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Submission on the Review of E-Mobility Device Carriage on Public Transport Networks

Prepared by the Australian Electric Vehicle Association (AEVA)

The Australian Electric Vehicle Association (AEVA) welcomes the opportunity to contribute to the important public discussions initiated by the Victorian Department of Transport and Planning and Transport for New South Wales regarding the carriage of personal e-mobility devices on public transport networks[1,2].

As Australia's peak body representing all consumers and end-users of electric mobility since 1973, AEVA is committed to ensuring any electric transport solution is managed safely, responsibly, and for the benefit of all.

Summary of Recommendations

- Policy alignment on the regulatory review process
- Establish a joint national review and working group
- Adopt a practical interim measure for first- and last-mile transport
- Engage with key stakeholders and representative bodies, including AEVA

Introduction

Electric bikes and other e-rideables are enormously popular in Australia for good reason - their low cost, ease of access and versatility affords zero-emission transport to tens of thousands of Australians each day. However we also acknowledge the legitimate safety concerns around fires, particularly those occurring on public transport, which have prompted these reviews. Recent incidents both locally and internationally, underscore the need for a robust, yet evidence-based safety framework[3].

Reports from NSW Fire and Rescue of 183 lithium-ion battery fires in the current year alone, with more than a third involving e-micromobility devices, provide a clear mandate for considered action[4]. AEVA shares the governments' primary objective: to ensure the absolute safety of passengers and staff across the public transport system.

This submission is presented as a constructive proposal for a more effective, targeted, and collaborative regulatory pathway; one that addresses the root cause of the risk without penalising the vast majority of responsible people who rely on safe, certified devices for their daily transport needs.

The approach being considered by the NSW Government (a temporary suspension of carriage pending a comprehensive review and public consultation) is a prudent model[2]. A permanent ban, as proposed in Victoria's draft regulations, could potentially close the door on a collaborative process. AEVA therefore advocates for Victoria to align with the NSW model, allowing for a joint review process which can offer guidance for the national strategy both states have called for. AEVA is willing to provide advice and input on a workable solution with both governments.

The E-Mobility Imperative: Preserving the Benefits

E-mobility devices are a proven and highly effective solution to the persistent "first and last-mile" problem. That is, the challenge of connecting commuters between their homes or workplaces and public transport hubs. By extending the effective catchment area of train stations, PMDs make public transport a viable and attractive option for a much larger segment of the population.

Data from the NSW Government's e-scooter trials confirms this critical function, revealing that 47% of trips are used to connect with public transport. Banning these devices[5] from the network would sever this vital link, diminishing the utility and accessibility of the entire public transport system.

The societal benefits extend far beyond public transport integration. E-mobility is a key enabler of mode shift away from private car dependency. The same NSW data shows that 35% of e-scooter trips in cities and 45% in regional areas directly displace car trips. Unless more frequent rail and bus services are offered where e-rideables are banned, driving a car from start to finish will be the inevitable outcome.

Bicycle NSW, in its response to the proposed ban, states the affected users include seniors who rely on e-bikes for fitness and social connection, individuals with disabilities or chronic illnesses and lower-income workers, including those in the gig economy. For these people, multi-modal transport is simply an economic necessity, so the resulting loss of mobility, independence, and economic opportunity is a serious impact.

Victoria's own draft regulations which have retained permission to carry foldable electric mobility devices on trams and buses, acknowledges this reality[1]. This existing, nuanced approach, which is also in place on some NSW bus services, provides a common-sense foundation for any interim measures. AEVA has advocated for a similar approach in Western Australia where any small e-rideable can be taken on Transperth trains and buses (where applicable).

The Risks of Uncertified Devices

The insurance industry and fire authorities acknowledge that the fire risk associated with e-mobility is not an inherent flaw in lithium-ion battery technology itself. Rather, it stems from poorly designed, cheaply manufactured, and largely uncertified products satisfying incredible demand from a market hungry for low-cost, zero emission transport options. A blanket ban is a disproportionate, and arguably unenforceable approach which fails to distinguish between safe, compliant devices and hazardous, non-compliant ones.

The Insurance Council of Australia (ICA) unequivocally states that the high risk of battery fire from personal mobility devices is "primarily due to poor design and manufacturing, high wear and tear, poor regulation and enforcement"[6,7]. Any increased fire risk is not a failure of the technology, but the response of manufacturers to market demand.

Data from EV FireSafe supports this conclusion, showing that while PMD battery fires are occurring weekly in Australia and have resulted in at least one verified death, the fire risk from highly regulated, road-registered electric vehicles (EVs) is "very low"[8].Production electric cars are subject to stringent Australian Design Rules (ADRs) and testing protocols, and accordingly catch fire at least one-twentieth of the frequency of internal combustion engine vehicles[1].

The successful safety record of registered EVs demonstrates that, when robust standards are mandated and enforced, the risks associated with high-capacity lithium-ion batteries can be effectively managed[9,10]. The same approach can apply to PMDs: instead of banning the entire

category, efforts should be made to implement and enforce certification regime which removes unsafe products from the market.

This approach has already been successfully implemented in other jurisdictions. Both New York City and Singapore have mandated third-party certification to the UL 2272 safety standard for all PMDs sold or used in their territories, effectively managing the risk without resorting to a complete prohibition[11]. The U.S. Consumer Product Safety Commission (CPSC) has likewise formally called on all manufacturers to comply with the UL 2272 and UL 2849 standards[13,14]. Australia could easily follow a similar approach for imported devices which are already captured by our current road rules.

The current regulatory vacuum in Australia has created what economists term a "market for lemons." Consumers, lacking the technical expertise to assess the safety of a battery system, often rely on price as the primary differentiator. Reputable manufacturers who invest significant capital in comprehensive safety testing and certification, a process that can cost tens of thousands of dollars per model, are placed at a severe competitive disadvantage.

A ban on public transport usage does not solve this underlying market failure. It merely removes a key legitimate use case, potentially driving demand for uncertified (and potentially risky) devices, or more likely, would see people return to their cars.

The only sustainable solution is to correct the market failure at its source by making safety certification a visible, and valuable requirement for all high-capacity battery devices sold in Australia.

Battery Capacity as a Risk Factor

The regulations governing what constitutes a compliant e-rideable relates only to its top speed in operation, but it does not address a major factor in calculating fire risk - the battery capacity. The motor may be limited to under 250 W, but a high capacity battery affording over 100 km of range would store in excess of 1000 watt-hours (Wh) of energy. The risk of fire initiating is no different to any other device, but the capacity is a multiplying factor in the consequence of a fire should one start.

Any proposed certification requirement would apply to devices containing lithium-ion batteries with a capacity greater than 100 watt-hours (Wh) - the established international safety standard used by the International Air Transport Association (IATA) for the carriage of batteries on aircraft. Devices under 100 Wh include cameras, laptops, mobile phones and some cordless tool battery packs.

Internationally Recognised Certification Standards

A credible and effective safety framework already exists in the form of internationally recognised, system-level safety standards developed by organisations like Underwriters Laboratories (UL)[12,13].

These standards go far beyond simple component checks, evaluating the entire electrical system, including the battery pack, the charger, and the device's control circuitry, as an integrated unit to ensure all parts work together safely[18,19]. Adopting these international standards could allow for a compliance regime which is easy to follow.

The following table outlines the key standards that could form the basis of the proposed certification framework.

Device Category	Recommended Standard(s)	Scope of Certification	Key Safety Protections
Personal E-Mobility (e-scooters, e-skateboards, hoverboards)	**UL 2272**	System-level evaluation of the electrical drive train, battery system, and charger combination.	Mitigates fire, explosion, and electrical shock hazards through rigorous testing for overcharging, short circuits, extreme temperatures, vibration, water exposure, and mechanical impact.
E-Bikes (Electrically Power Assisted Cycles)	**UL 2849 / EN 15194**	System-level evaluation of the entire e-bike electrical system, including the battery, charger, motor controller, and wiring. [17]	Assesses the holistic electrical and fire safety of the integrated system, ensuring components are compatible and function safely together to prevent thermal runaway and electrical malfunctions. [13]
Power Tools & Outdoor Equipment (Drills, mowers, etc.)	**IEC/UL 62841**	Safety of electric, motor-operated, or magnetically driven tools, including their battery systems. [20]	Addresses a comprehensive range of electrical, mechanical, thermal, and fire hazards associated with high-power, battery-operated tools and machinery. [21]

These standards provide a clear means for differentiating safe devices from unsafe ones. Certification which is easily identified by consumers, retailers, insurers, and regulators ensures the likelihood of low-quality and high risk devices entering the market is reduced.

The successful implementation of a national safety framework requires collaboration between all levels of government, key departments such as consumer affairs and emergency services, retailers and key consumer groups like AEVA, but also Bicycle NSW, We Ride Australia and others[22-29]. AEVA recommends the formation of a joint working group on electromobility safety which could investigate options for implementing a pathway for certification, with guidance from the insurance industry given their acute understanding of risk.

Recommendations

The AEVA makes the following recommendations:

1: Policy Alignment on the Regulatory Review Process
It is recommended that the Victorian Government pauses the implementation of a permanent ban on e-mobility devices as outlined in the Transport (Compliance and Miscellaneous) (Conduct on Public Transport) Regulations 2025 exposure draft.

AEVA recommends that Victoria instead aligns with the NSW approach of a temporary, consultative review, thereby creating a harmonised process across both states to allow for the development of a holistic, evidence-based national solution.

2: Establish a National Working Group
It is recommended that state governments, in partnership with the Commonwealth Government, establish a formal Joint Working Group on E-Mobility Safety. The primary mandate of this group should be to investigate and develop a national framework for e-mobility safety based on the proposed model of linking home and contents insurance coverage to mandatory, internationally recognised safety certifications.

3: Adopt a Practical Interim Measure for First/Last-Mile Transport
It is recommended that any interim measures adopted during the review period are designed to minimise disruption to essential first and last-mile transport connections. Specifically, this should include maintaining the carriage of foldable e-scooters on all public transport modes, a practical measure consistent with existing rules on some services and with the principle of proportionate, risk-based regulation.

4: Include key Stakeholders
AEVA recommends a wide range of stakeholders be invited to participate in the review process and any subsequent working groups. AEVA's long history of representing users and builders of electric vehicles allows us to provide valuable input, particularly around the safe construction and packaging of batteries subject to the elements. Other user groups like Bicycle NSW, We Ride Australia and other active transport advocates should also participate, as they too are familiar with the impact of specific bans on e-mobility devices. In addition to relevant government departments, the Insurance Council of Australia would surely offer valuable insights around fire risks and financial consequences.

The AEVA would welcome the opportunity to contribute further to this important matter, and is keen to engage with the Victorian government at any opportunity. The committee is welcome to contact the association on the details below.

Sincerely,

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Secretary Victorian Branch

The Australian Electric Vehicle Association

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