

Keep off the brake pedal India's EV transition has no time to lose

By Amitabh Kant and Pawan Mulukutla

Electric vehicles on Indian roads breached the 6.5 million mark in May 2025. With over 2 million EVs sold in 2024 and rising adoption across two-wheelers, three-wheelers, and public transport, the groundwork is firmly in place, and we are ready for take-off.

The stellar progress so far has been made possible due to a forward-looking, purposeful policy push, starting from FAME to the recent PM E-Drive and the scheme for manufacturing electric passenger cars in India. There are several ongoing interventions and initiatives to address rampant systemic bottlenecks in financing, credit mechanisms, charging networks, and the battery value chain. So far, the Government of India has spent more than Rs 40,000 crores on providing incentives, which in turn, has led us to a 7.8% share of EVs in annual vehicle sales. This necessitates a well-calibrated push for large-scale adoption of EVs across India's cities, both big and small, and not digressing from the national EV agenda that may derail the impressive progress we have made thus far.

The government has spent enormous funds to incentivise the automobile industry and battery ecosystem while taking decisive measures to localise manufacturing, ensure domestic value addition, and enhance the market uptake of the PLI scheme. While incentives and subsidies played a key role in market development, the path ahead requires setting up long-term expectations and visibility that can accelerate the momentum.

The rapid addition of renewable energy to green the power grid presents a unique opportunity to create a zero-emission value chain, from power generation to transportation. Globally, markets are moving decisively toward zero-emission vehicles (ZEVs), providing strong policy signals to accelerate EV adoption. India must craft tailored strategies for different vehicle segments, considering the varying levels of market maturity. Clear market and regulatory signals are necessary to unlock long-term investment, reduce risk for manufacturers and financiers. This calls for a decisive shift: from incentives and subsidies to clear mandates, regulatory confidence, and long-term innovative solutions contextualised for the Indian market.

Holistic Development of the Battery Ecosystem

To scale up EVs across modes and geographies, it is crucial to develop battery standards aligned with global benchmarks, besides creating a robust framework for data sharing grounded in the core objectives of safety, sustainability, resource efficiency, and circularity. A nodal agency should be instituted to ensure compliance, streamline mechanisms for data storage, and explore business models for financial viability. This can streamline the end-of-life management of batteries, thereby reinforcing a circular economy.

Creating a Circular and Accountable Economy

To ensure a thriving battery circularity ecosystem, we need to ensure that the Extended Producer Responsibility (EPR) portal is enabled with an audit function. Furthermore, third-party validation should be encouraged for producer declarations. In addition, the collection responsibility should be for both recyclers and producers, allowing unrestricted movement between states. Finally, the EPR pricing should be tailored to different battery chemistries.

Capturing Battery Data for Resource-Efficiency

To streamline the battery value chain and create a resilient and circular ecosystem, the Government of India's Department of Science and Technology recently unveiled a strategic pilot initiative – the Battery Aadhaar – a unique digital battery ID to enable tracking of lifecycle data to support circularity, resource efficiency, and regulatory compliance. This is a breakthrough moment for India's energy storage landscape as it strengthens our resolve to couple economic and sustainable development as we strive to become a net-zero economy by 2070. As our energy transition intensifies, we must also prioritise support for R&D and home-grown startups to explore indigenous technology development and the creation of a domestic recycling market. We also need more collaborative platforms like the Battery 360 Alliance, which can assess ecosystem readiness and facilitate more informed and efficient decision-making by all stakeholders.

Introducing EV Mandates

At this critical juncture of India's EV transition, we also need a gentle nudge towards mandating the use of EVs. We can initiate this process with low-level mandates that can be progressively scaled to more stringent measures with time. Globally, countries with robust EV adoption have used varied supply-side norms to send strong market signals. India can chart its own course by introducing phased, locally adapted mandates for manufacturers and operators.

Implementing CAFÉ Norms

We must urgently notify and implement the tightened CAFÉ norms for LDVs while tapering off the super credits provided to manufacturers in the non-EV segment. These compliance regulations also serve as motivators for manufacturers to invest more in innovation and accelerate economies of scale to bring down costs, helping the EV industry reach a tipping point. The scope of CAFÉ norms must be thoughtfully extended beyond just 4Ws to cover all major vehicle segments (especially commercial vehicles like trucks), given their substantial share in India's mobility ecosystem and their growing contribution to emissions. These regulations will accelerate the adoption of EVs, further push the development of a domestic market, especially for battery, charging, and other utilities companies, enable job creation, and create green livelihood opportunities for millions.

Expanding Charging Infrastructure to Underserved Areas

Currently, India also suffers from an uneven charging infrastructure distribution, with operators opting for high-traffic, commercially attractive zones, leaving low-demand or peri-urban areas underserved. For EVs to become the new normal in India's Tier 1 and 2 cities, we need corridor-level planning, not just a focus on wide distribution. We must establish a nodal agency that can create cross-subsidisation opportunities to ensure balanced infrastructure rollout and geographic equity in charging access. At the sub-national level, we must also prioritise enhancing the transparency and accountability of urban local bodies to strengthen and streamline frameworks for efficient service delivery through mechanisms like single-window clearances.

By integrating these strategic shifts in our short, medium, and long-term roadmap, India will not only pave the way for a cleaner future but also solidify its role as a global economic powerhouse while inching closer to its vision of 'Viksit Bharat' by 2047 with a \$30 trillion economy.

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