Australian Electric Vehicle Association Ltd.
Queensland Branch
ABN 71 660 748 318
PO Box 6057, North Ryde, NSW 2113
Email: nathangorebrown@gmail.com

INQUIRY INTO E-MOBILITY SAFETY AND USE IN QUEENSLAND

Inquiry by the State Development, Infrastructure and Works Committee

SUBMISSION BY AEVA QUEENSLAND BRANCH

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INTRODUCTION

This submission is provided by the Australian Electric Vehicle Association Ltd (AEVA). Thank you for the opportunity to make this submission to the State Development, Infrastructure and Works Committee.

Since 1973, AEVA has been active in advocating for electric propulsion technology. AEVA represents the users and drivers of electric vehicles (EVs) and the enthusiasts for electromobility more broadly, including electric bikes, motorcycles and scooters, cars, vans, utes, trucks, buses, trams, trains, boats and aircraft.

Over the years AEVA has served many roles, including (but not limited to) assisting members of the public with advice on converting vehicles to electric drive; public education and information sessions on EV battery technology, motors and charging; and advocating to governments for more electric transport-friendly policies.

This submission addresses Terms of Reference 1-4 and 6 only.

TERM OF REFERENCE 1

Benefits of e-mobility (including both Personal Mobility Devices (PMDs), such as e-scooters and e-skateboards, as well as e-bikes) for Queensland.

Electric bicycles and personal electro-mobility devices are lightweight power-assisted vehicles which are not required to be licensed with a transport department. Generally, they have power outputs of less than 250 W, and have a powered top speed of 25 km/h.

The electric bicycle is the world's most efficient electric vehicle (EV). No other technology can move a person as far on so little energy. E-bikes are also very good for the environment: since they require a battery one-hundredth the size of most electric car batteries, their resource impact on the planet is miniscule. They are also the best-selling EV on the planet, with e-bike sales beating electric car sales by about three-to-one[1]. Cycling (electric or human-powered) is arguably the best way to decarbonise our daily commute[2], considering the costs associated with it are so small and the societal benefits so great.

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[1] eBikes.org's data driven insights into the e-bike market, 21 February 2024. https://ebikes.org/general/e-bike-market-insights

[2] Christian Brand. The Conversation, 30 March 2021. https://theconversation.com/cycling-is-ten-times-more-important-than-electric-cars-for-reaching-net-zero-cities-157163

While many Australians live too far from their regular daily commuting destinations for cycling to be a popular choice, at least one third of the population could conceivably ride a bike on a daily basis. Efforts to motivate participation include paying residents to ride a bike to work, which has shown remarkably positive results[3]. E-bikes extend this benefit to a wider range of people and to longer commutes.

In addition to e-bikes, electric motorised scooters – the type you stand on, rather than sit on – are hugely popular around the world. Trips exceeding 10 km can be completed with ease, and the space required to accommodate them is miniscule.

The main appeal of an e-scooter, especially if privately owned, is its portability: riders can take it with them at the end of their trip or on the train for longer trips. The 'last mile' segment of transport is frequently described as an impediment to increased public transport use, so being able to bring your wheels with you is a major advantage. There are risks, however, which are discussed below.

TERM OF REFERENCE 2

Safety issues associated with e-mobility use, including increasing crashes, injuries, fatalities, and community concerns

AEVA's comments on this Term of Reference are strongly influenced by a recent article by Professor Geoff Rose of Monash University[4].

Professor Rose noted a recent death of a pedestrian in Perth after being struck by an e-scooter, and of a person in Victoria who was killed after being hit by a modified e-bike. In Queensland, an audit of e-scooter trauma at Sunshine Coast University Hospital found nearly 180 injuries in people aged 5 to 15 over a recent two-year period[5].

A key safety issue is the use of powered mobility devices on footpaths, which is the source of most of the pedestrian-rider friction. Under Term of Reference 4, we discuss regulations to limit the use of e-scooters on footpaths. In AEVA's view, e-scooters should continue to be welcome on shared paths, and on roads signposted at 50 km/h or less. We stress that safety would be improved by the building of more infrastructure to allow the safe operation of e-bikes and e-scooters on cycle paths separated from roads and footpaths.

[3] Micah Toll. Electrek, 3 February 2022. https://electrek.co/2022/02/03/these-countries-pay-people-to-ride-bicycles-and-e-bikes-to-work-shouldnt-the-us-too/

[4] Rose, Geoff. E-bikes and e-scooters are popular – but dangerous. A transport expert explains how to make them safer. The Conversation, 6 June 2025. https://theconversation.com/e-bikes-and-e-scooters-are-popular-but-dangerous-a-transport-expert-explains-how-to-make-them-safer-257126?utm_medium=article_native_share&utm_source=theconversation.com

[5] Matthew Clanfield and Isabel Sharman. Breaking bones and the rules: an audit of paediatric e-scooter trauma in a regional Queensland hospital. Australian and New Zealand Journal of Public Health, Volume 49(3), June 2025. https://www.sciencedirect.com/science/article/pii/S1326020025000263

We note that investment in safer urban cycling infrastructure can benefit retail businesses. Cities like New York[6], Salt Lake City[7] and Vancouver[8] have seen significant improvements in retail trade after the removal of cars and the construction of protected bike paths.

E-scooter hire companies have deployed large numbers of e-scooters in central business districts. A trend towards private ownership of e-scooters may serve to moderate this trend.

Several Australian states have made owning a private electric scooter illegal, although there are moves to address this[9]. Needless to say, privately owned scooters would not be left on city and suburban streets.

TERM OF REFERENCE 3

Issues associated with e-mobility ownership, such as risk of fire, storage and disposal of lithium batteries used in emobility, and any consideration of mitigants or controls

There is a known risk when people charge their electric scooters in apartments or offices. This risk can be exacerbated by inadequate quality control by manufacturers. If severely damaged, abused or faulty, lithium-ion batteries may go into 'thermal runaway', a heat-generating unstable chemical process that can lead to three main hazards: off-gassing, fire and gas explosion.

Some high profile fires have attracted media attention[10]. Emergency services strongly encourage users to charge their scooters and e-bikes outside the home or office.

In November 2023, the Insurance Council of Australia (ICA) issued a briefing note[11] which assessed the fire risk of personal mobility devices such as e-bikes and e-scooters as "high". The ICA provided some guidelines for users of such devices to follow, and we summarise these guidelines below.

To prevent any misunderstanding, AEVA emphasises that the ICA also assessed the fire risk of road-registered EVs such as cars and motorcycles as "very low". For this reason, AEVA strongly supports the rights of electric car-owning residential apartment dwellers to charge their cars in parking spaces at those apartments.

The ICA briefing note reminds us that rechargeable lithium-ion batteries are also contained in many common household items such as mobile phones and power tools.

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[6] Clive Thompson. Wired, 24 January 2023. https://www.wired.com/story/the-battle-over-bike-lanes-needs-a-mindset-shift/

[7] Michael Andersen. StreetsBlog USA, 6 October 2015. https://usa.streetsblog.org/2015/10/06/salt-lake-city-cuts-car-parking-adds-bike-lanes-sees-retail-boost

[8] Steve Frothingham. Vancouver dealer tour, July 2015. https://www.bicycleretailer.com/sites/default/files/downloads/resource/vancouver-dealer-tour_july2015.pdf

[9] Stephanie Richards. Indaily, 27 January 2023. https://www.indaily.com.au/news/2023/01/27/privately-owned-e-scooters-to-be-street-legal-under-opposition-plan

[10] See, for example: Grace Burmas. ABC news, 21 December 2022. https://www.abc.net.au/news/2022-12-21/lithium-ion-battery-fires-warning-issued/101569244

[11] Insurance Council of Australia. Briefing note: Managing fire risk from electrified transport in residential buildings. https://insurancecouncil.com.au/wp-content/uploads/2024/03/ICA_Briefing_Managing-fire-risk-EVs_Nov-2023.pdf

Data from EV FireSafe[12] shows that for personal mobility devices, battery fire incidents are occurring weekly in Australia. There is at least one verified death from a personal mobility device battery fire in Australia and multiple serious injuries.

The ICA recommended that users of personal mobility devices such as e-bikes and e-scooters should:

- ensure there is sufficient air flow around lithium-ion batteries when charging
- store batteries and lithium-ion products in cool, dry places and out of direct sunlight, including while charging
- avoid using batteries, products or chargers that are damaged, overheating or showing signs of failure such as swelling, leaking or venting gas.

AEVA suggests that retailers of e-bikes and other personal mobility devices be required to provide the purchasers of these devices with the above guidelines.

In AEVA's view, there is a case for having a separate fire-resistant facility in residential apartments to securely store and charge devices such as e-scooters.

TERM OF REFERENCE 4

Suitability of current regulatory frameworks for PMDs and ebikes, informed by approaches in Australia and internationally

As with Term of Reference 2, our comments on this Term of Reference are influenced by (and drawn from) the article by Professor Geoff Rose[13].

Professor Rose notes that regulations governing e-bikes and e-scooters were historically designed with reference to the power required to ride a regular bicycle. A power limit of 250 watts is used in Australia and Europe, compared to 500 watts in Canada and 750 watts in the United States. The power assistance is required to cut out at speeds above 25 km/h.

Professor Rose notes some of the differences across the Australian states. He recommended that State and territory governments "revise and simplify their e-bike and e-scooter regulations". He also recommended that references to motor power should be removed because the severity of a crash depends on speed and not the power of the device.

He recommended that there should be a national speed limit of 15 km/hr for e-scooters when ridden on pedestrian footpaths, and not permitting e-scooters on roads with a posted speed limit above 50 km/hr. On such roads, the maximum permitted e-scooter speed should be 25 km/hr.

AEVA acknowledges some unresolved issues concerning the speed limits for e-bikes and e-scooters on roads. For example, conventional bicycles and e-bikes can be ridden legally up to the speed limit on most roads except freeways. Professor Rose states that it would be reasonable to limit e-bikes to 32 km/hr where this speed is obtained using power assistance. It would seem reasonable to set the same speed limits for e-bikes and e-scooters. We recommend that State and Territory transport departments study how such anomalies can be removed.

He also recommended that local government and road authorities have the power to declare areas where footpath riding is not permitted – for example, inner-city footpaths

[12] https://www.evfiresafe.com/

[13] Rose, Geoff. E-bikes and e-scooters are popular – but dangerous. A transport expert explains how to make them safer. The Conversation, 6 June 2025. https://theconversation.com/e-bikes-and-e-scooters-are-popular-but-dangerous-a-transport-expert-explains-how-to-make-them-safer-257126?utm_medium=article_native_share&utm_source=theconversation.com

with heavy pedestrian activity. They should also have the power to set speed limits for riders on shared paths and bicycle lanes where there is likely to be interaction with pedestrians.

AEVA supports the above recommendations.

To improve safety for riders, AEVA also recommends that any personal mobility devices such as e-scooters comply with the following criteria:

- Weigh less than 30 kg, or 15 kg if foldable
- Be less than 750 mm wide
- Have a functioning, proven-effective brake system
- Have a front facing white light, and rear facing red light which must operate whenever the vehicle is in motion
- Have side facing reflectors.

TERM OF REFERENCE 6

Gaps between Commonwealth and Queensland laws that allow illegal devices to be imported and used.

Professor Rose notes that there is nothing to stop the import of high-performance e-bikes and e-scooters from overseas. He recommends that the Federal government should prohibit the import of e-bikes and e-scooters that exceed the legal limits for public use in Australia. AEVA can see the appeal, but struggles to see how this might be enforced, particularly when there is nothing illegal about using these devices on private property, or wherever unlicensed off-road vehicles are already permitted.

RECOMMENDATIONS

AEVA makes the following recommendations.

[1] That retailers of e-bikes and other personal mobility devices be required to provide the purchasers of these devices with the guidelines that are recommended by the Insurance Council of Australia.

[2] That the State, Territory and Federal Governments commence a discussion aimed at harmonising legislation around electric bicycles, scooters and other personal mobility devices.

[3] That there should be a national speed limit of 15 km/hr for e-scooters when ridden on pedestrian footpaths.

[4] That there should be a national speed limit of 25 km/hr for e-scooters when ridden on roads with a posted speed limit of 50 km/hr or less, and that e-scooters not be permitted on roads with a higher speed limit.

[5] That local government and road authorities have the power to declare areas where footpath riding is not permitted – for example, inner-city footpaths with heavy pedestrian activity.

[6] That any personal mobility devices such as e-scooters comply with the following criteria:

- Weigh less than 30 kg, or 15 kg if foldable
- Be less than 750 mm wide
- Have a functioning, proven-effective brake system
- Have a front facing white light, and rear facing red light which must operate whenever the vehicle is in motion

- Have side facing reflectors..

[7] That State and Territory Governments improve the active transport infrastructure in their jurisdictions, including protected bike lanes, connected cycling routes and establishing low traffic neighbourhoods.