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Developing a mandate mechanism for the adoption of electric vehicles in the state of Maharashtra, India

Maharashtra, one of the most populous and economically vibrant states of India, finds itself at a critical juncture in addressing air quality degradation in urban areas. Recognizing the need to embrace cleaner alternatives, there is a growing call for the state government to integrate electric vehicles into the transportation ecosystem. Two-wheelers are a ripe segment for electrification and comprise a majority of new vehicle registrations at the national and state level. By implementing policies to target electrification in the sector, Maharashtra can realize the manifold benefits that such a transition could bring to the state and its residents.

POLICY BACKGROUND

While the national sales share of electric two-wheelers was 5% in FY 2022–2023, the share in Maharashtra stood at 8%. Maharashtra is one of the leading states in India in designing and notifying its EV policy. First released in 2018 and updated in 2021,[1] the policy focuses on fiscal and non-fiscal incentives, in addition to charging infrastructure development. Notably, the policy also emphasizes building EV manufacturing capacity in the state and the development of a ZEV credit program.

The Maharashtra state subsidy scheme was introduced in July 2021 and extended through March 2022. In the initial program, the first hundred-thousand two-wheelers were entitled to a ₹5,000 incentive per kWh battery capacity, capped at ₹10,000. Additionally, the state government implemented an early buyer scheme offering ₹15,000 for the purchase of a 3 kWh battery-powered EV. With the expiration of the Maharashtra state government subsidy, only central government subsidies under the FAME-II are available to consumers.[2] While a third phase of the FAME scheme is indicated beyond March 2024, there remains uncertainty in the availability of incentives over the long term.[3] As a short-term measure, the central government has notified the Electric Mobility Promotion Scheme, which offers a reduced incentive amount of

1 "India: State level EV policies," TransportPolicy.net, accessed March 18, 2024, https://www.transportpolicy.net/standard/india-state-level-ev-policies/

2 Manaal Mahatme, "Maharashtra Government Withdraws Two-wheeler Electric Vehicle Subsidy," *ZigWheels*, August 11, 2022, https://www.zigwheels.com/news-features/ev-news/maharashtra-government-withdraws-electric-vehicle-subsidy/46660/

3 Parikshit Luthra, "Inside details of the next round of electric vehicle subsidies in India," *CNBC-TV18*, January 30, 2024, https://www.cnbctv18.com/auto/fame-iii-coming-soon-but-subsidies-to-be-tapered-down-18816631.htm

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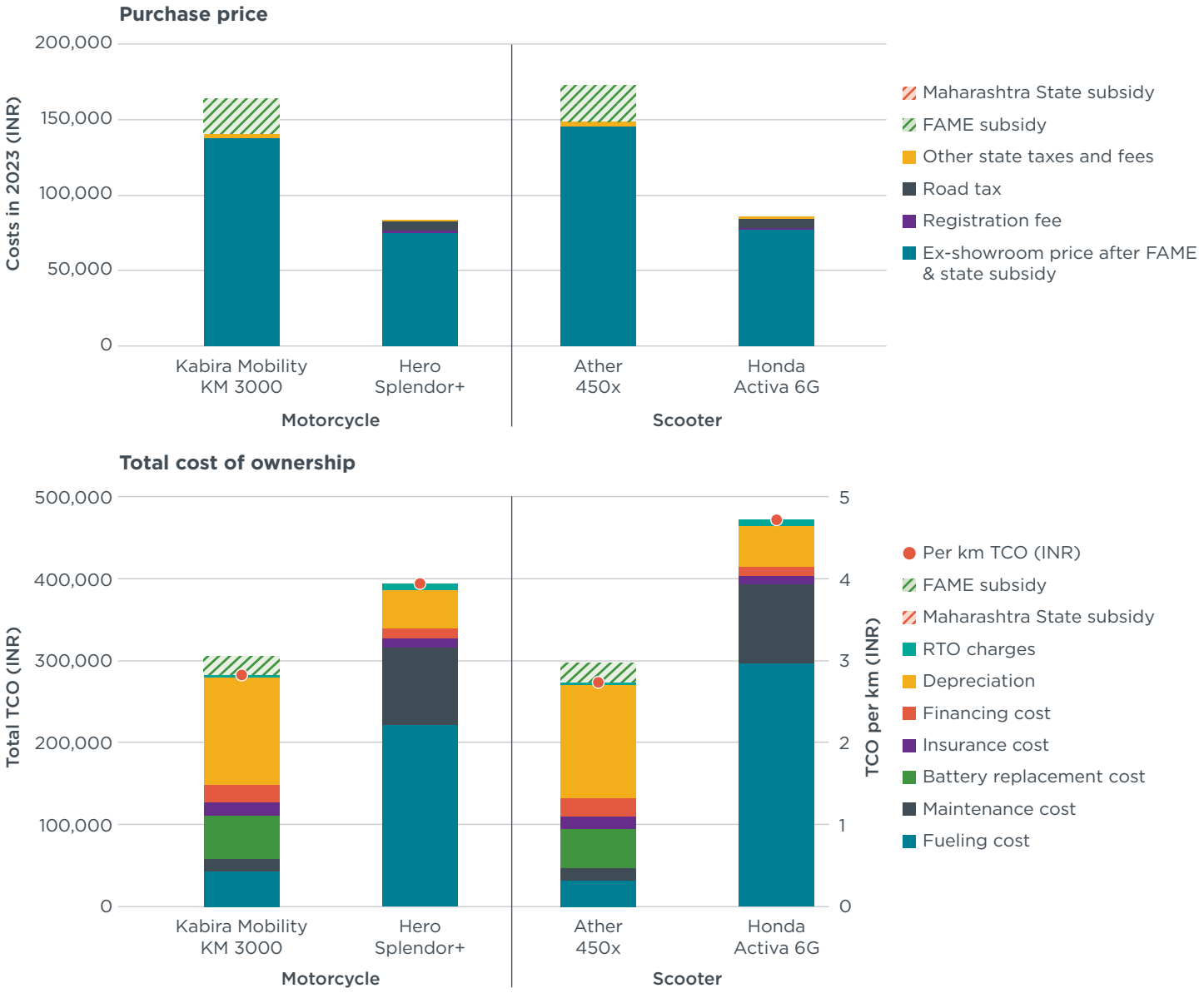
₹5,000 per kWh of battery capacity for electric two-wheelers purchased between April 1, 2024, and July 31, 2024.[4]

Figure 1 shows the upfront and total ownership cost comparison of motorcycle and scooter variants of the two-wheeler segment.[5] Both cost estimations assume no state-level subsidy for electric vehicles. The upfront cost differential between electric and combustion two-wheelers in 2023 is 41%–42%, even with central government subsidies. While the total cost of ownership for electric two-wheelers is lower than for combustion models even without subsidies, upfront and finance costs play an important role in consumer purchase decisions.

Figure 1

Upfront and total ownership costs of electric and combustion engine two-wheeler models in Maharashtra as of November 2023



4 Gazette Notification of Electric Mobility Promotion Scheme, Ministry of Heavy Industries, Government of India, Gazette of India CG-DL-E-14032024-252967, March 13, 2024, https://heavyindustries.gov.in/gazette-notification-electric-mobility-promotion-scheme-2024-reg

5 The total cost of ownership for a 10-year period is estimated as the cumulative cost incurred by the customer in the usage of vehicle during its lifetime. The on-road price is accounted as depreciation cost of the vehicle, that the customer had to bear. The total cost includes the road tax, fueling cost, maintenance cost, battery replacement cost, insurance, and financing cost over the lifetime. Shikha Rokadiya, Anup Bandivadekar, and Aaron Isenstadt, *Estimating Electric Two-Wheeler Costs in India to 2030 and Beyond* (Washington, DC: ICCT, 2021), https://theicct.org/publication/estimating-electric-two-wheeler-costs-in-india-to-2030-and-beyond/; Nibedita Dash and Anup Bandivadekar, *Cost Comparison of Battery Swapping, Point Charging, and ICE Two-Wheelers in India* (Washington, DC: ICCT, 2021), https://theicct.org/publication/cost-comparison-of-battery-swapping-point-charging-and-ice-two-wheelers-in-india/

Prior ICCT analysis indicates that in the absence of incentives, production cost parity between electric and combustion models is at least 10 years away if investments are made at scale. If the pace of investments occurs at a slower rate, cost-parity is even further away. However, for investments to occur at scale, manufacturers require market certainty, which cannot be provided through short-term incentives that only support a limited portion of total vehicles in the market due to cost to government.

ZERO-EMISSION VEHICLE REGULATIONS

While incentives are an important near-term policy measure, in the long term, lowering costs requires alternative approaches. Zero-emission (ZEV) sales regulations are an effective policy measure that can provide such certainty.

ZEV regulations place legally binding annual credit targets on vehicle manufacturers that need to be fulfilled through the sale of ZEVs. Globally, ZEV regulations have been deployed as a key policy lever to deliver 100% electrification of new light-duty vehicle sales by 2035 in California and several other U.S. states, the United Kingdom, and Canada. China and South Korea have also adopted modified versions of California's program for their markets. Such regulations create favorable conditions for scaling up production:

- *Investor certainty.* A legally binding annual credit target schedule gives long-term visibility to manufacturers, enabling investments at scale.
- *Consumer appeal.* As manufacturers boost supply in line with their credit targets, they compete to sell their obligated volumes by increasing consumer choice through offering more models and lowering prices, reducing long-term dependence on subsidies.
- *Manufacturer flexibility.* Market-based credit trading allows early movers to generate revenues by selling surplus credits to those manufacturers who may choose to delay their ZEV market entry.

Table 1 summarizes a review of key statutory and enabling authorities at the state level that can potentially support adoption of a ZEV sales regulation in Maharashtra.[6]

Table 1
Summary of enabling authority for adoption of ZEV sales regulation in Maharashtra

Body	Relevant functions	Empowering framework	Potential role in enabling ZEV sales regulation
Department of Environment and Climate Change	Protection and improvement of the environment	Maharashtra Government Rules of Business, 1975	Authorize ZEV sales regulation in state
Department of Transport	Govern on matters related to road transport and vehicular pollution	Central Motor Vehicles Act	Implement ZEV sales regulation set by central and/or state authorities
Maharashtra Pollution Control Board	Regulate vehicular emissions	Air Act	Authorize ZEV sales regulation in state

In view of the above summary of state capacity, there is no single authority which has authority to govern pathways relating to a ZEV sales regulation in the state of

6 ICCT contracted a legal consultant to conduct a review of authority available for enabling a ZEV sales regulation at national and sub-national level in India. The table summarizes the findings from this assessment pertaining to the state of Maharashtra. While this fact sheet focuses on two-wheelers, regulatory authority discussed is independent of vehicle segment.

Maharashtra. However, any actions taken by the Maharashtra Pollution Control Board are through legislative interventions and are enforceable.

SUMMARY

There is broad authority available to multiple government agencies to authorize and enable a ZEV regulation for manufacturers supplying two-wheelers within Maharashtra. Institutional delivery can be streamlined through coordination amongst the empowered and enabling authorities. It is with the state to take the aspiration forward, starting with establishing specific targets for EV adoption through a market-based credit policy. Maharashtra can be a model to other states by creating an ecosystem that supports and accelerates the transition to EVs, benefitting the environment, public health, and the economy. Furthermore, the establishment of a ZEV credit program can position Maharashtra as a leading state for EV supply and demand, attracting investments and innovation, and enhancing the state's competitiveness in the global automotive market.

FOR MORE INFORMATION:

Title: *Designing a zero-emission vehicle sales regulation for two-wheelers in India*

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Download: https://theicct.org/publication/designing-a-zero-emission-vehicle-sales-regulation-for-2w-in-india-mar24

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