

Building a green future: Strategic policies to strengthen the EV ecosystem

The electric vehicle industry in India is rapidly growing due to technological advancements, increasing environmental awareness, and supportive government policies. The government is driving initiatives for manufacturing and infrastructure, focusing on localizing supply chains and enhancing battery technologies to achieve its ambitious EV goals by 2030.



Strategic policies to strengthen the EV ecosystem.

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The electric vehicle (EV) industry is on a remarkable growth trajectory, driven by technological advancements, increasing environmental awareness, and supportive government policies in India. As the global push toward sustainable transportation gains momentum, EVs

are becoming a vital component in reducing carbon emissions and decreasing dependence on fossil fuels. A recent study suggests that EV sales in India are expected to rise 66 percent this year, as the country's schemes to provide subsidies help fuel buyer demand and also provide supporting infrastructure. By 2030, EVs are expected to represent nearly one-third of India's passenger vehicles market.

The significance of policy intervention to develop EV ecosystem

Last year, the Government of India approved a new US\$500-million incentive policy. This initiative aims to attract investments from global EV companies by offering a variety of incentives, positioning India as a leading hub for advanced EV manufacturing. Key objectives include giving Indian consumers access to innovative EV models, strengthening the Make in India initiative, lowering production costs, reducing oil imports, cutting urban air pollution, and boosting competitiveness in the domestic auto manufacturing sector.

India's ambitious goal of targeting 30 percent of new vehicle sales to be electric by 2030, cannot be achieved without Government-led policies as it is the primary factor driving the adoption and building the infrastructure.

Financial incentives are playing a crucial role in building the foundation of the ecosystem. The policy FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles), which provides financial incentives to manufacturers and consumers, reducing the upfront cost of EVs and making them more affordable, is a supportive move in favour of the industry. Similarly, schemes such as Advanced Chemistry Cell Production Linked Incentive (ACC PLI) is designed to boost domestic manufacturing of advanced battery technologies, crucial for the EV sector. Capital Manufacturing for Mobility (CMM) refers to the broader set of incentives and policies aimed at encouraging investment in the manufacturing of EV components and vehicles.

Furthermore, to ensure a stable supply of critical minerals essential for EV battery production, the government has implemented policies to exempt import duties on minerals like lithium, cobalt and nickel, making it more cost-effective.

Current Policy landscape

The Government of India is playing an active role in implementing policies driving the growth of the ecosystem. For instance, in 2022, it introduced the Battery Waste Management Rules to promote the reuse and recycling of Advanced Chemistry Cell (ACC) batteries. However, many players are being forced to import certain elements, as India has been unable to bridge the gap in manufacturing and build an end-to-end supply chain in battery management. In my opinion, the Government needs to dwell more into the battery raw material processing industry to bring relevant policies to make India's EV ecosystem much robust.

Geopolitical Impact on Global Supply Chains

The China+1 strategy reflects a shift in global supply chains, where companies diversify production by adding locations outside of China to reduce risk and dependency. Countries like India, Vietnam, and Indonesia could gain from increased investments in EV manufacturing and related infrastructure, for this. While this strategy will accelerate the development of local supply chains, encourage technological innovation, and foster the growth of new EV ecosystems, this also means that beefing up production and demand could lead to lowering of the costs, a major challenge of the industry at this juncture. This strategy could be a game-changer for many.

However, although a plenty is being done to set up supply chains, R&D and collaborations which is the driving factor for innovation in the EV sector, needs investments hereon. Initiative such as the 'green energy corridors' encourages collaboration between the energy sector and the EV industry to create synergies between renewable energy sources and EV charging infrastructure. But the sector will need many more collaborations, facilities, and adaptation to see real change on the ground. In India, we are witnessing transformation in the three-wheeler and two-wheeler category, but we are yet to see a definite adoption in the four-wheeler segment, which will revolutionize the industry.

Localized end-to-end solutions enable manufacturers to oversee the entire production process, ensuring better quality control and reducing costs by minimizing dependency on imports. By consolidating production within local ecosystems, manufacturers can streamline operations, leading to faster turnaround times and the ability to swiftly adapt to market demands. This approach not only enhances efficiency but also fosters innovation, as proximity to R&D facilities allows for quicker iterations and improvements in product design.

Moreover, local sourcing of materials and components strengthens the supply chain, making it more resilient to global disruptions and price fluctuations. As a result, manufacturers can offer more competitive pricing in the market, attracting a broader customer base while contributing to the growth of the local economy. In the long term, this strategy positions companies to better respond to changing consumer preferences and regulatory requirements, ultimately driving sustained business success and contributing to a more self-reliant industrial sector.

Targeted policy interventions are essential to nurture a thriving EV ecosystem, ensuring sustainable growth and global competitiveness. To build a powerful ecosystem, the sector primarily requires a strong infrastructure to fulfill the needs based on the geography. Looking ahead, advanced battery solutions, such as recycled lithium batteries, will inevitably become a critical necessity. Further, faster charging with better materials or increased battery lifespan would become essential to drive the growth and adoption of EVs.

Building a green future with EVs requires a strategic, multi-faceted approach from all the stakeholders. By focusing on localizing supply chains, encouraging infrastructure development, and promoting sustainable battery technologies, we can accelerate the transition to a cleaner, more resilient future.