs in a practical, reliable, and affordable way in their daily lives.¹⁶²

The Committee heard that public electric vehicle charging infrastructure increases consumer confidence and certainty across the electricity system, encouraging electric vehicle uptake.¹⁶³ Evidence described public charging as essential infrastructure for EV uptake, noting that public chargers are critical for those without access to home charging and for longer-distance travel, and are fundamental to consumer confidence.¹⁶⁴ Dr Alina Dini told the Committee that ‘Public charging acts as a visible confidence signal. When drivers see reliable, accessible infrastructure, they invest. When they do not, adoption slows’.¹⁶⁵

Evidence stated that consumers are often reluctant to make the significant financial investment in a new EV if they do not see a robust, available network of chargers.¹⁶⁶ Stakeholders expressed that although ‘range anxiety’ may be over-heightened, the

¹⁶¹ Dr Alina Dini, *Transcript of evidence*, p. 2.

¹⁶² Melissa Dimovski, *Transcript of evidence*, p. 16.

¹⁶³ Dr Alina Dini, *Transcript of evidence*, p. 2.

¹⁶⁴ *Ibid.*

¹⁶⁵ *Ibid.*

¹⁶⁶ *Ibid.*

perceived lack of infrastructure remains a top barrier, with 32% of Australians citing a lack of charging points near their homes as a reason for not purchasing an EV.¹⁶⁷

Oliver Hill spoke to the Committee about the ‘High degree of perceived range anxiety’ among consumers, suggesting that that EV uptake is being significantly affected by poor and fragmented information about charging infrastructure rather than just physical availability.¹⁶⁸ Mr Hill suggested that many people, particularly apartment residents, perceive a lack of nearby chargers even where infrastructure exists.¹⁶⁹

Evidence noted that Australia does not currently have a single, reliable national platform showing real-time charger locations and availability.¹⁷⁰ Instead, information is spread across multiple privately run networks with inconsistent updates, making it difficult for consumers to know whether chargers are available, working, or accessible.¹⁷¹ The Committee heard that this inconsistency strongly influences perceptions of reliability and contributes to range anxiety.¹⁷² Oliver Hill told the Committee that work is underway with national agencies such as AEMO and ARENA to improve data collection and better forecast future charging demand, but Australia is still in the early stages of planning infrastructure needs.¹⁷³

Representing the Australian Automotive Dealer Association, Melissa Dimovski noted that the automotive industry is undergoing a major structural transformation, with the Commonwealth’s New Vehicle Efficiency Standard expected to significantly increase the supply of low- and zero-emission vehicles in Australia over time.¹⁷⁴ However, Ms Dimovski expressed that charging access remains one of the strongest barriers to EV adoption, noting that people living in apartments, older suburbs, or homes without off-street parking often face significant difficulties or costs in installing home charging, which can discourage EV purchase and lead some consumers to choose hybrids instead of fully electric vehicles.¹⁷⁵

Similarly, Kent Johns, Head, Government Relations and Regulatory Affairs from the National Electrical and Communications Association told the Committee that many commonly cited barriers to EV uptake are diminishing, with purchase cost and model availability improving, range anxiety reducing due to better batteries and fast charging networks, and safety concerns not supported by evidence.¹⁷⁶ Mr Johns stated that the key remaining barrier is charging convenience, particularly for apartment and strata

¹⁶⁷ Energy Consumers Australia, *Submission 80*, p. 4.

¹⁶⁸ Oliver Hill, *Transcript of evidence*, p. 3.

¹⁶⁹ *Ibid.*

¹⁷⁰ *Ibid.*

¹⁷¹ *Ibid.*

¹⁷² *Ibid.*

¹⁷³ *Ibid.*

¹⁷⁴ Melissa Dimovski, *Transcript of evidence*, p. 16.

¹⁷⁵ *Ibid.*

¹⁷⁶ Kent Johns, Head, Government Relations and Regulatory Affairs, National Electrical and Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 38.

residents, where policy intervention would be most effective.¹⁷⁷ Mr Johns stated that simple, low-cost measures in new buildings such as adequate switchboard capacity and prewiring for parking spaces, can reduce future barriers to EV adoption.¹⁷⁸

Stuart Moffatt, General Manager, JOLT Charge, told the Committee that timely expansion of public EV charging is essential to removing a key barrier to EV uptake, which will ‘drive the decarbonisation of transport and assist in achieving Victoria’s net zero goals’.¹⁷⁹ Mr Moffatt added that:

the lack of a balanced ecosystem of EV charging as a combination of slow, fast and ultra-fast public charging remains a major barrier to EV ownership and adoption, particularly for those without off-street parking. Approximately 30 per cent of the population is unable to charge at home. They will rely solely on public charging.¹⁸⁰

Chief Executive Officer of EVX, Andrew Forster compared Victoria’s approach to New South Wales, arguing that while both jurisdictions have similar market conditions, NSW policy settings are delivering greater certainty and faster EV adoption.¹⁸¹ Mr Forster stated that electric vehicle charging infrastructure is not just a physical asset but a driver of market confidence, influencing whether households, fleets, renters, and apartment residents ‘can participate in the transition’.¹⁸²

Mr Forster further argued that investment decisions are being shaped by perceived regulatory certainty and delivery risk, with Victoria seen as having greater uncertainty around processes and limited contestability.¹⁸³ In contrast, New South Wales is viewed as providing clearer pathways for investment, resulting in stronger investor confidence.¹⁸⁴ Mr Forster concluded that the key difference between the two states is not capability but execution, and that accelerating EV uptake requires faster and more certain infrastructure delivery in Victoria.¹⁸⁵

FINDING 32: The current rollout of electric vehicle charging infrastructure is restricting consumer confidence and resulting in slower electric vehicle uptake rates in Victoria.

FINDING 33: Deployment of technologies that improve visibility and accessibility to electric vehicle charging infrastructure would strengthen consumer confidence about the availability of EV charging infrastructure and improve uptake of EVs in Victoria.

¹⁷⁷ Ibid.

¹⁷⁸ Kent Johns, *Transcript of evidence*, p. 38.

¹⁷⁹ Stuart Moffatt, *Transcript of evidence*, p. 1.

¹⁸⁰ Stuart Moffatt, *Transcript of evidence*, p. 2.

¹⁸¹ Andrew Forster, *Transcript of evidence*, p. 15.

¹⁸² Ibid.

¹⁸³ Andrew Forster, *Transcript of evidence*, p. 16.

¹⁸⁴ Ibid.

¹⁸⁵ Ibid.

4.4.3 Improving public awareness on EV and associated infrastructure requires engagement

The Committee heard that improving public awareness regarding electric vehicles and their associated technologies requires a proactive, multi-stakeholder engagement strategy. As the market shifts from ‘early adopters’ to the ‘early majority’, stakeholders highlighted that direct engagement is necessary to build consumer confidence and dispel persistent myths.¹⁸⁶ Oliver Hill told the Committee that it is ‘very difficult’ to ‘[address] misinformation and misconception’ as it requires more than providing a ‘FAQ or an information sheet to people; it requires engagement’.¹⁸⁷

Evidence emphasised that improving understanding requires targeted consumer education programs led by government in partnership with industry, particularly at the point of sale.¹⁸⁸ Dr Dini emphasised that international approaches show that educating vehicle dealers to inform buyers about how EV batteries can support household energy use and interact with electricity retailers is an effective way to build consumer confidence and awareness of these benefits.¹⁸⁹

Director of State and Territory Advocacy and Communications for Federal Chamber of Automotive Industries, Peter Griffin acknowledged to the Committee that ‘work needs to be done in terms of the education piece and bringing people up to speed with the capability of the vehicle: how it runs, total cost of ownership’.¹⁹⁰

While Melissa Dimovski told the Committee that consumers often lack clear information about electricity tariffs and EV charging costs when considering a purchase.¹⁹¹ Ms Dimovski noted that these issues usually develop once a buyer has already decided to consider an EV, at which point sales staff become the main source of information, noting that they are not electricity experts.¹⁹² Stakeholders emphasised the need to better equip dealerships with tools and guidance so they can clearly explain how EV ownership works in practice, including charging options, costs, and how to maximise benefits such as tariffs and incentives.¹⁹³

FINDING 34: Targeted engagement from automotive dealerships can strengthen consumer confidence to purchase electric vehicles.

FINDING 35: Automotive dealerships need support to communicate the benefits of electric vehicles to consumers in Victoria.

¹⁸⁶ Oliver Hill, *Transcript of evidence*, p. 3.

¹⁸⁷ Ibid.

¹⁸⁸ Dr Alina Dini, *Transcript of evidence*, p. 3.

¹⁸⁹ Ibid.

¹⁹⁰ Peter Griffin, *Transcript of evidence*, p. 21.

¹⁹¹ Melissa Dimovski, *Transcript of evidence*, p. 22.

¹⁹² Ibid.

¹⁹³ Ibid.

RECOMMENDATION 5: That the Victorian Government work with the automotive peak body to improve understanding of electric vehicles operation, charging, costs, and benefits, including the most cost effective times to charge with greatest benefit to the grid.

4.4.4 Strengthening consumer protections frameworks and external dispute resolutions will encourage confidence and increase electric vehicle ownership

The Energy and Water Ombudsman Victoria (EWOV), Ms Catherine Wolthuizen, told the Committee that consumer energy resources such as EVs, rooftop solar, and batteries are becoming mainstream and are increasingly enabling households to participate in the energy market and reduce energy costs.¹⁹⁴ It emphasised that as these technologies grow, consumer protections must also evolve to maintain trust, ensure fairness, and ‘support widespread adoption of EVs’.¹⁹⁵

Ms Wolthuizen said it is committed to using its casework insights to identify gaps in consumer protections and highlight necessary reforms to improve outcomes and confidence in emerging markets.¹⁹⁶

Ms Wolthuizen told the Committee that while EV-related complaints are still relatively low, they are increasing and often relate to billing confusion, tariff misunderstandings, charging costs, connection delays, voltage issues, and outages affecting charging access.¹⁹⁷ She highlighted that many EV and charging service issues fall outside its current jurisdiction, meaning consumers are often redirected to other bodies, creating fragmentation, confusion, and reduced complaint resolution efficiency.¹⁹⁸ Ms Wolthuizen warned that as EVs and bidirectional charging become more integrated into the energy system, gaps in consumer protections could undermine confidence and slow adoption.¹⁹⁹

On bidirectional charging, Ms Wolthuizen explained that its ability to handle complaints depends on whether the activity falls within its regulated jurisdiction. If the service is part of a licensed retail activity, complaints can be handled, but many emerging EV-related services are not yet clearly covered. As a result, some issues may fall outside its scope, limiting its ability to resolve disputes as the EV market evolves.²⁰⁰

The Committee heard that consumer protections for electric vehicles are less developed and less prioritised than for other consumer energy resources, with limited

¹⁹⁴ Catherine Wolthuizen, Ombudsman and Chief Executive, Energy and Water Ombudsman Victoria, public hearing, Melbourne, 28 February 2026, *Transcript of evidence*, p. 51.

¹⁹⁵ Ibid.

¹⁹⁶ Catherine Wolthuizen, *Transcript of evidence*, p. 53.

¹⁹⁷ Catherine Wolthuizen, *Transcript of evidence*, pp. 50–52.

¹⁹⁸ Ibid.

¹⁹⁹ Ibid.

²⁰⁰ Catherine Wolthuizen, *Transcript of evidence*, p. 53.

access to effective dispute resolution and redress for consumers experiencing issues.²⁰¹ There is a need for clearer and more accessible complaint pathways to address problems quickly, support consumer confidence, and identify systemic issues for regulators and policymakers as EV uptake increases.²⁰²

The Ombudsman argued that external dispute resolution is a key enabler of EV uptake because it provides consumers with certainty that problems can be resolved fairly and at no cost.²⁰³ Without this, uncertainty, especially given high upfront costs, may discourage EV adoption.²⁰⁴

Ms Wolthuizen recommended extending baseline consumer protections and dispute resolution coverage to include EV charging infrastructure and related services.²⁰⁵ It also stated it is well placed to take on this role, drawing on its experience in energy disputes, and noted it has already modernised its systems and expanded its capability to handle emerging consumer energy technologies.²⁰⁶

Ms Wolthuizen emphasised that integrating EV-related services into its scheme would improve consumer confidence, support market trust, and help facilitate the broader transition to electric vehicles.²⁰⁷

Ms Wolthuizen told the Committee that there are different regulatory options to require providers in the electric vehicle and energy market to join an ombudsman scheme, such as making membership a condition of licensing, registration, or market participation. Once within the scheme's jurisdiction, the Ombudsman can apply relevant laws and standards to resolve disputes quickly and address consumer harm using a range of regulatory and contractual frameworks.²⁰⁸

FINDING 36: Consumer protections and dispute resolution frameworks for EV-related services are currently fragmented and incomplete, risking reduced consumer confidence as EV uptake increases.

RECOMMENDATION 6: That the Victorian Government expand and clarify consumer protection frameworks to cover EV charging infrastructure and related services.

²⁰¹ Catherine Wolthuizen, *Transcript of evidence*, pp. 54–55.

²⁰² Ibid.

²⁰³ Catherine Wolthuizen, *Transcript of evidence*, pp. 50–52.

²⁰⁴ Ibid.

²⁰⁵ Ibid.

²⁰⁶ Ibid.

²⁰⁷ Catherine Wolthuizen, *Transcript of evidence*, pp. 50–52.

²⁰⁸ Catherine Wolthuizen, *Transcript of evidence*, p. 55.

RECOMMENDATION 7: That the Victorian Government work with the EWOV to establish a complaints mechanism, including:

- Enabling the Energy and Water Ombudsman to investigate EV charger installation
- DNSPs to inform new connection customers of the Ombudsman’s complaints mechanism

4.5 Supporting electric vehicle owners to optimise ownership benefits and enhance their contribution to Victoria’s electricity grid

4.5.1 Education on optimal electricity grid interactions and grid-friendly charging behaviour

The Committee heard that consumer education on optimal grid interactions and charging behaviour is needed to help EV owners maximise benefits and support Victoria’s electricity system.²⁰⁹ Chapter 5 further examines how charging infrastructure design and delivery influences these interactions.

Evidence highlighted that improving EV outcomes depends on educating consumers about how charging behaviour interacts with the electricity grid.²¹⁰ Professor Hai Vu of Monash University noted that understanding when and how people use their cars is essential, given vehicles are typically stationary most of the time, creating opportunities for convenient charging at home or work that can support grid efficiency.²¹¹ Evidence emphasised that EV policy should account for user behaviour and location to better align incentives with both household needs and system benefits.²¹²

Associate Professor Julie Karel of Monash University similarly stressed that effective consumer engagement is key to encouraging grid-aligned charging.²¹³ Associate Professor Karel said education should build on existing household habits and motivations such as routine overnight charging, while also encouraging charging during periods of low grid demand or high solar availability.²¹⁴ She further noted that relying solely on pricing signals is insufficient, and that tailored approaches, including for households with rooftop solar or flexible daytime access, are necessary to support more informed and grid-friendly charging behaviour.²¹⁵

²⁰⁹ Professor Hai Vu, *Transcript of evidence*, p. 33; Associate Professor Julie Karel, *Transcript of evidence*, pp. 32–33.

²¹⁰ Ibid.

²¹¹ Professor Hai Vu, *Transcript of evidence*, p. 33.

²¹² Ibid.

²¹³ Associate Professor Julie Karel, *Transcript of evidence*, pp. 32–33.

²¹⁴ Ibid.

²¹⁵ Ibid.

Stakeholders identified education channels to strengthen consumer understanding and enhance interactions with the electricity system, including:

- Car dealerships
- Government-led education campaigns
- industry training.²¹⁶

Evidence indicated that franchised car dealers are a key point of consumer education on EV charging, as most buyers have limited understanding of electricity pricing, tariffs, and how EV charging interacts with home energy systems.²¹⁷ The showroom and vehicle handover were identified as critical moments to influence charging behaviour, particularly encouraging practices that support grid efficiency rather than default evening charging, which aligns with peak demand.²¹⁸

However, the Committee heard that dealership staff often lack sufficient knowledge and consistent resources to properly advise consumers. Melissa Dimovski noted that dealers act as a ‘front line’ between policy and consumers but currently receive limited standardised guidance from governments and electricity networks.²¹⁹ The Committee heard that as EV uptake increases under the New Vehicle Efficiency Standard, improving dealer education and providing standardised tools will be important to support more informed, grid-friendly charging behaviour.²²⁰

The Committee heard that government education and communication strategies are important for promoting consistent information about EV impacts on the electricity system and encouraging grid-friendly charging behaviour.²²¹ The Federal Chamber of Automotive Industries (FCAI) argued that the State Government ‘has a key role in communicating ... how electricity demand generally and specifically in the case of electric vehicle charging can impact the grid’.²²² It called for clear and consistent education campaigns to help Victorians understand when and how to shift charging behaviours to support the electricity system.²²³

Similarly, the Australian Electric Vehicle Association’s 2025 members survey highlighted the need for education to encourage off-peak charging, suggesting that the Victorian Government collaborate with the Australian Electric Vehicle Association to develop consumer guidance on best-practice charging.²²⁴

²¹⁶ Melissa Dimovski, *Transcript of evidence*, p. 6; RACE for 2030, *Submission 62*, p. 4; Victorian Automotive Chamber of Commerce, *Submission 107*, p. 8.

²¹⁷ Melissa Dimovski, *Transcript of evidence*, p. 16.

²¹⁸ Ibid.

²¹⁹ Ibid.

²²⁰ Ibid.

²²¹ Melissa Dimovski, *Transcript of evidence*, p. 6; RACE for 2030, *Submission 62*, p. 4.

²²² Federal Chamber of Automotive Industries, *Submission 92*, p. 10.

²²³ Ibid.

²²⁴ Australian Electric Vehicle Association, *Submission 114*, p. 3; Aaron Gray, *Transcript of evidence*, p. 4.

Other stakeholders suggested that upskilling electricians and mechanics could enhance consumer confidence in terms of understanding their impact as electric vehicle owners on the electricity grid.²²⁵ Evidence noted that training to ensure that electricians and automotive technicians can provide advice on charging infrastructure and safe vehicle maintenance would support consumers to confidently interact with the electricity grid in a way that maximises benefits to individuals and the broader system.²²⁶

Emma Sutcliffe, Project Director, EV FireSafe, spoke to the Committee about providing firefighters with ‘hands-on’ training with EVs to address uncertainty about EV safety in crashes, including fears of electrocution, reflecting a broader lack of training and familiarity.²²⁷ Ms Sutcliffe emphasised the need for more practical, hands-on training for emergency services, noting that current education efforts are limited and often unfunded.²²⁸ While some manufacturer-led training has occurred, evidence argued for broader programs to improve understanding of EV design, battery placement, and emergency response procedures.²²⁹

FINDING 37: Adoption of grid-aligned charging behaviours from electric vehicle owners requires consumer education and engagement from government and industry.

RECOMMENDATION 8: That the Victorian Government develop guidelines and resources about electric vehicle charging and behaviours that align with electricity system needs for the automotive industry and consumers across the electricity system.

4.5.2 Tariff reform is needed to encourage behaviour that benefits electric vehicle owners and supports Victoria’s electricity system

The Committee heard that tariffs are a critical tool for aligning electric vehicle charging with the needs of the electricity system, where tariffs can influence electric vehicle charging behaviour by encouraging charging during periods of high supply and low prices and discourage peak-time charging.²³⁰ Evidence noted that effective tariffs can lower electricity costs for consumers and reduce the need for future network investment, but ‘current tariff structures do not reward’ grid-aligned charging behaviours and interactions from consumers.²³¹

²²⁵ John Khoury, *Transcript of evidence*, p. 13; Kent Johns, *Transcript of evidence*, p. 47; Michael Weekes, Manager, Technical, National Electrical and Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, pp. 47–48.

²²⁶ Kent Johns, *Transcript of evidence*, p. 48; Michael Weekes, *Transcript of evidence*, pp. 48–49; John Khoury, *Transcript of evidence*, pp. 13, 19; Dr Alina Dini, *Transcript of evidence*, p. 10.

²²⁷ Emma Sutcliffe, Project Director, EV FireSafe, *Transcript of evidence*, p. 32.

²²⁸ *Ibid.*

²²⁹ *Ibid.*

²³⁰ Australian Energy Regulator, *Submission 118*, p. 8.

²³¹ Stephanie Bashir, *Transcript of evidence*, p. 52.

As noted in Chapter 2, the Australian Energy Regulator (AER) regulates electricity distribution and transmission networks in the national electricity market through a five-year pricing determination process.²³² This sets the amount networks can earn based on forecast costs, allowed returns, and tariff design rules.²³³ The AER explained that the process is complex and takes place over two years, involving over a year of assessment, due to the significant financial impact.²³⁴

Justin Oliver, Deputy Chair, Australian Energy Regulator, explained that in Victoria, the current regulatory period is ending 30 June 2026, and the AER is finalising the next five-year determination (2026–2031), which will be completed by April.²³⁵ In addition, networks have to submit annual pricing updates for approval, which make up around 30–40% of a typical consumers electricity bill.²³⁶

Stakeholders noted that the final price a consumer sees is a combination of network tariffs, which are set by distributors like CitiPower or Powercor, and retail tariffs, which are set by retailers like AGL or Origin.²³⁷ Chapter 5 discusses network tariffs further in terms of their impact on Charge Point Operators (CPOs).

Network tariffs

The AER expressed that well-designed, cost-reflective tariffs can help manage electric vehicle charging demand, reduce network strain, and lower electricity bills, especially when combined with smart devices and flexible retail pricing.²³⁸ The AER expressed that it encourages DNSPs to trial innovative and dynamic tariffs, including time-of-use, critical peak, and incentive-based pricing, to better manage electric vehicle demand and support grid efficiency.²³⁹ The AER also indicated that it is progressing ‘two-way tariffs’ to enable vehicle-to-grid benefits in Victoria, expressing that this has been approved in other jurisdictions such as New South Wales and South Australia.²⁴⁰

Justin Oliver explained that tariffs and price signals are critical to encouraging both electric vehicle and battery behaviour that supports the grid, such as charging during low-demand, high-supply periods and discharging during peak times.²⁴¹ Mr Oliver expressed that this can reduce the need for costly network upgrades, while unmanaged peak charging would increase costs.²⁴² Mr Oliver identified time-of-use tariffs as a primary tool, noting that:

²³² Justin Oliver, *Transcript of evidence*, p. 40.

²³³ Justin Oliver, *Transcript of evidence*, p. 40.

²³⁴ Justin Oliver, Deputy Chair, Australian Energy Regulator, public hearing, Melbourne (via videoconference), 26 February 2026, *Transcript of evidence*, p. 40.

²³⁵ *Ibid.*

²³⁶ *Ibid.*

²³⁷ Australian Energy Regulator, *Submission 118*, pp. 3–4; Origin Energy, *Submission 74*, p. 2; AGL, *Submission 82*, p. 2; Andrew Forster, *Transcript of evidence*, p. 18.

²³⁸ Australian Energy Regulator, *Submission 118*, pp. 3–4.

²³⁹ Australian Energy Regulator, *Submission 118*, p. 4.

²⁴⁰ *Ibid.*

²⁴¹ Justin Oliver, *Transcript of evidence*, pp. 43–44.

²⁴² *Ibid.*

there is a proposal in the Victorian DNSPs for the next period that would set a default rule that a household would default to a time-of-use network tariff. That connection point could opt out to a flat tariff unless there is an EV charger installed. The proposal would be that that would not then be allowed, and they would have to stay on a time-of-use tariff to try and provide those signals.²⁴³

The Committee also heard that emerging approaches, including vehicle-to-grid tariffs and trials, are being explored by some Victorian DNSPs as part of their proposals to support two-way charging.²⁴⁴

Stakeholders expressed that two-way tariffs, which would reward consumers for exporting electricity during peak periods, provide financial motivation for consumers to adopt of bidirectional technologies.²⁴⁵ Australian Academy of Technological Sciences and Engineering submission expressed that tariff structures should let electric vehicle owners buy electricity inexpensively during and sell it back during peak demand, or receive discounts for supporting the grid, as this would create incentives to adopt bidirectional charging despite higher upfront costs.²⁴⁶

Renate Vogt, General Manager, Regulation, CitiPower, Powercor and United Energy, told the Committee that CPU are proposing EV-friendly tariffs in their current regulatory proposals to encourage charging during periods of available capacity, particularly midday, and to support technologies such as vehicle-to-grid.²⁴⁷ Ms Vogt explained that these tariffs aim to enable flexible devices like EVs and home batteries to provide network support and reduce overall system costs.²⁴⁸

Ms Vogt also outlined a proposed trial tariff, including a very low ‘solar soak’ midday rate, alongside peak, off-peak and export pricing, with an increased export rate to better incentivise electric vehicle users to supply energy back to the grid during peak periods.²⁴⁹

The AER’s submission noted that while most jurisdictions default eligible customers to cost-reflective tariffs, Victorian customers can often opt out, limiting the effectiveness of tariff reforms.²⁵⁰ Oliver Hill argued that dynamic tariffs should be opt-in, warning that opt-out models can lead to unexpected bill increases for consumers ‘without them knowing’.²⁵¹ Mr Hill noted that current tariff developments focus on time-of-use pricing and dynamic operating envelopes, and explained that greater ability to shift energy

²⁴³ Ibid.

²⁴⁴ Ibid.

²⁴⁵ Australian Academy of Technological Sciences and Engineering, *Submission 65*, p. 3; AEVA, *Submission 114*, p. 4.

²⁴⁶ Australian Academy of Technological Sciences and Engineering, *Submission 65*, p. 3.

²⁴⁷ Renate Vogt, General Manager, Regulation, CitiPower, Powercor and United Energy, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 2.

²⁴⁸ Ibid.

²⁴⁹ Renate Vogt, *Transcript of evidence*, p. 14.

²⁵⁰ Australian Energy Regulator, *Submission 118*, pp. 3–4.

²⁵¹ Oliver Hill, *Transcript of evidence*, p. 6.

between households, businesses and the grid would enhance the value of technologies like bidirectional charging by better aligning energy use with solar generation and peak demand.²⁵²

Nonetheless, the Committee heard criticisms about the current network tariff structures operating in Victoria's electricity system.²⁵³ Stephanie Bashir, Chief Executive Officer, Nexa Advisory, argued that 'Network tariffs have not kept up with the pace of the realities of a two-way customer-led energy system', suggesting that traditional demand-based tariffs represent a major barrier to commercially viable public electric vehicle charging projects.²⁵⁴

Stakeholders expressed that current tariff structures fail to reward grid-supportive behaviours, such as charging during periods of high solar generation, and instead prioritise cost recovery for existing networks.²⁵⁵ Evidence noted 'current commercial tariff structures mute both climate and market signals' and are 'designed for legacy load profiles [that] discourage charging when electricity is cheapest and cleanest'.²⁵⁶

Associate Professor Zsuzsanna Csereklyei of RMIT University told the Committee that most Victorian tariffs encourage overnight charging, failing to incentivise use of abundant midday solar.²⁵⁷ Evidence suggested that Victorian DNSPs should reform tariffs to better align EV charging with renewable energy availability, including through midday off-peak pricing.²⁵⁸

Ms Bashir called for tariff reforms that 'recognise smart infrastructure, including energy-only options for low-utilisation sites, solar soak incentives and low-control incentives during critical events', expressing that these changes give the system needed flexibility.²⁵⁹ Ms Bashir also emphasised the importance of including EV-specific tariffs in the current AER review of Victorian DNSP pricing determinations for the next five-year reset, as advocated by many organisations.²⁶⁰

Associate Professor Julie Karel and Associate Professor Roger Dargaville both told the Committee that improving electric vehicle charging behaviour requires more than tariff design alone and must take account of consumer awareness and engagement.²⁶¹ They noted that many consumers are unaware of their tariff structures or when cheaper electricity is available, limiting the effectiveness of price signals.²⁶² They emphasised

252 Ibid.

253 Stephanie Bashir, Chief Executive Officer, Nexa Advisory, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 52; Monash Energy Institute, *Submission 77*, p. 10; Electric Vehicle Council, *Submission 111*, p. 11.

254 Stephanie Bashir, *Transcript of evidence*, p. 52.

255 Ibid.

256 Monash Energy Institute, *Submission 77*, p. 10; Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

257 Associate Professor Zsuzsanna Csereklyei, *Transcript of evidence*, p. 46.

258 Monash Energy Institute, *Submission 77*, pp. 10-11.

259 Stephanie Bashir, *Transcript of evidence*, p. 52.

260 Stephanie Bashir, *Transcript of evidence*, p. 55.

261 Associate Professor Julie Karel, *Transcript of evidence*, pp. 29, 32; Associate Professor Roger Dargaville, *Transcript of evidence*, p. 38.

262 Ibid.

that incentivising off-peak charging is essential to protect the grid, but argued that automation through smart chargers and network signals is likely to be more effective than relying on consumers to actively respond to tariffs.²⁶³

The Electric Vehicle Council expressed that Victorian DNSPs draft proposals for network tariff reform are ‘not strong enough’, indicating that the ‘State governments can work with the AER and DNSPs to ensure network tariffs are working in the best interests of consumers’.²⁶⁴

The Monash Energy Institute explained in its submission that a national and state strategy should integrate smart charging standards and tariff reform, among other goals, to align electric vehicle charging with renewable energy availability and grid capacity.²⁶⁵ The submission expressed that governments programs should:

- harmonise tariffs and standards across jurisdictions
- encourage consumer uptake by linking electric vehicle charging to everyday routines and solar self-consumption to promote grid-friendly charging behaviour.²⁶⁶

Associate Professor Julie Karel, recommended ‘midday off-peak pricing, EV-specific tariffs, dynamic network operating envelopes and clearer signals about where charging infrastructure can connect most efficiently’.²⁶⁷

Retail tariffs

The Committee heard that retail electricity tariffs are a highly effective mechanism for signalling optimal electric vehicle charging behaviour, as they can translate complex grid conditions into simple, actionable price signals for consumers.²⁶⁸ The Australian Electric Vehicle Association described retail tariffs as a key ‘enabler’ for the State Government to align electric vehicle charging with electricity supply and demand.²⁶⁹

Evidence indicated that consumer charging behaviour is strongly influenced by price variation, with consumers likely to respond to clearly presented lower-cost electricity options.²⁷⁰ Aaron Gray noted that retailers are exploring very low mid-day tariffs, but emphasised that enabling this behavioural shift would require improved consumer education, supportive infrastructure, and easier access to flexible pricing.²⁷¹ Aaron Gray also highlighted the role of emerging automated technologies that allow users to ‘set and forget’, simplifying tariff management and improving uptake.²⁷²

²⁶³ Ibid.

²⁶⁴ Electric Vehicle Council, *Submission 111*, p. 11.

²⁶⁵ Monash Energy Institute, *Submission 77*, p. 6.

²⁶⁶ Ibid.

²⁶⁷ Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

²⁶⁸ Energy Consumers Australia, *Submission 80*, p. 4.

²⁶⁹ Australian Electric Vehicle Association, *Submission 114*, pp. 4–5.

²⁷⁰ Aaron Gray, *Transcript of evidence*, p. 4.

²⁷¹ Ibid.

²⁷² Ibid.

Evidence consistently emphasised that tariffs must remain simple and easily actionable to be effective.²⁷³ Professor Hai Vu from Monash University told the Committee that pricing design is a key lever for influencing energy use but cautioned that complex tariff structures and smart meter data can be difficult for consumers to interpret, reducing their effectiveness.²⁷⁴ Professor Hai Vu emphasised the importance of simpler pricing approaches combined with improved consumer education.²⁷⁵

Consequently, stakeholders consistently supported time-of-use (ToU) tariffs as a key tool for aligning consumers charging behaviours with the electricity system's capacity.²⁷⁶ Evidence noted that ToU tariffs can harmonise charging behaviour with electricity supply and demand by encouraging consumers to charge during off-peak periods or periods of cheap, abundant renewable energy, reducing system costs and improving grid reliability.²⁷⁷ Evidence noted that:

- Tariffs that encourage overnight off-peak charging where consumers charge during off hours such as midnight and 6am.²⁷⁸
- Tariffs that incentivise charging to occur during the middle of the day when renewable generation is at its peak.²⁷⁹

AGL expressed strong support for time-of-use (ToU) tariffs, noting they are the simplest and most effective way to influence customer energy use because consumers can easily understand price differences across periods.²⁸⁰ General Manager of Policy and Regulation at AGL, Ralph Griffiths noted that ToU tariffs can successfully shift electric vehicle charging away from peak periods, improving network utilisation.²⁸¹

Mr Griffiths told the Committee that 'electric vehicles can support both grid reliability and consumer affordability', noting that electric vehicle charging is flexible and 'responsive to price signals', and does 'not pose a material risk to peak demand'.²⁸² Mr Griffiths argued that although electric vehicles increase overall electricity consumption, shifting charging to off-peak periods benefits all customers, with any resulting congestion likely to be contained and manageable through existing network planning and tariff structures.²⁸³

²⁷³ Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

²⁷⁴ Professor Hai Vu, *Transcript of evidence*, p. 36

²⁷⁵ Ibid.

²⁷⁶ Jet Charge, *Submission 63*, pp. 1–2; Australian Energy Council, *Submission 66*, p. 4; Origin Energy, *Submission 74*, p. 2; Nexa Advisory, *Submission 89*, pp. 7–8; Monash Energy Institute, *Submission 77*, p. 5; AGL, *Submission 82*, p. 3; Evie Networks, *Submission 87*, p. 5; Australian Energy Regulator, *Submission 118*, p. 4; Ampol, *Submission 119*, p. 3.

²⁷⁷ Nissan, *Submission 125*, p. 5; Victorian Greenhouse Alliances, *Submission 85*, pp. 8–9; Australian Electric Vehicle Association, *Submission 114*, p. 4.

²⁷⁸ Mabelle Reyes, Mabelle Reyes, Head of e-Mobility, AGL, public hearing, Melbourne (via videoconference), 27 February 2026, *Transcript of evidence*, p. 36.

²⁷⁹ Mabelle Reyes, *Transcript of evidence*, p. 36; Australian Electric Vehicle Association, *Submission 114*, p. 4; Dr Alina Dini, *Transcript of evidence*, p. 2.

²⁸⁰ Ralph Griffiths, *Transcript of evidence*, p. 37.

²⁸¹ Ralph Griffiths, *Transcript of evidence*, pp. 34–35.

²⁸² Ibid.

²⁸³ Ibid.

Mabelle Reyes, Head of e-Mobility, AGL, described AGL's smart charging trial, which tested customer willingness to allow automated control over electric vehicle charging.²⁸⁴ While customers were generally receptive to automation, AGL found that simple pricing signals were more effective in shifting behaviour.²⁸⁵ A flat overnight tariff shifted around 67–70% of charging to off-peak hours, reducing peak demand and lowering overall electricity costs by about 22%.²⁸⁶ Ms Reyes noted that this approach incentivised consumers to avoid charging during evening peak periods, and did so 'very clearly in a way that could be programmed with the electric vehicle', resulting in a 'very strong' response.²⁸⁷

Other stakeholders identified dynamic tariffs, where prices respond in real time to grid conditions and wholesale market fluctuation, arguing that they are a more efficient mechanism for aligning consumers charging behaviour with system needs.²⁸⁸ Research commissioned through the RACE for 2030 CRC and ARENA National Roadmap for Bidirectional EV Charging found that while ToU tariffs are effective for managing early electric vehicle uptake, dynamic tariffs are more effective at aligning charging with real-time grid conditions.²⁸⁹ The research recommended prioritising a shift toward dynamic pricing to maximise system efficiency.²⁹⁰

FINDING 38: Time-of-use and dynamic tariffs can effectively shift electric vehicle charging to off-peak periods or periods of high renewable generation, improving networks utilisation.

FINDING 39: Current network tariff structures in Victoria do not reward or encourage electric vehicle charging behaviour that supports the electricity grid.

FINDING 40: Network tariff reform is needed to better align electric vehicle charging with renewable energy availability and grid capacity, to ensure that charging occurs during low-demand, high-supply periods.

RECOMMENDATION 9: That the Victorian government work with the industry, including the DNSPs and retailers, to reform tariffs to smooth the load on the grid from EV charging and give consumers choice and lower costs. This should include:

- EV charging Tariffs and ToU tariffs which encourage the use of cheap daytime power;
- Encourage the AER to support regulatory settings that promote EV uptake.

²⁸⁴ Mabelle Reyes, *Transcript of evidence*, p. 36.

²⁸⁵ *Ibid.*

²⁸⁶ *Ibid.*

²⁸⁷ *Ibid.*

²⁸⁸ RACE for 2030, *Submission 62*, p. 5.

²⁸⁹ *Ibid.*

²⁹⁰ *Ibid.*

4.5.3 Bidirectional charging technologies are an opportunity that presents consumer and system-wide benefits

Stakeholders emphasised that bidirectional charging, includes vehicle-to-grid (V2G) and vehicle-to-home (V2H) technologies, presents a significant opportunity to integrate electric vehicles into the electricity system as flexible, ‘mobile energy assets’.²⁹¹ The Committee heard that this technology can help align electricity demand and supply by storing excess renewable energy and discharging it during peak periods, improving grid efficiency, capacity, and reliability while potentially lowering costs for consumers.²⁹²

Evidence indicated that bidirectional charging offers benefits such as reduced strain on the grid, improved energy security, and greater use of renewable energy, as EVs can absorb surplus solar and wind generation and supply it back when demand is high.²⁹³ Stakeholders emphasised that consumer participation depends on trust, transparency, and user control, alongside technical capability, and that bidirectional charging should be seen as a key enabler for optimising EV integration into the electricity system.²⁹⁴

The Australian Electric Vehicle Association identified access to smart, bidirectional charging as a key ‘enablers’ for the State Government to align electric vehicle charging with electricity supply and demand.²⁹⁵

The Committee heard that bidirectional charging could deliver significant economic and system benefits in Victoria. The RACE for 2030 Cooperative Research Centre’s submission stated:

Vehicle-to-grid (V2G) technology could reduce national energy system costs by \$0.7bn to \$2.7bn through wholesale market benefits alone, with additional distribution network savings of \$0.3bn to \$2.4bn. Fast uptake of V2G services could provide up to 16GW of dispatchable capacity by 2050, which is over 30% of the National Electricity Markets 2050 requirements.²⁹⁶

Other stakeholders explained that bidirectional charging offers substantial economic benefits to consumers, giving electric vehicle owners access to much larger, lower-cost battery capacity via their vehicles.²⁹⁷ Aaron Gray told the Committee that:

some of the V-to-G chargers that are on the market are in the \$5000 to \$10,000 type price. That gives you access to a 50- to 100-kilowatt hour battery in your car, depending

²⁹¹ Pete Mercouriou, *Transcript of evidence*, p. 3; Justin Oliver, *Transcript of evidence*, p. 43; Dr Alina Dini, *Transcript of evidence*, pp. 2, 8; AGL, *Submission 82*, p. 3.

²⁹² Pete Mercouriou, *Transcript of evidence*, p. 3; Justin Oliver, *Transcript of evidence*, p. 43; Dr Alina Dini, *Transcript of evidence*, pp. 2, 8; Associate Professor Julie Karel, *Transcript of evidence*, p. 29; AGL, *Submission 82*, p. 3; Ralph Griffiths, *Transcript of evidence*, p. 35.

²⁹³ Dr Alina Dini, *Transcript of evidence*, p. 8; Australian Electric Vehicle Association, *Submission 114*, pp. 4–5; AGL, *Submission 82*, p. 3.

²⁹⁴ Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

²⁹⁵ Australian Electric Vehicle Association, *Submission 114*, pp. 4–5; AGL, *Submission 82*, p. 3.

²⁹⁶ RACE for 2030, *Submission 62*, p. 3.

²⁹⁷ Aaron Gray, *Transcript of evidence*, p. 13.

on the car that people have bought, compared with, even with the government subsidy, spending \$8000 to \$10,000 on a 13.5-kilowatt battery.²⁹⁸

Ralph Griffiths emphasised the benefits of bidirectional charging, including lower household energy costs, backup power, and grid support.²⁹⁹ Mr Griffiths noted that while the technology is still developing, consumers are likely to adopt it first for home use before engaging in the electricity system more broadly.³⁰⁰

AGL outlined a national V2G trial exploring a customer-focused model, informed by feedback from over 1,000 users.³⁰¹ They noted initial challenges such as ensuring users consistently plugged in their vehicles, but expressed that trust in the retailer developed over time, enabling more efficient load management and cost savings for businesses.³⁰² AGL emphasised that V2G success depends on consumer-led adoption, strong customer value, and trust, supported by innovation, clear design, and effective market participation rather than mandates.³⁰³

Expanding on the findings from user feedback, Mabelle Reyes told the Committee that interest in bidirectional charging typically starts with vehicle-to-home, driven by lower household energy costs, improved energy security, and financial benefits.³⁰⁴ Mabelle Reyes noted that interest in vehicle-to-grid services grows as consumers become more familiar with the technology, with increasing recognition of its potential to support broader grid stability.³⁰⁵

The Electric Vehicle Council expressed the need for a rebate to accelerate uptake of bidirectional charging equipment, noting that this will encourage consumer adoption and incentivise manufacturers to support V2G in the Australian market.³⁰⁶ Dr Alina Dini emphasised that financial incentives could accelerate uptake and reduce investment risk, including through programs such as the Victorian Energy Upgrades scheme.³⁰⁷

Founder and Director of Vehicle Charging Solutions Australia, Ross De Rango told the Committee that vehicle-to-grid (V2G) is becoming technically available in Australia after major updates to national electrical standards, particularly those governing grid-connected inverters. Evidence expressed that V2G chargers are starting to reach the market, including pilot programs with strong consumer interest.³⁰⁸ Ross De Rango suggested a short-term government rebate for V2G equipment, similar to incentives

²⁹⁸ Ibid.

²⁹⁹ Ralph Griffiths, *Transcript of evidence*, p. 35.

³⁰⁰ Ibid.

³⁰¹ Mabelle Reyes, *Transcript of evidence*, p. 36.

³⁰² Ibid.

³⁰³ AGL, *Submission 82*, pp. 3–4.

³⁰⁴ Mabelle Reyes, *Transcript of evidence*, pp. 36–37.

³⁰⁵ Ibid.

³⁰⁶ Electric Vehicle Council of Australia, *Submission 111*, p. 10.

³⁰⁷ Dr Alina Dini, *Transcript of evidence*, p. 2.

³⁰⁸ Ross De Rango, *Transcript of evidence*, pp. 58–59.

used for home batteries and rooftop solar, arguing that costs will fall naturally over time as uptake grows.³⁰⁹

Similarly, the RACE for 2030 Cooperative Research Centre stated that ‘targeted funding support’ is needed to accelerate the delivery of this technology such as funding for commercial fleet trials, as well as continued investment in research and demonstration projects.³¹⁰

While the Australian Electric Vehicle Association also stressed that broader V2G adoption will depend on clear financial incentives, behavioural change, and competition with home battery storage, supported by government programs and emerging large-scale battery systems.³¹¹ AEVA suggested that the economic value of V2G for electric vehicle owners remains uncertain and called for further research to better understand its costs, benefits, and role in supporting the grid.³¹² According to AEVA, the delivery of vehicle-to-grid at scale depends on four key technical standards:

- AS/NZS 4777.2 for safety and grid interaction
- Dynamic Operating Envelopes for real-time network limits
- OpenADR for secure grid communication
- OCPP for charger interoperability.³¹³

AEVA stated that these standards would ensure that bidirectional charging is compatible across the electricity system.

Current barriers for consumer uptake of bidirectional charging technologies

Dr Alina Dini said that vehicle-to-home and vehicle-to-grid technology is already technically and regulatorily possible in Australia, indicating that ‘the barriers are more market-related, so whether the automotive Original Equipment Manufacturers (OEMs) will allow for their vehicles to be used in a particular way’.³¹⁴ Dr Dini noted that industry is working to harmonise national standards between the automotive and energy sectors, with states expected to adopt and align with Australian standards.³¹⁵ Dr Dini added that bidirectional charging is moving from ‘pilot to early commercial development’, but scaling will require regulatory clarity, consistent national standards, streamlined approvals, and stronger market confidence from consumers and manufacturers.³¹⁶

³⁰⁹ Ibid.

³¹⁰ RACE for 2030, *Submission 62*, p. 3.

³¹¹ Australian Electric Vehicle Association, *Submission 114*, pp. 4–5.

³¹² Australian Electric Vehicle Association, *Submission 114*, p. 5.

³¹³ Ibid.

³¹⁴ Dr Alina Dini, *Transcript of evidence*, p. 3.

³¹⁵ Ibid.

³¹⁶ Dr Alina Dini, *Transcript of evidence*, p. 2; RACE for 2030, *Submission 62*, p. 3.

The Electric Vehicle Council of Australia stated that while many technical and regulatory barriers for DC V2G in homes and businesses have largely been addressed, uptake remains constrained by vehicle manufacturers' warranty conditions and limited model availability.³¹⁷ Evidence noted that uptake will depend on OEM support, broader interoperability through standards such as ISO 15118-20, and clearer regulatory frameworks.³¹⁸

In its submission, Nissan noted that their Nissan LEAF vehicle 'demonstrated both technical V2G capability and warranty support when paired with approved bidirectional chargers'.³¹⁹ However, the submission noted that 'several challenges remain before V2G can become a mainstream'.³²⁰ Nissan identified the development of a clear regulatory framework in Victoria as a priority to enable pilot programs, build consumer confidence, and support broader rollout for V2G chargers.³²¹

Other stakeholders noted that apartment residents face significant barriers to accessing bidirectional charging technologies.³²² Aaron Gray highlighted that building owners lack incentives to install such systems, creating a key policy challenge for enabling access in apartment buildings.³²³ Mabelle Reyes told the Committee that V2G in apartments is constrained by the difficulty of coordinating vehicle, parking space, and energy arrangements for individual owners.³²⁴ Other evidence noted that participation from multi-unit buildings would require supportive legislation, noting this legislative restriction.³²⁵

FINDING 41: Bidirectional charging technologies offer significant benefits to consumers and Victoria's electricity system, enabling electric vehicles to act as mobile energy assets that can strengthen grid reliability and capacity.

FINDING 42: Accelerating the uptake of bidirectional charging will require targeted financial incentives and policy measures from the State Government to build industry and consumer confidence to adopt these technologies.

RECOMMENDATION 10: That the Victorian Government fund targeted programs, trials, research or demonstration projects for bidirectional technologies to build market and consumer confidence.

³¹⁷ Electric Vehicle Council of Australia, *Submission 111*, p. 10.

³¹⁸ Electric Vehicle Council of Australia, *Submission 111*, p. 10.

³¹⁹ Nissan, *Submission 125*, pp. 7-8.

³²⁰ Nissan, *Submission 125*, p. 7.

³²¹ Ibid.

³²² Aaron Gray, *Transcript of evidence*, p. 13; RACE for 2030, *Submission 62*, p. 3.

³²³ Aaron Gray, *Transcript of evidence*, p. 13.

³²⁴ Mabelle Reyes, *Transcript of evidence*, p. 36.

³²⁵ RACE for 2030, *Submission 62*, p. 3.

Chapter 5

Delivering EV charging infrastructure

Chapter 5 explores the relationship between charging behaviour and infrastructure design, its impact on the electricity grid, the sufficiency of current EVCI deployment rates, the role of Distribution Network Service Providers in Victoria, and how the Government can ensure equitable access to charging for all Victorians.

5.1 Victoria needs an ecosystem of Electric Vehicle charging infrastructure

5.1.1 EV charging infrastructure is not one-size-fits-all

Shifting demand for EV charging away from evening peak periods of energy use is the key challenge for the electrification of transport in Victoria. The Committee heard that an effective charging network is best understood as an ecosystem of different technologies that promote grid-friendly behaviour at a system level by facilitating convenient access to charging outside of peak demand periods across public, private and commercial settings.¹

Electric Vehicle Charging Infrastructure (EVCI) is a widely used term that refers to the hardware and physical assets that collectively support EV charging.² This includes but is not limited to:

- charging stations
- charging bays
- charging cables and ports
- electrical equipment
- on-site batteries
- renewable energy generation equipment.

There are three levels of charger currently available in the Australian market. They operate at different speeds, with different power outputs for use in a range of different scenarios.

¹ Monash Energy Institute, *Submission 77*, pp. 2-3.

² Department of Climate Change, Energy, the Environment and Water, *Definitions for electric vehicles*, <<https://www.energy.gov.au/electric-vehicles/electric-vehicle-basics/definitions-electric-vehicles>> accessed 4 May 2026.

Table 5.1 Types of EV chargers available in Australia

Charger type	Level 1 – Trickle Charger	Level 2 – Slow Charger	Level 3 – Fast & Ultra-Fast
Location	Home	Home & Public	Public
Description	This is the slowest form of charging. It can use a standard 240V power point and adds around 10–15km of range per hour of charging. It is typically used to ‘top-up’ an EV.	This is the most common type of charging in residential and kerbside public settings. It can provide from 40–100km of range per hour of charging and will deliver a full recharge overnight	DC chargers replenish EV batteries at very fast rates, providing between 200–1,000km per hour of charging. This type of charger is used in commercial premises and at road-side locations by drivers needing to quickly recharge while on the go.
Output	From 1.8kW	7–22kW	25–350kW
Current	AC	AC	DC

Source: Springmount Advisory, *Submission 108*, p. 4; Electric Vehicle Council of Australia, *A-Z of EV Charging*, <<https://electricvehiclecouncil.com.au/a-z-charging>> accessed 24 March 2026.

Slow chargers (7 to 22 kilowatts) are suited to cars that will be parked for an extended period, such as on the kerbside, at a workplace or commuter transport hub during the day, or at home overnight. Fast and ultra-fast chargers (25 to 350 kilowatts) are found at roadside charging stations on major highways, in commercial or industrial settings, and in high-turnover locations like supermarket carparks.

A diversified, distributed network that incorporates all charging levels can deliver whole-of-system efficiencies to the electricity grid. A network that relies on one type of charger, such as Level 3 DC fast charging, will place stress on the grid owing to the power output required, incur expensive distribution network infrastructure upgrades, and raise electricity prices for all consumers.

5.1.2 How infrastructure design influences charging behaviour

Modelling of projected energy demand scenarios in 2050 by the Monash Energy Institute at Monash University showed that charging behaviour has ‘a decisive influence on infrastructure needs’.³ This research forecasted that unmanaged, evening-dominant charging patterns that coincide with the 5pm–9pm peak of household energy demand would double the grid’s firm capacity requirement from its optimal level of around 50GW to around 100GW. Distributing demand through daytime and overnight periods can maximise utilisation of existing infrastructure and avoid the need for capital investment that raises operational costs and prices for all electricity consumers.⁴

³ Monash Energy Institute, *Submission 77*, p. 2.

⁴ *Ibid.*, pp. 2–3.

Price and convenience are the two main determinants of charging behaviour.⁵ For most Australian EV drivers, home-based charging marries price and convenience. It is the preferred solution of over 75% of those who intend to purchase an EV in the next five years⁶ and as much as 85-to-90% of current drivers, among whom there is also strong adoption of rooftop solar.⁷

Price signals that encourage drivers to charge their vehicles at off-peak periods – during the daytime ‘solar soak’ window or overnight when electricity demand and prices are low – are one method of promoting grid-friendly charging behaviour. Strategic placement of public charging points is another. Associate Professor Julie Karel of Monash University told the Committee that qualitative research undertaken at the Monash Energy Institute shows that ‘household routines, preferences and the desire for convenience and control strongly shape when people charge their vehicles.’⁸ Having charge points available on the kerbside, at workplaces, sports centres, supermarkets or any other destination where vehicles stop for extended periods would allow the rhythms of daily life to shape charging sessions.

Understanding driver behaviours and providing a broad network of charge points at locations that fit into established preferences and routines represents an opportunity not only to facilitate convenience for drivers, but also to allow EVs to become ‘solar sponges’ that maximise use of solar generation.⁹ Professor Hai Vu of Monash University argued that we must ask whether an inability to charge during the day is contributing to the strong preference towards home charging.¹⁰

The variety of available charging technology also means that managing the battery of an EV is a different experience to managing the fuel level of an internal combustion engine (ICE) vehicle. As Brendan Davies, Secretary of the Victorian Branch of the Australian Electric Vehicle Association, explained to the Committee:

With a petrol car, some people leave it until the low fuel light goes and fill up the tank at whatever the closest petrol station is. Electric car drivers have so many more options. [...]. They do not just get empty then charge up to 100 per cent at a fast charger. People charge in the middle of the day on solar, often using their own solar panels if they have them.¹¹

5 Associate Professor Julie Karel, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 29.

6 Oliver Hill, Program Lead, RACE for 2030 Cooperative Research Centre, public hearing, Melbourne, *Transcript of evidence*, p. 12; Jo Oddie, Acting National President, Australian Electric Vehicle Association, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 15; Associate Professor Julia Karel, *Transcript of evidence*, p. 36.

7 Jo Oddie, *Transcript of evidence*, p. 15.

8 Associate Professor Julie Karel, *Transcript of evidence*, p. 29.

9 Dr Kazi Hasan, Senior Lecture and Transport Electrification Research Lead, RMIT University, public hearing, 12 February 2026, Melbourne, *Transcript of evidence*, p. 47.

10 Professor Hai Vu, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 33.

11 Brendan Davies, Secretary, Victorian Branch, Australian Electric Vehicle Association, public hearing, Melbourne 12 February 2026, *Transcript of evidence*, p. 26.

A public network is essential to guarantee access to charging for Victorians who face barriers to installing charging equipment at home, such as apartment residents, private renters, social and community housing tenants, and those without off-street parking. Stuart Moffatt, General Manager, JOLT Charge, estimated this to be as much as 30 per cent of the population.¹² Ensuring that these groups have easy access to charging solutions will prevent them from being frozen out of the energy transition.

Similarly, the public charging network must be distributed equitably through metropolitan, regional and rural areas of Victoria, catering to the needs of all communities. This is essential to improving statewide consumer confidence in EVs. While Victorians living in regional areas are on average more likely to have access to home charging solutions than their metropolitan counterparts, they are also more likely to travel longer distances by car. This will likely increase their need for destination charging solutions.

A robust, reliable statewide public charging network will not just benefit Victorians living in rural and regional areas but will also ‘unlock’ the wider Victorian road network for all EV drivers.¹³ Bass Coast Shire Council and East Gippsland Shire Council, two areas of Eastern Victoria whose economies rely on tourism, stressed the need for regional equity and expressed their concern that future tourists may not choose to visit their regions if adequate charging options are lacking.¹⁴ Ross De Rango, Founder and Director, Vehicle Charging Solutions Australia, described how the strategic placement of fast charging infrastructure at regular intervals ‘from the point at which you cross the Nullarbor coming in from South Australia all the way down through Margaret River, up through Perth, up past Broome and around to the Northern Territory’ has been part of the Western Australian Government’s strategy to boosting EV uptake in Perth.¹⁵ Mr De Rango said that they ‘looked at the number of people who were in Perth buying vehicles. They wanted those people to buy EVs with confidence that, should the mood take them to drive to Broome in that vehicle, that would be a thing they could do’.¹⁶

Ensuring that regional areas and major interstate routes are connected to the charging network is an important consideration for industry stakeholders from the freight and logistics sectors who plan to electrify their heavy commercial vehicle fleets. Volvo Group Australia, who will begin manufacturing electric trucks in Queensland this year, described the strategic placement of fast charging stations on interstate highways, in rest stops, or depots in regional Victoria as fundamental to the viability of heavy electric vehicles.¹⁷

¹² Stuart Mofatt, General Manager, JOLT Charge, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 3.

¹³ Ross De Rango, Founder and Director, Vehicle Charging Solutions Australia, public hearing, 12 February 2026, *Transcript of evidence*, p. 63.

¹⁴ Bass Coast Shire Council, *Submission 115*, pp. 1–2; East Gippsland Shire Council, *Submission 79*, p. 3.

¹⁵ Ross De Rango, *Transcript of evidence*, p. 63.

¹⁶ *Ibid.*

¹⁷ Volvo Group Australia, *Submission 101*, pp 7–8.

FINDING 43: There is a strong preference for home-based charging among EV drivers in Australia.

FINDING 44: A distributed network that blends private charging at homes with slow, fast, and ultra-fast public chargers is essential to allowing broad end-user access while maximising benefits and preventing grid stress.

FINDING 45: Public EV charging benefits the grid as its load profile broadly aligns with daytime periods of peak solar generation when curtailment is currently common.

FINDING 46: EV charging technology gives EV drivers flexibility in how they charge their vehicles, meaning charging behaviour is very different to refuelling an ICE vehicle.

FINDING 47: A state-wide public charging network is essential to unlocking the Victorian road network not only for passenger car drivers, but also for electrified commercial transport.

RECOMMENDATION 11: That the Victorian Government provides education, incentives, and support for large employers and accommodation providers to provide charging for employees at Victorian workplaces and guests at accommodation providers.

5.1.3 Who is delivering Electric Vehicle Charging Infrastructure?

The delivery of EVCI relies on the involvement of key actors in the design, regulatory, strategic and technical levels of delivering EVCI. They are:

- **Charge Point Operators (CPOs)** design, install, and operate charging infrastructure. The Inquiry heard evidence from CPOs that operate both domestic and kerbside AC slow chargers, as well DC fast or ultra-fast charging stations.
- **Local governments** around Victoria are key facilitators of charging infrastructure installation. Councils work in partnership with private CPOs and the Victorian Government who have provided co-funding for infrastructure delivery through schemes such as the Destination Charging Across Victoria program.
- **Distribution Network Service Providers (DNSPs)** are responsible for maintaining and upgrading distribution infrastructure, such as the low voltage poles and wires. They are responsible for assessing network capacity for proposed EVCI installations and connecting new assets to the grid.

As will be addressed in Section 5.3.6, CitiPower, Powercor and United Energy recently applied for and been granted a waiver by the AER to operate 100 kerbside EV chargers on a trial basis from 2026 to 2031.

- **Electrical contractors** are responsible for creating electrical designs and performing installations in homes or on public sites.

5.1.4 EVCI is not being installed at a sufficient rate to meet demand

Charging is not merely infrastructure, it is market confidence and it ensures that the adoption of EVs extends beyond households with garages. It determines whether fleets electrify and determines whether renters and apartment dwellers can participate in the transition.

Andrew Forster, Chief Executive Officer, EVX, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 15.

Adequate EVCI deployment is critical to the attainability of the target set out by the Victorian Government in its Climate Change Strategy 2021–2025 for EVs to comprise 50% of all new vehicle sales by 2030.¹⁸ Dr Alini Dini of the Electric Vehicle Council described public charging as ‘foundational’ to confidence¹⁹ in electrified transport, noting that ‘When drivers see reliable, accessible infrastructure, they invest. When they do not, adoption slows.’²⁰

Electric vehicle uptake is entering a phase of exponential growth globally. According to the Electric Vehicle Council, December 2025 ‘marked one of the strongest months on record for electric vehicles which accounted for 16.7% of all new cars sold’ in Australia.²¹ Nearly 13 per cent of new vehicle registrations in Victoria in 2025 were EVs,²² which now make up 1–2% of the total state fleet.²³ Victoria’s adoption rates are on the cusp of moving into the Early Majority phase of the technological diffusion curve, a tipping point at which uptake of new technologies tends to rapidly increase.

¹⁸ Department of Energy, Environment and Climate Action, *Victoria’s Climate Change Strategy 2026–30*, November 2025, p. 18.

¹⁹ Dr Alina Dini, Electric Vehicle Council, Head of Energy, Infrastructure and Commercial, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 2.

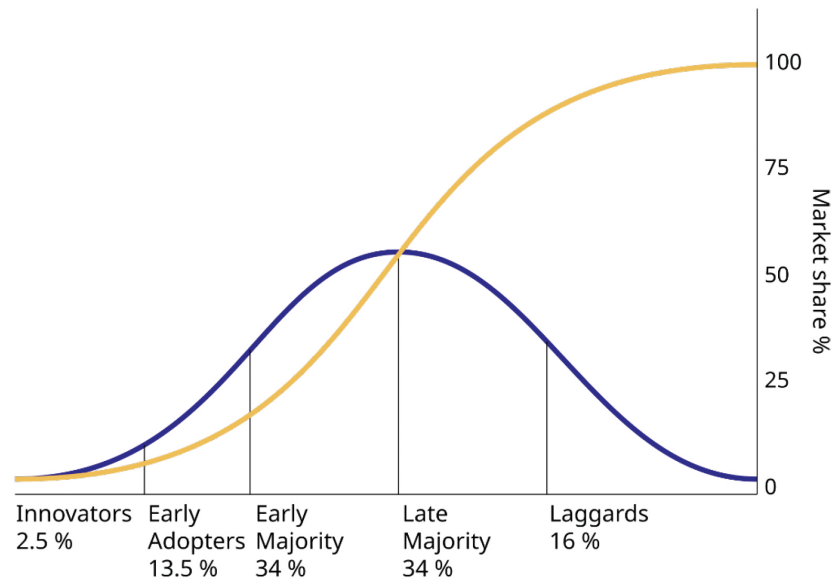
²⁰ Ibid.

²¹ Electric Vehicle Council, *EV Sales Hit Record Highs in 2025 with 38% Rise and New Monthly Record in December*, <<https://electricvehiclecouncil.com.au/media-releases/ev-sales-hit-record-highs-in-2025-with-38-rise-and-new-monthly-record-in-december>> accessed 28 January 2026.

²² Jo Oddie, *Transcript of evidence*, p. 15.

²³ Associate Professor Roger Dargaville, Monash Energy Institute, Monash University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 33.

Figure 5.1 Diffusion of technological innovations curve



Source: Wikimedia Commons, *The diffusion of innovations according to Rogers (1962)*, <https://commons.wikimedia.org/wiki/File:Diffusion_of_ideas.svg> accessed 24 March 2026.

Oliver Hill, Program Lead for Electric Vehicles at the RACE for 2030 Cooperative Research Centre, explained that predictions based on national and international data relating to EV uptake suggest that the Australia could reach parity between EVs and ICE vehicles in the national fleet of around 20 million vehicles between 2035 and 2040.²⁴

Although Mr Hill noted that that we are still in the early stages of knowing exactly how much public EVCI will be required to support the future fleet,²⁵ the Committee heard that supporting this transition as it accelerates will require a substantial uplift in the public charging network. Local governments, academic research centres, peak bodies, specialist consultancies, EV drivers, car dealers, energy retailers, and charge point operators all told the Committee that EVCI is being deployed too slowly to service projected demand.²⁶

²⁴ Oliver Hill, *Transcript of evidence*, p. 4.

²⁵ Oliver Hill, *Transcript of evidence*, p. 3.

²⁶ RACE for 2030, *Submission 62*, p. 2; EVX, *Submission 71*, p. 6; Energy Consumers Australia, *Submission 80*, p. 5; AGL, *Submission 82*, p. 3; Evie Networks, *Submission 87*, pp. 6–9; Stephanie Bashir, *Transcript of evidence*, p. 51; Federal Chamber of Automotive Industries, *Submission 92*, pp. 7–8; City of Port Phillip, *Submission 103*, pp. 2–3; Australian Electric Vehicle Association, *Submission 114*, p. 6.

JOLT Charge stressed that implementing incremental targets for the rollout of charging infrastructure that sit alongside aspirational uptake goals is essential both to developing the public charging network and boosting EV ownership.²⁷ Victoria currently has no such targets. Stuart Moffatt told the Committee that a 2024 analysis by Deloitte contended that approximately 27,500 public EV chargers will need to be installed nationally by 2033 to meet forecast demand.²⁸ This equates to a rate of around eight new chargers per day.²⁹

While the number of available charge points is an important consideration for assessing a network's development, international network benchmarks are determined by the ratio of public charging capacity in kilowatts to EVs on the road. One established international standard is around 1 kilowatt of public charging capacity per EV on the road. This standard is currently being exhibited in Norway, the world-leading nation for EV uptake. The European Union's Alternative Fuels Infrastructure Regulation (AFIR), which came into force in April 2024, is slightly more ambitious. It introduced mandatory national fleet based minimum infrastructure targets for member states of 1.3 kilowatt of public charging capacity per registered EV.³⁰

There is no certainty regarding the total capacity of the public charging network due to a lack of centralised public charger data.³¹ This is a national issue, as was noted in the July 2025 update to the *National Electric Vehicle Strategy* by the Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW). This document reported that DCCEEW is 'working to develop [its] capacity to track and report on the roll-out of AC public chargers. This data is instead held by individual private operators and understanding of it is contingent on how they share and update information about their assets.'³² Information about AC chargers is not included in DCCEEW's EVCI mapping tool, launched in July 2025, which maps public chargers with a capacity of 25kW and above.³³

27 JOLT Charge, *Submission 123*, p. 5

28 Stuart Moffatt, *Transcript of evidence*, p. 2.

29 Ibid.

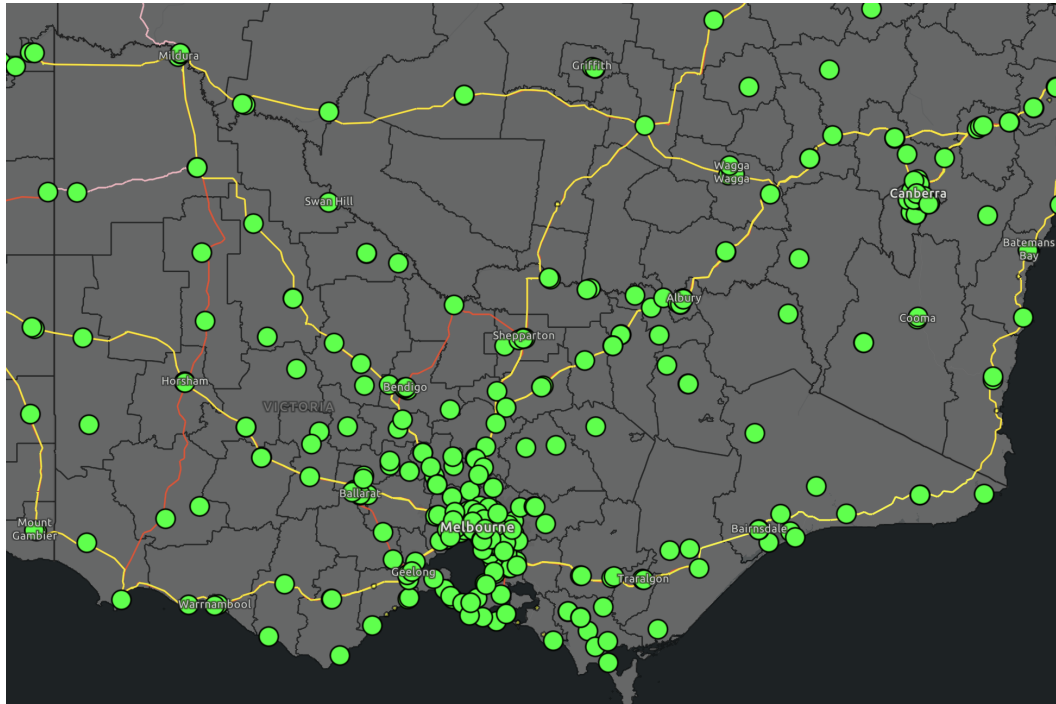
30 European Commission, *Alternative Fuels Infrastructure: Alternative Fuels Infrastructure Regulation*, <https://transport.ec.europa.eu/transport-themes/clean-transport/alternative-fuels-sustainable-mobility-europe/alternative-fuels-infrastructure_en> accessed 23 April 2026.

31 Oliver Hill, *Transcript of evidence*, p. 3.

32 Ibid.

33 Department of Climate Change, Energy, the Environment and Water, *Electric Vehicle Charging Infrastructure Mapping Tool (EVCI mapping tool)*, <<https://evciroadmap.evenergi.com>> accessed 22 April 2026.

Figure 5.2 Victoria's fast EV charging network (>25 kilowatts), EVCI Mapping Tool



Source: Department of Climate Change, Energy, the Environment and Water, Electric Vehicle Charging Infrastructure Mapping Tool (EVCI mapping tool), <<https://evciroadmap.evenergi.com>> accessed 22 April 2026.

JOLT Charge estimated the Victorian public charging network's capacity to be 34,755 kilowatts at the end of Q3 2025. With 94,966 registered EVs on the road at that time, this estimate calculated Victoria's charging capacity-to-registered EV ratio at around 0.37:1.³⁴ If the Victorian Government's goal for half of all new light vehicle sales to be Zero Emissions Vehicles (ZEVs) by 2030 is met, 10% of the approximately six million cars in the Victorian fleet could be EVs by 2030. JOLT argued that the state could require around 600,000 kilowatts of public charging capacity to support the 600,000 EVs that are projected to be registered in Victoria.³⁵

While these figures indicate that there is room for improvement in Victoria's EVCI network, the Committee heard that network development is trending in the right direction. Stakeholders acknowledged that misconceptions about how much public infrastructure is available are common.³⁶ For example, Aaron Gray, Projects Energy Lead, South East Councils Climate Change Alliance observed that 'There are not many places, particularly in Victoria, where you cannot drive with an EV and be comfortable that you will be able to charge',³⁷ and Jo Oddie, Acting National Chair of AEVA, described EVCI deployment nationally as 'a lumpy transition everywhere. There

³⁴ JOLT Charge, *Submission 123*, p. 5.

³⁵ *Ibid.*

³⁶ Oliver Hill, *Transcript of evidence*, p. 3.

³⁷ Aaron Gray, Projects Energy Lead, South East Councils Climate Change Alliance, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 11.

is nothing smooth about it, but there is a lot that is working.³⁸ Bernhard Conoplia of Evie Networks told the Committee that although comparisons with international jurisdictions are instructive, what they really show is that Victoria is at an early stage in the market and ‘years behind’ other countries.³⁹

Instead, Mr Conoplia argued that would be more appropriate to evaluate Victoria’s rollout of EVCI against New South Wales, a comparable market with similar infrastructural challenges. Mr Conoplia told the Committee that Sydney’s public charging network compares favourably to London and other European cities.⁴⁰ The Committee noted that the New South Wales Government released a new Electric Vehicle Strategy in April 2026. This strategy set distance-based charging coverage targets to ensure that all residents in areas where off-street parking is limited are no more than 5km from an ultra-fast charger, and that ultra-fast chargers are available at 100km intervals across the state’s highway network.⁴¹

FINDING 48: Equitable, reliable, and accessible public charging infrastructure is foundational to driving confidence in EVs and increasing consumer uptake.

FINDING 49: EV charging infrastructure is not being installed quickly enough in Victoria to meet current and projected demand.

RECOMMENDATION 12: That the Victorian government implement policy settings that speed and scale up the deployment of public EV charging.

FINDING 50: There is no definitive understanding of how much public charging capacity has been installed in Victoria to date due to lack of centralised data about chargers under 25 kilowatts.

RECOMMENDATION 13: That the Victorian Government work with the Commonwealth, States and Territories to develop a definitive understanding of total national public charging capacity.

³⁸ Jo Oddie, *Transcript of evidence*, p. 19

³⁹ Bernhard Conoplia, Chief Networks Officer, Evie Networks, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 8.

⁴⁰ Bernhard Conoplia, *Transcript of evidence*, p. 7.

⁴¹ New South Wales Department of Climate Change, Energy, the Environment and Water, *NSW Electric Vehicle Strategy*, April 2026, p. 16.

RECOMMENDATION 14: That the Victorian Government collaborate with the Commonwealth, States and Territories to ensure there is a database that maps where public charging is and communicates information about availability and uptime for use by EV drivers, and that mapping software providers make this information available to the public.

FINDING 51: An international benchmark for a developed public EV charging infrastructure network is a 1:1 ratio of kilowatts of public charging capacity per EV on the road.

FINDING 52: In late 2025, Victoria's ratio of public charging capacity in kilowatts to registered EVs was approximately 0.37:1.

RECOMMENDATION 15: That the Victorian Government develop coverage and incremental targets for EV charging to reach a 1:1 ratio of public charging capacity in kilowatts to registered EVs. This should run parallel to the aspirational targets for EV uptake in the Climate Action Plan 2026–2030.

5.2 How the Victorian Government can facilitate the effective rollout of EV charging infrastructure

5.2.1 Victoria needs a statewide EV charging strategy and implementation plan

Electrification of transport is essential to reducing emissions, strengthening energy security and improving long-term affordability for Victorian households and businesses. However, the success of that transition will be determined not by EV uptake alone but by how charging infrastructure is planned, regulated and delivered.

Kent Johns, Head, Government Relations and Regulatory Affairs, National Electrical and Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, pp. 36–37.

Delivering charging infrastructure at the pace and scale required to meet future demand is a technically complex, multi-jurisdictional task at the intersection of energy and transport policy. This requires significant coordination among numerous actors across the public and private sectors, including but not limited to private charge point operator, DNSPs, the electrical contracting workforce, car dealers, and all three levels of government. The Committee heard from many stakeholders that the Victorian Government must play a vital leadership role in this transition.⁴²

⁴² West Wimmera Shire Council, *Submission 16*, p. 1; Moonee Valley City Council, *Submission 67*, p. 4–6; Yarra Ranges Council, *Submission 72*, p. 2; Macedon Ranges Shire Council, *Submission 75*, p. 1; Merri-bek City Council, *Submission 76*, p. 1; East Gippsland Shire Council, *Submission 79*, p. 2; Victorian Greenhouse Alliances, *Submission 85*, p. 2; City of Yarra, *Submission 120*, p. 1; City of Greater Bendigo, *Submission 121*, p. 5.

Victoria currently has no dedicated EV charging strategy and implementation plan to coordinate the rollout of the public charging network. The Committee heard that the absence of a statewide strategy is causing inefficiencies across the deployment chain. A lack of coordination and cooperation has created unclear responsibilities, deployment delays, and duplicated effort at the local government level.⁴³

The landscape for electrified transport in Victoria has changed significantly since the Victorian Government's Zero Emissions Roadmap was published in 2021.⁴⁴ Although it set uptake targets for electric vehicles, it did not offer strategic direction about how they will be achieved or set infrastructure delivery targets. The Victorian Government recently addressed EV charging directly in its *EV Charging Regulatory Statement*, published in April 2026.⁴⁵ This document outlined the Government's commitment to regulatory reforms that will facilitate EVCI delivery but did not address strategic network planning.

Table 5.2 Commitments made by the Victorian Government in its *EV Charging Regulatory Statement*, April 2026

Priority area	Victorian Government commitment
EV charging at affordable rates	<p>The Victorian Government has formally advocated for the AER to require distribution businesses to introduce EV charging tariff trials that cover all forms of public charging (including fast-charging) through the 2026–31 Electricity Distribution Price Review.</p> <p>If appropriately designed tariff trials for public EV charging are not delivered in the AER's final determinations in April 2026, the Government will implement regulatory reforms to ensure the tariff framework delivers better prices for drivers and supports the rollout of more public EV charging infrastructure in Victoria</p>
Connecting new EV chargers: faster, cheaper, more transparent	<p>The Victorian Government has been working with Victorian distribution businesses to emphasise the importance of low-voltage network data. It will continue to work to understand the speed and pricing of connection requests and make comparisons with other states and territories.</p> <p>The Victorian Government will take regulatory action to ensure distribution businesses publish data on connection processes, timeframes and costs, and report publicly on their performance against these metrics. It anticipates this will provide greater visibility of whether or not further regulatory action is needed to ensure connections are not unreasonably delayed or expensive.</p> <p>The Victorian Government has initiated a Victorian Service and Installation Rules (VSIR) Governance Review in collaboration with distribution businesses and industry stakeholders, with the stated purpose of reforming the governance of the VSIR to give government more of a role and bring them into line with other states. This review will be complete by the end of Q2 2026.</p>
Removing barriers to kerbside charging	<p>The Victorian Government supports strong competition in the public EV charging market, underpinned by transparent and consistent fees for access to shared infrastructure.</p> <p>The Victorian Government is monitoring proposed AER reforms closely to see to what extent they address issues identified by stakeholders relating to access to DNSP-owned infrastructure, and to evaluate whether Victoria also needs to regulate directly.</p>

⁴³ Ibid.

⁴⁴ Department of Environment, Land, Water and Planning, *Victoria's Zero Emissions Vehicle Roadmap*, May 2021.

⁴⁵ Department of Energy, Environment and Climate Action, *EV Charging Regulatory Statement*, April 2026.

Priority area	Victorian Government commitment
Slashing power and fuel bills with vehicle to grid (V2G)	<p>The Victorian Government is working with the Australian Government, other states and industry to resolve the remaining technical and regulatory barriers for V2G through the implementation of the National Consumer Energy Resources (CER) Roadmap. This includes developing nationally consistent standards for CER, as well as setting up a national regulator and regulatory framework to set and enforce standards.</p> <p>The Victorian Government recognises that there may be potential for it to participate in V2G with its own fleet of electric vehicles, with the objectives of saving taxpayer money and leading the V2G transition.</p>

Source: Department of Energy, Environment and Climate Action, *EV Charging Regulatory Statement*, April 2026, pp. 8–13.

The Committee heard from stakeholders across the EVCI deployment chain that strategic planning and leadership from the Victorian Government are essential to ensuring that all market participants are ‘pulling in the same direction’⁴⁶ towards the delivery of an equitable, accessible and effective charging network.⁴⁷ This must also occur at the national level. As energy policy is administered by individual states and territories but coordinated nationally, the Victorian Government must advocate for a more integrated approach to planning critical EVCI deployment by federal, state and local governments.⁴⁸ Oliver Hill noted:

When you have coordination between what you do nationally, rather than individual state roles, it can make a big difference in terms of the efficiencies and in terms of businesses understanding where to invest. It helps you deploy policies which then can affect the wider system and not just the individual states.⁴⁹

Proceeding with the mass deployment of charging infrastructure without a statewide network strategy risks allowing the type and location of charging infrastructure to be determined by market outcomes led by convenience or private interests.⁵⁰ This could lead to all Victorians facing higher electricity prices, as what is most profitable is not necessarily what is best for the community or the grid. For example, although 7 kilowatt slow charging facilitates more efficient utilisation of existing grid infrastructure, it generates smaller returns for operators.⁵¹ Meanwhile large fast-charging hubs are more profitable but require significantly higher capital expenditure. These costs – and those associated driven by increased peak demand – would ultimately be passed onto all Victorian electricity consumers, not just EV drivers, in the form of higher and more variable prices.⁵²

⁴⁶ Bernhard Conoplia, *Transcript of Evidence*, p. 3.

⁴⁷ Victorian Greenhouse Alliances, Submission 85, pp. 2–3; Bernhard Conoplia, *Transcript of Evidence*, p. 3; Michael Oke, Unit Manager, Sustainability, Yarra City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 14; Cr Tom Crook, Deputy Mayor, East Gippsland Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 27; Simon Woodland, Manager, Sustainable Environment, Bass Coast Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 33; Stuart Moffatt, *Transcript of evidence*, p. 4; Ralph Griffiths, General Manager, Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

⁴⁸ Pete Mercouriou, Chair of the Barwon South West Climate Change Alliance and Senior Sustainability Officer at City of Geelong, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 6.

⁴⁹ Oliver Hill, *Transcript of evidence*, pp. 7–8

⁵⁰ Aaron Gray, *Transcript of evidence*, p. 7.

⁵¹ Ibid.

⁵² Monash Energy Institute, *Submission 77*, pp. 2–3.

Strategic leadership from the Victorian Government is therefore essential not just from the perspective of ensuring adequate public charging but because transport electrification will impact how all Victorians interact with the electricity network. Aaron Gray told the Committee that the actions of the Victorian Government will shape the future of the state's electricity system. Mr Gray argued that allowing public charging network to be dominated by multinational businesses who seek to replicate the business model of petrol stations will raise costs for all Victorian electricity consumers:

The really big players who are putting in the fast charging are your Ampols, your BPs, your Shells and then your Teslas. Three out of those have a vested interest in continuing to supply fossil fuels through the petrol station networks that they have already got. They love the model of 'Everyone go and fill up as quickly as you possibly can'. They market on convenience, but what is that going to do for our grid? If we have got to put in a \$200,000-plus upgrade to the grid to facilitate every single one of these charging stations going in because we are going to assume that we can continue with the behaviour we have had before, Victorian consumers are going to pay an awful lot of money.⁵³

Figure 5.3 What the Committee heard

“ From a state perspective, having a statewide EV charging strategy and implementation plan that has been worked on or discussed, inclusive of the key stakeholders – and that includes the DNSPs and that includes local government, whether they are inner metro or outer regional ones, which are the areas with the greatest challenges. Having them collaborating and working on this together with a view to what the actual end goal is and what we want this system to look like in 2040, 2045. Because that is where we need to be. If we meet our targets for EV uptake by 2035 that the state has set, we need the infrastructure there and we need to be planning for that.

Aaron Gray, *Transcript of evidence*, pp. 9–10.

“ Everyone needs to be pulling in the same direction, so industry, networks, consumer groups, local government and state governments all need to be pulling in the same direction. But that is not happening today. We do not have a national strategy for EV charging. We do not have any central planning around what consumer needs for charging will be, in all of their different forms, either now or in the future.

Bernhard Conoplia, *Transcript of evidence*, p. 3.

⁵³ Aaron Gray, *Transcript of evidence*, p. 4.

“ The absence of a coordinated statewide strategy has resulted in inconsistent delivery, unclear responsibilities, and issues with maintenance and reliability. In some areas, demand already exceeds supply—leading to queues and lost economic opportunities—while others remain underserved

Victorian Greenhouse Alliances,
Submission 85, p. 2.

“ Leadership matters. When government moves decisively, the private sector follows.

Dr Alina Dini, *Transcript of evidence*, p. 2.

“ Victoria cannot meet its emissions reduction goals without a clear plan for charging infrastructure. Councils cannot be left to design their own networks independently. A Victorian Electric Vehicle Charging Strategy should set statewide coverage targets, site selection principles, funding mechanisms and technical standards – and then break these down into delivery plans for each local government area. This ensures a coordinated rollout rather than a patchwork of market driven outcomes.

Cr Tom Crook, Deputy Mayor, East Gippsland Shire Council, public hearing, Melbourne, 13 February 2026, *Opening statement*, p. 2.

FINDING 53: The Victorian Government has no dedicated strategy for deploying a state-wide EV charging network.

RECOMMENDATION 16: That the Victorian Government must develop a statewide EV charging strategy and implementation plan in consultation with key stakeholders that establishes charging network coverage targets, a standardised site identification methodology, infrastructure standards, and clear responsibilities for all levels of government with consideration of funding mechanisms.

FINDING 54: The Victorian Government committed to delivering reforms that make public charging affordable, speed up EV charging infrastructure delivery, remove barriers to delivering kerbside charging, and promote bidirectional charging.

RECOMMENDATION 17: That the Victorian Government collaborate with the Commonwealth Government towards the development of a coordinated, national EV charging infrastructure delivery strategy.

5.2.2 Providing infrastructure and capability support for local governments

The Committee heard that Victorian local governments require strategic planning and capability support to better facilitate the expansion of the charging network. Councils expressed that there is an urgent need for a statewide EV transition plan that sets out

charging network coverage targets, a standardised site identification methodology, funding mechanisms, infrastructure standards, and clear responsibilities for all levels of government.

Local governments are key facilitators of the EV transition but require support from state and federal governments to deliver it at scale. As was noted by a July 2025 report commissioned by Energy Consumers Australia, local governments are best placed to consult with their communities to understand where infrastructure is needed but may lack capacity to efficiently determine the compatibility of these sites with grid capacity.⁵⁴ Councils also play an important regulatory role as managers of large amounts of public land. Sam Sampanthar, Head of Sustainable Futures, Knox City Council, noted that council are likely ‘the largest landholder of car parks’ in the state.⁵⁵ Ralph Griffiths, General Manager, Policy and Regulation, AGL added that councils play a key role in designing parking restrictions for charging locations that allow drivers to stay ‘for long enough to put a meaningful charge into their vehicle’.⁵⁶

In their submission to the Inquiry, the Victorian Greenhouse Alliances explained individual councils have taken proactive steps to meet demand for EV charging despite it not being a core service and despite their limited resources.⁵⁷ Consequently, councils have ‘developed evidence-based regional charging frameworks and strategies that identify optimal public charging sites on council land, improving accessibility, equity, and local economic outcomes.’⁵⁸ To date, councils have delivered public charging via co-funding arrangements with the Victorian Government such as application-based initiatives like the Destination Charging Across Victoria Program or by facilitating access for private CPOs to operate on council land through licence agreements.⁵⁹

Targeted investment from the Victorian Government could allow councils, especially those in regional areas, to overcome budgetary constraints that are preventing them from electrifying their vehicle fleets faster and unlock significant cost savings through reduced liquid fuel expenditure. Rebecca Lambie, Sustainability Officer at East Gippsland Shire Council told the Committee that a recent council fleet transition plan found that by bringing forward \$700,000 in infrastructure investments would save the council \$350,000 in fuel costs annually by year five.⁶⁰

⁵⁴ Adrian Kemp, Mathew Ditchburn, Max Prien, *Creating accessible and affordable public EV charging networks for Australia*, report for Energy Consumers Australia, July 2025, p. 25.

⁵⁵ Sam Sampanthar, Head of Sustainable Futures, Knox City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 23.

⁵⁶ Ralph Griffiths, *Transcript of evidence*, p. 35.

⁵⁷ Victorian Greenhouse Alliances, *Submission 85*, p. 2.

⁵⁸ Ibid.

⁵⁹ Victorian Greenhouse Alliances, *Submission 85*, p. 2; Knox City Council, *Submission 61*, p. 1.

⁶⁰ Rebecca Lambie, Sustainability Officer, East Gippsland Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 31.

The Committee heard that high capital costs associated with upgrading the electricity supply of depots that require high-powered chargers for heavy electric vehicles are a major barrier for council fleet electrification.⁶¹ Pete Mercouriou, Chair of the Barwon South West Climate Change Alliance and Senior Sustainability Officer at City of Geelong, told the Committee that many local governments, especially those in the Barwon South-West region have plans to transition their fleets of council-owned vehicles but they find the cost to accommodate charging installation at depots to be an insurmountable barrier. He said:

you will find a lot of council officers sinking a lot of time in feasibility studies where upgrading your electrical wires at a depot is going to be north of half a million dollars, and none of those local governments in those areas have that sort of capital to invest to upgrade their depots. So what happens? They do not invest in electric vehicles, which then puts them behind their goal of becoming a net zero organisation, operationally speaking.⁶²

The absence of a statewide EV charging strategy has forced councils around Victoria to carry out this work individually, or in partnership with neighbouring local authorities. This is inefficient and extremely resource intensive, as Michael Oke, Unit Manager, Sustainability, Yarra City Council noted, 'There are 79 Victorian local governments. Each of us trying to do this individually is hard and complex.'⁶³ Aaron Gray explained that this is structurally inefficient as it duplicates effort and stops local governments from benefitting from economies of scale:

We have had a scenario with each individual council essentially having to upskill people to know and understand about EV charging and electrical grid infrastructure who were not necessarily in that position, and this is being replicated across every single council that is dealing with a charge point operator, whether they are wanting to put in new pole-mounted EV chargers or whether they are wanting to put in new kerbside charging.⁶⁴

Stakeholders repeatedly called for the Victorian Government to develop a centralised framework that establishes funding streams to overcome key barriers to the EV transition, builds technical capacity around EV charging within councils, and facilitates greater cooperation between all market participants.⁶⁵ They believed that this would allow Victorian local governments to make more efficient use of their time and resources and deliver a harmonised charging network with no gaps.

⁶¹ Michelle Wyatt, Manager, Climate Change and Environment, City of Greater Bendigo, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 31.

⁶² Pete Mercouriou, *Transcript of evidence*, p. 5.

⁶³ Michael Oke, Unit Manager, Sustainability, Yarra City Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 19.

⁶⁴ Aaron Gray, *Transcript of evidence*, p. 4.

⁶⁵ Victorian Greenhouse Alliances, *Submission 85*, p. 3; Evie Networks, *Submission 87*, p. 8; JOLT Charge *Submission 123*, p. 2; Michael Oke, *Transcript of evidence*, p. 14; Cr Tom Crook, *Transcript of evidence*, p. 27; Simon Woodland, *Transcript of evidence*, p. 33; Stuart Moffatt, *Transcript of evidence*, p. 4; Ralph Griffiths, General Manager, Policy and Regulation, AGL, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 35.

Several witnesses told the Committee that Victoria should look to implement a framework for state-local government cooperation modelled on the United Kingdom's successful Local Electric Vehicle Infrastructure (LEVI) scheme. The LEVI scheme not only provides co-funding for infrastructure but also prioritises investments in building technical capacity within local governments to deliver public charging.⁶⁶

As the scheme also includes a support body that provides support, technical advice and guidance to local government applicants,⁶⁷ the LEVI model illustrates the importance of building capacity and providing ongoing support in providing effective infrastructure. Bernhard Conoplia, explained:

We see local governments here all desperately trying to come up with their own plans; this is a centralised body that helps them and resources them to plan the right infrastructure for those local areas, and when you plan that infrastructure properly, you know it is going to be well utilised by consumers.⁶⁸

Case Study 5.1 Local Electric Vehicle Infrastructure (LEVI) scheme (United Kingdom)

The LEVI scheme launched in 2023 with a two-year funding round that would distribute a total of £360.8 million to local governments across England using a needs-based methodology that weighted funding allocations in favour of:

- areas with areas with lower levels of residential off-street parking
- rural areas
- areas with high levels of socioeconomic disadvantage
- areas with fewer established public charge points.

Local governments were invited to apply for funding, which was delivered in two streams:

- £343 million in capital funding to contribute to the costs of delivering charge points (predominantly slow chargers)
- £37.8 million in capability funding for local authorities to employ and train new staff specifically to plan and deliver charging infrastructure.

Source: United Kingdom Government, *Local Electric Vehicle Infrastructure (LEVI) funding allocation methodology*, February 2026, <<https://www.gov.uk/government/publications/local-ev-infrastructure-levi-funding-amounts/local-electric-vehicle-infrastructure-levi-funding-allocation-methodology>> accessed 8 April 2026.

⁶⁶ Victorian Greenhouse Alliances, *Submission 85*, p. 3; Evie Networks, *Submission 87*, p. 8; JOLT Charge *Submission 123*, p. 2.

⁶⁷ Energy Saving Trust, *Local Electric Vehicle Infrastructure (LEVI) fund*, 25 March 2026, <<https://energysavingtrust.org.uk/grants-and-loans/local-electric-vehicle-infrastructure-scheme>> accessed 8 April 2026.

⁶⁸ Bernhard Conoplia, *Transcript of evidence*, p. 4.

FINDING 55: Local governments are important facilitators of the EV transition but require additional support and better coordination to deliver it at scale.

RECOMMENDATION 18: That the Victorian Government ensure that local councils develop parking restrictions for EV charging bays that:

- allow drivers to stay long enough to meaningfully charge
- prevent non-EV drivers from parking

FINDING 56: High up-front infrastructure costs associated with fleet electrification, including wiring upgrades at depots, are preventing local governments from transitioning their fleets sooner and accessing cost savings earlier.

RECOMMENDATION 19: That the Victorian Government support local government fleet electrification with targeted investment.

FINDING 57: Best practice examples from EV charging rollouts in other countries demonstrate that it is important to invest in building technical capacity in local governments as well as co-funding infrastructure projects.

RECOMMENDATION 20: That the Victorian Government develop a framework for state-local government cooperation for EV charging infrastructure delivery with reference to the United Kingdom's Local Electric Vehicle Infrastructure (LEVI) scheme.

5.2.3 Planning a comprehensive regional Victorian charging network

A government-led EV charging strategy must recognise the unique circumstances of regional Victoria and that the market is not currently delivering sufficient infrastructure in rural areas, away from major interstate routes. Operating charging stations in these areas is a commercially challenging proposition for many private CPOs as they have lower average utilisation rates than those in metropolitan areas but also need to have enough charging stations and capacity to accommodate seasonal demand peaks associated with tourism travel. As regional areas are also more likely to face power constraints, upgrading grid capacity can be more costly than in metropolitan areas.

Capital costs and low or inconsistent utilisation rates combine to create a ‘commerciality gap’⁶⁹ that dissuades investment from the private sector in many rural or regional areas.⁷⁰ Failure to appropriately support charging infrastructure deployment in risks creating ‘black holes’ in the charging network and leaving rural communities behind in the energy transition.⁷¹ Bass Coast Shire Council and East Gippsland Shire Council told the Committee that inadequate public charging infrastructure in their regions could jeopardise the future viability of their tourism industries, which are extremely significant to the local economies.⁷²

The Committee heard that Victorian Government investment in or co-funding of charging infrastructure in rural and regional Victoria can address this issue, but that it must prioritise ‘genuine gaps’ in the network as Victoria’s EV fleet matures.⁷³ Ross De Rango told the Committee that commerciality gaps are more likely to manifest in rural, lower traffic areas, away from major interstate or intercity routes. He said:

On the run from Melbourne to Sydney you do not need any government intervention there beyond ‘Let’s make sure that the regulations are right and the connection processes are okay’, because it will stack up commercially. On the run east from Orbost [in eastern Victoria], you might need some government intervention by way of support. On the run up to Swan Hill [in north-western Victoria], you might need some government intervention by way of support in order to close that commerciality gap for the EV charging operators.⁷⁴

A needs-based allocation model for Victorian Government co-funding that prioritises rural or disadvantaged areas that are undersupplied by the private market is essential. Stuart McConnell, General Manager Assets and Environment, East Gippsland Shire Council advocated for the implementation of prioritisation measures for regional areas that address geographical inequities as part of a statewide charging infrastructure deployment plan in Victoria. He argued that East Gippsland Shire Council’s experience shows that delivering charging in the regions increases EV uptake in these areas:

Our more remote and regional settlements are at a real risk of missing out if we do not see some regional coverage, prioritisation and equity measures put in place, because we will not see the private sector invest in those places because the business cases just are not as strong. There are simply not as many users as those either metro or more populated town centres. So it is really important that we consider both landscape scale coverage but community coverage in this infrastructure. Our experience demonstrates really strongly that when you build it, people use it.⁷⁵

⁶⁹ Ross De Rango, *Transcript of evidence*, p. 58.

⁷⁰ Stuart Moffatt, *Transcript of evidence*, p. 9.

⁷¹ Australian Electric Vehicle Association, *Submission 114*, p. 6

⁷² Simon Woodland, *Transcript of evidence*, p. 25.

⁷³ Bernhard Conoplia, *Transcript of evidence*, p. 7.

⁷⁴ Ross De Rango, *Transcript of evidence*, p. 58.

⁷⁵ Stuart McConnell, General Manager Assets and Environment, East Gippsland Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 29.

Small towns and rural areas do not possess the power quality of larger metropolitan areas or regional centres and would need significant upgrades to install a sufficient number of fast chargers.⁷⁶ As upgrade and installations costs would likely prove prohibitive for local government and the private sector, Victorian Government co-funding can de-risk investments in regional and rural locations and provide that extra support to councils and regional communities. Bernhard Conoplia of Evie Networks told the Committee that co-funding initiatives, like the Victorian Government's Destination Charging Across Victoria Program,⁷⁷ can have a 'multiplier effect' for industry investment and therefore facilitate the delivery of essential infrastructure.⁷⁸

As a general rule, when we receive \$1 of government funding, we will invest about \$3 of our own money, so there is a multiplier effect. When government works with industry to deploy key infrastructure, you get this benefit of industry investment, which does not happen in other scenarios.⁷⁹

Ensuring broad access to kerbside or slow charging in regional towns that experience seasonal tourism peaks, camping grounds, and caravan parks is essential to distributing charging demand and avoiding reliance fast charging stations. Andrew Forster, CEO of EVX, told the Committee that the lower capital costs associated with kerbside charging mean that 30 per cent of EVX's operational charge points are in regional areas and that the company has not experienced commerciality gap.⁸⁰ He explained that EVX's regional sites in remote areas of northern New South Wales 'emulate some early-stage suburban chargers that we deploy in the middle of Sydney and in Melbourne'.⁸¹ Stakeholders believed that commerciality gaps for charging stations regional areas will decrease as more EVs come onto Victorian roads, as higher market penetration will create a 'vastly different business case' for private CPOs.⁸²

The Committee heard that strategic planning from the Victorian Government must also consider the deployment of dedicated fast charging infrastructure along priority freight routes to support the electrification of the logistics sector. The Electric Vehicle Council explained that Victoria currently has no plan for developing charging hubs for electric freight movements or for major cross-border routes.⁸³

The Committee noted that the Government's Victorian Freight Plan 2025–2030 outlined a commitment to develop a Freight Charging Framework that 'considers options for recharging facilities and the emergence of new, low carbon liquid fuels

⁷⁶ Michelle Wyatt, *Transcript of evidence*, p. 26.

⁷⁷ Department of Energy, the Environment and Climate Action, *Destination Charging Across Victoria Program*, 28 April 2026, <<https://www.energy.vic.gov.au/grants/destination-charging-across-victoria-program>> accessed 29 April 2026.

⁷⁸ Bernhard Conoplia, *Transcript of evidence*, pp. 2–3.

⁷⁹ Ibid.

⁸⁰ Andrew Forster, Chief Executive Officer, EVX, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 26.

⁸¹ Ibid.

⁸² Bernhard Conoplia, *Transcript of evidence*, p. 9.

⁸³ Electric Vehicle Council of Australia, *Submission 111*, p. 13.

to support industry to invest in decarbonising road and rail freight'.⁸⁴ Tim Camilleri, Director e-Mobility Solutions, Volvo Group Australia argued that ensuring appropriate regulatory settings are in place to facilitate the delivery of appropriate, affordable high-power charging infrastructure along major routes or in peri-urban depots is fundamental to businesses having the confidence to electrify their fleets. He said:

If any of these passing the equation are zero or significantly reduced, the deployment of that vehicle or those vehicles in those applications does not work if it does not carry what it needs to, if it does not go the range it needs to, if it does not have the charging available. If the costs do not work, then we are unable to deploy and make change in this space.⁸⁵

Mr Camilleri also told the Committee that axle weight limits and overnight operational curfews for trucks are additional barriers to electrification in the logistics sector. Electric trucks are on average between one and two tonnes heavier than their internal combustion engine counterparts. This means that they must carry a lighter payload due to axle weight limit restrictions that apply for trucks that operate on Victorian roads.⁸⁶

Overnight operational curfews do not currently distinguish between electric and internal combustion engine trucks, meaning that heavy electric vehicles are prohibited from operating overnight. Mr Camilleri told the Committee that electric trucks 'make significantly reduced sound emissions' such that 'when they were designed in their infant stage, we identified that we needed to add additional noise to the vehicles to enable safety of people working around or being around the vehicle so they were made aware of it'.⁸⁷ Standard operational hours for logistics companies mean that vehicles return to depots after peak solar generation periods. Mr Camilleri explained that permitting electric heavy vehicles to operate at night would allow them to charge during the day at periods of peak renewable supply.⁸⁸

FINDING 58: Charging stations regional Victoria currently have lower average utilisation rates than those in metropolitan areas but also need to have enough charging stations and capacity to accommodate seasonal demand peaks associated with tourism travel.

FINDING 59: The private market is not currently delivering sufficient charging infrastructure in regional and rural areas away from main intercity or interstate routes, which risks creating 'black holes' in the network and leaving these communities behind.

⁸⁴ Department of Transport and Planning, *Victoria Delivers: Victorian Freight Plan 2025-30*, Melbourne, September 2025, p. 43.

⁸⁵ Tim Camilleri, Director, e-Mobility Solutions, Volvo Group Australia, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 25.

⁸⁶ Tim Camilleri, *Transcript of evidence*, pp. 30, 33.

⁸⁷ Tim Camilleri, *Transcript of evidence*, p. 27.

⁸⁸ Tim Camilleri, *Transcript of evidence*, p. 28.

FINDING 60: Government co-funding can have a ‘multiplier effect’ for private charge point operators (CPOs) and can address commerciality gaps and support infrastructure delivery.

RECOMMENDATION 21: That the Victorian Government works with industry and local government to ensure there is sufficient investment for charging infrastructure in areas where installation is more complex or has longer returns on investment, prioritising rural or disadvantaged areas that are undersupplied.

RECOMMENDATION 22: That the Victorian Government develop a model that recognises regional, rural and disadvantaged areas that are undersupplied by the private market acknowledging private and government investment.

FINDING 61: The availability of appropriate, affordable high-power charging infrastructure along major routes or in peri-urban depots is fundamental to giving logistics businesses the confidence to electrify their fleets.

RECOMMENDATION 23: That strategic charging network planning undertaken by the Victorian Government incorporates all relevant stakeholders, consider the specific needs of heavy electric vehicles and remove barriers to electrification.

FINDING 62: Overnight operational curfews do not currently distinguish between electric and internal combustion engine trucks, meaning that heavy electric vehicles are prohibited from operating overnight despite their significantly reduced sound emissions.

FINDING 63: If electric heavy vehicles could operate overnight, they would charge during periods of strong renewable energy generation.

RECOMMENDATION 24: That the Victorian Government should commission a trial to understand the effects of allowing heavy electric vehicles to operate overnight.

5.2.4 Metropolitan councils may require additional regulatory support

The Committee heard that there is regulatory barrier that prevents councils in metropolitan Melbourne from granting licence agreements to CPOs for the installation and operation of EV charging stations in Council-managed parking bays located on Urban Arterial Road Reserves.⁸⁹

Deploying EVCI through licensing agreements with private CPOs is a method preferred by some councils as it allows them to expand public charging in their areas without the need for councils to fund installation or ongoing operational costs, which fall on the charging provider.⁹⁰ Although councils are the responsible road authority for these car parks and perform several key functions including lane marking, resurfacing, maintenance and repairs, and parking enforcement, Urban Arterial Road Reserves are Crown Land. As outlined in the *Road Management Act 2004 (Vic)*, leasing and licensing powers for any part of the arterial road reserve can only be carried out by the coordinating road authority, Transport Victoria.⁹¹

Sam Sampanthar told the Committee that there is no process in place to facilitate licence agreements with charge point operators and local governments, and that discussions with private CPOs suggest that they have avoided Urban Arterial Road Reserves across metropolitan Melbourne due to this issue. Mr Sampanthar estimated that there are over 500 car parking bays in Urban Arterial Road Reserves across Knox that Council is unable to consider for EV charger installation for this reason, and likely many more around Melbourne.⁹²

FINDING 64: Councils in metropolitan Melbourne are currently unable to grant licence agreements to Charge Point Operators for the installation and operation of EV charging stations in Council-managed parking bays located on Urban Arterial Road Reserves.

RECOMMENDATION 25: The Department of Transport and Planning should transfer the licensing function for Council-managed parking bays located on Urban Arterial Road Reserves to councils on a case-by-case basis, with the consent of the Head of Transport for Victoria.

⁸⁹ Knox City Council, *Submission 61*, p. 1.

⁹⁰ Sam Sampanthar, *Transcript of evidence*, p. 15.

⁹¹ *Ibid.*

⁹² *Ibid.*

5.2.5 Policy certainty creates confidence and delivers investment

Investment follows certainty, and this is what we do not have in Victoria right now.

Andrew Forster, *Transcript of evidence*, p. 16.

The Committee heard that delivering a statewide charging strategy and a long-term implementation plan would be an important signal of the Victorian Government's commitment to electrifying the transport network.

In their *State of EVs – 2025* report, the Electric Vehicle Council noted that in countries with more developed EV transitions than Australia, long-term policy certainty underpins market confidence among investors and consumers alike.⁹³ Dr Alina Dini told the Committee that the Commonwealth Government's Electric Vehicle Strategy in 2022 was 'a sudden signal shift globally that said Australia was open for business on EVs',⁹⁴ leading to sharp upturn both in the number of EV products available on the Australian market and in sales.

Bernhard Conoplia shared estimates with the Committee that predict that Australia will require between \$4 billion and \$5 billion in investment before 2030 to develop a national EV charging network that will accommodate the EV adoption rate targets state by Commonwealth, state and territory governments.⁹⁵ Mr Conoplia explained this does not just refer to charging supply for passenger vehicles but will be underpinned by decisions taken by commercial operators and freight companies, 'who look at the total cost of ownership and the product itself and choose what is best for them economically.'⁹⁶ Andrew Forster, CEO, EVX and Brendan Wheeler, CEO, EVSE Australia told the Committee that there is not a shortage of capital, but rather that investors have been deterred from Victoria by policy uncertainty and have chosen to pursue projects in other jurisdictions.⁹⁷

Policy certainty also impacts how businesses and the Victorian Government invest in workforce development and skills training in in-demand industries. Electrifying Victoria's transport system will require a significant uplift in the existing electrical contracting workforce to facilitate the installation of charging infrastructure at the speed and scale required to keep up with EV adoption forecasts.

The Committee heard Australia's electrical contracting workforce will be around 35,000 people below the required level in 2030,⁹⁸ and that there are already workforce and skills shortages in the automotive industry.⁹⁹ Kent Johns, Head of Government

⁹³ Electric Vehicle Council, *State of Electric Vehicles 2025*, October 2025, p. 19.

⁹⁴ Dr Alina Dini, *Transcript of evidence*, p. 5.

⁹⁵ Bernhard Conoplia, *Transcript of evidence*, p. 3.

⁹⁶ Oliver Hill, *Transcript of evidence*, p. 4.

⁹⁷ Brendan Wheeler, CEO, EVSE Australia, public hearing, Melbourne (via videoconference), 26 February 2026, *Transcript of evidence*, p. 25.

⁹⁸ Kent Johns, Head, Government Relations and Regulatory Affairs, National Electrical and Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 47.

⁹⁹ Victorian Automotive Chamber of Commerce, *Submission 107*, p. 9.

Relations and Regulatory Affairs, National Electrical and Communications Association (NECA) explained to the Committee that increasing electrification of the energy and transport systems will require a significant uplift in Victoria's electrical contracting workforce. Mr Johns called on the Victorian Government to prioritise creating pathways for more women and mature-aged learners to enter the trade. He said:

It is a four-year apprenticeship. 2030 is four years away, so theoretically, because the completion rates for apprenticeships are close to 50 per cent, we should have 70,000 electrical apprentices enrolled today. We do not, and we will run short.¹⁰⁰

FINDING 65: Long-term policy certainty underpins market confidence among investors and consumers alike and will support the transition to the electrification of transport.

FINDING 66: Modelling suggests that Australia will not have enough electrical contractors to meet demand for electrification works in 2030.

RECOMMENDATION 26: The Victorian Government must create pathways for young people to undertake electrical apprenticeships, especially groups that are underrepresented in these cohorts, such as women and mature-aged learners, and incentivise improved apprenticeship completion rates.

5.3 The role of the Distribution Network Service Providers

5.3.1 The EV charging station site selection process is inefficient and unpredictable

Determining sites that are appropriate for installing public charging requires matching visibility, patterns of driver behaviour with sufficient grid capacity.¹⁰¹ The Committee heard from many stakeholders — especially CPOs and local governments — that this is an unpredictable, expensive and time-consuming process in Victoria.¹⁰²

Figure 5.4 gives an indicative outline of the process an applicant must go through to install and connect a charging station to the electricity network.¹⁰³

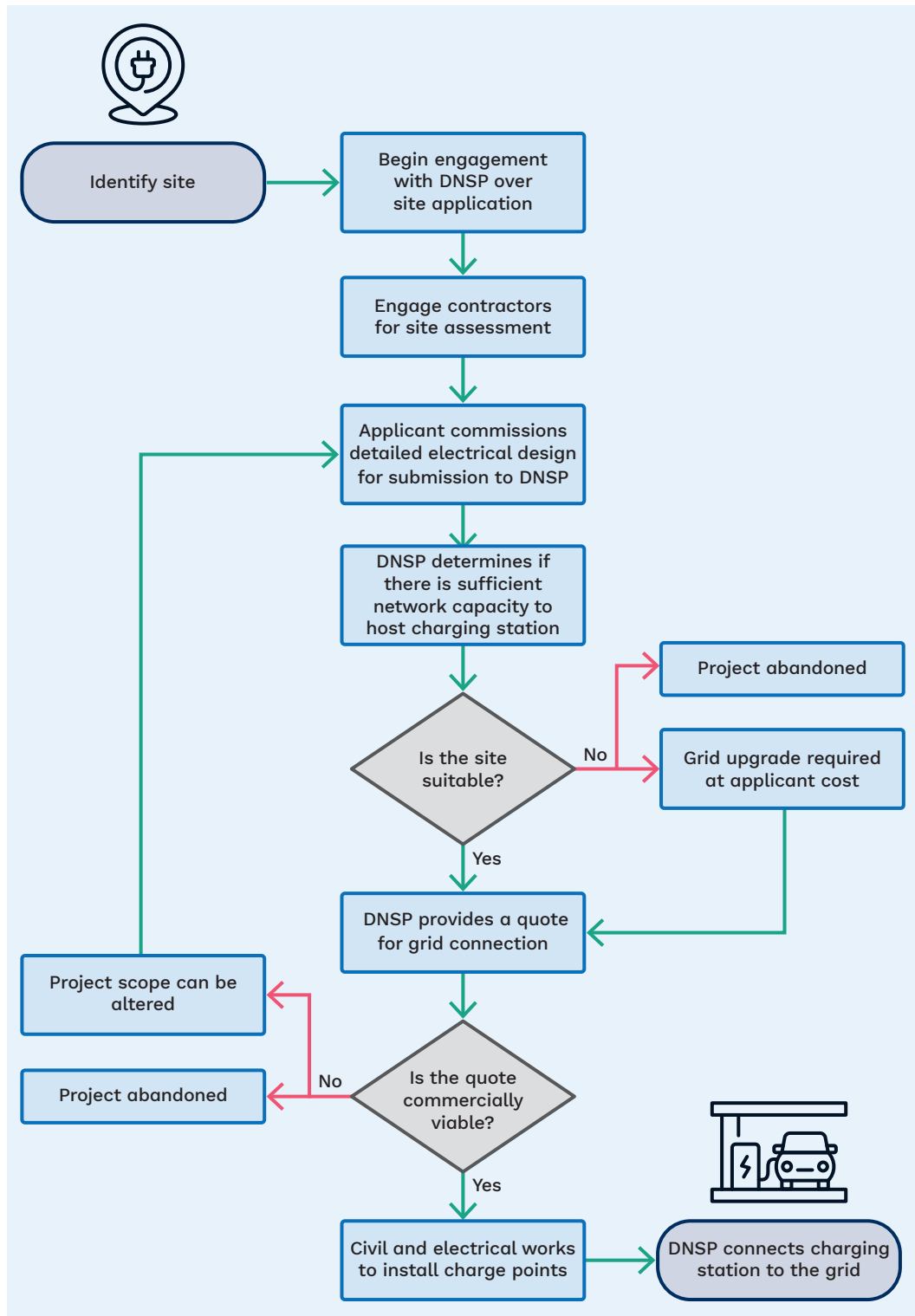
¹⁰⁰ Kent Johns, *Transcript of evidence*, p. 47.

¹⁰¹ Oliver Hill, *Transcript of evidence*, p. 5.

¹⁰² EVX, *Submission 87*, p. 9; JOLT Charge, *Submission 123*, pp. 6–7; East Gippsland Shire Council, *Submission 79*, p. 2; Victorian Greenhouse Alliances, *Submission 85*, p. 3; Bass Coast Shire Council, *Submission 115*, p. 2; City of Greater Bendigo, *Submission 121*, p. 5.

¹⁰³ Based on evidence heard by the Committee, Figure 5.4 reflects an indicative application process for a DC fast charging station. Pole-mounted kerbside charging requires the additional steps of an asset suitability assessment and the negotiation of a Facilities Access Agreement. This is discussed in Section 5.4.4.

Figure 5.4 Installing a public DC fast charging station in Victoria



5

Stakeholders reported many common issues regarding the process of installing public charging in Victoria that they believe are slowing its deployment around the state:

- Connection application processes are not standardised.
- Many sites proposed by CPOs, councils and the community are rejected because of grid capacity constraints.
- Clear low-voltage network capacity data is not available to applicants at the site selection stage, meaning they must draft connection proposals for asset installations without knowing whether the project will be viable.
- Applications for kerbside installations are frequently rejected because of the degradation of physical assets means that they are in too poor condition to host a mounted charger.
- Uncertainty around network capacity and project viability can severely delay projects as different sites are selected in an iterative process. In some cases, completion targets have been pushed back as long as 18 to 24 months.
- Connection costs are high and unpredictable. Stakeholders reported that there is little transparency around how DNSPs determine their connection costs.
- Unlike in other states and territories, connection services are non-contestable.

5.3.2 Witnesses criticised the service standards of Victorian DNSPs

When connection and network assessment services operate as a monopoly function without strong time-bound standards, deployment slows and investment evaporates.

Andrew Forster, *Transcript of evidence*, p. 16.

DNSPs have an important role to play in facilitating the deployment and connection of EV charging infrastructure as part of their core business.¹⁰⁴ However, the Committee heard criticism of the performance and transparency of Victorian DNSPs from a range of stakeholders including EV drivers, private Charge Point Operators, and local councils.¹⁰⁵ They also argued that structural and data quality issues are preventing Victorian DNSPs from efficiently enabling transport electrification.

Unpredictable connection fees and timeframes from DNSPs are among the most significant barriers faced by applicants looking to install public charging infrastructure in Victoria. Stakeholders raised concerns about inefficient processes and a lack of transparency around pricing methodologies for grid connections. Bernhard Conoplia described Evie Networks' experience of unpredictable pricing for grid connections in Victoria, detailing several instances where quotes were 'challenged' and then revised with limited transparency:

¹⁰⁴ AGL, *Submission 82*, p. 5.

¹⁰⁵ EVX, *Submission 87*, p. 9; JOLT Charge, *Submission 123*, pp. 6–7; East Gippsland Shire Council, *Submission 79*, p. 2; Victorian Greenhouse Alliances, *Submission 85*, p. 3; Bass Coast Shire, *Submission 115*, p. 2; City of Greater Bendigo, *Submission 121*, p. 5.

We had one cost that came through at \$75,000. When we challenged it, it got reduced to \$34,000. We had a quote for a quote that was \$20,000 – not for design work, but a quote to produce a quote that was 88 hours at \$207 an hour. Someone was being paid \$400,000 inside that DNSP to produce a quote, and they were going to spend 2½ weeks on it. There is that example. We had another one at \$35,000, and it was literally switching off a substation and switching it back on. It was one day of work. There are many examples. We had a \$300,000 quote for a 40-metre cable run, and there was another one, I think it was \$100,000, but no transparency. They would not provide any data.¹⁰⁶

JOLT Charge reported a similar experience, whereby a quote that was ‘\$80,000, when challenged, became \$50,000 straightaway’.¹⁰⁷ Stuart Moffatt and Bernhard Conoplia both noted that high connection costs undermine commercial viability and are the reason why many proposed sites are ultimately abandoned.¹⁰⁸

CPU told the Committee that typically ‘a quote will only change when the scope of work is revised through negotiation.’¹⁰⁹ They added that under the existing regulatory framework, project proponents are required to cover the costs of exploratory works to ‘prevent their applications adding to power bills for other Victorian homes and businesses’.¹¹⁰ If a project requires augmentation above a certain level, it must be referred to its Design and Project Delivery team ‘who scope and design network augmentation and determine costs via a regulated pricing algorithm.’¹¹¹

Both Ross De Rango¹¹² and Andrew Forster told the Committee that poor performance at Victorian DNSPs is causing capital to leave Victoria, as CPOs pursue projects in more accommodating jurisdictions.¹¹³ Mr Forster criticised the structural capacity of the DNSPs to deliver infrastructure to the required level. He said:

Innovation in infrastructure delivery requires a degree of agility at the end of the day, and it requires a willingness from our monopoly networks to perform to a reasonable service standard, the minimum which we should expect for being granted the privilege to profit unopposed competitively from our public infrastructure. Where this fails to occur, the market does not wait. It reallocates capital elsewhere, and that is precisely what we are observing: investment, productivity, economic growth and job-creating infrastructure projects walking out of Victoria and into other more accommodating jurisdictions.¹¹⁴

¹⁰⁶ Bernhard Conoplia, *Transcript of evidence*, p. 14.

¹⁰⁷ Stuart Moffatt, *Transcript of evidence*, p. 13.

¹⁰⁸ Stuart Moffatt, *Transcript of evidence*, p. 9; Bernhard Conoplia, *Transcript of evidence*, p. 10.

¹⁰⁹ Lauren Featherston, Head of Regulatory Policy and Compliance, CitiPower, Powercor and United Energy, correspondence, 2 April 2026, p. 8.

¹¹⁰ *Ibid.*

¹¹¹ *Ibid.*

¹¹² Ross De Rango, *Submission 73*, p. 4.

¹¹³ Andrew Forster, *Transcript of evidence*, p. 16.

¹¹⁴ *Ibid.*

Local councils feel the impact of cost blowouts and protracted delays more acutely than private CPOs due to more limited budgets and public expectations around infrastructure project delivery. For Bass Coast Shire Council, inefficient processes connection processes have both caused delays that undermined public confidence in the Council's capacity to deliver critical and drained its resources.¹¹⁵

Case Study 5.2 Delays and cost blowouts at Bass Coast Shire Council

In mid-2022, Bass Coast Shire Council received funding from the Victorian Government to deliver six charging stations across its region. The Council had recognised that demand for public charging in Bass Coast Shire was growing exponentially and was not being met by the private sector.

The funding was used to deploy four public 60 kilowatt fast chargers and two 22 kilowatt chargers for council-owned fleet vehicles. The project began in mid-2022 with the goal of completing the installation of all six chargers in 12 months.

Bass Coast Shire Council prioritised sites with good public visibility, access to amenities, shops, recreational areas in town centres and on main thoroughfares around Bass Coast. It engaged local contractors for civil and electrical works to begin detailed site investigations and engaged with its DNSP, AusNet.

AusNet advised that applications from the Council would be considered on a site-by-site basis, subject to the submission of detailed electrical designs commissioned at cost to the Council.

Initial connection quotes from AusNet ranged from thousands of dollars to in excess of \$200,000. The more costly sites were deemed completely untenable, and the Council had to start the site selection process for some towns from scratch. This meant it had to identify a site that met all its criteria and commission electrical designs before resubmitting applications to AusNet and waiting for the process to restart. Finalising site selections saw the Council cycle through several rounds of application to AusNet, each time incurring additional costs and delays.

By early 2024, the project budget had increased by over 50 per cent, driven almost entirely by the cost of network upgrades, which now totalled over \$355,000 despite Council's best efforts to contain them.

Public chargers in Wonthaggi, Grantville and Newhaven were just commissioned in December 2025 and January 2026, almost four years later. Nearly four years after the project started, Bass Coast Shire Council is still waiting for its public charger in Inverloch to be connected by AusNet.

Source: Simon Woodland, *Transcript of evidence*, p. 25.

¹¹⁵ Bass Coast Shire Council, *Submission 115*, p. 2.

Simon Woodland, Manager, Sustainable Environment, Bass Coast Shire Council, explained to the Committee that around three years of delays to its project to install 6 public chargers in its region meant that the Council spent ‘at least half a million dollars’ in officer time and \$1.3 million to \$1.4 million in cash on project-related expenditure. This came in addition to \$355,000 in connection fees charged by AusNet for six sites.¹¹⁶ Bass Coast Shire Council officers time was spent ‘both securing council approval for additional council budget to make this project work’ and ‘project managing, chasing answers from AusNet and going through the cycle again with our local contractors’.¹¹⁷

Councils and charge point operators believed that streamlined application processes, greater transparency and closer working relationships with DNSPs are essential to simplify the installation of public charging infrastructure in Victoria and reduce unnecessary costs. The Committee heard that Victorian DNSPs do not proactively identify sites that possess sufficient grid capacity to host EVCI.¹¹⁸ Instead, to learn whether a site is suitable to host a charge point applicants must develop, submit and pay for a connection application.¹¹⁹ Reflecting on the City of Greater Bendigo Council’s experience of deploying public charging, Michelle Wyatt described structural challenges and inefficiencies in their working relationship with Powercor:

I guess the collaborative attitude has gone up and down with time, but overall we find that there is not as much transparency around the grid capacity and the costs of the connection fees as we would like, and a lack of maybe capacity at their end to work collaboratively with us on, like, a largish project of multiple electric vehicle charging opportunities – to help work with us on triaging those [locations] and determining which ones are going to work from a distribution network perspective. They just do not, from our experience, have the staff or the time or the capacity to do that sort of collaborative work ...

We have the same difficulty in getting a sense of what would be possible before we have designed a solution that we then find out is not actually going to be feasible within the current grid constraints. I think overall we find Powercor a little bit more difficult, in some cases, to collaborate with compared to some of the other [regulated monopoly] services that operate in our region.¹²⁰

A comparison of DNSPs around Australia that was published by the Electric Vehicle Council in December 2024 shows that Victorian DNSPs were among the worst in the country when it comes to having dedicated teams that support EV connections, second lines of supply, and connection timeliness.¹²¹ When the Electric Vehicle Council’s report was published in December 2024,¹²² no Victorian DNSP had a dedicated team for

¹¹⁶ Simon Woodland, *Transcript of evidence*, p. 28.

¹¹⁷ *Ibid.*

¹¹⁸ Michelle Wyatt, *Transcript of evidence*, p. 28.

¹¹⁹ *Ibid.*

¹²⁰ *Ibid.*

¹²¹ Ross De Rango, *Submission 73*, p. 5; Electric Vehicle Council, *State of Electric Vehicles 2024*, p. 57.

¹²² Note: The Electric Vehicle Council’s most recent report, *State of Electric Vehicles 2025*, does not discuss DNSP activities in as much detail as the 2024 edition.

processing high power public charger connections compared to their counterparts in New South Wales, Queensland, and South Australia, who all possess such teams.¹²³ If DNSPs do not have dedicated teams that can facilitate high power EVCI deployment, extended delays and wasted resources will remain site selection process for public charging. Simon Woodland of Bass Coast Shire Council described these structural concerns, noting that DNSPs have no mechanisms in place to streamline the application process or differentiate between requests made to connect essential infrastructure with other consumer connections. He said:

We understand that [finding an appropriate site] is an iterative process, but our concern is ... our network provider does not appear to have any dedicated resource, any business process specific to this challenge within the business. We are simply treated as yet another connection customer, and we join the queue alongside the local IGA, who wants to upgrade their refrigeration.¹²⁴

Andrew Forster told the Committee that after CPU was granted a waiver to the ring-fencing guideline, it created a dedicated team to build, connect and manage the kerbside trial chargers but has not created a dedicated team for applications by other charging providers.¹²⁵ CPU confirmed to the Committee that they had allocated \$1.2 million to deploy and maintain kerbside chargers in Victoria.¹²⁶ Mr Forster believed that expanding this approach to encompass all EVCI applications could reshape the landscape in Victoria. He said, 'If you had a dedicated team and the funding to increase network capacity and manage EV charging applications ... then we would be in a fundamentally different position.'¹²⁷

The Committee heard that a contestable works scheme for connection services could help to streamline the connection process and reduce costs for applicants. Several stakeholders referred to the Accredited Service Provider scheme¹²⁸ in New South Wales as an example of a system that facilitated a competitive market for work to design, construct or connect assets to the electricity distribution network by accrediting around 1,200 companies to provide these services.¹²⁹ Andrew Forster told the Committee that DNSPs in Victoria 'retain control over assessment and delivery of key connection services, and where their internal capacity becomes constrained, whether by resourcing, process or prioritisation, the market has limited alternatives.'¹³⁰ Mr Forster explained that EVX's experience shows that this does not just impact prices, but also slows the 'tempo' of EVCI delivery:

¹²³ Electric Vehicle Council, *State of Electric Vehicles 2024*, p. 57.

¹²⁴ Simon Woodland, *Transcript of evidence*, p. 28.

¹²⁵ Andrew Forster, *Transcript of evidence*, p. 25.

¹²⁶ Daniel Bye, Head of Customer Connections and Requests, Citipower, PowerCor and United Energy, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, pp. 7-8.

¹²⁷ Andrew Forster, *Transcript of evidence*, p. 25.

¹²⁸ New South Wales Department of Climate Change, Energy, the Environment and Water, *Accredited Service Provider (ASP) Scheme* <<https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/asp-scheme-and-contestable-works>> accessed 17 April 2026.

¹²⁹ Stuart Moffatt, *Transcript of evidence*, p. 8; Bernhard Conoplia, *Transcript of evidence*, p. 8; Andrew Forster, *Transcript of evidence*, pp. 16, 18.

¹³⁰ Andrew Forster, *Transcript of evidence*, p. 16.

In New South Wales, for example, once a connection is approved, EVX and their approved service providers can install, connect and commission a new location in 4 hours in every DNSP jurisdiction. As a result, in 2025 EVX, one of many operators in New South Wales, delivered close to four new public charge points every single week. In Victoria this process takes several weeks and is completed over four stages.¹³¹

FINDING 67: EV charging infrastructure proponents do not learn whether there is sufficient network capacity to accommodate for their projects to be viable until after they have submitted their application to the DNSP and paid associated costs.

FINDING 68: A 2024 report found Victorian DNSPs to be among the worst in the country regarding dedicated teams to support EV connections, second lines of supply, and connection timeliness

FINDING 69: Unlike their counterparts in New South Wales, Queensland and South Australia, DNSPs in Victoria do not have dedicated teams to facilitate EV charging infrastructure connection requests.

RECOMMENDATION 27: That the Victorian government requires the Victorian DNSPs to establish dedicated teams to streamline the connection process, enable installations within set timeframes and set transparent connection prices.

FINDING 70: Contestability frameworks for connection services like the Accredited Service Provider scheme in New South Wales can improve the tempo of EV charging infrastructure deployment and transparency of data.

RECOMMENDATION 28: That the Victorian Government develop a contestable works framework for connection services in Victoria.

¹³¹ Ibid.

Figure 5.5 What the Committee heard

“ Installations that take a total of 4 hours to complete in NSW will take an average of 6 weeks in VIC due to the protracted nature of the DNSPs connection process and lack of contestable service provider frameworks and metering in VIC.

EVX, Submission 71, p. 7.

“ The best role for the electricity distribution businesses in the rollout of EV charging infrastructure is to promptly and sufficiently provide network connections for the businesses deploying public facing EV charging infrastructure. This is their core task – and they are, in a word, woeful at it.

Ross De Rango, Submission 73, p. 4.

“ I have been at Evie [Networks] for 7 years and I have been in the industry longer than that. In that time I have not seen the DNSPs in Victoria do anything to address the barriers towards public fast charging. Connections remain unpredictable in terms of time and cost. There has been no tariff innovation for public fast charging, and there is a lack of transparent network data that would otherwise help us plan our network.

Bernhard Conoplia, Transcript of evidence, p. 3.

“ In New South Wales integrating chargers into existing street poles had moved from concept in June of 2022 to execution by December 2022 – six months. In Victoria, however, this model has been subject to extended review, reconsideration and delay with no technical barriers in the way. The VSIR committee issued approval for our chargers to be put up on the Victorian distribution network in October of 2023. In Victoria, the first chargers did not go up and get connected in the United Energy service area until July of 2025. This two-year delay was commercial; it was not technical and certainly not due to a lack of enthusiasm from the private sector or local government – six months from concept to completion versus two years for the same in Victoria. The effect, deliberate or otherwise, has resulted in a deferral of lower cost, faster to deploy charging solutions in Victoria.

Andrew Forster, Transcript of evidence, p. 16.

5.3.3 Insufficient grid capacity data is slowing installation of public charging in Victoria

Our experience ultimately leaves us questioning whether network service providers have the capacity in their poles and wires and in their businesses to support an efficient and affordable transition to electric vehicles, particularly across regional Victoria.

Simon Woodland, Manager, Sustainable Environment, Bass Coast Shire Council, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, pp. 25-26.

EVCI connection applications are frequently rejected by DNSPs because of insufficient grid capacity. Some complaints heard by the Committee also cited deteriorated power poles as the cause of rejected applications from CPOs looking to mount chargers on those assets. Nationally there are no ‘clear signals’ or ‘national mapping’ to determine where infrastructure needs to be located to best utilise existing grid capacity.¹³² Evidence heard by the Committee indicates that network data is a greatly contested issue in Victoria. There is little clarity about where the grid has capacity for new public EVCI and limited collaboration between market participants.

The Committee repeatedly heard strong criticism from CPOs and local governments from around Victoria that network data is currently not transparent and that available mapping tools do not give a clear impression of where there is capacity to accommodate new EVCI.¹³³ Stakeholders believed that transparent, increasingly granular network capacity data would streamline connection processes by allowing them to map sites that have sufficient capacity to accommodate EVCI.¹³⁴

Evie Networks and JOLT Charge, who have experience of working with DNSPs in other states, argued that a contestable services framework like the Accredited Service Provider Scheme gives operators in New South Wales more transparent access to network data that facilitates planning.¹³⁵ EVX told the Committee that DNSPs in Queensland, Tasmania, and New South Wales have capacity maps that are available for CPOs to use. Justin Oliver, Deputy Chair of the AER confirmed that the regulator is ‘hearing a lot about access to network data’ from market participants. He noted that ‘getting more visibility of network data’ is one of the objectives of the ring-fencing waiver issued to CPU.¹³⁶

Renate Vogt, General Manager, Regulation, CitiPower, Powercor & United Energy told the Committee that CPU possesses a grid capacity mapping platform – MapInsights – that is ‘readily available to everyone’ and has ‘the same level of granularity of data as every other network service provider in Australia’.¹³⁷ Ms Vogt confirmed that CPU recognised complaints raised by CPOs about the utility of the platform, describing its data is ‘insufficient’ for mapping possible sites to install EVCI ‘because it does not go down to the low-voltage network’.¹³⁸ Further, the Committee noted that the AER’s *Reasons for decision* paper published upon its approval of CPU’s ring-fencing waiver application appears to contradict the assertion that the MapInsights portal possesses the same level of data visibility as other Australian DNSPs:

¹³² Oliver Hill, *Transcript of evidence*, p. 5.

¹³³ EVX, *Submission 87*, p. 9; JOLT Charge, *Submission 123*, pp. 6–7; East Gippsland Shire Council, *Submission 79*, p. 2; Victorian Greenhouse Alliances, *Submission 85*, p. 3; Nexa Advisory, *Submission 89*, p. 3; Tesla Motors Australia, *Submission 110*, p. 1; Electric Vehicle Council, *Submission 111*, p. 6; Bass Coast Shire Council, *Submission 115*, p. 2; City of Greater Bendigo, *Submission 121*, p. 5.

¹³⁴ Ibid.

¹³⁵ Stuart Moffatt, *Transcript of evidence*, p. 8; Bernhard Conoplia, *Transcript of evidence*, p. 8.

¹³⁶ Justin Oliver, Deputy Chair, Australian Energy Regulator, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 43.

¹³⁷ Renate Vogt, General Manager, Regulation, CitiPower, Powercor & United Energy, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 3.

¹³⁸ Ibid.

The AER further encourages CPU to improve its network visibility to support the kerbside EV charging industry, by publishing information on pole suitability and available capacity in a user-friendly, accessible manner. For example, Essential Energy's network map includes a layer which contains pole information and available capacity. Publishing this information can reduce a significant information barrier that hinders third-party EV charger rollout.¹³⁹

This view was shared by the Electric Vehicle Council, which described itself as being 'particularly supportive of initiatives that support the identification of suitable locations for EV charging on the network, including Essential Energy's NSW network-specific capacity tool.'¹⁴⁰ It described AusNet's network capacity tool as 'quite comprehensive', but noted that 'more and updated data points are required in the CitiPower/Powercor/United and Jemena areas in the form of distribution transformer specifications and spare capacity.'¹⁴¹

Ms Vogt argued that this a national issue and not specific to Victoria as 'no electricity distributor in Australia yet has individual circuit-level network capacity data'.¹⁴² She added that CPU is working towards providing 'increasingly granular data' quality to increase its capacity map network capacity and that this observation formed the basis for CPU's proposal to the AER for additional investment in its data infrastructure.¹⁴³ Ms Vogt told the Committee that CPU participated in the AER's network visibility trial and has 'significantly expanded' its published dataset.¹⁴⁴ She added, 'We have got the tools, which are the AMI meters, but to date we do not have the systems in place. There needs to be additional investment in place to ensure that we can provide that data in real time'.¹⁴⁵

Stakeholders reported that connection application rejection rates in Victoria are higher than in New South Wales, where processes are more streamlined and more detailed capacity data appears to be available.¹⁴⁶ EVX noted that their experience shows that between 10 and 15 per cent of their connection applications in New South Wales are rejected because of a lack of capacity or due to the poor condition of the power pole proposed to host a charger. Their rejection rate reached between 40 and 50 per cent in Victoria.¹⁴⁷ Sean McGinty, Founder and Director of EVX, explained that in a recent batch of eight connection applications for 22 kilowatt pole-mounted kerbside pole chargers in metropolitan Melbourne, only one site was approved by the DNSP as the remainder had insufficient capacity. He argued that high rejection rates in cases such

¹³⁹ Australian Energy Regulator, *Reasons for decision: Ring-fencing waiver for an electric vehicle charging infrastructure trial from CitiPower, Powercor, and United Energy*, October 2025, p. 22.

¹⁴⁰ Electric Vehicle Council of Australia, *Submission 111*, p. 6.

¹⁴¹ Ibid.

¹⁴² Renate Vogt, *Transcript of evidence*, p. 2.

¹⁴³ Renate Vogt, *Transcript of evidence*, p. 3.

¹⁴⁴ This trial concluded its third phase in 2025. Its objective was to 'Develop a pathway to deliver visibility of the low-voltage network to the market, including clear use cases and benefits, definitions of the data needed and appropriate arrangements for it to be delivered.'

¹⁴⁵ Renate Vogt, *Transcript of evidence*, p. 4.

¹⁴⁶ EVX, *Submission 71*, p. 10.

¹⁴⁷ Ibid.

as this are the result of ‘vast areas of capacity constraint’¹⁴⁸ in metropolitan Melbourne that is symptomatic of underinvestment in network development:

We are only asking for 63 amps a phase. Considering that most urban pole-top subs[tations] have 400-amp fuses in them, if we cannot get 63 amps of phase, it means that the network is running within 15 per cent of its limit. So in seven of eight cases the network is running within 15 per cent of its ultimate capacity, which I find astounding, to be honest. To me, that is just the lack of investment over the years in the network ... Well, it is not the way I would run a network. They are running their asset really hard. If you cannot connect another house to a street, then I think you have got some issues.¹⁴⁹

Understanding network capacity is a significant concern for regional and rural areas of Victoria, where upgrades to the distribution network can incur higher costs than in metropolitan areas. Renate Vogt explained that, as an economic regulator, the AER ‘will only approve investment that they consider efficient and prudent’, which creates a specific difficulty for rural areas: ‘the lower the customer density the more challenging it is to demonstrate that there is a higher benefit relative to the cost’.¹⁵⁰ This means that understanding network capacity is even more important in regional Victoria so that EVCI can be developed that maximises the utility of the existing infrastructure to prevent unnecessarily expensive upgrades.

The Committee noted the Victorian Government’s commitment to taking regulatory action to ensure DNSPs publish data on connection processes, timeframes and costs, and report publicly on their performance against these metrics.

FINDING 71: In Victoria, EV charging infrastructure connection applications are frequently rejected by DNSPs because of insufficient grid capacity or the deterioration of the physical asset power poles.

FINDING 72: There is little clarity about where the electricity grid has capacity for EV charging infrastructure and limited collaboration between market participants.

FINDING 73: Current network data is insufficient for mapping possible sites to install EV charging infrastructure as it does not go down to the low-voltage network

FINDING 74: The Victorian Government has committed to taking regulatory action to ensure DNSPs publish data on connection processes, timeframes and costs, and report publicly on their performance against these metrics

¹⁴⁸ Andrew Forster, *Transcript of evidence*, p. 16.

¹⁴⁹ Sean McGinty, Founder and Director, EVX, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 18.

¹⁵⁰ Renate Vogt, *Transcript of evidence*, p. 13.

RECOMMENDATION 29: That the Victorian Government require Victorian DNSPs to develop the necessary data infrastructure to create network plans that show fine-grained capacity data and provide an indication of connection costs.

5.3.4 Standardising Facilities Access Agreements

To access DNSP-owned distribution infrastructure for the purposes of operating a kerbside public charger, CPOs must negotiate a Facilities Access Agreement that establishes an annual fee payable to the DNSPs for use of their asset.

The Committee heard from CPOs in Victoria that they face much higher costs to access DNSP-owned distribution infrastructure to deploy kerbside charging than in other states and territories. Some CPOs told the Committee of how protracted negotiations with Victorian DNSPs have inhibited their capacity to deploy EVCI at scale in Victoria and accused DNSPs of acting anti-competitively. CitiPower, Powercor and United Energy denied these allegations.

Access to distribution infrastructure for hosting public charging is not currently regulated by the AER. As such, there is no established national price schedule or negotiating framework for private CPOs seeking to deploy kerbside charging. This means that the costs and timeframes associated with negotiating access to a pole can vary in each distribution area. For example, Kent Johns told the Committee that ‘In New South Wales one DNSP currently charges \$750 [per annum] for access; in Victoria it is close to \$4000.’¹⁵¹

Difficulties reaching a Facilities Access Agreement with a DNSP can create project delays. Sean McGinty explained that it took two years for EVX to finalise an agreement with CPU and, under its terms, their access fee will ‘increase fivefold’ from the 61st charger that EVX installs. Mr McGinty argued that this was evidence of anti-competitive behaviour by CPU, as the latter was seeking to set high prices that manufacture market failure to support a waiver application for it to deploy its own kerbside charging assets:

Funnily enough, it was after they announced to the market that they wanted to do the same as us. Call me a cynic, but that did not stack up well. We are economically regulated to only be able to install 60 chargers in the CPU network area ... My opinion is that they do not want the competition.¹⁵²

CPU denied the above claims. They told the Committee that their goal in operating a kerbside charging trial ‘is not to compete with the private sector; it is to generate evidence on charging behaviour, network impacts and site selection, and the AER has imposed strict conditions to ensure the trial is timebound, transparent and focused on generating evidence.’¹⁵³

¹⁵¹ Kent Johns, *Transcript of evidence*, p. 38.

¹⁵² Sean McGinty, *Transcript of evidence*, p. 24.

¹⁵³ Renate Vogt, *Transcript of evidence*, p. 2.

CPU denied that they were responsible for the delays in EVX's rollout of kerbside charging in Victoria. They stated that their Facilities Access Agreement with EVX took 23 months to execute due to major scope changes from EVX during the negotiations, including a change of location from the Bayside City Council area to Boroondara City Council and an increase in the proposed network capacity, which required additional assessment.¹⁵⁴ CPU added that it took EVX three months to sign and return the agreement after it had been finalised.¹⁵⁵

On access fees, Daniel Bye, Head of Customer Connections and Requests, CitiPower, Powercor and United Energy said that CPU has 'discounted [pole access] at a very heavy rate in order to enable [CPOs] to deploy' chargers.¹⁵⁶ The discounts offered to EVX included an exemption from administrative fees for their first 60 chargers, an exemption from Facilities Access Agreement fees for their first 10 chargers, large fee reductions for the next 50 chargers. CPU explained that the increase from the 61st charger is a return to the market rate fee that exists for 'all other third parties wanting to access network assets, whether the applicant is a telecommunication company, local council or EV charging operator'.¹⁵⁷

Justin Oliver, Deputy Chair of the AER, told the Committee that the regulator has heard complaints that 'charges in Victoria have either been too high or much higher than in other states or just very divergent – wildly divergent', raising the question of which prices are correct.¹⁵⁸ To address this issue, the AER has classified pole access for third-party kerbside charging infrastructure in Victoria as a 'negotiated distribution service' in the electricity distribution determinations for all Victorian DNSPs for the upcoming regulatory period, which runs from 2026 to 2031.¹⁵⁹ This change will come into effect on 1 July 2026.

In practice, this will mean the introduction of a Negotiating Framework that will establish a procedure to be followed during negotiations between the DNSP and any entity that wants to access poles to operate an EV charger, as well as to the terms and conditions of access to the service. This framework will also be accompanied by Negotiated Distribution Service Criteria, which establish principles that guide the negotiations between the parties.

The negotiated distribution service classification will also give the AER the capacity to resolve disputes over pole access between CPOs and DNSPs.¹⁶⁰ In the event of a

¹⁵⁴ Lauren Featherston, correspondence, p. 2.

¹⁵⁵ Ibid.

¹⁵⁶ Daniel Bye, *Transcript of evidence*, p. 6.

¹⁵⁷ Lauren Featherston, correspondence, p. 1.

¹⁵⁸ Justin Oliver, *Transcript of evidence*, p. 41.

¹⁵⁹ Australian Energy Regulator, *Final Decision: CitiPower Electricity Distribution Determination (1 July 2026 to 30 June 2031)*, April 2026, p. 28; Australian Energy Regulator, *Final Decision: Powercor Electricity Distribution Determination (1 July 2026 to 30 June 2031)*, April 2026, p. 29; Australian Energy Regulator, *Final Decision: United Energy Electricity Distribution Determination (1 July 2026 to 30 June 2031)*, April 2026, p. 28; Australian Energy Regulator, *Final Decision: Jemena Electricity Distribution Determination (1 July 2026 to 30 June 2031)*, April 2026, p. 30; Australian Energy Regulator, *Final Decision: AusNet Electricity Distribution Determination (1 July 2026 to 30 June 2031)*, April 2026, p. 29.

¹⁶⁰ Justin Oliver, *Transcript of evidence*, p. 42.

disagreement over a quoted facilities access price, the parties would be able to notify a dispute to the AER, who will make ‘a binding determination’¹⁶¹ about what the price should be. This will also allow the AER to also publish views on how these assets should be priced and standardise access to poles for CPOs. The AER’s draft determinations assessed that this change would ensure that negotiations to access assets belonging to Victorian DNSPs will be conducted ‘on terms that are fair, reasonable, and cost reflective’.¹⁶²

Mr Oliver could not provide the Committee with information regarding complaints from CPOs about access to poles in other states or territories as the AER does not regulate access to poles in any other Australian jurisdiction and therefore does not possess a dispute resolution function.¹⁶³

The Committee heard calls for Facilities Access Agreements to be harmonised nationally.¹⁶⁴ The AER’s decision to designate power pole access as a negotiated distribution service could facilitate progress towards standardisation of this progress nationally. The Committee noted that the Victorian Government has committed to monitoring the AER’s reforms and evaluating whether further regulation is required in Victoria should the issue not be resolved.

FINDING 75: Facilities Access Agreements for DNSP-owned assets are not standardised nationally.

FINDING 76: Third-party access to distribution infrastructure, including for use by CPOs to operate kerbside charging infrastructure, will be regulated by the AER from 1 July 2026.

FINDING 77: From 1 July 2026, the AER will be able to resolve disputes over facilities access agreements, make binding determinations about pricing, ensure that negotiations between CPOs and DNSPs are conducted on fair, reasonable, and cost reflective terms.

FINDING 78: The Victorian Government has committed to monitoring the AER’s reform of facilities access agreements and evaluating whether further regulation is required in Victoria should disputes continue between DNSPs and CPOs.

¹⁶¹ Ibid.

¹⁶² Australian Energy Regulator, *Submission 118*, p. 3.

¹⁶³ Justin Oliver, *Transcript of evidence*, p. 48.

¹⁶⁴ Electric Vehicle Council, *Submission 111*, p. 7.

5.3.5 Network tariff innovation is needed to support public charging

Distinct from the consumer tariffs charged by retailers that were discussed in Chapter 4, network tariffs are the charges through which DNSPs recover revenue to build, operate and maintain electrical infrastructure. The AER regulates tariffs that are set by DNSPs both within their five-yearly revenue proposals, known as the tariff structure statement, and applied during any single year of this period.¹⁶⁵ The National Electricity Rules require DNSPs ‘to progressively make their tariffs better reflect the costs of providing network services’.¹⁶⁶ This ‘encourages more efficient use of networks which helps reduce the need for additional investment, the amount of network infrastructure that needs to be maintained.’¹⁶⁷

The Committee heard that Victorian DNSPs do not currently offer tariffs that account for the unique electricity usage characteristics of DC public charging stations and that this is stifling the investment of early-stage fast charging businesses in Victoria. Dr Alina Dini noted that ‘tariff restructuring can support more cost-efficient public charging’.¹⁶⁸

Tariffs currently available to DC public charging businesses are determined according to peak demand and capacity. Dr Alina Dini and Bernhard Conoplia explained that these tariffs were designed for traditional industrial loads, like factories, whose electricity usage demands are both high and sustained.¹⁶⁹ By contrast, DC public charging stations currently experience high peak demand but low overall utilisation rates, as EVs currently have a low overall penetration in the Victorian fleet.

In 2021, the Victorian Government issued an Order in Council to allow small- and medium-sized businesses whose connections are below 160-megawatt hours per annum to opt out of demand and capacity tariffs. Bernhard Conoplia told the Committee that once utilisation surpasses that threshold, ‘you are hit with demand and capacity tariffs and it becomes really, really expensive.’¹⁷⁰ Brendan Wheeler, CEO of EVSE Australia, explained that these ‘network tariff structures directly influence whether a site proceeds. In some jurisdictions demand and capacity charges can make network costs several times higher for the same asset’.¹⁷¹ As Stephanie Bashir, CEO, Nexa Advisory noted, these costs are ultimately passed onto consumers, who are ‘paying for the highest level of utilisation at a site, when really the utilisation is very low at the moment, until we see that greater [EV] uptake’.¹⁷²

¹⁶⁵ Australian Energy Regulator, *Energy Innovation Toolkit - Regulatory explainer: network tariffs and network tariff trials*, <<https://energyinnovationtoolkit.gov.au/regulatory-explainer-network-tariff-trials>> accessed 23 April 2026.

¹⁶⁶ Ibid.

¹⁶⁷ Ibid.

¹⁶⁸ Dr Alina Dini, *Transcript of evidence*, p. 8.

¹⁶⁹ Dr Alina Dini, *Transcript of evidence*, p. 2; Bernhard Conoplia, *Transcript of evidence*, p. 10.

¹⁷⁰ Bernhard Conoplia, *Transcript of evidence*, p. 10.

¹⁷¹ Brendan Wheeler, *Transcript of evidence*, p. 17.

¹⁷² Stephanie Bashir, *Transcript of evidence*, p. 53.

Tariffs that better reflect EV load profiles and reward off-peak and flexible charging, where CPOs remotely limit charging loads during peak network events as directed by DNSPs,¹⁷³ would ‘materially improve site economics and unlock faster rollout’.¹⁷⁴ This would also reduce charging costs for EV drivers. Stephanie Bashir, CEO, Nexa Advisory, told the Committee that tariffs will need to respond as public charging stations move from low to high utilisation rates.¹⁷⁵ Outlining the importance of doing so, she said:

EVs have the potential to help the system: charging during periods of rooftop solar surplus, responding to price signals and providing flexibility, but the current tariff structures do not reward this behaviour. They favour cost recovery for incumbent networks rather than incentivising efficient use of the grid. If we want EVs to support the electricity system, we must establish tariffs that recognise smart infrastructure, including energy-only options for low-utilisation sites, solar soak incentives and low-control incentives during critical events. Without these reforms we are effectively penalising the very flexibility the system needs.¹⁷⁶

CPU told the Committee that it will launch a kerbside EV charging tariff on 1 July 2026 that will be available to all kerbside charging providers, up to a capacity of 44 kilowatts.¹⁷⁷ It added that its solar soak tariff — which is 1 cent per kilowatt hour for usage and 7 cents per kilowatt hour to export¹⁷⁸ — will be ‘repurposed for EV charging’ and available for all electricity retailers.¹⁷⁹ CPU also confirmed its commitment to trialling dynamic tariffs with flexible loads during the next regulatory period. It described EV charging stations as ‘a potential candidate for these trials’ but noted it is ‘still developing the systems to offer dynamic tariffs’.¹⁸⁰

The Committee noted that the Victorian Government has formally advocated to the AER ‘to require distribution businesses to introduce EV charging tariff trials that cover all forms of public charging (including fast charging) through the 2026–31 Electricity Distribution Price Review’.¹⁸¹ The Committee also noted the Victorian Government’s commitment to implementing regulatory reforms to ensure eligible CPOs are ‘not unfairly paying demand charges, and that tariff settings do not discourage investment in larger, higher capacity charging sites’.¹⁸²

¹⁷³ Bernhard Conoplia, *Transcript of evidence*, p. 11; Brendan Wheeler, *Transcript of evidence*, p. 26.

¹⁷⁴ Brendan Wheeler, *Transcript of evidence*, p. 17.

¹⁷⁵ Stephanie Bashir, *Transcript of evidence*, p. 53.

¹⁷⁶ Stephanie Bashir, *Transcript of evidence*, p. 52.

¹⁷⁷ Lauren Featherston, correspondence, p. 7.

¹⁷⁸ Renate Vogt, *Transcript of evidence*, p. 14.

¹⁷⁹ Lauren Featherston, correspondence, p. 7.

¹⁸⁰ Lauren Featherston, correspondence, p. 8.

¹⁸¹ Department of Energy, the Environment, and Climate Action, *EV Charging Regulatory Statement*, p. 8.

¹⁸² Department of Energy, the Environment, and Climate Action, *EV Charging Regulatory Statement*, p. 9.

5.3.6 Many stakeholders were opposed to CitiPower, Powercor and United Energy’s kerbside charging trial

DNSPs are subject to a ‘ring-fencing’ guideline, which separates regulated services provided by a DNSP, such as the installation and/or maintenance of network poles and wires, from the provision of contestable services, such as the installation of smart meters or electric vehicle charging infrastructure.¹⁸³ DNSPs may operate contestable services if they are granted a waiver by the AER to do so.

On 17 December 2024, the AER received an application from CPU for a waiver from the ring-fencing guideline to conduct a kerbside EV charging trial.¹⁸⁴ In a paper released at the beginning of a public consultation process, the AER described the mooted trial:

The proposal involves CPU installing and maintaining EVCI mounted on their power poles. CPU would not operate the chargers, and would instead ‘provide an unregulated third party [i.e. a charge point operator] with access to the EVCI, with the third party acquiring retail services from a licensed retailer’. CPU indicates that granting this waiver would help deliver cost-efficiencies and expedite the rollout of more EV chargers in Victoria, particularly to under-serviced areas where there are coverage gaps.¹⁸⁵

Following a public consultation process, in which it received 34 submissions from industry stakeholders,¹⁸⁶ the AER granted waiver to allow CPU to conduct the trial on 22 October 2025.¹⁸⁷ The waiver is time-limited to 30 June 2031 unless revoked sooner, is subject to annual review, and stipulates that it is to be conducted at 100 sites across its distribution areas. The waiver has strict conditions relating to site selection, competitive neutrality, transparency in processes and data, and the publication of learnings. At the conclusion of the waiver period, CPU must either:

- Seek a new ring-fencing waiver from the AER to continue operation of the EVCI until failure or decommissioning; or
- Offer any EVCI that remains operational to contestable providers (for example, via competitive tender process), including access to the established charging site (subject to any applicable pole access rental charge); or
- Uninstall any EVCI that remains operational.¹⁸⁸

¹⁸³ Australian Energy Regulator, *Ring-fencing guideline (electricity distribution): Explanatory Statement Guideline – Version 4*, February 2025, p. 5.

¹⁸⁴ Australian Energy Regulator, *Consultation paper: Ring-fencing waiver application for an EV charging infrastructure trial from CitiPower, Powercor, and United Energy*, April 2025, p. 3.

¹⁸⁵ Australian ER, *Consultation paper*, pp. 3–4.

¹⁸⁶ The AER provided the Committee with a list of the 34 stakeholders who made submissions during its public consultation process. Many of these stakeholders also made submissions to this Inquiry.

¹⁸⁷ Australian Energy Regulator, *Reasons for decision: Ring-fencing waiver for an electric vehicle charging infrastructure trial from CitiPower, Powercor and United Energy*, October 2025, pp. 22–24.

¹⁸⁸ *Ibid.*, p. 22.

In approving the waiver, the AER considered that the trial ‘has the potential to improve the price, quality, safety, reliability, and security of electricity supply for EV customers, particularly in areas currently underserved by commercial CPOs.’¹⁸⁹ It added that the trial

will test a specific set of objectives and share valuable insights into demand response, tariff design and modulation of EV chargers to manage local network impacts. This knowledge may allow CPU and other network businesses to expand the number of poles that can accommodate EV chargers without requiring network augmentation.¹⁹⁰

The Committee heard from many stakeholders who expressed concerns about how the DNSP ownership of downstream charging infrastructure could distort the rest of the market and create worse outcomes for electricity consumers and EV drivers.

Figure 5.6 What the Committee heard

“ From an end user perspective, it does feel like there are an unnecessary number of hurdles to get chargers installed, particularly in the regions, with DNSPs taking – I think I saw a figure somewhere – up to 18 months to approve certain sites. From an end user perspective, if a DNSP who owns all the poles and wires does have the ability to put in chargers, we as end users worry that it will end up creating more of a monopoly on charging. They own all the infrastructure, so they will try to push out other competitors.

Brendan Davies, *Transcript of evidence*, p. 17.

“ Instead of building EV chargers, which is a market ready technology ready industry, DNSPs should spend that time and money to develop the systems and monitoring of their network that would allow for the kinds of innovation being delivered in NSW through flexible and dynamic tariffs.

EVX, *Submission 71*, p. 2.

“ DNSP incentives are not aligned with consumers or industry; they are rewarded for the amount of capex they spend. There has been a longstanding process of lobbying for ring fencing to be relaxed, with guaranteed returns by consumers, and the recent waiver that was approved by the AER for CitiPower, Powercor and United to deploy kerbside charging of their own is the first step towards expanding the regulated asset base. What does this mean for industry? It means that our biggest suppliers, who control the time and cost it takes for us to connect to the network and how much we pay for our electricity, become our largest competitors. That is not compatible with industry investment.

Bernhard Conoplia, *Transcript of evidence*, p. 4.

¹⁸⁹ Australian Energy Regulator, *Reasons for decision*, October 2025, p. 1.

¹⁹⁰ *Ibid.*

“ If DNSPs, distribution network service providers, are to be un-ring fenced, let us call it that, so that they can own and operate charging points, it needs to be done really equitably. They need to have that community service obligation of installing chargers in black hole charging places. At this stage we support the principle of competition for the establishment of charge points, but if there are areas where it does not work, I think it is a possibility. But in principle, overall, we think it should be a competitive market

Jo Oddie, *Transcript of evidence*, p. 17.

“ This is not a failure of the charging market; it is a regulated monopoly behaviour constraining competition so they can argue for entry into regulated markets. Despite this, the distribution networks have argued that these very barriers justify their entry into the EV charging market and have sought ring-fencing waivers to allow them to own and operate charging infrastructure. That approach would entrench the problem rather than solving it. Allowing entities that control access, pricing and timing of connections to also compete in downstream markets creates an inherent conflict of interest. It undermines contestability, deters private investment and shifts risk and cost onto all electricity consumers through regulated returns

Kent Johns, *Transcript of evidence*, p. 37.

RECOMMENDATION 30: That the Victorian Government monitors the ring-fencing waiver granted to CPU to ensure that competitive neutrality is maintained and that it advises the AER on any identified barriers to the private sector.

5.4 Ensuring access to reliable charging for all Victorians

5.4.1 Delivering charging solutions for apartments, multi-unit dwellings and renters

Being able to charge where your car is, whether that is in your multi-unit car park in that situation or on a pole near where you are renting – is probably going to be the simplest way to have that confidence as a renter that you will be able to charge your car.

Michael Oke, *Transcript of evidence*, p. 23.

In addition to ensuring an adequate supply of public charging options, delivering at-home charging solutions for Victorians who live in apartments or multi-unit dwellings and renters or social housing tenants is a critical to ensuring that the benefits of transport electrification are equitably accessible to all.¹⁹¹

¹⁹¹ Monash Energy Institute, *Submission 77*, p. 6.

The National Construction Code 2022, which came into force in Victoria in May 2024, requires developers to ensure space for switchboards and EVCI for all parking spaces in new apartment buildings. However, data from the 2021 census shows that 12.1% of Victorians live in flats or apartments and that there are over 300,000 existing apartment dwellings in Victoria that will not be impacted by those changes.¹⁹²

The Committee heard that the *Owners Corporation Act 2006 (Vic)* and high costs associated with retrofitting existing developments to install charging infrastructure are significant hurdles. Associate Professor Anne Kallies, RMIT University, explained that Owners Corporations require a special resolution passed by 75 per cent of lot owners to approve significant decisions like retrofitting the building's electrical wiring or installing charging infrastructure.¹⁹³ Passing a special resolution in this context may prove difficult as 'Seventy-five per cent of owners may really not care or may not show up'.¹⁹⁴ Michael Oke told the Committee that the Victorian Government can facilitate the installation of EV charging in existing apartment buildings by 'removing barriers, helping to reduce those up-front costs for those early adopters and reducing the high bar that is set for owners corporations for approval for sustainability works.'¹⁹⁵

The Australian Electric Vehicle Association told the Committee that Victoria is out of step with other states and territories on this issue. Their submission explained that the in New South Wales, the '*Strata Schemes Legislation Amendment (Miscellaneous) Bill 2025* includes a provision that specifically prohibits unreasonable objection to the installation of electric vehicle charging stations',¹⁹⁶ while the ACT's *Unit Titles (Management) Act 2011* 'prohibits unreasonable refusal of permission to install sustainability infrastructure in general'.¹⁹⁷ In both jurisdictions, as well as others in Australia and New Zealand, approval thresholds for sustainability works in strata legislations are reduced to 50 per cent, compared to the 75 per cent required in Victoria.¹⁹⁸

Further, Michael Weekes, Technical Manager, National Electrical Communications Association, explained that that smart charging systems that can manage and share load among charging vehicles means that retrofitting existing apartment buildings will not require extensive electrical capacity upgrades to ensure broad access to charging in these spaces:

If there are 20 or 32 spare amps available in the building, they can put in a management system that they can run 10 charges off, and they will load share. So the first one plugs in, they get 100 per cent; the second one plugs in, they get 50 per cent; the third one plugs in, and they might only get 10 per cent until the first one's finished charging;

¹⁹² Australian Bureau of Statistics, *Snapshot of Victoria: High level summary data for Victoria in 2021*, 28 June 2022, <<https://www.abs.gov.au/articles/snapshot-vic-2021>> accessed 20 April 2026.

¹⁹³ Associate Professor Anne Kallies, RMIT University, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 47.

¹⁹⁴ Ibid.

¹⁹⁵ Michael Oke, *Transcript of evidence*, p. 14.

¹⁹⁶ Australian Electric Vehicle Association, *Submission 114*, p. 8.

¹⁹⁷ Ibid.

¹⁹⁸ Ibid.

and then they split it up again. So there are those sorts of smarts available and load management available now that are going into apartment buildings and the like.¹⁹⁹

The National Construction Code 2022 included no mandatory requirement for Class 1 buildings — detached houses, townhouses, terraced houses — to be EV-ready with provisions such as separate circuits for charging. On 22 October 2025, the Commonwealth, State and Territory Building Ministers announced that no further residential changes will be made to the National Construction code until mid-2029, except for essential quality and safety measures.²⁰⁰ Kent Johns told the Committee that this delay ‘risks locking in higher retrofit costs for decades’.²⁰¹ Mr Johns explained that requiring developers to include ‘Simple, low-cost measures such as ensuring adequate switchboard capacity and prewiring for car spaces in new homes’ would not meaningfully increase their costs and ‘can materially reduce future barriers to EV adoption.’²⁰²

As renters are locked out of Owners Corporation decision-making, they will require additional legislative support from the Victorian Government to ensure access to home charging. Associate Professor Kallies referenced recent amendment to Section 554 of the German Civil Code as an example that the Victorian Government could follow. The amendment created the provision that landlords in Germany must ‘tolerate structural changes to the rented property by the tenant “which serve their use by persons with disabilities, the charging of electrically powered vehicles or protection against burglary”’.²⁰³

This view was echoed by the Monash Energy Institute, who called on the Victorian Government to ‘Establish regulatory mechanisms that require or incentivise landlords and developers to provide accessible, affordable charging options for renters to ensure equitable access to home-like charging convenience’.²⁰⁴ Associate Professor Roger Dargaville argued that if early adoption of EV charging installation among landlords can be facilitated through incentives, just as there are incentives for the uptake of home batteries or heat pump hot water systems, then we will reach a tipping point as EV ownership increases where the incentives are no longer required as the investment will pay for itself.²⁰⁵ He said:

As EV ownership increases, when people are looking for a house or apartment to rent, the existence of an EV charger will be an attractive asset for that property in much the same way that a swimming pool or off-street parking – whatever is – is appealing.

¹⁹⁹ Michael Weekes, Technical Manager, National Electrical Communications Association, public hearing, Melbourne, 13 February 2026, *Transcript of evidence*, p. 43.

²⁰⁰ Department of the Treasury, Meeting communiqué: Building Ministers’ Meeting, October 2025, 22 October 2025, <<https://treasury.gov.au/media-release/meeting-communique-building-ministers-meeting-october-2025>> accessed 22 April 2026.

²⁰¹ Kent Johns, *Transcript of evidence*, p. 37.

²⁰² Ibid.

²⁰³ Oppenhoff, *1 December 2020: tenant’s legal right to structural changes for charging points*, 9 November 2020, <<https://www.oppenhoff.eu/en/news/detail/1-december-2020-tenants-legal-right-to-structural-changes-for-charging-points>> accessed 22 April 2026.

²⁰⁴ Monash Energy Institute, *Submission 77*, p. 7.

²⁰⁵ Associate Professor Roger Dargaville, *Transcript of evidence*, p. 37.

I think there will be a natural progression to people advertising that this property has its own off-street parking spot or the apartment building has EV charging bays that are available for tenants.²⁰⁶

FINDING 79: In strata-managed complexes, major changes like electrical retrofitting works for EV charger installation require a special resolution with approval from 75 per cent of lot owners.

FINDING 80: Victoria's *Owners Corporation Act 2006* is out-of-step with equivalent legislation in other Australian states and territories as it does not include provisions that facilitate the installation of EV charging infrastructure and requires approval by 75 per cent of lot owners.

RECOMMENDATION 31: That the Victorian Government amend *the Owners Corporation Act 2006* to include provisions that:

- prohibit unreasonable objection to the installation of electric vehicle charging infrastructure.
- reduce the approval threshold for sustainability works from 75 per cent to 50 per cent.

FINDING 81: Electrical retrofitting works for EV charging can be expensive, but costs can be mitigated by using demand management technologies.

RECOMMENDATION 32: That the Victorian Government establish a grants program or subsidy for the retrofitting of multi-unit residential buildings for EV charging readiness.

FINDING 82: Having EV charging facilities installed is likely to make apartments or rental properties more attractive to renters.

RECOMMENDATION 33: That the Victorian Government establish regulatory mechanisms that require or incentivise landlords to provide accessible, affordable charging options for renters to ensure equitable access to home-like charging convenience.

FINDING 83: Provisions for EV-readiness for new Class 1 buildings (houses, townhouses and terraced houses) were removed from the National Construction Code 2025, which will not be updated until mid-2029.

²⁰⁶ Ibid.

RECOMMENDATION 34: That the Victorian Government advocate for the reversal of the decision to remove the provisions for EV-readiness for new Class 1 buildings (houses, townhouses and terraced houses) from the National Construction Code 2025.

5.4.2 Ensuring reliability and accessibility with minimum operating standards

Reliable and accessible charging infrastructure is essential to building broad public confidence in the network. The Committee heard from EV drivers, local government, the automotive industry and CPOs that the Victorian Government must ensure the reliability of public charging infrastructure by implementing and enforcing minimum operating standards. These standards must consider uptime, standardised user experience, and access for people with disabilities.

City of Greater Bendigo Council told the Committee that two fast chargers that were installed in the council area by Evie Networks as part of the Central Victorian Greenhouse Alliance’s Charging the Regions initiative,²⁰⁷ are ‘frequently offline due to faulty software or parts’.²⁰⁸ Charging failures can stem from hardware faults, payment errors, and poor remote monitoring’.²⁰⁹ Referencing research conducted by the University of Queensland on California’s fast charging network that found that 75–83 per cent of fast charging sessions were successful despite claimed uptimes of 95–98 per cent,²¹⁰ the Council suggested that this echoes the experience of local governments across regional Victoria, where.²¹¹

In 2025, the Energy and Climate Ministerial Council published their *Minimum operating standards for government-supported public electric vehicle charging infrastructure* as part of the National Electric Vehicle Strategy.²¹² The standards were developed by the Commonwealth Government in collaboration with states and territories to ensure national standards harmonisation. They included stipulations that public chargers that have received government support must:

- Operate with at least 98% annual uptime
- Give consideration of access to people with disability in charging terminal design, and at least one charging bay per site must meet disability accessible parking bay compliance requirements
- Publish timely and accurate data showing charger availability status and pricing via an online platform.

²⁰⁷ Central Victorian Greenhouse Alliance, *Charging the Regions 2*, <<https://www.cvga.org.au/charging-the-regions-2.html>> accessed 21 April 2026.

²⁰⁸ City of Greater Bendigo, *Submission 121*, p. 7.

²⁰⁹ Ibid.

²¹⁰ The University of Queensland, *Many public EV chargers are unusable - despite being ‘online’*, 15 October 2025, <<https://news.uq.edu.au/2025-10-many-public-ev-chargers-are-unusable-despite-being-online>> accessed 21 April 2026.

²¹¹ City of Greater Bendigo, *Submission 121*, p. 7.

²¹² Department of Climate Change, Energy, the Environment and Water, *Minimum Operating Standards for Government-supported Public Electric Vehicle Charging Infrastructure – Guidance Document*, October 2025.

- Clearly communicate a method of reporting issues and, for DC chargers, have an available customer support service.
- Support credit and debit car transactions, and not require registration or app download prior to arriving at the charging station.

The Commonwealth Government noted that state and territory governments retain the right to ‘design their EV charging programs in a way that aligns with the objectives of their respective strategies’, meaning that ‘jurisdictions can vary requirements under the minimum operating standards on a case-by-case basis where they are not practical or feasible’.²¹³ For example, government-supported kerbside chargers in New South Wales are subject to a 99 per cent uptime requirement.²¹⁴

The requirements set out in the standards do not apply to non-government supported infrastructure. Several stakeholders called on the Victorian Government to develop and stringently enforce an accessibility and reliability framework that encompasses all public charging infrastructure to resolve maintenance issues, standardise the user experience, and build community confidence.²¹⁵ The City of Greater Bendigo called on the Victorian Government to develop a framework that follows international best practice, such as the European Union’s AFIR regulations or the National Electric Vehicle Infrastructure (NEVI) program from the United States, which mandate ≥ 97 –99 per cent true uptime, certified maintenance, and real-time data transparency. The Council’s submission noted:

True uptime requirements ensure chargers are usable, not just “online”; real-time status reporting prevents “ghost” chargers and improves transparency; certified maintenance and rapid response times reduce prolonged outages; data auditing builds accountability; and penalties for non-compliance create strong incentives for operators.²¹⁶

FINDING 84: Established national minimum operating standards for EV chargers currently only apply to those that have received government support.

FINDING 85: DC charging providers often require the use of specific apps and account creation prior to use. This can make using on public chargers less accessible and less convenient.

²¹³ Department of Climate Change, Energy, the Environment and Water, *Minimum Operating Standards*, October 2025, p. 4.

²¹⁴ Office of Energy and Climate Change, New South Wales Treasury, *EV kerbside charging for local government*, October 2023, p. 11.

²¹⁵ National Electrical and Communications Association, *Submission 57*, p. 7; Federal Chamber of Automotive Industries, *Submission 92*, p. 7; Victorian Greenhouse Alliances, *Submission 85*, p. 3; Australian Electric Vehicle Association, *Submission 114*, p. 6; City of Greater Bendigo, *Submission 121*, p. 6.

²¹⁶ City of Greater Bendigo, *Submission 121*, pp. 7–8.

RECOMMENDATION 35: That the Victorian Government develop an accessibility and reliability framework for all public charging infrastructure that:

- establishes and enforces uptime targets
- sets maintenance requirements
- ensures that real-time data is accessible for EV drivers via an online mapping platform
- ensures that EV charging infrastructure complies with accessibility standards for people with disabilities
- standardises the payment experience such that drivers are not required to register or download an app prior to arriving at the charging station.

Chapter 6

Developing an EV battery supply chain and circular economy in Victoria

6.1 Battery technology is changing rapidly

6.1.1 Lithium-ion batteries are now commonplace in mass market EVs

The International Energy Agency reported that annual battery demand surpassed 1 terawatt-hour (TWh) globally in 2024.¹ Batteries are manufactured from ‘high-value critical minerals’,² including lithium, nickel, cobalt, copper, manganese, iron and graphite. There has been significant innovation in battery chemistry globally during the last decade, when nearly all batteries used in EVs used nickel manganese cobalt (NMC) and nickel cobalt aluminium (NCA) chemistries.³

The sector has begun to move away from cobalt due to concerns about its cost and sustainability. Lithium iron phosphate (LFP) batteries are now commonplace in mass-market EVs, having grown from having grown from a single-digit market share globally in 2015 to 44 per cent in 2023.⁴ This trend has reduced reliance on nickel, cobalt and aluminium, improved energy performance and made batteries safer, more durable and cost-effective.⁵ Although NMC use is expected to still remain prevalent throughout the rest of the coming decade, innovation — such as an increased uptake of sodium-ion or lithium manganese iron phosphate chemistries — that seeks to reduce costs and reliance on certain critical minerals can disrupt these projections.⁶

Oliver Hill, Program Leader Electric Vehicles, RACE for 2030 Cooperative Research Centre, explained that battery technology has evolved to the extent that international battery producers are proposing new models that give an EV range that surpasses 1,000 km. Mr Hill added that it was his personal belief that innovations in battery technology over the next 10 years will be such that range will no longer be a concern for consumers.⁷

1 International Energy Agency, *The battery industry has entered a new phase*, report prepared by Teo Lombardo, Leonardo Paoli, Araceli Fernandez Pales, Timur Gül, 5 March 2025, <<https://www.iea.org/commentaries/the-battery-industry-has-entered-a-new-phase>> accessed 27 April 2026.

2 Steven Marshall, Chief Operating Officer, Livium, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 31.

3 International Renewable Energy Agency, *Critical Materials: Batteries for Electric Vehicles*, Abu Dhabi, 2024, p. 22.

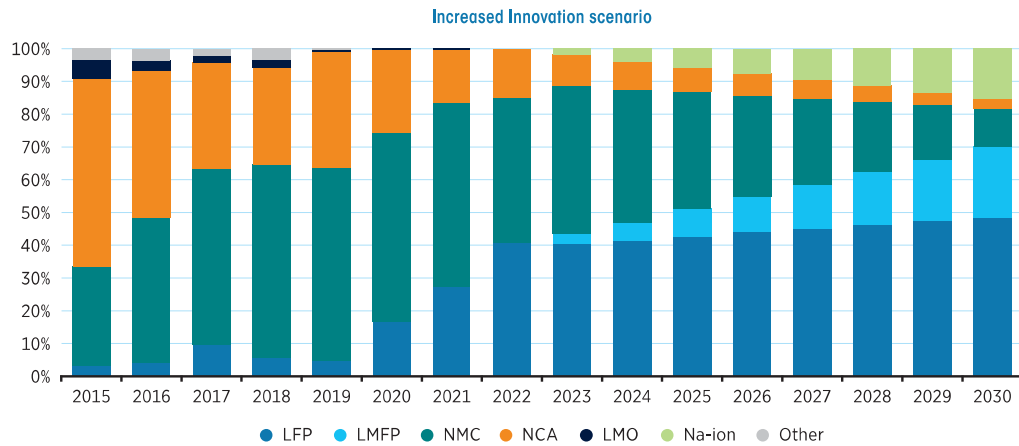
4 Ibid.

5 Ibid.

6 International Renewable Energy Agency, *Critical Materials: Batteries for Electric Vehicles*, Abu Dhabi, 2024, p. 23.

7 Oliver Hill, Program Lead, Electric Vehicle, RACE for 2030 Cooperative Research Centre, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 13.

Figure 6.1 Evolution of battery chemistry market shares for passenger vehicles, 2015–2022, and an explorative scenario, 2023–2030



Source: International Renewable Energy Agency (IRENA), *Critical Materials: Batteries for Electric Vehicles*, International Renewable Energy Agency, Abu Dhabi, 2024, p. 27.

FINDING 86: Lithium iron phosphate (LFP) batteries are now commonplace in mass-market EVs, having grown from having grown from a single-digit market share globally in 2015 to 44 per cent in 2023.

FINDING 87: Evolutions in battery technology have reduced reliance on nickel, cobalt and aluminium, improved energy performance and made batteries safer, more durable and cost-effective.

6.1.2 How are Victorians using batteries?

The Committee heard that adoption of rooftop solar, home batteries, and EVs — described by several stakeholders as ‘batteries on wheels’ — improve the resilience of the Victorian electricity system while also reducing household bills and carbon emissions.⁸ Batteries facilitate the capture and storage of renewable energy. Stakeholders noted that Australian energy grid ‘currently struggles with oversupply of electricity from renewable sources ... which cannot be quickly stored and re-deployed to compensate for intermittent electricity supply’.⁹

It is estimated that there are over 44,000 small-scale battery systems installed in Victorian homes.¹⁰ This has been driven by high uptake of rooftop solar and facilitated by rebates and interest-free loans for batteries that were offered by the Victorian

⁸ Ross De Rango, Founder and Director, Vehicle Charging Solutions Australia, public hearing, Melbourne, 12 February 2026, *Transcript of evidence*, p. 55.

⁹ Alpine Energy, *Submission 93*, p. 2.

¹⁰ Sophie Vorrath, *Home battery boom: The who, what, where and why behind record storage numbers*, 5 April 2023, <<https://onestepoffthegrid.com.au/home-battery-boom-the-who-what-where-and-why-behind-record-storage-numbers>> accessed 28 April 2026.

Government from 2019 until April 2026,¹¹ and the Australian Government's Cheaper Home Batteries Program.¹²

Stakeholders also noted that behind-the-meter batteries are being used to support EV charging systems and energy resilience in regional areas or in commercial settings where high-power outputs are required but grid connection supply is limited, preventing the need for expensive network capacity upgrades.¹³ The Committee heard that lithium titanate oxide (LTO) batteries are well-suited to light commercial and heavy vehicle applications, as well as providing back-up power in regional areas that may be impacted by power outages caused by extreme weather because of their large storage capacity, high-power output, durability and safety.¹⁴ These batteries can be steadily charged over time by solar or grid connection and can rapidly discharge when required.¹⁵

The Committee heard that EV batteries typically have a longer lifespan than the other components of the car they are housed in, retaining between 70–80 per cent of their original capacity after around 15 years of use.¹⁶ Steven Marshall, Chief Operating Officer, Livium told the Committee that the recycling industry has begun to recover batteries from the first EVs that came to the Australian market in the late 2000s and early 2010s as they are now reaching 'true end of life'.¹⁷ Oliver Hill noted that used car dealers that perform battery health testing on second-hand EVs 'find the state of health of the battery has not decreased substantially in the three- to five-year period since it was first purchased. It usually has something close to 95 per cent of its capacity still there.'¹⁸ Mr Hill added that 'There are Teslas which were purchased and on the road 10 years ago that are still running today with 80 per cent of their battery state of health. That means that they are only diminishing the overall range by 20 per cent.'¹⁹

Batteries that are no longer viable for use in vehicles are currently being recovered and recycled in Victoria.²⁰ Alpine Energy told the Committee that recovered EV batteries fall into four broad categories:

- Recalled batteries, which have been identified as faulty by manufacturers or regulators. These typically require skilled labour and may be impractical to repair or repurpose.

11 Solar Victoria, *Solar Victoria exceeds battery targets*, 27 May 2025 <<https://www.solar.vic.gov.au/solar-victoria-exceeds-battery-targets>> accessed 28 April 2026.

12 Australian Government Clean Energy Regulator, *Solar Batteries*, <<https://cer.gov.au/schemes/renewable-energy-target/small-scale-renewable-energy-scheme/small-scale-renewable-energy-systems/solar-batteries>> accessed 28 April 2026.

13 Alpine Energy, *Submission 93*, p. 2; David Van, Head of Strategy, Arvio Technology, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 35.

14 David Van (Arvio Technology), *Submission 116.1*, pp. 1–2.

15 Ibid.

16 Electric Vehicle Council and Association for the Battery Recycling Industry, *EV Batteries are refurbished, reused, repurposed, and recycled*, November 2023, <<https://electricvehiclecouncil.com.au/wp-content/uploads/2023/11/20231129-Batteries-ABRI-and-EVC-Collaboration.pdf>> accessed 28 April 2026.

17 Steven Marshall, Chief Operating Officer, Livium, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 32.

18 Oliver Hill, *Transcript of evidence*, p. 13.

19 Ibid.

20 Steven Marshall, *Transcript of evidence*, p. 31.

- End-of-life batteries, whose performance has deteriorated below acceptable service levels for transport but remains viable for stationary use.
- Statutory write-offs, where vehicles are deregistered due to severe damage, but battery packs are often intact and salvageable.
- Repairable write-offs from vehicles that are uneconomical to repair, yet battery packs are usually undamaged and suitable for reuse.²¹

FINDING 88: Behind-the-meter batteries are being used to support EV charging systems and energy resilience in regional areas or in commercial settings where high-power outputs are required but grid capacity is limited.

FINDING 89: EV batteries have a longer lifespan than the other components of the car they are housed in, retaining between 70–80% of their original capacity after around 15 years of use

FINDING 90: End-of-life EV batteries are being recovered and recycled in Victoria.

6.2 Recycling and reusing EV batteries in Victoria

6.2.1 Recycling batteries locally is an opportunity for Victoria

EV batteries are not waste. They are a high value asset at end of life. With the right policy settings, they can underpin a thriving domestic industry and contribute meaningfully to Australia’s decarbonisation and critical minerals ambitions

Steven Marshall, Chief Operating Officer, Livium, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 32.

The Committee heard that creating a regulatory framework and supporting infrastructure to develop a battery recycling and manufacturing industry in Victoria represents a significant economic and strategic opportunity.

As around 95–97 per cent of a battery’s components are recyclable,²² Steven Marshall, Chief Operating Officer, Livium, noted that component materials retain value. Recovered materials can be ‘infinitely recycled’ and reconstituted into new batteries.²³ Mr Marshall explained that Victoria already has the capability to safely and effectively recover battery components and that ‘industry is actively investing in safe handling and materials recovery related to batteries’.²⁴ He said that ‘Proven metallurgical

²¹ Alpine Energy, *Submission 93*, p. 4

²² Steven Marshall, *Transcript of evidence*, p. 33; Volvo Group Australia, *Submission 101*, p. 12.

²³ Steven Marshall, *Transcript of evidence*, p. 33.

²⁴ Ibid.

expertise backed by research institutions is helping increase recovery rates and reduce environmental impacts.²⁵

Dr Peter Sherrell, Senior Vice Chancellor's Research Fellow, Applied Chemistry and Environmental Science, RMIT University told the Committee that Australia's geographic isolation means that if a domestic battery recycling industry is not developed then 'we would need to ship these very heavy, complex batteries offshore to do such recycling and then ship them back'.²⁶ Dr Sherrell believed that the expense and inefficiency associated with this process would make it an attractive value proposition to bring this industry onshore.²⁷

Katharine Hole, CEO of the Association for the Battery Recycling Industry, told the Committee that the 'dangers of amateur [battery] handling and unsafe operations are real, and upmarked, end-of-life EV battery shipments overseas pose serious risks'.²⁸ Ms Hole stressed that not only is building domestic lithium processing capacity safer, it also 'helps local business build momentum and provides Australia with the option to choose which global supply chains to enter'.²⁹ Alpine Energy's submission told the Committee that a 'direct re-use approach also helps preserve valuable minerals such as lithium, cobalt, and nickel, which are critical to Australia's supply chain security, especially as global access to rare earth minerals becomes increasingly disrupted'.³⁰ It added that although Australia supplied approximately 45 per cent of the world's lithium in 2023, it produced less than 1 per cent of global battery materials or components in the same year.³¹ Recovered EV batteries can therefore reduce reliance on imported battery packs without substantial investment in local cell production.³²

FINDING 91: Around 95–97 per cent of a battery's components are recyclable. Recovered materials can be infinitely recycled and reconstituted into new batteries.

FINDING 92: Domestic battery recycling capacity helps preserve valuable minerals such as lithium, cobalt, and nickel, which are critical to Australia's supply chain security, especially as global access to rare earth minerals becomes increasingly disrupted.

FINDING 93: Recovered EV batteries reduce reliance on imported battery packs without substantial investment in local cell production.

²⁵ Ibid.

²⁶ Dr Peter Sherrell, Senior Vice Chancellors Research Fellow, Applied Chemistry and Environmental Science, RMIT University, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 39.

²⁷ Ibid.

²⁸ Katharine Hole, CEO, Association for the Battery Recycling Industry, public hearing, Melbourne, 26 February 2026, *Transcript of evidence*, p. 30.

²⁹ Ibid.

³⁰ Alpine Energy, *Submission 93*, p. 2.

³¹ Ibid.

³² Ibid.

6.2.2 Victoria must prepare for a large increase in end-of-life EV batteries as the uptake increases

There are 450,000-odd electric vehicles on the road at the moment in Australia. When these reach end of life, there is no clear strategy, at least to the best of my knowledge, for where these batteries go.

Dr Peter Sherrell, Senior Vice Chancellors Research Fellow, Applied Chemistry and Environmental Science, RMIT University, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 36.

Decisions made in this decade will determine whether Victoria and broader Australia can capture the economic, security, environmental and safety benefits of a circular battery economy, or whether we will export both the risks and the value offshore.

Steven Marshall, *Transcript of evidence*, p. 31.

The Committee heard that Victoria will experience an exponential increase in EV batteries approaching second-life and end-of-life stages over the next decade, reflecting the increase in EV uptake nationwide. Stakeholders told the Committee that Victoria is not prepared for this eventuality as it lacks both a regulatory framework to establish safe battery management pathways, as well as the industrial capacity to recycle EV batteries at the required scale.

Katharine Hole explained that industry modelling shows that ‘EV batteries arriving for materials recovery are set to grow dramatically from around 1,000 to 1,500 tonnes per year today to more than 20,000 tonnes per year in the next decade.’³³ The absence of clear pathways or options for managing these products means that ‘These are not challenges for the future but ones to resolve now’.³⁴

Steven Marshall and Katharine Hole both told the Committee that EV batteries already are entering the Australian waste recovery system either at end of life or due to early failure and warranty claims.³⁵ A CSIRO report found that Australia currently has ‘very little capacity’ to recycle lithium-ion battery waste and that only 10% of the total waste was recycled in 2021.³⁶ This leads to large volumes of end-of-life lithium-ion batteries being stored in warehouses and scrapyards, ‘creating a serious fire risk and potential for environmental contamination’.³⁷ Mr Marshall and Ms Hole added that both the automotive service sectors and the broader community are also seeking guidance on safe battery management practices.

³³ Katharine Hole, *Transcript of evidence*, p. 30.

³⁴ Ibid.

³⁵ Steven Marshall, *Transcript of evidence*, p. 31; Katharine Hole, *Transcript of evidence*, p. 29.

³⁶ CSIRO, *Lithium-ion battery recycling*, <<https://www.csiro.au/en/research/technology-space/energy/decarbonising-industry-transport/energy-in-the-circular-economy/battery-recycling>> accessed 29 April 2026.

³⁷ Ibid.

Mr Marshall noted that government policies have focused on smaller consumer batteries.³⁸ EV batteries are not covered by B-cycle, the national recycling scheme run by the Battery Stewardship Council.³⁹ Recycling EV batteries represents a challenge of a 'different order of magnitude in both opportunity and risk' due to their large size, energy-dense composition, and the potential hazards they pose if handled in correctly.⁴⁰

Mr Marshall warned that 'Without clear pathways, we risk unsafe handling, informal operators and inconsistent disposal practices.'⁴¹ Katharine Hole shared this view, telling the Committee that there is 'a pressing requirement for an established framework to manage [end-of-life EV batteries]. Implementation of such a framework cannot be delayed. Action must be taken immediately to address the challenges and unlock the potential benefits.'⁴²

Mr Marshall told the Committee that the battery recycling industry has been engaging government about implementing regulations for EV battery management 'for some time' and advocated that 'we must move from discussion to implementation.'⁴³ He explained that in the absence of a framework, 'many companies, including some major brands that boast about their sustainability credentials, [are] opting to ship batteries offshore to countries such as India because of their lower environmental and labour standards, allowing for cheaper processing.'⁴⁴ Mr Marshall believed that this runs counter to Australia's international obligations and commitments and also 'misses an early opportunity to play our part in the battery value chain today and into the future'.⁴⁵

This view was echoed by stakeholders from local government and the automotive industry who called on the Victorian Government to either implement a state-level product stewardship scheme for EV batteries that places responsibility for end-of-life battery outcomes on Original Equipment Manufacturers or to advocate to the Commonwealth for the development of a national scheme.⁴⁶

³⁸ Steven Marshall, *Transcript of evidence*, p. 29.

³⁹ B-cycle, *What batteries can be B-cycled*, <<https://bcycle.com.au/how-you-can-b-cycle/battery-types-accepted>> accessed 29 April 2026.

⁴⁰ Steven Marshall, *Transcript of evidence*, p. 29.

⁴¹ Ibid.

⁴² Katharine Hole, *Transcript of evidence*, p. 30.

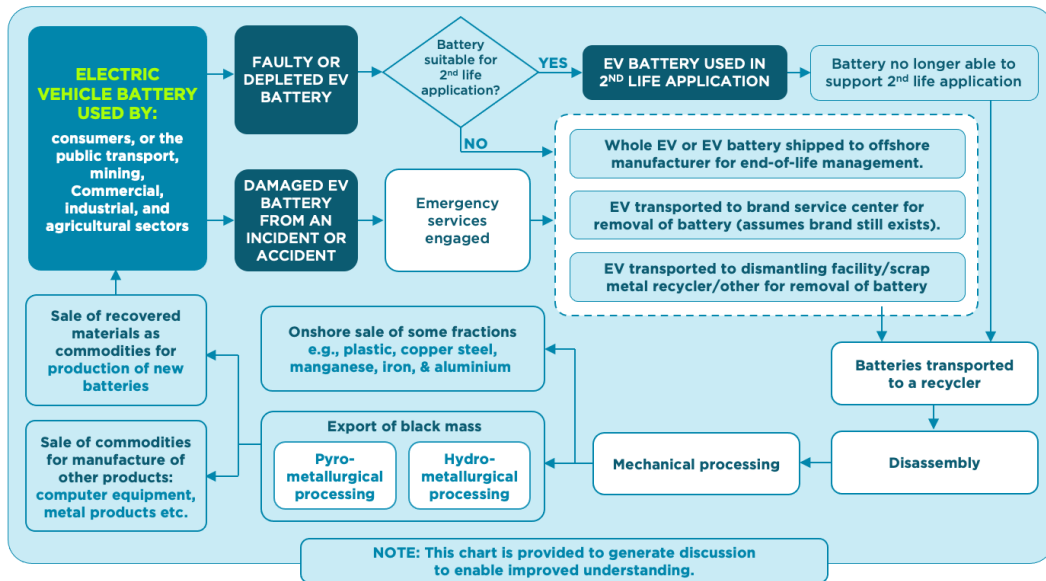
⁴³ Steven Marshall, *Transcript of evidence*, p. 32.

⁴⁴ Ibid., p. 29.

⁴⁵ Ibid.

⁴⁶ Hyundai Motor Company Australia, *Submission 50*, p. 5; Victorian Greenhouse Alliances, *Submission 85*, p. 5; Victorian Automotive Chamber of Commerce, *Submission 107*, pp. 6–9.

Figure 6.2 A possible EV battery life cycle under a product stewardship scheme



Source: Battery Stewardship Council, Electric Vehicle Battery Stewardship Discussion Paper, March 2023 <https://bcycle.com.au/wp-content/uploads/2023/04/BSC_FCAI_MTAA-EVB-Stewardship-Discussion-Paper-20230402.pdf> accessed 28 April 2026.

Hyundai Motor Company Australia told the Committee that Victorian Government can create new high-skill jobs and reduce environmental impacts by co-investing in battery recycling and reconditioning facilities and creating product stewardship obligations for EV batteries.⁴⁷ The Victorian Greenhouse Alliances called on the Victorian Government to advocate to the Commonwealth Government for EV batteries to be designated as a priority product⁴⁸ under the *Recycling and Waste Reduction Act 2020 (Cth)*. It added that a comprehensive stewardship and recycling framework should:

- Promote research, innovation, and industry collaboration on battery recycling and second-life applications (such as stationary energy storage);
- Establish a nationally consistent code of practice and safety guidelines for battery collection, transport, storage, and processing;
- Provide funding, training, and technical support for local governments to work with waste/recycling contractors to ensure safe collection, handling and transport of end-of-life EV batteries.⁴⁹

47 Hyundai Motor Company Australia, *Submission 50*, p. 5.

48 Victorian Greenhouse Alliances, *Submission 85*, p. 5.

49 Ibid.

The Committee notes that the Victorian Environmental Protection Agency (EPA) is currently ‘developing a national guideline to support the safe management of end-of-life lithium-ion batteries ... on behalf of the Heads of EPA Australia and New Zealand (HEPA)’,⁵⁰ an informal alliance of heads of environment protection regulators in Australia and New Zealand. This guideline will be published in November 2026; however, it is not intended to address the development of national or state-based product stewardship schemes.

FINDING 94: Victoria does not have a strategy or regulatory framework for managing end-of-life EV batteries, which present different challenges to the small consumer batteries covered by existing government policies.

FINDING 95: The amount of EV batteries arriving for materials recovery in Victoria is set to increase from around 1,500 tonnes per year to over 20,000 tonnes per year in the next decade.

FINDING 96: Australia has limited capacity to process lithium-ion batteries onshore. This leads to large volumes of end-of-life lithium-ion batteries being stored in warehouses and scrapyards.

FINDING 97: Many companies ship batteries offshore because of lower environmental and labour standards that allow for cheaper processing. This has safety and long-term supply chain security risks.

RECOMMENDATION 36: That the Victorian Government advocate to the Commonwealth Government to designate EV batteries as a priority product under the *Recycling and Waste Reduction Act 2020 (Cth)* as part of a coordinated national product stewardship scheme.

6.2.3 EV batteries can have a ‘second life’ in stationary battery storage systems

Second-life batteries are not simply a technical problem; they are a systems problem involving diagnostics, safety, insurance, and regulation, and solving it will require coordinated innovation between research institutions, industry, and government.

Associate Professor Mahdokht Shaibani, Department of Chemical Engineering, RMIT University, correspondence, 12 March 2026, p. 1.

⁵⁰ Engage Victoria, *Environmental Protection Agency Victoria: Guideline for Safe Management of End-of-life Lithium-ion Batteries*, 15 April 2026, <<https://engage.vic.gov.au/national-guidelines-safe-management-of-end-of-life-lithium-ion-batteries>> accessed 28 April 2026.

The Committee heard that with the right policy settings, 61 per cent of EV batteries collected at end of first life could enter a second life.⁵¹ This would be equivalent to around 6 per cent of the energy storage capacity Australia requires at a significant cost reduction.⁵²

Stakeholders supported repurposing undamaged EV batteries for use in stationary battery storage systems once they have reached the end of their usable life in a vehicle but described the need for a rigorous safety framework for ensuring their viability for use in houses or apartment buildings or in commercial settings, like depots, mines or construction sites.⁵³ Moyne Shire Council noted in its submission that second-life applications for EV batteries can support the energy resilience of communities at the edge of the grid by local storage for excess wind or solar generation and reduce curtailment.⁵⁴

Dr Peter Sherrell explained that even after accounting for that level of depletion, an EV battery with an original capacity of 88 kilowatt hours would be sufficient to operate as a household battery, which only requires between 8 and 25 kilowatts.⁵⁵ If it is connected to rooftop solar, this would allow the house to operate as though it were off the grid.⁵⁶ Dr Sherrell added that power control management software systems that keep a battery between 40 and 60 per cent of its total charge can further extend its lifespan by preventing it from reaching the end ranges that can potentially cause damage to the battery.⁵⁷

Associate Professor Mahdokht Shaibani, Department of Chemical Engineering, RMIT University, told the Committee that there are several barriers to facilitating this use case:

- Accurately diagnosing of battery state-of-health is difficult. Current diagnostic tools often produce results that can vary by 10–15%, which creates uncertainty about the remaining capacity, safety, and usable lifetime of repurposed batteries.
- EV battery packs were not originally designed with second-life applications in mind. Different manufacturers use different cell formats, geometries, cooling systems, and packaging architectures, which means there is unlikely to be a universal disassembly or repurposing pathway. Each design requires its own specialised approach, which increases cost and complexity.

⁵¹ Katharine Hole, *Transcript of evidence*, p. 30.

⁵² Ibid.

⁵³ Hyundai Motor Company Australia, *Submission 50*, p. 4; Australian Energy Council, *Submission 66*, p. 4; Frankston City Council, *Submission 70*, p. 2; East Gippsland Shire Council, *Submission 79*, p. 3; Victorian Greenhouse Alliances, *Submission 85*, p. 5; Alpine Energy, *Submission 93*, p. 2; City of Greater Geelong, *Submission 98*, p. 2; Volvo Group Australia, *Submission 101*, pp. 9–10; Professor Ray Wills and Professor Peter Newman, *Submission 105*, p. 10; Tesla Motors Australia, *Submission 110*, p. 7; Australian Electric Vehicle Association, *Submission 114*, p. 12; Moyne Shire Council, *Submission 117*, pp. 3–4.

⁵⁴ Moyne Shire Council, *Submission 117*, p. 3.

⁵⁵ Dr Peter Sherrell, *Transcript of evidence*, p. 41.

⁵⁶ Ibid.

⁵⁷ Ibid.

- Large-scale deployment will depend on whether insurers and investors are willing to underwrite these systems. Without standardised testing, certification, and liability frameworks, insurance companies are unlikely to support widespread second-life deployment.⁵⁸

Emma Sutcliffe, Program Director, EV FireSafe, told the Committee that a state-of-health check assesses whether the battery has degraded over time through use and through DC charging, but it does not give a ‘state of safety’.⁵⁹ Ms Sutcliffe explained that although she is supportive of second-life applications for EV batteries as stationary storage, ensuring the safety of a battery requires opening the battery pack and examining the battery at a cellular level.⁶⁰ Volvo Group Australia told the Committee that they use detailed battery data to ‘understand each battery’s first life down to the cellular level, ensuring its journey into its second life.’⁶¹ This allows it to understand the nature of the reconditioning work that will be required to ensure that it can progress to a second-life application.

Dr Peter Sherrell told the Committee that he believed that EV batteries are safe to be used in households for this purpose but noted that communicating this to the public is an important challenge for the Victorian Government to resolve.⁶²

FINDING 98: EV batteries can have second-life stationary storage applications in residential, commercial or industrial settings.

FINDING 99: Power control management software systems that keep a second-life EV battery being used in a residential setting between 40 and 60 per cent of its total charge can extend its lifespan by preventing it from reaching end ranges.

FINDING 100: Although current diagnostic tools cannot automate safety verifications for second-life batteries, it is possible to analyse battery cells to ensure a pack is safe for use in a second-life application.

⁵⁸ Associate Professor Mahdokht Shaibani, RMIT University, correspondence, 12 March 2026, p. 1

⁵⁹ Emma Sutcliffe, Program Director, EV FireSafe, public hearing, Melbourne, 12 March 2026, *Transcript of evidence*, p. 34.

⁶⁰ Ibid.

⁶¹ Volvo Group Australia, *Submission 101*, p. 9.

⁶² Dr Peter Sherrell, *Transcript of evidence*, pp. 36–37.

6.3 How the Victorian Government can support the circular battery economy

6.3.1 Australia must bring its safety and compliance standards into line with international best practice

EV battery circularity policies are already established as international best practice and have already been implemented as part of supply chain security aims in China, the European Union, India, South Korea, and the United States.⁶³ However, the Committee heard that Australia is yet to implement legislation that supports supply chain transparency and the traceability of battery components, improves lifecycle data, enhances safety, and advances circular economy goals.

Stakeholders pointed to the European Union's adoption of a Battery Regulation (Regulation (EU) 2023/1542)⁶⁴ in 2023 as an example of best practice in this space.⁶⁵ It introduced a Battery Passport framework, a mandatory digital record system that has requirements for sustainability, safety, labelling, processing, and recycling for all batteries that enter the European market from February 2027.⁶⁶ It was the first digital product passport — a digital record of a product's environmental and social impact through its lifecycle — introduced globally.

Case Study 6.1 The European Union's Battery Passport Scheme

Coming into effect from February 2027, the European Union's Battery Passport scheme will make comprehensive information about the entire lifecycle of certain batteries, from raw material mining to reuse, recycling and disposal, publicly transparent.

This data contains due diligence on the provenance of raw materials for responsible sourcing, the carbon footprint of the manufacturing process, battery composition and recycled content, performance and expected lifespan, and finally, information for safe use, disassembly, and recycling or end-of-life processing.

This system will apply to Light Means of Transport (LMT) batteries (such as for e-bikes and e-scooters), EV batteries, and industrial batteries with a capacity over 2 kWh.

(Continued)

⁶³ Katharine Hole, *Transcript of evidence*, p. 30.

⁶⁴ Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC.

⁶⁵ Toyota Motor Corporation Australia, *Submission 104*, p. 4; Alpine Energy, *Submission 93*, p. 2; RACE for 2030, *Submission 62*, p. 15.

⁶⁶ Barbara Christopoulou, *Securing the Future: South Korea Races to Regulate EV Batteries and Match EU Standards*, 1 December 2025, <<https://fiscalnote.com/blog/south-korea-races-to-regulate-ev-batteries>> accessed 29 April 2026.

Case Study 6.1 Continued

It will include a digital certificate that is accessible via a QR code on the battery or its packaging.

Sources: Battery Pass, *Battery Passport Content Guidance—Executive Summary: Achieving Compliance with the EU Battery Regulation and increasing sustainability and circularity*, December 2023; Barbara Christopoulou, *Securing the Future: South Korea Races to Regulate EV Batteries and Match EU Standards*, 1 December 2025, <<https://fiscalnote.com/blog/south-korea-races-to-regulate-ev-batteries>> accessed 29 April 2026.

Dr Peter Sherrell strongly supported a battery passport scheme as a way of making product information open and transparent. He told the Committee that manufacturers currently have discretion about the battery data they share, meaning that it ‘always has some implicit bias’.⁶⁷ He added that ‘It would be better to be able to clearly communicate and inform the public generally of what is in their battery and what its performance is, as standardised by, let us say, an Australian or Victorian testing system.’⁶⁸

Associate Professor Mahdokht Shaibani told the Committee that RMIT University is currently undertaking a research project funded by an Australian Government grant into developing a Digital Battery Passport in Australia. Associate Professor Shaibani argued that universities, research centres, industry and government must work closely together ‘to develop smart recycling systems that can adapt to changing battery compositions and supply chains.’⁶⁹ She said, ‘If we approach it strategically, Victoria has the opportunity to build a resilient and forward-looking battery recycling ecosystem, rather than replicating models that may already be becoming outdated elsewhere.’⁷⁰

Transparent battery data could also enable more batteries to be repaired and safely transition to second-life applications before recycling. In their submission, Sustainable Lithium Cells Australia told the Committee that the technical capacity to repair and repurpose batteries exists in Australia but that independent operators are currently not able to access the software and technical information necessary to safely diagnose and assess battery systems.⁷¹ OEMs and fleet operators are currently under no obligation to publicly disclose end-of-life management information.

Stakeholders called on the Victorian Government to advocate to the Commonwealth Government to implement similar legislation and take strengthened regulatory compliance action towards meeting Australia’s commitments to process hazardous waste onshore.

⁶⁷ Dr Peter Sherrell, *Transcript of evidence*, p. 40.

⁶⁸ Ibid.

⁶⁹ Associate Professor Mahdokht Shaibani, correspondence, p. 2.

⁷⁰ Ibid.

⁷¹ Sustainable Lithium Cells Australia, *Submission 126*, pp. 1–2.

FINDING 101: Battery producers are not obligated to publicly disclose end-of-life management information.

FINDING 102: The ability to access the software and technical information necessary to safely diagnose and assess battery systems would enable more batteries to be safely repaired for second-life applications or safely recycled.

FINDING 103: The European Union has introduced a Battery Passport framework, a mandatory digital record system that has requirements for sustainability, safety, labelling, processing, and recycling for designated batteries that enter the European market from February 2027. This includes batteries for e-rideables, EV batteries and industrial batteries with a capacity over 2 kilowatt hours.

RECOMMENDATION 37: That the Victorian Government advocate to the Commonwealth Government to implement a national Battery Passport framework that has requirements for sustainability, safety, labelling, processing, and recycling for all e-rideable batteries, EV batteries, and industrial batteries with over 2 kilowatt hours of capacity.

6.3.2 Government grants or incentives can support the development of a domestic lithium-ion battery recycling industry

You cannot just build a little bit at a time – you have got to build for scale for 10 years’ time, which is a big commercial risk.

Katharine Hole, *Transcript of evidence*, p. 36.

Recycling of any product, let alone something as complex and potentially hazardous as a battery, does come at a cost. But so too does the unmanaged risk, environmental harm and lost economic opportunity. The long-term benefits – jobs, investment, skills development, supply chain resilience – substantially outweigh the short-term expense.

Steven Marshall, *Transcript of evidence*, p. 31.

Stakeholders described the Australian battery recycling industry as ‘nascent but working extremely hard’,⁷² and noted that the two operational lithium-ion battery recycling facilities in Australia are both located in Victoria.⁷³ The Committee heard that battery recycling is an economy of scale,⁷⁴ and that grants or incentives from government may be required enable the construction of recycling facilities to meet projected future demand. Stakeholders noted that since battery technology is evolving

⁷² Katharine Hole, *Transcript of evidence*, p. 36.

⁷³ Steven Marshall, *Transcript of evidence*, p. 33.

⁷⁴ *Ibid.*, p. 32.

so rapidly, Victoria must ensure that its developing recycling industry must be flexible and adaptable to future changes in battery composition or chemistry.

Associate Professor Shaibani explained that recycling economics have historically been ‘driven largely by nickel and cobalt in high-nickel chemistries such as NMC and NCA’, but that this equation is changing now that mass-market EVs favour LFP batteries, which contain fewer high value components.⁷⁵

Australia is currently focused on ‘preprocessing’, which refers to the recovery of a battery to ‘black mass’ — also known as mixed metal dust — from which valuable materials can be extracted.⁷⁶ Mr Marshall noted that Australia currently exports around 1,000 tonnes of black mass per annum for materials recovery, as full hydrometallurgical plants that can recover valuable materials from black mass require feedstocks of around about 10,000 to 20,000 tonnes per annum to be economically viable.⁷⁷

Mr Marshall told the Committee that Australia currently has the capacity to manage an initial increase in the volume of battery processing, but said that there is a need to provide incentives or grants for recyclers to build facilities to manage future demand as ‘financially it is very difficult for it to run with a “build it and they will come” model’.⁷⁸ He noted that lithium battery recycling is a low capital expenditure operation but with high fixed costs, which, as has been seen in established recycling economies in Asia, would be offset by greater product volumes entering the system. Associate Professor Shaibani noted that material sovereignty and supply-chain timing are pressing concerns that relate to the timely development of local recycling capacity, as if recycling facilities are not built in time.⁷⁹

If local recycling capacity is not established at the right time, Australia may end up exporting battery “black mass” to countries such as China for processing. Then, when domestic recycling facilities eventually come online, they may face the opposite problem, having capacity but insufficient feedstock, a challenge already being observed in parts of the global recycling industry.⁸⁰

Associate Professor Shaibani stressed that the rapid rate of change in battery chemistries, mineral prices, and recycling technologies means that investment must focus on flexible, adaptive, and intelligent recycling infrastructure that can respond to the changing landscape.⁸¹

FINDING 104: Battery recycling is a nascent industry in Australia, but the country’s two operational lithium-ion battery recycling facilities are in Victoria.

⁷⁵ Associate Professor Mahdokht Shaibani, correspondence, p. 2.

⁷⁶ Steven Marshall, *Transcript of evidence*, p. 32.

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Ibid.

⁸⁰ Associate Professor Mahdokht Shaibani, correspondence, p. 2.

⁸¹ Ibid.

FINDING 105: Australia currently exports around 1,000 tonnes of ‘black mass’ annum for materials recovery.

FINDING 106: Full hydrometallurgical plants that can recover valuable materials from ‘black mass’ require feedstocks of around about 10,000 to 20,000 tonnes per annum to be economically viable

FINDING 107: If adequate domestic recycling not built in time, Australia would have to export ‘black mass’ for processing, which risks having insufficient feedstock for a domestic recycling industry.

RECOMMENDATION 38: That the Victorian Government provide grants, incentives, or subsidies to facilitate the construction of battery recycling facilities to manage future demand projections.

6.3.3 Standardising and supporting EV battery handling skills training

The Committee heard that end-of-life EV batteries are routinely transported around Australia in trucks under a dangerous goods classification, meaning that logistics costs are one of the most significant challenges faced by industry.⁸²

Witnesses told the Committee that there is a battery handling skills shortage in the Victorian workforce and no coordinated national minimum standards. Katharine Hole noted that the Association for the Battery Recycling Industry is developing an industry guideline for packing and transport of used lithium batteries, exploring a standards framework for EV battery reuse and remanufacturing, and skills training for recycling centre operators. However, Ms Hole explained that ‘There is no coordinating narrative to develop minimum standards’ for this and called on the Victorian Government to advocate for national coordination.⁸³

The Committee also heard from stakeholders who expressed similar concerns about workforce and skills shortages in the automotive industry as it relates to battery management, handling, and EV servicing.⁸⁴ John Khoury, Manager, Industry Policy, Victorian Automotive Chamber of Commerce, told the Committee that there is a significant need for an expansion to funding for accredited EV training incentives for technicians, for workshops to invest in EV safe tooling, and for structured partnerships between TAFEs, OEMs and industry to provide appropriate training for staff.⁸⁵

⁸² Katharine Hole, *Transcript of evidence*, p. 36.

⁸³ *Ibid.*, p. 30.

⁸⁴ Victorian Automotive Chamber of Commerce, *Submission 107*, p. 9.

⁸⁵ John Khoury, Manager, Industry Policy, Victorian Automotive Chamber of Commerce, public hearing, Melbourne, 27 February 2026, *Transcript of evidence*, p. 13.

FINDING 108: End-of-life EV batteries are routinely transported around Australia in trucks under a dangerous goods classification, meaning that battery recycling businesses face high logistics costs.

FINDING 109: There are no nationally coordinated standards for safe end-of-life battery handling in Australia

RECOMMENDATION 39: That the Victorian Government collaborate with the Commonwealth, State and Territory Governments to develop national minimum standards for safe end-of-life battery handling and management.

RECOMMENDATION 40: That the Victorian Government invest in safe battery handling skills training for the Victorian workforce.

**Adopted by the Legislative Council Economy and Infrastructure Committee
Parliament of Victoria, East Melbourne
19 May 2026**

Appendix A

About the Inquiry

A.1 Submissions

No.	Author
1	Alan Tse
2	Tom Christie
3	Michael Brennan
4	Damian Kelly
5	Tom Danby
6	Name withheld
7	Julian Mudge
8	myenergi
9	Anthony Lieu
10	Rohan Wightman
11	Name withheld
12	Belinda Haebich
13	David Weber
14	Name withheld
15	Liz Whyte
16	West Wimmera Shire Council
17	Name withheld
18	Mike Parker
19	James Lloyd
20	Steven Abrahall
21	Name withheld
22	Randall Mathews
23	John Herbert
24	Robyn Pogmore
25	Erik Christiansen
26	Josephine Eady
27	Phil Armitage
28	Paul Foxworthy
29	Tom Latimer
30	Name withheld

No.	Author
31	Gannawarra Shire Council
32	Alex Livissianos
33	Electrify Southside
34	EVSE
35	Name withheld
36	Tamara DeSilva
37	Chi Lu
38	John MacInnes
39	Peter Biggs
40	Ben Beccari
41	Maroondah City Council
42	Nicholas Hobbs
43	Andrew Thompson
44	Gary Saunders
45	Belinda Nemece
46	Yi Zhao
47	Name withheld
48	Confidential
49	Michael Bauer
50	Hyundai Motor Company Australia
51	RACV
52	John Hill
53	Electrify Boroondara
54	Yarra Energy Foundation
55	Martin Hurley
56	Connected Kerb
57	National Electrical and Communications Association
58	Name withheld
59	Greater Dandenong City Council

No.	Author
60	Robin Gardner
61	Knox City Council
62	The RACE for 2030 Cooperative Research Centre
63	JET Charge
64	Valerie Kay
65	Australian Academy of Technological Sciences and Engineering
66	Australian Energy Council
67	Moonee Valley City Council
68	Radha Claridge
69	Master Electricians Australia
70	Frankston City Council
71	EVX
72	Yarra Ranges Council
73	Ross De Rango
73a	Ross De Rango
74	Origin Energy
75	Macedon Ranges Shire Council
76	Merri-Bek City Council
77	Monash Energy Institute, Monash University
78	Tony Stevenson
79	East Gippsland Shire Council
80	Energy Consumers Australia
81	Associate Professor Andrea La Nauze
82	AGL
83	ChargePost
84	Harry Barber
85	Victorian Greenhouse Alliances
86	Chris Moss
87	Evie Networks
88	Renew Melbourne branch
89	Nexa Advisory
90	Lighter Footprints
91	bp Australia
92	Federal Chamber of Automotive Industries

No.	Author
93	Alpine Energy
94	Paula Greenough
95	Timothy Wall
96	Nigel Gould
97	Brenton Hall
98	City of Greater Geelong
99	Name withheld
100	Confidential
101	Volvo Group Australia
102	Streets Alive Yarra Inc.
103	City of Port Phillip
104	Toyota Motor Corporation Australia
105	Professor Ray Wills and Professor Peter Newman
106	City of Stonnington
107	Victorian Automotive Chamber of Commerce
108	Springmount Advisory
109	CitiPower, Powercor and United Energy
110	Tesla
111	Electric Vehicle Council of Australia
112	Australian Automotive Dealer Association
113	Maciej Daniszewski
114	Australian Electric Vehicle Association Ltd
115	Bass Coast Shire Council
116	David Van
117	Moyne Shire Council
118	Australian Energy Regulator
119	Ampol
120	City of Yarra
121	City of Greater Bendigo
122	City of Whittlesea
123	Jolt Charge Pty Limited
124	Energy and Water Ombudsman
125	Nissan
126	Sustainable Lithium Cells Australia

A.2 Public hearings

12 March 2026

Committee Hearing Room 3, 55 St Andrews Place, East Melbourne, VIC

Witness	Position and Organisation
Renate Vogt	General Manager of Regulation, CitiPower, Powercor and United Energy (CPU)
Daniel Bye	Head of Customer Connections and Requests, CitiPower, Powercor and United Energy (CPU)
Jonathon Clark	Executive Director, Connected Kerb
Emma Sutcliffe	Chief Executive Officer, EV FireSafe
Dr Peter Sherrell	Vice-Chancellor's Senior Research Fellow, Department of Applied Chemistry and Environmental Science, RMIT University

27 February 2026

Committee Hearing Room 2, 55 St Andrews Place, East Melbourne, VIC

Witness	Position and Organisation
Dr Alina Dini	Head of Energy, Infrastructure and Commercial, Electric Vehicle Council
Peter Griffin	Director State and Territory Advocacy and Communication, Federal Chamber of Automotive Industries
John Khoury	Manager, Industry Policy, Victorian Automotive Chamber of Commerce
Anthony Botta	Policy Advisor, Victorian Automotive Chamber of Commerce
Melissa Dimovski	Director of Policy and Advocacy, Australian Automotive Dealer Association
Michael McKenna	Director Industry Affairs, Australian Automotive Dealer Association
Lauren Pulitano	Vice President Public Affairs, Volvo
Tim Camilleri	Director E-Mobility Solutions, Volvo
Ralph Griffiths	General Manager Policy and Regulation, AGL
Mabelle Reyes	Head of eMobility, AGL
David Magill	Senior Manager, Government Relations, AGL
Michael Shay	Director, Fire Suppression Group
Mike Greiner	President, Hazard Control Technologies
Dan Miller	Chief of Training, Hazard Control Technologies
John Blair	Managing Director, Australasia, Firestryker
Stephanie Bashir	Chief Executive Officer, Nexa Advisory

26 February 2026

Committee Hearing Room 2, 55 St Andrews Place, East Melbourne, VIC

Witness	Position and Organisation
Bernhard Conoplia	Chief Networks Officer, Evie Networks
Stuart Moffatt	General Manager, JOLT Charge
Brendan Wheeler	Chief Executive Officer, EVSE
Andrew Forster	Chief Executive Officer, EVX
Sean McGinty	Founder and Director, EVX
David Van	Head of Strategy, Arvio Technology
Katharine Hole	Chief Executive Officer, Association for the Battery Recycling Industry
Steven Marshall	Chief Operating Officer, Livium
Justin Oliver	Deputy Chair, Australian Energy Regulator
Professor Ray Wills	Managing Director, Future Smart Strategies, Adjunct Professor, The University of Western Australia
Professor Peter Newman	John Curtin Distinguished Professor of Sustainability, Curtin University

13 February 2026

Committee Hearing Room 2, 55 St Andrews Place, East Melbourne, VIC

Witness	Position and Organisation
Pete Mercuriou	Chair of the Barwon South West Climate Change Alliance and Senior Sustainability Officer at City of Geelong, Victorian Greenhouse Alliances (VGA)
Aaron Gray	Projects Energy Lead, SECCCA, Victorian Greenhouse Alliances (VGA)
Mike Fisher	Manager City Planning and Sustainability, City of Port Philip
Renaë Walton	Principal Climate Officer, City of Port Philip
Sam Sampanthar	Head of Sustainable Futures, Knox City Council
Michael Oke	Unit Manager Sustainability, Yarra City Council
Simon Woodland	Manager Sustainable Environment, Bass Coast Shire Council
Jodi Kennedy	General Manager Community & Culture, Bass Coast Shire Council
Michelle Wyatt	Manager Climate Change and Environment, City of Greater Bendigo
John Harvey	Sustainability Officer, City of Greater Bendigo
Cr Tom Crook	Deputy Mayor, East Gippsland Shire Council
Stuart McConnell	General Manager Assets and Environment, East Gippsland Shire Council
Rebecca Lamble	Sustainability Officer, East Gippsland Shire Council
Neil Roberts	Director: Policy Technical and Safety, National Electrical and Communications Association
Michael Weekes	Technical Manager, National Electrical and Communications Association

Witness	Position and Organisation
Kent Johns	Head of Government Relations and Policy, National Electrical and Communications Association
Catherine Wolthuizen	Ombudsman and Chief Executive, Energy and Water Ombudsman Victoria

12 February 2026

Committee Hearing Room 2, 55 St Andrews Place, East Melbourne, VIC

Witness	Position and Organisation
Oliver Hill	Program Leader Electric Vehicles, RACE for 2030 Cooperative Research Centre
Jo Oddie	Acting National President, Australian Electric Vehicle Association
Brendan Davies	Secretary, Victorian Branch, Australian Electric Vehicle Association
Associate Professor Julie Karel	Deputy Director, Research, Monash Energy Institute, Monash University
Professor Hai L. Vu	Monash Energy Institute, Monash University
Associate Professor Roger Dargaville	Monash Energy Institute, Monash University
Dr Kazi Hasan	Senior Lecturer and Transport Electrification Research Lead, RMIT University
Associate Professor Anne Kallies	RMIT University
Associate Professor Zsuzsanna Csereklyei	RMIT University
Ross De Rango	Founder and Director, Vehicle Charging Solutions Australia

Extract of proceedings

Extracts of proceedings Legislative Council Standing Order 23.20(5) requires the Committee to include in its report all divisions on a question relating to the adoption of the draft report. All Members have a deliberative vote. In the event of an equality of votes, the Chair also has a casting vote.

The Committee divided on the following questions during consideration of this report. Questions agreed to without division are not recorded in these extracts.

Adoption of the Report – 19 May 2026

Mr McIntosh moved, That Chapter 1 be adopted and stand part of the Report.

The question was put.

The Committee divided.

Ayes	Noes
Ms Purcell	Mr Welch
Mr Berger	Ms Broad
Dr Mansfield	Mr Mulholland
Mr McIntosh	Mrs Deeming

The votes being equal, the Chair cast her casting vote with the Ayes.

The question was agreed.

Dr Mansfield moved, That Chapter 2 be adopted and stand part of the Report.

The question was put.

The Committee divided.

Ayes	Noes
Ms Purcell	Mr Welch
Mr Berger	Ms Broad
Dr Mansfield	Mr Mulholland
Mr McIntosh	Mrs Deeming

The votes being equal, the Chair cast her casting vote with the Ayes.

The question was agreed.

Mr Berger moved, That Chapter 3 be adopted and stand part of the Report.

The question was put.

The Committee divided.

Ayes	Noes
Ms Purcell	Mr Welch
Mr Berger	Ms Broad
Dr Mansfield	Mr Mulholland
Mr McIntosh	Mrs Deeming

The votes being equal, the Chair cast her casting vote with the Ayes.

The question was agreed.

Mr McIntosh moved, That Chapter 4 be adopted and stand part of the Report.

The question was put.

The Committee divided.

Ayes	Noes
Ms Purcell	Mr Welch
Mr Berger	Ms Broad
Dr Mansfield	Mr Mulholland
Mr McIntosh	Mrs Deeming

The votes being equal, the Chair cast her casting vote with the Ayes.

The question was agreed.

Mr Berger moved, That Chapter 5 be adopted and stand part of the Report.

The question was put.

The Committee divided.

Ayes	Noes
Ms Purcell	Mr Welch
Mr Berger	Ms Broad
Dr Mansfield	Mr Mulholland
Mr McIntosh	Mrs Deeming

The votes being equal, the Chair cast her casting vote with the Ayes.

The question was agreed.

Dr Mansfield moved, That Chapter 6 be adopted and stand part of the Report.

The question was put.

The Committee divided.

Ayes	Noes
Ms Purcell	Mr Welch
Mr Berger	Ms Broad
Dr Mansfield	Mr Mulholland
Mr McIntosh	Mrs Deeming

The votes being equal, the Chair cast her casting vote with the Ayes.

The question was agreed.

Mr McIntosh moved, That the Draft Report (Chapters 1 to 6, including Findings and Recommendations, together with Appendix A), be adopted as the Report of the Committee, and that it be Tabled on 2 June 2026.

The question was put.

The Committee divided.

Ayes	Noes
Ms Purcell	Mr Welch
Mr Berger	Ms Broad
Dr Mansfield	Mr Mulholland
Mr McIntosh	Mrs Deeming

The votes being equal, the Chair cast her casting vote with the Ayes.

The question was agreed.

Minority report

Liberal and Nationals Minority Report

Parliamentary Inquiry into Electricity Supply for Electric Vehicles

Introduction

The Liberals and Nationals acknowledge that electric vehicles (EVs) are a growing part of Victoria's transport system and significant barriers exist that are limiting the further expansion of the industry as noted within the Committee Report. In comparison to other states, Victoria adoption of EVs lags behind other states with no dedicated EV charging strategy of implementation plan.

We support practical measures to ensure that the integration of EVs within the electricity network is reliable, affordable and fair, without placing additional cost pressures on Victorian households, increasing safety risks or compromising the reliability of the state's electricity system. This Minority Report highlights the following:

- Rising EV sales will increase the demand for electricity
- The transition to renewable energy presents electricity reliability risks
- Continued government subsidies places additional costs on taxpayers
- Power reliability remains a significant issue in regional areas
- Greater transparency around battery origin would help consumers make informed choices
- Safety risks associated with recycled EV batteries
- The expansion of EV charging infrastructure in Victoria is lagging behind other states due to delays and increased costs imposed by DNSPs and insufficient grid capacity.

Setting targets and lack of coordinated planning

Energy policy is determined by the states, and the Victorian Labor Government identified transport electrification as critical to achieving its net zero target by 2050. Despite setting these targets, the Committee heard that Victoria currently lacks effective mechanisms to co-plan electricity and transport systems, and found that Victoria currently has no dedicated EV charging strategy and implementation plan to coordinate the rollout of the charging network.

The Electric Vehicle Council submission notes that electric vehicles, including plug in and hybrid vehicles, accounted for 12.9% of new vehicle sales in Victoria from January to June 2025. Ausnet project that the number of Electric Vehicles will 'rise from 11,000 in 2024 to 245,000 in 2031 in Victoria. The Plan for Victoria's Electricity Future cites modelling that an additional 1.4 million charge points will be needed for EVs in Victoria by 2035.

Increased demand for electricity and Victoria's unreliable energy system

During the inquiry the Committee heard that the uptake of electric vehicles will increase the demand for electricity and could strain the electricity grid and reduce grid capacity if this demand is not strategically managed. The Australian Electric Vehicles Association submission noted that inappropriately designed and poorly managed charging networks could strain energy supply networks and force expensive upgrades.

Careful consideration must be given to the impact of EV charging on electricity supply and demand, particularly during peak periods. Incentives to encourage off-peak charging may assist in reducing pressure on the grid, but any approach must preserve consumer choice and avoid placing unreasonable restrictions on vehicle or property owners.

The increased demand for electricity comes at a time when Victoria's energy system is already under pressure. The Victorian Auditor General's December 2025 report, *Managing the Transition to Renewable Energy*, raises significant concerns about Victoria's progress toward its renewable energy objectives and the risks associated with the transition. The report highlights that offshore wind targets are not being achieved, no port has yet been confirmed to support offshore wind development, and major transmission infrastructure projects are facing delays. As a result, Victoria's 2030 renewable energy targets are now uncertain. The report also warns of looming gas shortages and electricity reliability risks.

The Auditor General's report also found that planning for Victoria's energy transition has not adequately accounted for risks and uncertainties, with key decisions often based on optimistic assumptions and few options available to address potential energy shortfalls. It stresses the need for sufficient backup electricity supply to meet peak demand during adverse weather and recommends the development of contingency plans to manage delays and risks. Reflecting these concerns, the Allan Labor Government's own risk framework rates the likelihood of a "disorderly energy transition" as significant and severe/almost certain, warning it could lead to supply disruptions, price volatility for households and businesses, community resentment, and job losses.

Grid stability is essential to prevent electricity prices from spiking further for Victorian families and businesses, and reliable baseload power is required to support the projected demand for electricity to meet the needs of a growing population and increased demand for electricity if thousands of EVs are charging simultaneously.

Taxpayer funded subsidies

The Committee Report makes several recommendations to accelerate the adoption of EVs in Victoria that would place additional costs on taxpayers through taxpayer funded subsidies and programs, reduced stamp duty, registration discounts, and financial incentives. The report also recommends funding targeted programs, trials and research projects, and implementing funding mechanisms and policy measures to build industry and consumer confidence.

In addition, it proposes that the Victorian Government expand fleet electrification programs, and support local government fleet electrification with targeted investment, and provide funding for EV charging infrastructure. It also recommends incentivising landlords to provide accessible charging options for renters.

The growth in electric vehicles in Australia can be attributed in part to government subsidies and tax incentives that promote the purchase of EVs through stamp duty exemptions, reduced registration, low interest loans and public charging stations. The Electric Vehicle Council's State of EVs 2025 report cautioned against the removal of demand-side incentives as this can reverse uptake trends.

Evidence presented to the Committee cites the example of New Zealand, where EV uptake was strong until the end of 2023. In January 2024 the government removed a rebate scheme and also introduced a road user charge for EVs. This triggered a collapse of EV sales which plummeted from 40% of all new registrations in December 2023 to below 5% in January 2024. (*What happened to EV Sales in New Zealand? September update – Clean Technica*).

Continued dependence on taxpayer funded subsidies to promote EV adoption and support the continued replacement of renewable energy infrastructure risks placing a ongoing burden on taxpayers.

Labor policies at the state and federal level relating to the energy grid continue to rely upon significant taxpayer funded subsidies, allocating billions of dollars to renewable energy generation, renewable energy transmission and distribution, and underwriting renewable energy projects. The significant uptake in rooftop solar in Victoria has also been facilitated by government rebates and interest free loans.

Further taxpayer funded subsidies would add to the cost pressures on families and businesses, as Victorians already pay the highest taxes in Australia.

The 2026- 2027 State Budget was delivered on 5th May and reflects a growing state net debt, rising to nearly \$200 billion over the forward estimates. Under Labor, Victorians are paying more than one million in interest every hour. Every dollar spent servicing debt is a dollar that cannot be invested in frontline services, infrastructure, healthcare, and education

Since 2014, the Labor Government has introduced over 60 new or increased taxes, and the recent state budget confirmed:

- Net debt has increased from \$21.8 billion to \$199.3 billion in 2029-30.
- Interest repayments have increased from \$2.1 billion to \$11.8 billion in 2029-30.
- Total tax revenue has increased from \$17.9 billion to \$50.2 billion in 2029-30.

Victorians are increasingly paying the price for years of financial mismanagement, major project cost blowouts and growing government spending, with concerns that escalating debt will place greater tax and cost pressures on households and businesses already struggling with cost-of-living pressures.

EVs and power reliability in regional areas

The transition to electric vehicles (EVs) presents challenges for rural and regional communities where power reliability remains a significant issue. In towns such as Euroa and across the Strathbogie region, residents already experience frequent and prolonged blackouts, with reports of 17 power outages in just two months. In areas still reliant on single-line electricity infrastructure, a loss of power does not simply mean inconvenience, it can mean no phone service, no water supply, no septic systems, no access to air conditioning during extreme heat and difficulty leaving the home if garage doors or electric locks cannot operate. For households being encouraged to adopt EVs, unreliable electricity raises practical concerns about whether vehicles can be consistently charged and relied upon during emergencies or extended outages.

These concerns are compounded by longstanding frustrations over inadequate energy infrastructure in regional communities. In the Strathbogie region, residents have called on the Australian Energy Regulator (AER) to approve plans by AusNet to install an Express Feeder to improve electricity reliability, however the proposal has since been rejected due to low population density. Without reliable power infrastructure, regional residents' risk being left behind, raising questions about whether policies designed for metropolitan areas adequately reflect the realities faced by rural communities.

Ms Renate Vogt, General Manager of CitiPower, Powercor and United Energy (CPU) presented to the inquiry, acknowledging that regional and rural electricity customers currently experience lower reliability than urban customers due to structural and environmental factors. Unlike metropolitan networks, regional systems are less interconnected, rely more heavily on overhead rather than underground infrastructure, and are more exposed to vegetation and extreme weather events such as bushfires. Ms Vogt explained that the AER assesses projects through an economic efficiency lens, and lower population density in regional areas makes it harder to demonstrate that the benefits outweigh the costs.

The CPU acknowledged that this approach risks widening the reliability gap between urban and regional communities and suggested reforms may be needed to better account for equity in electricity access. Electricity is an essential service, and the industry needs to consider changes to the national electricity objective or regulations to prioritise fairness alongside efficiency and sustainability, so that regional communities do not get left behind.

The Committee Report notes that small towns and rural areas do not possess the power quality of larger metropolitan areas or regional centres and would need significant upgrades to install a sufficient number of fast chargers, and these installation costs would likely prove prohibitive for local government and the private sector.

Consumer information

As electric vehicle uptake grows, there is an increasing need to ensure consumers have access to clear information and meaningful choice about where EV batteries are sourced and produced. Many Victorians want confidence that the transition to cleaner transport is not simply offshoring environmental harm and poor labour conditions to other countries.

Concerns were highlighted in a *Spotlight* investigation by journalist Liam Bartlett in 2025, which examined nickel production in Indonesia, a country responsible for around 70 per cent of the world's nickel supply, a critical component in many EV batteries.

The program raised questions about significantly higher emissions compared to *Australian* nickel production, as well as reports of poor working conditions, workplace injuries and fatalities, and environmental degradation. Consumers are increasingly asking where EV batteries come from and whether ethical and environmental standards have been considered. Greater transparency, including battery origin labelling or information provided at the point of sale, could help consumers make informed choices and support supply chains that align with their values on sustainability, emissions and worker welfare.

Data shows a rapid growth of Chinese made and Chinese branded vehicles, which are becoming a major driver of EV uptake in Australia. Last year brands such as BYD, Chery, MG Motor and Great Wall Motor experienced rapid sales growth in Australia, within a year Chinese manufactured vehicles grew from 14% of car sales to about 20% in 2025.

Fire risk and battery recycling

Data presented to the Committee indicated that EV fires are much harder to control than diesel vehicle fires, because thermal runaway can continue spreading through the battery pack. Firefighters may need 2-4 hours to fully manage an EV fire compared with less than 30 minutes for conventional vehicle fires. Evidence noted that 15% of EV battery fires occur during charging, compared with 23% in Australia, based on a small sample size.

Appearing before the Committee, EV FireSafe Director, Emma Sutcliffe supported reusing and recycling end-of-life EV batteries but highlighted ongoing safety concerns. She explained that while current tools can measure battery degradation, cannot reliably detect hidden internal damage that may lead to failure or fire. Repeated impacts or wear may create hidden risks that are not detectable through standard testing. At present, fully assessing battery safety requires dismantling the battery pack and inspecting individual cells.

DNSPs and insufficient grid capacity

The Committee report outlines the role of Distribution Network Service Providers (DNSPs), and concerns raised about higher connection charges and significant time delays, as well as a lack of transparency accessing granular network and capacity data in comparison to other states.

Evidence presented to the inquiry raised concerns about the role of DNSPs in delaying or limiting the rollout of EV charging infrastructure in Victoria, with reports suggesting rejection rates of proposed charging sites could be as high as 40 to 50 per cent, significantly higher than in New South Wales.

Witnesses indicated that while some rejections are attributed to technical constraints such as limited power availability or concerns about dual points of electricity supply, there are also allegations that some DNSPs may be prioritising access for their own unregulated subsidiaries or affiliated charging operations. The National Electrical and Communications Association shared instances where charge point operators seeking access to power poles or locations for chargers were told capacity had already been allocated or unavailable, raising concerns about fairness and transparency in access decisions.

Conclusion

The Liberals and Nationals recognise that EVs are an important part of Victoria's transport future and acknowledges the opportunities associated with transport electrification. However, evidence presented throughout this inquiry demonstrates that the successful integration of EVs into Victoria's electricity network will require careful planning, with broader considerations including cost-of-living pressures, consumer confidence, equitable access to infrastructure, and public safety.

Victoria currently faces challenges including a lack of coordinated electricity and transport planning, insufficient charging infrastructure, grid capacity constraints, and disparities in energy reliability between metropolitan and regional communities. As EV uptake increases, particularly through the growth of more affordable vehicle options, ensuring electricity supply remains secure and capable of meeting future demand will be critical. Greater transparency around battery supply chains, effective management of battery recycling and fire risks, and improved oversight of charging network access will be necessary to support public trust and industry confidence.

Moving forward, Victoria's approach must ensure that the adoption of EVs occurs in a way that strengthens energy reliability, supports informed consumer choice, and delivers long-term benefits for all Victorians.