Submission No 13

ELECTRIC AND HYBRID VEHICLE BATTERIES

Organisation: City of Sydney

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CITY OF SYDNEY

Electric and hybrid vehicle batteries

Joint Standing Committee on Road Safety Inquiry

Draft Submission
November 2023

The City of Sydney acknowledges the Gadigal of the Eora Nation as the Traditional Custodians of our local area.

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1. Introduction

1.1. Purpose of Submission

This is the City of Sydney's submission to the NSW parliament's Joint Standing Committee (Staysafe) Inquiry into electric and hybrid vehicle batteries ("Inquiry") .

It identifies recommendations or considerations for the Inquiry, based on the City's support for electrification of transport systems to reach Net Zero Emissions by 2035 (see Section 2.1 of this document for more information).

1.2. Terms of Reference:

The Terms of Reference of the Inquiry are reproduced below:

> *That the Joint Standing Committee on Road Safety inquire into and report on:*
>
> *(a) the risk and management of fires and other issues caused by batteries in electric and hybrid vehicles, including light electric vehicles*
>
> *(b) the risk to workers in the automotive industry and emergency services personnel caused by batteries in electric and hybrid vehicles*
>
> *(c) the adequacy of training and equipment for workers in the automotive industry and emergency services personnel regarding potential hazards of batteries in electric and hybrid vehicles*
>
> *(d) any other related matters.*

This submission responds to these Terms of Reference.

1.3. The Safe Systems framework, Safer Vehicles and Staysafe

1.3.1. The City supports the Safe System approach to road safety

Support for and commitment to a Safe Systems approach to road safety underpins the City's work to reduce fatalities and serious injuries on streets in our area.

1.3.2. The City supports the Safer Vehicles "pillar" of the Safe System approach

The City recognises the importance of Safer Vehicles in road safety. From seatbelts and airbags, to technological advancements such as brake assistance and hazard detection, improvements to vehicle safety have been a major reason in the decline in road trauma affecting occupants of vehicles since the 1970s. The City supports the Centre for Road Safety's Technology Branch research into potential vehicle features for distraction, fatigue and other road safety risks.

The City recommends a stronger focus on the impacts of vehicle design on the safety of people outside the vehicle / victims of road trauma, including people walking, cycling and driving other vehicles. The increase in the number of large 'SUV' vehicles and instance of dangerous 'bull bars' and other additions to the front of vehicles is of particular concern.

1.3.3. The City is unclear if electric/vehicle hybrid battery safety is a Safer Vehicles issue

The City is not aware of extensive evidence that the risk of battery fire is likely to occur while vehicles are being operated. It is possible that risk is greatest during charging or storage.

While the risk needs to be addressed and managed (see Section 2.2), this could be considered a design/industry standards risk management issue.

Liaison with or even referral to other NSW Parliament Committees with a greater focus on those issues/risk could therefore be appropriate.

2. Response to Terms of Reference

2.1. City of Sydney Electrification of Transport Strategy and Action Plan

2.1.1. Strategy and Action Plan purpose and status

In mid-2023 the Council of the City of Sydney adopted an *Electrification of Transport in the City Strategy and Action* ("the Strategy"). The Strategy outlines the City's approach to reducing vehicle carbon emissions as part of its Net Zero Emissions by 2035 goal. The Strategy is consistent with the City's focus on creating a city for walking, cycling and public transport.

2.1.2. Vehicle standards should address fire risk.

The Strategy contains actions focussed on advocacy for fuel and emissions standards to accelerate the availability and affordability of electric vehicles.

The City expects that national vehicle standards will manage the risk of battery fire.

2.1.3. Vehicle charging

The Strategy contains actions relating to vehicle charging, including:

- City provision of additional public charging in off-street car parks
- City facilitation of a limited supply of pole-based on-street public charging (in collaboration with Ausgrid)
- Advocacy for additional public rapid charging in suitable off-street locations, such as existing service stations
- Using the planning system to ensure new buildings are "EV ready"
- Providing advice to support provision of off-street charging in existing buildings, especially apartment buildings
- Increasing charging capacity in our depots, to support ongoing electrification of our fleet.

In all of these actions, the City's risk management framework applies. This includes assessment of any charging units against relevant Standards.

2.2. ToR (a) the risk and management of fires and other issues caused by batteries in electric and hybrid vehicles, including light electric vehicles

2.2.1. Electric/hybrid vehicle batteries may create some risk

The City is aware of the intensity, duration, and toxicity of lithium based battery fires.

The City supports the NSW Government understanding the risk and developing policies and procedures to manage the risk.

2.2.2. While individual events may be intense, the overall risk is relatively low

The risk and management of fires and other issues caused by batteries in electric and hybrid vehicles, including light electric vehicles should be contextualised against the number and nature of fires that occur in internal combustion engine (ICE) vehicles. According to the NRMA, a 2022 US study showed ICE vehicles are 60 times more likely to catch fire than electric vehicles: www.mynrma.com.au/electric-vehicles/basics/understanding-electric-vehicle-fires

2.2.3. Other transport devices and batteries may be higher risk

The source cited in Section 2.2.2 (above) states that of the 114 lithium-ion battery fires attended by Fire and Rescue NSW between January and July 2023, the bulk were related to portable batteries, e-scooters, and e-bicycles.

The terms of reference may need to be expanded, or contextualised against these greater apparent risks.

2.2.4. Batteries are likely to become safer over time

The City's understanding is that the chemistry of batteries is continually evolving and improving to better balance cost, energy density, and use of precious materials. The City expects that non-flammable chemistries such as manganese or zinc based, and solid state batteries, may replace the current generation of highly flammable lithium-ion chemistries over time. One relevant source is: www.alsym.com/technology/stationary-grid-long-duration-energy-storage-ldes/

2.2.5. The Inquiry should refer to recent guidance on this by the insurance industry. For example: https://www.chubb.com/au-en/partners/brokers/risk-bulletins/lithium-ion-batteries-storage.html

This evolution of technology is one reason the Australian, state governments, and the electric vehicle industry must ensure that recyclability and circular economy systems are central as markets expand.

2.2.6. New buildings will be designed to manage any risk from vehicles/batteries

Recent updates to the National Construction Code (NCC) mean that new apartment buildings will need to be built "EV-ready".

The NCC has requirements for car parks to be operated safely to accommodate ICE cars, including ventilation and fire suppression.

The NCC could be updated to reflect any different risks for electric cars, including measures for existing development when EV chargers are retrofitted.

It is generally necessary for a developer to go through a consent process with their local fire service, which includes consideration of elements of the building that pose a fire risk. The Australian Building Codes Board has developed an advisory note that details several low-cost, low-impact fire risk mitigation strategies, developed by industry experts, for mitigating risk in car park environments. See https://electricvehiclecouncil.com.au/guidance-for-fire-safety-when-installing-ev-chargers-and-supporting-infrastructure-in-buildings/

The Electric Vehicle Council could advise the Committee on its shortlist of fire engineering consultancies who are developing proficiency in managing perceived fire risk issues relating to electric vehicles in an evidence-based way.

2.2.7. The NSW Government should work to ensure insurance to manage the risk is priced appropriately in relation to the risk.

The City believes that recent media coverage of battery fires may create an elevated community sense of the actual risk (noting the City's support for managing that risk).

This could create the environment where the insurance industry is able to over-price the risk.

An agency such as the State Insurance Regulation Authority should oversee the framework for insurance for this risk.

2.3. ToR (b) the risk to workers in the automotive industry and emergency services personnel caused by batteries in electric and hybrid vehicles.

The City has a strong commitment to Workplace Health and Safety and supports measures to keep all workers in the sector safe.

2.4. ToR (c) the adequacy of training and equipment for workers in the automotive industry and emergency services personnel regarding potential hazards of batteries in electric and hybrid vehicles

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