

Fact Sheet – EV Fire Safety

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OCN is working with various industry groups on updates to the National Construction Code (NCC) with respect to charging of Electric Vehicles (EV) in residential buildings. This work is primarily aimed at setting minimum requirements for EV readiness in the built environment. As part of that work, the question for fire risk from EVs and fire safety in carparks is being addressed.

There is no persuasive evidence at present to show EV fires are significantly worse than Internal Combustion Engine Vehicles (ICE fires, or that EV fire rates are significantly higher than ICEV. EV charging equipment is not expected to have a significant impact on carpark fire rates or fire severity. The cautious conclusion is NCC requirements do mitigate the hazards and risks of EV charging in building carparks. However, emerging knowledge about EV fires must be kept under review in the following key areas.

NCC provisions for carpark fire safety design were informed by research last century showing fires largely confined to single vehicles and causing only local damage. Australia's experience has backed in that research. Carpark fires are infrequent, multi-car fires rare, fatalities and injuries almost unknown, structural damage limited, and fire spread to other premises of little concern. Carpark fires have been the epitome of low risk; a well-understood hazard with low frequency and low consequences that is managed adequately by long-established and effective controls.

While the total level of stored energy in a battery electric vehicle is less than the stored energy in a typical petrol or diesel tank in a passenger car, we acknowledge that it's reasonable to consider the different behaviour of vehicle fires in enclosed spaces when they occur involving EVs.

The Australian Building Codes Board (ABCB) commissioned a piece of work to address this question (supplied with this note) which concluded that:

“NCC Performance Requirements address the fire risks of EV charging in carparks adequately. However, our fire knowledge is still developing, and it is important to keep EV fire research and fire statistics under review.”

It's our view that a watching brief on this concern would be prudent, but that the use of this fire safety concern as a reason to water down the updates to NCC electrical infrastructure provision is not reasonable. It's not the electrical infrastructure that poses the risk, and the cars will be in the car parks regardless of whether they can charge there or not, because that's where the owners will be living.