

ECO-FRIENDLY OR FIRE HAZARD?

The Double-Edged Sword of
Australia's LEV Craze.



Electric Vehicles have surged in popularity in recent years, both flooding the market globally and penetrating Australian homes, as consumers seek more convenient, cost effective and climate friendly modes of transportation.

However, the term 'electric vehicle' does not necessarily just refer to a car or a truck. Alternative e-transport options can include e-bikes, e-scooters, 'hoverboards' and a range of other consumer transport products, all of which come under the banner of 'Light Electric Vehicles' (LEVs).

THE GOOD

LEVs are attractive transport options that can offer a range of benefits, including:

- Portability & Convenience
- Efficient Mobility
- Personal Autonomy
- Eco-friendliness
- Cost-effectiveness
- 'Last Kilometre' Connectivity

THE BAD

LEVs generally utilise lithium-ion based batteries in the same manner as conventional EVs, due to the portability, weight, energy density and longevity of the battery type.

However, whilst efficient, this means that they also carry the same battery ignition risks, and in fact are widely considered pose an even greater risk of combustion than batteries in conventional EVs.



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Specifically, the ease and risk of battery abuse is substantially higher in LEVs, including everything from direct physical damage to overcharging to sun exposure, leading to higher chances for battery failure and catastrophic fire incidents as a result.

At the same time, the low barriers to ownership and lack of regulation and oversight of imported products also continues to increase risk and fire event frequency.

Data suggests that globally, LEV personal mobility devices have accounted for over 500 battery fires, in comparison to 44 fires conventional EVs.

LEVS IN STRATA

The introduction of LEVs into the communal living environment of strata presents a unique set of challenges and risks.

Unlike conventional EVs that are generally parked in designated areas like garage or on a public street, LEVs in strata are often brought directly into and stored either in personal living spaces or shared areas, creating a serious hazard.

Obviously as a result, a severe fire event in a strata community has the potential to affect the safety and homes of hundreds of residents that might not even have an LEV (as opposed to a standalone home), compounding their potential danger factor.

HARM MINIMISATION

Analysis of lithium-ion fires have suggested that a variety of factors can contribute to likelihood and intensity of a fire event when an LEV is introduced into a personal area, including carpets that poorly dispel heat, density of furnishings that are highly flammable and the humidity and heat of laundry areas.

Similarly, data suggests that that a majority of LEV fires start when a battery is being charged, and often whilst unattended or unsupervised including when a person may be asleep or simply leaving on charge for an extended period of time.

Strata communities may consider the introduction of a by-law that restricts LEVs from entering into a strata community. However, the passing and enforcement of this by-law is not always possible.

Recommendations from NSW Fire and Rescue to minimise LEV risks:

- Purchase LEV devices and equipment from reputable suppliers.
- Only use supplied charging applications and follow instructions.
- Avoiding leaving the device unattended whilst charging, especially overnight.
- Do not charge LEVs on easily flammable surfaces such as beds, carpets, blankets etc.
- Where possible, do not store your LEV in the living spaces within your home - a garage, carport or allocated storage area is preferable.
- Do not upgrade or modify the device in any way, except when done so by a qualified professional.
- Do not expose LEVs to any additional heat or moisture.
- Do not use LEVs that show signs of damage, including bulging, cracking, leaking, swelling etc.