

Future-ready: India has huge, untapped demand for electric mobility

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New Delhi, 20 July

There is a vast, untapped demand in India for electric vehicles (EVs), which can be realised with the help of an ambitious approach by automotive (auto) players, innovation to reduce costs, and a focus on commercial vehicles, experts and industry leaders pointed out at the *Business Standard* EV Dialogues held on Tuesday.

What will also help is an increased awareness of the total cost of ownership (TCO) instead of the cost of acquisition, which, at present, can be much higher for EVs than for comparable models of vehicles running on the traditional internal combustion engine (ICE).

Kartikey Hariyani, managing director (MD), TecSo Energy and ChargeZone, said while the demand for two- and three-wheelers is evident, that for heavier commercial vehicles remains compelling.

Corporate clients, he said, are willing to switch to EVs quickly if they match the 'diesel cost', or the price of the diesel variant of the comparable vehicle.

Randheer Singh, chief executive officer and founder, Foresee Advisors, and former senior specialist and director of e-mobility, NITI Aayog, pointed out that the order books of all EV manufacturers are filled, while the manufacturing cycle itself is backlogged.

"For commercial vehicles, we surveyed the Jaipur area. We found that if TCO is brought down, the fleet operator does not care about the type of truck or who owns it," said Singh. But achieving a lower TCO is easier said than done, warned Vikram Handa, MD of battery materials company Epsilon Advanced Materials.

"The magic number for lithium-ion (Li-ion) battery pack prices is \$100 per kilowatt hour, at which point owning an EV makes more sense than an ICE vehicle," he said.

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The sector is staring at several problems that need to be solved at full tilt, said Arpit Agarwal, investment partner at Blume Ventures. "Advanced chemistry cell (ACC) technology requires a lot of investment, which, in turn, requires a lot more demand to come from India. We are hoping that the production-linked incentive (PLI) scheme will help bring online a lot more gigafactories in the next few years," he observed.

There is also the challenge of deciding which segments to prioritise when it comes to manufacturing — motor, battery management system or electronic component. Arguing that auto original equipment manufacturers (OEMs) are ready to buy components in North America

and Europe, Handa said Indian automakers are still thinking small. Western auto OEMs are betting big on the manufacturing of EV technology, training their sights on the market five years down the line, said Handa. He also argued that the company's plan to set up a \$650 million synthetic graphite anode manufacturing facility in the US is aimed at taking advantage of the evolved

ecosystem there.

Synthetic graphite is prized in Li-ion battery applications and the plant will produce up to 50,000 tonnes of materials, catering to 50 gigawatt hour (GWh) of cells.

"Today, the US is building 500 GWh worth of cells. We are one-tenth of what the US needs," he said.

"When we talk about the erstwhile solar and wind boom, the main driver was the renewable purchase obligations. There needs to be similar mandatory obligations for the industry to, say, turn 10 per cent of its fleet into electric," said Hariyani.

Handa also flagged the challenges of securing funding for long gestation projects and scaling up. "Today, Indian cell companies are talking about 1-10 GWh. By 2030, India should have about 220 GWh between EV and energy storage systems. There is a lot of headroom to grow and a lot of companies need to come in," he said.

The sector faces a raft of challenges — straddling funding, uneven growth, and differences in demand projection between automakers and other industry players