

1. How can transportation infrastructure be improved to better manage electric and hybrid vehicle battery fires?

Response: My recommendation on the management of electric and hybrid vehicle battery is structured on three fundamental pillars:

(1) Prevention: The majority of the fires are due to thermal runaway either due to defects in the battery, exposure to extreme conditions or improper charging and discharging.

Preventative activities will involve:

- a. Testing and certification of technologies as well as battery and charging management systems
- b. Regular maintenance, evaluation and testing of state of the batteries and chargers, similar to the regular vehicle registration renewal activities. However the time interval of maintenance activities need to be reconsidered in accordance with the new technology.
- c. If possible have real-time battery health information being monitored. This may be particularly considered for micro-mobility options like e-scooters and e-cycles.
- d. Personal charging stations at home and strata need to be carefully regulated and tested to ensure how fires do not spread within the properties. Not considering this secondary risk of spread can pose significant adverse consequences at scale.
- e. Finally, with climate change and the increase floods and fluctuations in temperature, we need to consider best ways to support evacuees with electric vehicles, like a mobile re-fuelling truck a mobile charging vehicle should be considered.

(2) Response: In the event of a fire the nature of the fire and its sources are significantly different to those from the usual technologies we are exposed to. To address this:

- a. Training emergency services and first responders to the range of risks, ways to assess the risk and appropriate interventions.
- b. Provision of appropriate fire mitigation tools in the proximity of potential sources of fires (for example charging stations and maintenance depots) as well as appropriate personal safety gear (for example masks)

(3) Recovery: in the aftermath of a fire the toxic nature of gases and spills need to be careful contained and disposed. There is a need to develop guidelines and methods for this.

I would be happy to address any other points. It has been a privilege to support this enquiry.