

India's EV transition on right track, but miles to go: Experts

PHOTO: PRIYANKA PARASHAR

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Range anxiety, inadequate charging infrastructure, charger uptime and maintenance gaps, battery degradation worries, evolving safety standards, and high utilisation stress in commercial vehicles remain real challenges for India's electric vehicle (EV) ecosystem. Yet industry leaders said strong unit economics, rising penetration, improving technology, and supportive policy momentum give them confidence that electrification will only accelerate from here on.

During a panel discussion titled 'Smoothing the EV Transition', moderated by *Business Standard's* Deepak Patel, at the Manthan 2026 summit, VinFast India Chief Executive Officer (CEO) Tapan Ghosh, Euler Motors Founder and CEO Saurav Kumar, and Bolt.Earth CEO Raghav Bharadwaj made it clear that while execution challenges persist, the direction towards electrification is unmistakable.

Ghosh pointed to the numbers. Over the past six years, EVs in India have grown at a compound annual growth rate (CAGR) of 63 per cent, he said. "I am more hopeful that it is real growth and that it is sustainable," he said, adding that once the industry resolves current hindrances collectively, "we will reach an inflection point, and then it is going to boom".

In cars, penetration has doubled from about 2 per cent two years ago to 4 per cent last calendar year. Monthly volumes have risen from 5,000-6,000 units to around 17,000 units, with annual registrations touching roughly 177,000 units. The shift, he noted, has come quickly, and momentum remains strong.

Kumar said electrification in commercial vehicles is less about sentiment and more about economics. "I think vehicle electrification will happen. The only question is at what pace," he said.

Data from the segment, he argued, show electrification rates remain high irrespective of goods and services tax (GST) changes, which have made vehicles run on diesel and petrol cheaper — or shifts in subsidies. EVs can now be built at a similar price point to internal combustion engine models while delivering comparable value, he said.

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of electrification might change but I think we will meet three years down the line and be surprised by the numbers that we will see," Kumar said.

Bharadwaj placed his confidence in both economics and consumer behaviour. "I have no doubt that India will transition and hit its climate goals by 2030," he said.

Indian consumers, he added, are extremely smart and respond to hard numbers. It is difficult to beat the unit economics of driving an EV. While the total cost of ownership (TCO) may be slightly higher at present, he expects battery technology improvements to sharply reduce costs over time. He said alternative technologies, such as hydrogen, may be discussed, but electricity already has one key advantage: It is widely distributed and available across the country.

Yet all three acknowledged that optimism does

not erase structural challenges.

For cars, Ghosh identified charging infrastructure as the most significant source of customer anxiety. It is not just about increasing the number of charging stations, he said, but ensuring they function reliably, are properly maintained, and offer a seamless experience. Range anxiety, though easing with improving battery technology, still lingers in consumers' minds.

Ghosh noted that EV ranges today are significantly higher than they were three or four years ago, citing models offering over 500 km on a single charge in the ₹25 lakh price bracket.

Battery life and long-term ownership costs also remain concerns. OEMs, Ghosh argued, have a responsibility to mitigate these anxieties through longer warranties and service support. He cited examples such as 10-year battery warranties and free maintenance packages to reassure buyers. Expanding service access beyond metros is equally important. While most OEMs naturally focus on metro and Tier-I markets, Tier-II and Tier-III cities present growing opportunities. Innovative approaches, such as tying up with third-party workshops for minor repairs, can help address customer concerns in these regions.

In the commercial vehicle space, Kumar said range anxiety plays out differently. Vehicles are driven intensively — often 100-120 km daily — quickly accumulating 100,000 km in three to four years. That makes battery degradation, thermal stress and powertrain durability central to product design. He said Euler Motors invested early in liquid-cooled battery technology in 2021 to reduce thermal stress and extend battery life from three to four years to potentially seven or eight years.

The company introduced a 200 km range in the cargo segment to address operational anxiety and backed its vehicles with warranties of up to seven years or 200,000 kilometres. Today, it is working towards 10-year battery life cycles in commercial use cases, which are significantly more demanding than passenger vehicles due to consistently high throttle usage.

Kumar stressed that EV standards and testing frameworks are still evolving from legacy internal combustion norms. Batteries, electronics, and powertrains change how vibration, thermal stress, and overload must be evaluated.



(From left) Bolt.Earth CEO Raghav Bharadwaj, Euler Motors' Founder and CEO Saurav Kumar, and VinFast India CEO Tapan Ghosh