

# Upward march towards e-mobility transition

October 2021

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(3 min read)

## Key takeaways:

- *EV adoption is gaining traction across the country and increasingly becoming the preferred choice for consumers*
- *Parity with respect to TCO (Total Cost of Ownership) already exists for electric two-wheelers and three-wheelers (with subsidy) vis-à-vis their internal combustion engine counterparts*
- *Policy impetus coupled with the PLI scheme for batteries and auto components (exclusively covering EVs) is likely to further boost growth, reduce costs and accelerate this transition*
- *The transition will also open up the market for new age companies and innovators across the value chain.*

Electric vehicle (EV) adoption is gaining traction across the country and is increasingly becoming the preferred choice of consumers. India recorded total sales of 1,56,741 EVs in the first eight months of 2021, i.e. ~130 per cent of the total vehicles sold in whole of 2020<sup>1</sup>. EVs have fared better than internal combustion engine (ICE) on a range of policy goals, including enhanced energy security, reduced reliance on crude oil, better air quality and lower greenhouse gas emission. Consequently, 20 states have announced EV policies, set targets for various vehicle segments and charging infrastructure and provided an array of benefits including incentives based on battery size, waiver of registration fees, road taxes, etc.

With various positive developments, the economics of EVs have improved significantly. As per KPMG in India analysis, parity in the total cost of ownership (TCO) already exists in the two-wheeler (2W) vehicle segment, signalling improved affordability for this category of EVs. The current incentives offered by states and incentives under faster adoption and manufacturing of hybrid and electric vehicles (FAME)-II scheme make even upfront cost parity of E2W vis-à-vis ICE. These incentives have, in fact, spurred the sales for E2W, where E2W sales reached to 1 per cent of the total 2W market in FY22. For E3W, there is TCO parity with the FAME-II purchase incentives, however, as the battery costs decline to below USD140 per kWh, the E3W parity will be achieved without any purchase incentives. E3W has fared better than E2W with a 40 per cent penetration level in 3W segment. For cars the parity is linked to usage, and for usage of more than 100 km per day (or ~30,000 km per annum) parity can be achieved. In addition, the Government of India (GoI) is also focussed on converting the fleet of state-run transport undertaking's buses into electric buses, for which, it has allocated around INR3,500 crores in FAME-II scheme. Advancements in battery technologies and auto component manufacturing are expected to further reduce the costs and support the upward march towards electric future.<sup>2</sup>

To support the advancement in battery technologies, during May 2021, GoI extended the Production Linked Incentive (PLI) scheme for the Advanced Chemistry Cell (ACC) battery manufacturing with an allocation of INR18,100 crores. The scheme is aimed at promoting (a) establishment of battery giga-factories in India, (b) research and development in battery technologies and (c) bringing scale to production and transform

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sectors, including mobility. Battery occupies a significant portion of cost of EV, and a reduction in its costs will enhance affordability of EVs.

Today, India entirely imports its requirement<sup>3</sup> for ACC battery, hence, the scheme will go a long way in reducing India's import dependency on this upcoming technology choice and the impending energy security concerns. The scheme aims to achieve a manufacturing capacity of 50 Giga Watt Hour (GWh) in the next five years. As per the guidelines, a single beneficiary can develop maximum of 20GWh of capacity, with a minimum capacity of 5GWh. The selected manufacturers have to ensure a minimum 60 per cent domestic value addition within five years at a project level. The scheme is open to both domestic and international players and can be instrumental in bringing best in class technology choices to the country. The scheme is technology agnostic wherein technologies with higher energy density and cycle life will be preferred, thus laying focus on newer and niche cell technologies.

Along with the ACC battery PLI scheme, GoI in September 2021, announced PLI for auto, auto components and drone industries. Originally envisaged to be a INR57,000 crore scheme, the revised INR26,000 crore aims to promote investments in advanced automotive technologies' global supply chain, with a focus on EVs and hydrogen fuel cell vehicles. This allocation clearly indicates the directional shift towards advanced technologies across the automobile and allied sectors. With exclusive focus on EVs and related components, and coupled with PLI for battery manufacturing, the scheme is likely to improve competitiveness of EV manufacturing and take growth to the next level. At the end of its five-year tenure, the scheme is expected to facilitate fresh investment of over INR42,500 crore, incremental production of over INR2.3 lakh crore with additional employment opportunities of over 7.5 lakh jobs.<sup>4</sup>

KPMG in India published a thought leadership in October 2020, titled, "[Shifting gears: the evolving electric vehicle \(EV\) landscape in India](#)". Based on the analysis, we expect that EV penetration by 2030 is likely to reach 25 to 35 per cent for 2W and 65 to 75 per cent for 3W. In case of 4W space, penetration is expected to be 10 to 15 per cent in the passenger vehicle segment and 20 to 30 per cent in the commercial vehicle segment by 2030. Additionally, about 10 to 12 per cent of overall market for buses is expected to be electrified by 2030<sup>5</sup>.

The developments related to the PLI scheme are likely to further accelerate this transition by providing relative cost advantage and ease of availability of key components domestically. At the same time, it will also open up the market for new age companies and innovators across the value chain, including manufacturing of battery packs, global supply chains, EVs, charging infrastructure, battery recycling and swapping infrastructure, and a host of other value added services.

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<sup>1</sup> Vahan Portal, Ministry of Road Transport & Highways, Government of India, accessed on 21 September 2021

<sup>2</sup> Based on KPMG in India's analysis

<sup>3</sup> India imported around 1.2 billion USD worth of lithium ion batteries in FY21 and 300 million USD worth of lithium ion batteries in Q1 FY22, Export Import databank, Department of Commerce, Government of India, accessed on 21 September 2021

<sup>4</sup> Cabinet approves ₹26,058 crore PLI scheme for auto, drone sectors, accessed on 19 September 2021

<sup>5</sup> [Shifting gears: the evolving electric vehicle \(EV\) landscape in India](#), KPMG India publication, October 2020

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