

NO SHORT CIRCUITS: ON ELECTRIC VEHICLES CATCHING FIRE

Relevant for: Indian Economy | Topic: Infrastructure: Roads

A spate of incidents related to [the burning of electric vehicles](#) (EV) has resulted in the Union government [announcing an expert panel](#) to investigate the battery explosions causing them and a few manufacturers recalling batches of electric scooters after some caught fire. EVs have increasingly become a viable transportation device, with more than 11 lakh electric/battery-operated vehicles registered in India (Vahan database, April 2022). The increase in the utilisation of EVs has also been largely helped by the significant reduction in costs of lithium-ion batteries that have fallen by an estimated 89% since 2010. With climate change concerns driving governments, including India's, to incentivise the shift to EVs, their manufacture for commercial use has undergone an acceleration with an increase in indigenous companies in the Indian market as well. The enhanced use of EVs and utilisation of the underlying technology is welcome as despite the institution of fuel emission norms and building these into fossil fuel-driven vehicles, the shift to EVs from petrol and diesel ones is expected to gain significant net environmental benefits. But it must also be remembered that the Li-ion battery packs that form the core of the technology, are sophisticated devices and there should be no compromise on the inbuilt safeguards.

As an energy storage scientist explained in *The Hindu* ([‘FAQ’ page, May 1, 2022](#)), battery fires occur due to the convergence of heat, oxygen and fuel, and the controlled manufacturing of devices is specifically required to prevent these. Engineering higher safety into EVs can result in higher costs but the smooth functioning of Li-ion batteries without accidents is reliant on the absence of “shoddy engineering” and “cutting corner approaches”. With long-term device changes in Li-ion batteries such as the use of solid state electrolytes, special safety switches, etc. still some time away in implementation, the onus is on manufacturers and regulators to ensure that testing and certification standards related to battery management systems such as devices that prevent accidental shorting of the cells, and thermal management solutions among others are met in existing EV systems and supply chains. Union Transport Minister Nitin Gadkari has said that the Ministry of Road Transport will issue guidelines for EVs which would include tests for compliance with specific safety norms. While the regulation of a fledgling albeit growing sector that has shown a lot of promise but requires adequate safety norms to be put in place is an imperative, manufacturers and other companies in the EV supply chain should also proactively work in recalling defective batches of vehicles and ensuring safety compliance to prevent the recurrence of mishaps.

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