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ESG: Blasting EVs Driven by a Moral Compass

Article By:

Sahil Kanuga

Mohammad Kamran

INTRODUCTION:

Electric vehicles have taken the world by storm. In the Indian context, the situation is no different and it extends from four wheeled vehicles to even two wheeled scooters.

Positive changes in the electric vehicle policies coupled with rising fuel costs, supplemented by a significantly lower running cost and maintenance cost spread over the lifetime of the electric vehicle, have ensured that electric vehicles ("EV") are flying off the shelves faster than they can even be manufactured.

To keep up, traditional fossil-fuel based car manufacturers like Tata Motors, Hyundai and MG have quickly rolled out electric vehicles in India, which have, in spite of being priced higher that their fossil fuel-based versions, have largely been well accepted. The situation is no different in two-wheelers where a revolution of sorts is brewing. A technology-company, Ola, best known for running a radio-cab service and giving Uber a run for its money, has entered the electric scooter business by setting up the Ola Futurefactory. Other manufacturers of electric two wheelers include Hero Electric, Okinawa, Boom Motors and Ampere.

From the looks of it, this is just the start as any automobile or bike manufacturer now has some sort of electric and/or hybrid plan in place and is moving towards bringing such models online at the earliest. The thrust towards electric-only is so strong that Mercedes Benz has reportedly announced that their internal combustion engines will not be available in all markets after 2030.

From an environmental standpoint, keeping aside the usual argument of the naysayers that the electricity we have in India is still derived from carbon fuels, the early acceptance and adoption of this technology will set the ball rolling and enable the setting up of a large pan-India charging network and spur further growth of the industry, where pollution levels from the daily running of such vehicles are close to zero.

THE JOKER IN THE PACK:

The one niggle that has emanated is the battery. Recent news reports have shown scooters from Ola

Electric, Boom Motors, Okinawa and other manufacturers going up in flames in Indian cities. In the last one week, there have been atleast two incidents where EV's have exploded whilst charging, causing loss of life and property. Hyundai Kona, which was the first electric car introduced by the Korean giant in India, has already been through a global recall where battery systems were replaced[1] in over 80,000 Kona vehicles at a cost of $900 million following fires in about 15 Kona vehicles. Battery fires in electric vehicles are possibly the largest concern that have emanated since the adoption and roll-out of this new breed of vehicles.

WHAT CAUSES BATTERY FIRES?

In large parts of India, there is prolonged exposure to extremely high temperature on a sustained basis. Lithium batteries are susceptible to fire at high temperatures. During the process of charging or even discharging, battery temperature does increase increasing the fire risk and the need for an effective thermal management system/process. In addition, the usual suspects such as (a) short circuits; and (b) deformed cells; and (c) insufficient ventilation; cannot be ruled out. Over a period of time, unless a battery is specifically designed for such extreme conditions, it is likely to get vulnerable.

Another aspect that one should not lose sight of is that this is a relatively new industry where learning and evolution is taking place swiftly. Initially, companies were importing kits from China, assembling and selling them. These products were, possibly, not designed for Indian conditions.

An EV on fire is to be handled very differently that a regular internal combustion car/vehicle that is on fire. There have been instances where fires thought to have been put out have actually restarted[2] due to stranded energy[3] causing further damage. The one point that emanates is that as with all fires, in case of EV, prevention is a far better option.

INDIAN REGULATION:

Applicable regulations in India have also evolved with the passage of time. The applicable standards are AIS 038 Rev 2 (2020) and AIS 156 (2021)[4]. These standards are, reportedly[5], equivalent to EU standards. These also include environmental and thermal proposition tests. The test objects also include the battery system, subsystem and the entire vehicle.

From a policy perspective, the Government through public-policy think-tank Niti Aayog[6] unveiled a draft battery swapping policy[7], aimed creating a framework of interoperability whilst safeguarding the EV battery ecosystem. Should this be implemented and adopted, one of the benefits is that it effectively removes the issue of 'range-anxiety', thus speeding up the adoption of this eco-friendly technology.

The Government is ensuring that they are taking all steps towards embracing this new technology.

THE GOVERNANCE ANGLE

Evolution is inevitable. Several Indian companies like Exide, Amaron, Hero MotoCorp, Maruti and even the house of Tatas, have either already taken or intend to take the plunge towards manufacture of EV batteries. These Companies should adequately take the Indian climatic conditions and other applicable factors into account and reduce risk of EV fires.

When issues of EV fires were first reported, vehicle manufacturers were considered slow[8] in issuing recalls and even slower in executing such recalls. Indian EV manufacturers need to ensure that any instance of fire is quickly investigated and learnt from; any learnings need to be quickly integrated into safety protocols to ensure that the issues are addressed.

As Indian EV manufacturers and the Government grapple with an evolving technology, which is significantly more eco-friendly and has the potential to radically redefine the way India commutes, navigating the critical safety challenges which include safety of life of the occupants and even those in the periphery becomes crucial. Sufficient safety standards should be introduced and met. Adequate research and development and consistently improving on the battery technology should be the norm. The Indian market is a very cost-sensitive market; it is a very attractive proposition to many to undercut others and gain market share by introducing low-technology low-cost products, which may not be appropriate for Indian climes. It is entirely possible that in the race to enter the market quickly, insufficient care towards research and development and safety standards is the order of the day. Moreover, the absence of fear for disregard of such concerns in the race to enter the market is a factor that comes into play. While regulation and safety standards do help, this is one area where an individual manufacturer's moral compass will be the key to the quality and safety standards incorporated into the particular EV.

It must be remembered that the Companies Act, 2013 imposes a wider set of obligations on the board of directors, who must ensure that they act not only in the best interest of the company and its shareholders and employees but also the community and for the protection of environment.[9] Further, non-adherence to requisite levels of safety standards may also have ramifications under other laws and can invite action under criminal law.[10]

Footnotes

1. https://timesofindia.indiatimes.com/auto/cars/kona-ev-owners-say-hyundai-mishandling-recall-for-battery-fires/articleshow/81684474.cms

2. https://www.youtube.com/watch?v=J6eS6JzBn0k

3. https://www.nfpa.org/News-and-Research/Resources/Fire-Protection-Research-Foundation/Current-projects/Stranded-Energy-within-Lithium-Ion-Batteries

4. Automotive Industry Standards in India under Central Motor Vehicle Rules;

5. https://evreporter.com/battery-safety-standards-in-india-by-arai/

6. https://en.wikipedia.org/wiki/NITI_Aayog

7. https://www.niti.gov.in/draft-battery-swapping-policy

8. https://timesofindia.indiatimes.com/auto/cars/kona-ev-owners-say-hyundai-mishandling-recall-for-battery-fires/articleshow/81684474.cms

9. Section 166 of the Companies Act, 2013

10. See for e.g. Section 285 (Negligent Conduct with respect to fire or combustible matter), Section 287 (Negligent conduct with respect to machinery)

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