

INQUIRY INTO ELECTRICITY SUPPLY FOR ELECTRIC VEHICLES

Organisation: Australian Electric Vehicle Association Ltd

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Legislative Council Economy and Infrastructure Committee

SUBMISSION BY THE AUSTRALIAN ELECTRIC VEHICLE ASSOCIATION

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ABOUT AEVA

This submission is provided by the Australian Electric Vehicle Association Ltd (AEVA). Thank you for the opportunity to make this submission to the Legislative Council Economy and Infrastructure Committee.

AEVA is a volunteer-run, not-for-profit organisation dedicated to switching Australia's transport networks to electric drive as quickly as possible. Formed in 1973, AEVA primarily represents the consumers and end-users of electric vehicle (EV) technology, disseminating knowledge through our collective experience.

Electric vehicles of all types represent a highly flexible load when charging, and a potential reservoir of energy which can address spikes in demand when parked. EVs are able to absorb abundant, low cost renewable energy during the day, and critically, not demand energy from the network during peak demand periods. The charging demands of EVs are often not time-critical, allowing high-level demand response interaction with the grid. Moreover, the ability to utilise locally produced, zero-emission electricity improves Australia's resilience to global energy prices.

AEVA firmly believes that with proactive policy, the growing EV road fleet presents a unique energy resilience measure, and does not present a threat to grid stability. However, inappropriately designed and poorly managed charging networks could strain energy supply networks and force expensive upgrades. Executed well, EVs will only help stabilise the grid, and reduce costs for all consumers.

SUMMARY OF RECOMMENDATIONS

1.1: Incentivise and co-fund low-powered EV charging infrastructure in commuter carparks and in Victorian workplaces, such as schools, hospitals, government administration centres.

1.2: Direct or incentivise Victorian distribution network service providers of electricity (DNSPs) to offer dynamic tariffs (which vary by time or location) for EV charging by mid-2026.

1.3: Build real-life scenarios and case studies of vehicle-to-grid (V2G) to build consumer knowledge and confidence about V2G.

2.1 Initiate a program of EV destination charging grants similar to the recent program in New South Wales.

2.2: Inform and empower local governments to lead public charging infrastructure deployments, and facilitate solutions for households without off-street parking.

- 2.3: Assist the Municipal Association of Victoria in designing guidelines and standards for kerbside gully charging.
- 2.4: Strengthen enforcement of the National Construction Code's EV-ready requirements (introduced in 2022) and establish a co-funding program for existing building upgrades.
- 2.5: Reform the *Owners Corporation Act 2006* to establish a clear "right to charge" and streamline approval processes.
- 3.1: Recommend to the Australian Energy Regulator that "ring-fencing guidelines" (aimed at preventing anti-competitive practices) be upheld to prevent DNSPs from owning or operating public EV charging assets in contestable markets.
- 3.2: Mandate that Victorian DNSPs (a) adhere to strict service standards for charger connections (maximum 90 days); and (b) establish transparent, standardised network tariff structures for EV charge point operators to facilitate market competition.
- 3.3: If DNSPs operate EV charging infrastructure, require reliability standards equivalent to the electricity network and require them to implement community service obligations
- 4.1: The Victorian Government should publicly support the federal New Vehicle Efficiency Standards when reviewed in 2026, with a target of 0 gCO₂/km by 2035 for all light vehicles.
- 4.2: That the Victorian Government launch a public information campaign countering EV misinformation, and including case studies comparing the environmental benefits of battery EVs (BEVs) and plug-in hybrid EVs (PHEVs).
- 4.3: The Victorian Government should support the gradual introduction of a federally set, universal, mass × distance Road User Charge, where fuel excise is retained as a highly efficient pollution tax.
- 4.4: Expand EV-specific training programs through TAFE for electricians, automotive technicians, and sales staff.
- 5.1: Support development of national standards for testing, certification, and safety of second-life EV batteries.
- 5.2: Launch a Victorian pilot program demonstrating second-life EV batteries in community (neighbourhood) battery applications.
- 6.1: Commission a study mapping Victoria's competitive advantages across the EV and battery supply chain.
- 6.2: Increase support for Victorian R&D in next-generation battery technologies
- 7.1: Rather than banning the importation and sale of high-powered electric bikes, create pathways for these vehicles to be registered and licensed as road-going mopeds or motorcycles.
- 7.2: Increase the active transport component of the transport budget to the UN Environment Programme's recommended level of 20% to encourage more people to use non-car transport options.
- 7.3: Enhance the Victorian Energy Compare website to enable comprehensive EV tariff modelling.

TERM OF REFERENCE 1

Strategies to reduce EV charging during periods of peak demand on the grid and increase charging during periods of peak supply.

How EV drivers charge their cars

AEVA's 2025 survey of members¹ shows that 85% of charging by Australian EV drivers is done at home, mostly from home solar during peak solar generation hours from approximately 10 am to 3 pm. However, not all EV drivers are able to take advantage of this opportunity, with their EVs being parked at workplaces or transport hubs (such as rail station car parks) during these peak solar periods.

These drivers will use home or public charging outside business hours, and more incentives or education may be needed to ensure that their EV charging is delayed until after the evening demand peak. A home 7kW charger will fill a typical EV car between 9pm and 6am (and slower charging from a standard power point will still add more than 150 km).

It is important to note that with typical usage most EVs will not need to be charged every day. Owners will typically charge no more than 2–3 times per week, and mostly with partial (say 30%) 'top-ups' rather than full charges. Where home charging is available, public charging will be typically needed only for longer trips away from home.

Most home charging is already intelligently managed by EV owning households, who are "early adopters" of the new technology. As EV uptake increases, unmanaged charging during evening peak periods might create a risk of localised network overloads. This could force expensive network reinforcement without proactive education and incentives to delay charging until after 9pm.

Also, some EV drivers may not be able to charge at home. They may lack off-street parking, or they may reside in an apartment where the Owners Corporation has not permitted the installation of a power point at their parking place. These drivers may choose to charge at public stations as part of their commute home, which would be more expensive for them and less desirable from a network demand perspective. These issues are discussed further under Term of Reference 2.

AEVA proposes that the Victorian Government, in partnership with AEVA, provide consumer guidance for good EV home charging practice.

Charging in workplaces and carparks

Workplace charging infrastructure (along with home-installed batteries) are essential to smooth out the demands placed on the grid, by soaking up abundant renewable energy and reducing demand on the grid during the evening peak period.

Support for business solar installations or cheaper daytime tariffs would encourage the installation of this infrastructure. The Victorian Government could fund the installation of slower (AC) chargers in workplaces, for example in school and hospital car parks. This would encourage health, education and other employees to transition to EVs while providing grid support during peak periods of solar generation. It would complement other measures such as the Federal Government's FBT exemption for EVs².

¹ Ann Hoban and Richard Scherer. Attitudes of Australian EV drivers. Presentation to AEVA National Conference, November 2025. <https://www.aeva.asn.au/aeva-conference-2025-hoban-scherer/>

² Electric Vehicle Council. <https://electricvehiclecouncil.com.au/docs/what-is-the-fbt-exemption-and-how-does-it-reduce-the-cost-of-an-ev/>

A similar measure to shift EV charging towards peak electricity supply periods would be to fund the installation of slow EV charging at transport hub car parks. This is happening, for example, in the new station car parks³ for Perth's electric rail system.

Enabling EV charging behaviour change

AEVA draws attention to two 'enablers', which are under the purview of the Victorian Government, and which are relevant to harmonise EV charging with grid supply and demand.

Enabler 1: Price signals through tariff reform

Innovative retail electricity tariffs can align with EV consumer interests, with distributed energy resources (such as home, neighbourhood and EV batteries) and with grid needs. Current examples in Victoria include:

- Overnight Off-Peak: Some retailers (e.g. AGL and Origin) offer rates around 8c/kWh (midnight-6am)
- Solar Soak: Plans like Powershop's "EV Day Saver" offer free electricity 12pm-2pm
- Wholesale Exposure: Amber Electric provides direct access to 30-minute wholesale prices, automating charging during cheapest/greenest periods
- Two-Way Tariffs: Time-varying charges for consumption and credits for export incentivise vehicle-to-grid technology, where for example, EV owners will be able to sell the electricity stored in their EV batteries in peak periods.

Enabler 2: Access to affordable, convenient and smart (bidirectional) charging technology

The Jemena "EV Grid" trial⁴ (2022-2023) in Victoria considered the impact of EVs on distribution networks. It examined consumer willingness to permit third party control, and the ability of electricity suppliers to forecast and manage network loads in periods of low and high demand. The trial documented consumer behaviour and acceptance, showing that 74% of participants preferred managed charging, and 76% would purchase a smart charger based on their experience.

While this study focused on early adopters, the lessons gained can be further explored as more EVs with the capability of supporting vehicle-to-grid (V2G) enter the market.

AEVA is still investigating the appropriate use of V2G and acknowledge that it may be of diminishing interest as more home batteries are installed, supported by the 'Cheaper Home Batteries Program'⁵. We also observe that significant behavioural change will be needed for households to share their EV battery stored energy with the grid in the evenings.

Another important factor will be the return on investment to the EV owner for providing renewable energy generation. In Victoria, solar feed-in tariffs are set by retailers, with a mandatory minimum rate of 3.3 cents per kWh set by the Essential Services Commission.

Victoria has a growing number of Battery Energy Storage Systems (BESS): large-scale batteries that store and release electricity to support the grid. Examples are the Victorian Big Battery in Geelong and the operational Latrobe Valley BESS in Morwell. These BESS

³ Transperth. Electric vehicle chargers. <https://www.transperth.wa.gov.au/Using-Transperth/Station-Facilities/Electric-Vehicle-Chargers>

⁴ ARENA. Jemena EV Grid Trial Knowledge Sharing Final Report <https://arena.gov.au/knowledge-bank/jemena-ev-grid-trial-knowledge-sharing-final-report/>

⁵ Department of Climate Change, Energy, the Environment and Water. <https://www.dcceew.gov.au/energy/programs/cheaper-home-batteries>

systems help improve grid reliability, integrate more renewable energy from sources like solar and wind, and manage peak demand.

An issue is the extent to which EV owners will be financially rewarded for providing their own stored energy. AEVA encourages the Victorian Government to participate in on-going research and information sharing to more fully understand the real value of V2G to EV owners and grid operators, including how costs and benefits are considered. Cooperative Research Centres like RACE for 2030 are planning research into the integration of bi-directional charging for EVs⁶.

In this context, we note that recent research by the laboratory of Professor Jeff Dahn at Dalhousie University indicates the impact of V2G on battery cycling is negligible, reporting no detectable impact over potentially decades of use ⁷.

Standards

Delivery of V2G at scale will be dependent on four key standards as the foundation for smart, scalable EV charging:

- AS/NZS 4777.2: Governs electrical safety and grid-interaction behaviour of bidirectional EV chargers
- Dynamic Operating Envelopes (DOE): Enable DNSPs to communicate real-time import/export limits to smart chargers
- OpenADR: Secure two-way communication protocol for grid signals
- OCPP: Universal device-level control interface ensuring interoperability

These standards fall under the purview of the Australian Government and need to be continually improved, with interoperability of associated technical equipment ensured to underpin a reliable and accessible EV charging network across all levels of charging.

Recommendations

1.1: Incentivise and co-fund low-powered EV charging infrastructure in commuter carparks and in Victorian workplaces, such as schools, hospitals, government administration centres.

1.2: Direct or incentivise Victorian distribution network service providers of electricity (DNSPs) to offer dynamic tariffs (which vary by time or location) for EV charging by mid-2026.

1.3: Build real-life scenarios and case studies of vehicle-to-grid (V2G) to build consumer knowledge and confidence about V2G.

⁶ RACE for 2030. <https://www.racefor2030.com.au/race-for-evs/>

⁷ Jeff Dahn. AEVA National Webinar, November 2025.
https://www.youtube.com/watch?v=GVaAjJJ_YcQ&t=31s

TERM OF REFERENCE 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

Public charging needs of EV drivers

Access to reliable and effective, suitably priced home or public EV charging is a primary enabler for EV adoption. AEVA has a policy on public EV charging⁸.

In AEVA's view, the installation of public charging is progressing slower than is needed in Victoria. There are still many charging gaps, particularly for regional travellers, but also for urban dwellers who may need a top-up or fast charge. Reliability of existing and new charging infrastructure is key to accelerating EV adoption by the early majority. Chargepoint operators and hosts must be held to minimum standards for service and functionality, especially for equipment installed using public funds.

Further, we acknowledge that design of charging networks needs careful consideration to avoid over-investment, with effective co-design with the various actors. Public funding may still be needed for charging black holes. For example, the NSW Government has recently announced a new round of funding for destination charging⁹. AEVA recommends an equivalent program for Victoria.

Public charging need not match the ubiquity of petrol stations, as most EV charging (85%) occurs at home or work. Public charging should comprise a mixture of 50 kW+ DC charging and slower AC charging (typically 11 kW or less). Different charging speeds suit different destinations and 'dwell times'. There is no "one size fits all" solution.

Key considerations include:

- User type and location: Travellers, residents, and workers require different charging speeds
- Amenities: Safety, shelter, access to toilets and refreshments, internet connectivity, and lighting are needed.
- Travel patterns: Daily travel typically under 150 km; top-up charging more common than full charges
- Road hierarchy: Primary highways are mostly well-serviced; secondary roads and townships need destination AC chargers.

It is essential that when the Victorian Government is supporting co-design processes for installation of charging infrastructure, the most appropriate charger for the task is selected, and some level of redundancy is determined. In most locations, but especially in towns between major centres, an AC charger to backup a DC fast charger is recommended.

Where power supplies are constrained in small centres it is preferable to install lower power (20 kW) DC chargers on existing 32 amp, three-phase supplies rather than AC chargers. This allows a reasonable charging speed as all EVs can charge at 20 kW DC, but most on-board charging is limited to 6-11 kW AC. Other locations such as recreational centres, libraries, civic centres and parks, or places where longer dwell times are anticipated, may benefit from multiple AC charging points to encourage daytime charging. Local

⁸ AEVA. Policy recommendations: Public charging infrastructure. Approved by the Board, 7 July 2025. <https://www.aeva.asn.au/files/4233/>

⁹ Destination charging grant NSW. <https://evse.com.au/nsw-electric-vehicle-destination-charging-grants/>

governments or retailers may also plan to develop car parks with solar roofs to supplement their EV charging facilities.

For long distance travel, EV drivers must have confidence that reliable charging will be available at regular intervals along major intercity routes and country towns. Since EV uptake is now growing rapidly through the mid-2020s, there is a clear need for substantial banks of EV chargers at regular intervals on Australia's highways and secondary roads. Suppliers of fast chargers on these busy routes should be able to make these investments and receive an economic return through charging fees.

Where governments provide financial assistance to install charging infrastructure, such agreements should require on-going reliability guarantees. Chargers left out-of-order for extended times are a cause of considerable frustration among EV drivers and could erode public confidence in EVs. The Australian Government DCCEEW 'Minimum operating standards'¹⁰ for government supported public electric vehicle charging infrastructure' provide guidance on delivering a quality charging network.

Inner city urban solutions

The inability to charge at home is emerging as a barrier to adoption. A significant number of suburban households lack off-street parking¹¹, with high numbers cited for households in the City of Yarra.

AEVA's preferred solution is kerbside 'gully charging' where the concrete footpath managed by the local government is cut and covered with a conduit for an EV charger to be installed at the owners expense. Kerbo Charge is commencing trials of gully charging in Australia¹². This approach is feasible for older inner-city suburbs and is currently being explored in Sydney's inner-west. The approach would work in Melbourne, with no impact on pedestrian safety or streetscape amenity. AEVA recommends that the Victorian Government assist the Municipal Association of Victoria in designing guidelines and standards for kerbside gully charging. Local governments could develop preferred products and enlist approved installers for their deployment.

Victoria's Distribution Network Service Providers (DNSPs) have approval for a trial of pole-mounted charging equipment. AEVA has concerns about DSNP-owned EV charging infrastructure and would rather see support for a thriving competitive market. The costs of installation and maintenance must be covered by income generated from charging (or grants) and not passed on to the general pool of electricity consumers.

Apartment and strata challenges

Retrofitting charging into existing apartments is a major barrier. Legislation for strata title management must provide for the 'right to charge'. The National Construction Code 2022 (commenced 1 May 2024 in Victoria) requires "EV-ready" infrastructure in new buildings: this must be robustly enforced. For existing buildings, co-funding programs for infrastructure upgrades and reforms to Owners Corporation Act 2006 to streamline approval processes are needed.

¹⁰ Energy and Climate Ministerial Council.

<https://www.dcceew.gov.au/sites/default/files/documents/minimum-operating-standards-electric-vehicles-charging-infrastructure.pdf>

¹¹ There is no compelling data on the number of households in Victoria that lack off-street parking. This study by Elizabeth Taylor found a figure of 18% for Melbourne based on a modest survey sample: <https://www.sciencedirect.com/science/article/abs/pii/S0264837718309104>

¹² Kerbo Charge. <https://www.kerbocharge.com/australia>

In NSW the Strata Schemes Legislation Amendment (Miscellaneous) Bill 2025 includes a provision that specifically prohibits unreasonable objection to the installation of electric vehicle charging stations. Similarly, the ACT's Unit Titles (Management) Act 2011 prohibits unreasonable refusal of permission to install sustainability infrastructure in general. In both jurisdictions, as well as others in Australia and New Zealand, approval thresholds in strata legislations are reduced to 50% rather than Victoria's 75%.

More information on the retrofitting of strata buildings for EV charging is provided by Wattblock¹³.

We also draw the Committee's attention to the submission by the ACT Branch of AEVA to the inquiry by the ACT Legislative Assembly into the management of strata properties¹⁴.

Role of local government

Local Government plays a vital role in planning and design of public charging networks, including unlocking of public land, and designing and managing parking and streetscape amenities. AEVA commends the 'Regional Charging Framework' developed by the Institute of Sensible Transport¹⁵ as a guide for Local Government councils in their planning of public EV charging and their collaboration with charge point operators. Further, the Victorian Government should ensure, through the Municipal Association of Victoria, that Local Government council staff are well-informed on EV charging, and EV driver's needs, so that they can be effective actors in co-design and delivery.

As a side note, some municipal councils are procuring plug-in hybrid electric vehicles (PHEVs) for their fleets. AEVA has concerns¹⁶ that PHEVs risk undermining the decarbonisation goals of governments, particularly as the real-world fuel efficiency of these vehicles is sometimes five-fold worse than rated¹⁷ and carry higher maintenance and fuel costs. In the context of this Term of Reference, more PHEVs in the fleet diminishes the case for more public charging infrastructure.

Recommendations

2.1 Initiate a program of EV destination charging grants similar to the recent program in New South Wales.

2.2: Inform and empower local governments to lead public charging infrastructure deployments, and facilitate solutions for households without off-street parking.

2.3: Assist the Municipal Association of Victoria in designing guidelines and standards for kerbside gully charging.

2.4: Strengthen enforcement of the National Construction Code's EV-ready requirements (introduced in 2022) and establish a co-funding program for existing building upgrades.

2.5: Reform the *Owners Corporation Act 2006* to establish to establish clear "right to charge" provisions, and help streamline the approvals processes.

¹³ <https://www.wattblock.com/>

¹⁴ AEVA ACT Branch. Submission to the Inquiry into the management of strata properties <https://www.aeva.asn.au/files/3978/>

¹⁵ Central Victorian Greenhouse Alliance. <https://www.cvga.org.au/ctr3.html>

¹⁶ [Don't plug in your plug-in hybrid? Here's how the extra emissions add up - ABC News](#)

¹⁷ *The Driven*, 21 October 2025. ["One of biggest cons:" Plug-in hybrids pollute almost as much as petrol cars, report finds](#)

TERM OF REFERENCE 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

Public EV charging is ideally a competitive retail service that thrives on innovation. Allowing regulated monopolies such as DNSPs to compete creates an unlevel playing field and unfairly socialises costs. It is AEVA's view that charging infrastructure costs should not be included in the regulated asset base of DNSPs.

DNSPs must comply with timely service standards for assessing, approving and connecting new chargers, as anecdotal evidence suggests approvals can take almost 18 months.

To facilitate a competitive market, AEVA recommends:

- Streamline grid connections: Establish simplified, transparent connection processes and standardised connection agreements to reduce negotiation delays
- Provide network data: Mandate accessible data on local network capacity to a suitable level of detail, preferably for free or nominal cost.
- Cost-reflective network tariffs (payments by the charge point operators to the DNSP): DNSPs should provide standardised, time-of-use network tariffs to the charge point operators. This price signal allows retailers to offer competitive variable retail tariffs that motivate public EV charging during low demand periods.

AEVA supports competitive markets for kerbside and pole-mounted chargers. Installation and maintenance costs must be covered by charging income or grants, not socialised. If DNSPs are eventually permitted to own/operate charging points, as is being permitted in some jurisdictions they must:

- accept reliability standards equivalent to the electricity network;
- undertake community service obligations for installation of regional charging infrastructure in 'charging black holes'; and
- exclude assets from the Regulated Asset Base.

Recommendations

3.1: Recommend to the Australian Energy Regulator that "ring-fencing guidelines" (aimed at preventing anti-competitive practices) be upheld to prevent DNSPs from owning or operating public EV charging assets in contestable markets.

3.2: Mandate that Victorian DNSPs (a) adhere to strict service standards for charger connections (maximum 90 days); and (b) establish transparent, standardised network tariff structures for EV charge point operators to facilitate market competition.

3.3: If DNSPs operate EV charging infrastructure, require reliability standards equivalent to the electricity network and require them to implement community service obligations

TERM OF REFERENCE 4

Strategies to facilitate the take-up of EV ownership, including the facilitation of bidirectional charging

With the surge of imports from China, and following the implementation of Australia's New Vehicle Efficiency Standard, new EVs in Australia are now some of the cheapest in the world. As a result, upfront purchase price is not a key impediment to EV uptake, and purchase rebates or subsidies are no longer needed.

Charging infrastructure is catching up with the growth in EV uptake, but considering that most charging will be done at home or at work, shortcomings in charging infrastructure are not a significant impediment to uptake. That said, increasing charging infrastructure in regional and rural Australia will go a long way towards instilling confidence in the market.

What AEVA has observed though, is a lack of confidence in public understanding of EVs and how they would fit into a household's routine. The environmental benefits are clear and the economics of EV ownership are compelling in their own right, but new vehicle purchases are often influenced by other factors. These include brand loyalty and familiarity, confidence in access to parts and service, and a general understanding of how a vehicle is utilised over the course of a week. All of these seem to be sticking points for the 'early majority'.

More frustrating is the prevalence of opportunistic bad-faith actors willing to sow seeds of doubt and uncertainty, or misrepresent aspects of EV ownership to further delay the transition.

The 2025 survey conducted by the Global EV Association (GEVA), which had 27,500 responses, found that misinformation and myths about EVs were cited as the biggest barrier to EV uptake. Over 50% of respondents reported difficulties convincing family and friends about the benefits of EVs.

Thus, a concerted, positive education and awareness campaign must form a key plank in the next stage of accelerating EV uptake. The AEVA is willing to offer guidance on this.

During 2025 AEVA developed an Australian version¹⁸ of the UK's *Little Book of EV myths*. This resource responds to common incorrect or out-of-date assertions about EVs, covering themes such as the driving experience, costs, charging, batteries and environmental benefits.

One issue addressed in the Little Book of EV myths is the comparative environmental benefits of battery EVs (BEVs) and plug-in hybrid EVs (PHEVs). PHEVs have seen a surge in sales in 2025, but an October 2025 report¹⁹ showed that in real-world driving the average CO2 emission figures for PHEVs were almost five times higher than their quoted test figures. It is clear that PHEVs emit both more emissions and use more fuel than previously claimed. For this reason, AEVA proposes that the Victorian Government publish PHEV versus BEV comparative case studies.

Another aspect of EV uptake which is leading to some apprehension is the prospect of a road user charge (RUC) to be levied on EVs. While the costs will be modest, there is an inequity around encouraging EV uptake while simultaneously planning to tax them. The

¹⁸ AEVA. Little book of EV myths, Australian edition. <https://www.aeva.asn.au/little-book-of-ev-myths-australian-edition/>

¹⁹ Transport and Environment. Smoke screen: the growing PHEV emissions scandal. https://www.transportenvironment.org/uploads/files/2025_10_PHEV_smoke_screen_report.pdf

AEVA has long held a policy²⁰ that if a RUC is introduced, *it must be universal* (it applies to all vehicles of all segments, regardless of energy source), *it must factor in vehicle mass* (heavier vehicles do more damage) and the *rate must be set by the Commonwealth*, even if the scheme is administered by the states and territories.

The federally collected fuel excise, which has not funded roads for decades, should in AEVA's view be retained as a highly efficient pollution tax. The RUC should be introduced at a low rate and steadily increased over the course of a decade such that it matches a roughly equivalent rate as fuel excise would have collected.

The motor vehicle industry, which will increasingly depend on consumers buying EVs, is also experiencing an existential conflict of interest. Dealership business models have long relied on service schedules for ongoing revenue, and EVs significantly impact this model. Hence many dealerships will downplay their EV offerings while directing customers towards petrol, diesel or hybrid options.

Mechanics and service technicians unfamiliar with EVs also have an outsized influence on public perceptions of EVs, with their advice (however ill-informed) potentially stalling EV sales. Similarly, electricians can influence consumer preference for EVs and related charging equipment. A reluctance to familiarise themselves with new, better technologies is projected onto potential EV owners, holding back enthusiasm for EVs. This was observed in the Electrify 2515 community pilot²¹ as well. EV-specific training through TAFE and/or industry bodies would help build a more knowledgeable workforce, and improve confidence in the technology among tradespeople.

Bidirectional charging, or V2X, is another feature of EVs which appeals to a subset of prospective buyers, but risks needlessly confusing an already-shy consumer. While Vehicle-to-Grid and Vehicle-to-Load (V2G/V2L) offers options for household and community electricity outage resilience, AEVA suggests promoting this feature as a secondary benefit. For those with a particular interest in the V2X capability of an EV, the process of connecting to the grid needs to be kept simple, fair and affordable.

Virtual power plants are serving as aggregators of stored energy, but public trust in utilities accessing energy must be high for these programs to succeed. In the meantime, current barriers to V2G adoption include high hardware costs, lack of clarity around connection rules, limited vehicle compatibility and the practicalities of aligning vehicle use with energy arbitrage.

Recommendations

4.1: The Victorian Government should publicly support the federal New Vehicle Efficiency Standards when reviewed in 2026, with a target of 0 gCO₂/km by 2035 for all light vehicles.

4.2: That the Victorian Government launch a public information campaign countering EV misinformation, and including case studies comparing the environmental benefits of battery EVs (BEVs) and plug-in hybrid EVs (PHEVs).

4.3: The Victorian Government should support the gradual introduction of a federally set, universal, mass × distance Road User Charge, where fuel excise is retained as a highly efficient pollution tax.

²⁰ AEVA. Universal, mass × distance road user charging for Australia: an options paper. <https://www.aeva.asn.au/files/3915/>

²¹ Electrify 2515. <https://www.electrify2515.org/news/real-world-lessons-from-australias-first-community-led-electrification-pilot>

4.4: Expand EV-specific training programs through TAFE for electricians, automotive technicians, and sales staff.

TERMS OF REFERENCE 5 and 6

Whether old EV batteries could have a second life as household or community batteries after removal from vehicles.

The barriers and opportunities to the manufacture, reconditioning and recycling of EV batteries, or other elements of the DEV supply chain in Victoria.

AEVA is currently investigating policy options for efficient battery decommissioning, testing and assessment for redeployment or recycling. Some information on EV batteries is set out in Part 4 of our *Little book of EV myths*²². EV batteries retired at ~80% of their original capacity have substantial capacity for stationary energy storage, extending their useful life by a decade or more.

For battery packs where re-deployment is not viable, recycling is the only option. Approximately 95% of a Li-ion battery can be recycled, and all valuable metals can be recovered. Localised battery recycling would create a domestic critical mineral supply and could generate hundreds of jobs. Most EV batteries in service today will continue in service for a decade or more. Nonetheless, CSIRO forecasts recovered materials worth up to \$3 billion annually by 2036.

More research is needed to explore Victoria's competitive advantages across the EV and battery supply chain.

The Electric Vehicle Council has collaborated with the Association for the Battery Recycling Industry to develop an explainer²³ for the landscape of EV battery reuse and recycling in Australia.

Recommendations

5.1: Support development of national standards for testing, certification, and safety of second-life EV batteries.

5.2: Launch a Victorian pilot program demonstrating second-life EV batteries in community (neighbourhood) battery applications.

6.1: Commission a study mapping Victoria's competitive advantages across the EV and battery supply chain.

6.2: Increase support for Victorian R&D in next-generation battery technologies.

²² AEVA. Little book of EV myths. Part 4: Batteries. <https://www.aeva.asn.au/little-book-of-ev-myths-australian-edition/#part4>

²³ Electric Vehicle Council. <https://electricvehiclecouncil.com.au/evbatteryreuseandrecycling/>

TERM OF REFERENCE 7

Any other related matters the Committee considers relevant

AEVA notes the following additional matters as relevant for consideration in enhancing uptake of EVs and providing for EV charging:

Non-car electric vehicles

The AEVA advocates for the full electrification of all forms of transport, including motorcycles, scooters, e-bikes and other e-rideables. An e-bike or e-scooter can complete the same transport task as a 2-ton car, using a tiny fraction of the resources and space. Electric motorcycles and mopeds have never been included in any rebate or incentive schemes, and are rarely discussed as the highly efficient, zero-emissions mobility options they are.

We note that several state governments are grappling with the issue of inexperienced and young riders using high-powered e-bikes and scooters, and unfortunately, many are tempted to support banning the importation and sale of such machines. It is the view of AEVA that these small EVs have the potential to massively reduce transport emissions at the lowest cost, and they should be encouraged through sensible regulation..

AEVA recommends that any e-bike or e-rideable which exceeds the speed and power limitations set by the Road Safety Act should be offered a pathway to become registered and licensed as a road-going moped or motorcycle. If fitted with appropriate brakes, lights, turn signals and a licence plate, they will take the place of a car trip. They will still require the operator to be of age, possess a valid motorcycle license, and carry compulsory third party insurance.

The Victorian Government should make all efforts to encourage more people to embrace non-car transport. Investment in safe, separated cycling infrastructure is essential to achieving mode-shift away from the car as the primary form of transport, and this means raising funding for active transport infrastructure to the United Nations Environment Program's recommended level of 20% of the transport budget. People won't ride bikes unless they feel safe to do so. Electric bikes, scooters, mopeds and motorcycles should be supported with clear regulations that encourage responsible use, rather than outright bans.

Consumer empowerment

The Victorian Energy Compare website should be enhanced to enable comprehensive modelling of EV-specific tariffs, enabling informed decisions about EV adoption and energy plans.

Recommendations

7.1: Rather than banning the importation and sale of high-powered electric bikes, create pathways for these vehicles to be registered and licensed as road-going mopeds or motorcycles.

7.2: Increase the active transport component of the transport budget to the UN Environment Programme's recommended level of 20% to encourage more people to use non-car transport options.

7.3: Enhance the Victorian Energy Compare website to enable comprehensive EV tariff modelling

CONCLUSIONS

The Australian Electric Vehicle Association (AEVA) thanks the Committee for the opportunity to be part of this discussion. The transition to electric transport offers profound benefits for Victoria's economy, environment, and energy security. The approaches and technologies required are already within reach.

AEVA is keen to continue to represent the consumer voice in Victoria's transition to electric vehicles, and wider electric transport.

Yours sincerely,



Richard Czumak
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