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Developing a mandate mechanism for the adoption of electric two-wheelers in the state of Delhi, India

Electric vehicles (EVs) represent a transformative shift in the global automotive industry, offering an environmentally sustainable alternative to traditional combustion engines. In India, where urban air pollution and energy security are significant concerns, the transition to EVs holds great promise. Two-wheelers, which comprise the majority of new vehicle registrations at the national and state level, are a ripe segment for electrification. States can play an important role in expediting this transition by bringing the electric two-wheeler market to scale through zero-emission vehicle regulations.

POLICY BACKGROUND

Delhi has made significant strides in promoting electrification of two-wheelers, reaching a 10% sales share in fiscal year 2022–2023, double the national share. Such progress in Delhi has been achieved largely through incentives from central and state government subsidy packages.

Under the Delhi EV Policy, electric two-wheelers are eligible for a subsidy of ₹5,000 per kilowatt hour of battery capacity, capped at ₹30,000. Additionally, the Policy offers incentives up to ₹5,000 for scrappage of combustion engine two-wheelers. The first phase of the Policy was in effect from August 2020 to August 2023, but it has received multiple short-term extensions and incentives continue to be available through June 2024.[1]

In addition to incentives from the Delhi EV Policy, consumers in Delhi also benefit from the central government FAME-II subsidy, which offers ₹10,000 per kilowatt hour of battery capacity towards the purchase of electric two-wheelers, with subsidies capped at 15% of the ex-factory price of the vehicle. FAME-II incentives expire in March 2024.

While there are indications of announcements of a Phase II of Delhi's EV Policy and a third phase of the FAME scheme, there remains uncertainty in the availability of these incentives over the long term.[2] As a short-term measure, the central government has notified the Electric Mobility Promotion Scheme, which offers a reduced incentive

1 Press Trust of India, "Delhi Cabinet gives nod to extend electric vehicle policy till June," *The Economic Times*, March 16, 2024, https://economictimes.indiatimes.com/industry/renewables/delhi-cabinet-gives-nod-to-extend-electric-vehicle-policy-till-june/articleshow/108543635.cms?from=mdr

2 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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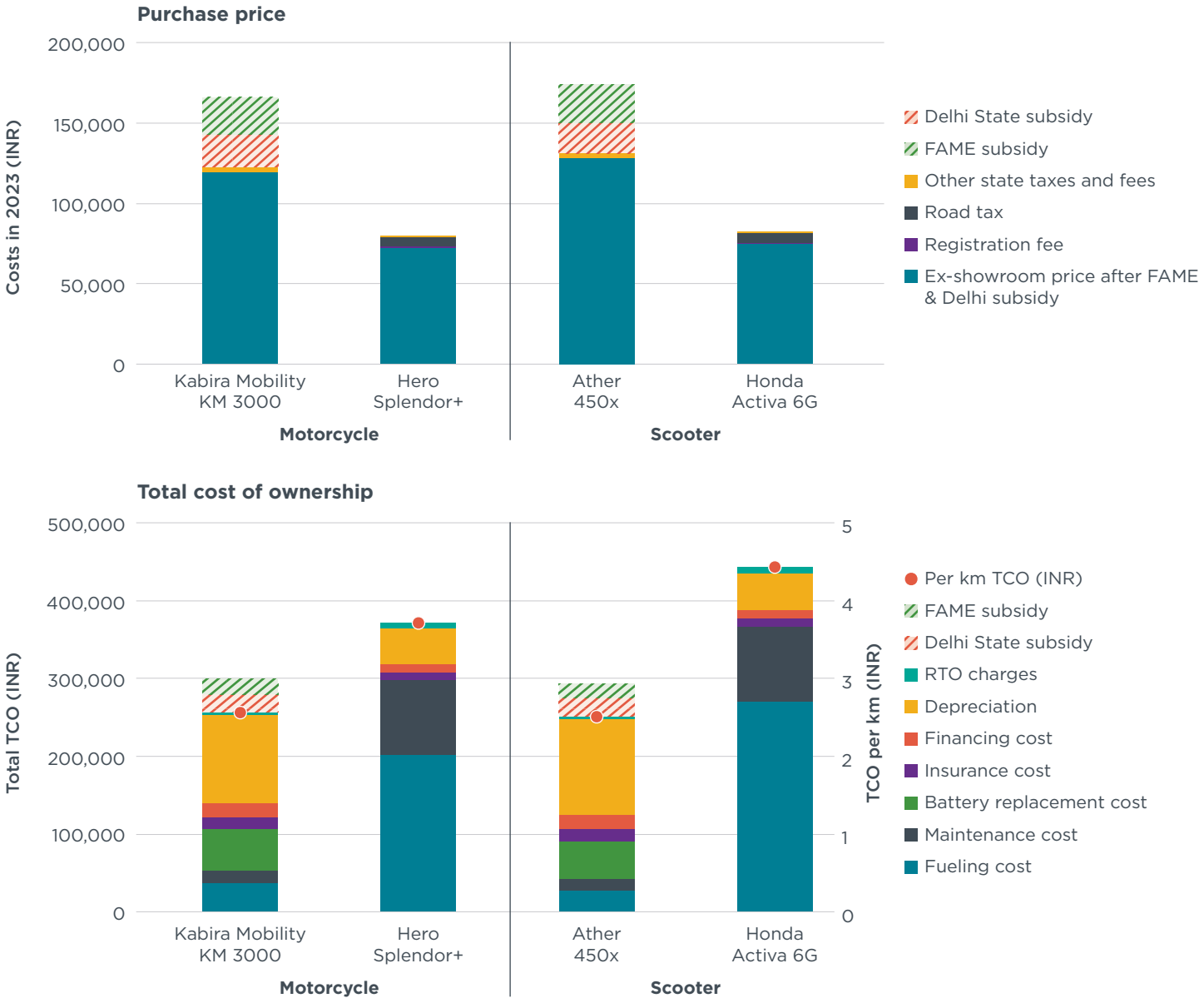
amount of ₹5,000 per kilowatt hour of battery capacity for electric two-wheelers purchased between April 1, 2024, and July 31, 2024.[3]

Figure 1 shows the upfront and total ownership costs of motorcycle and scooter variants of the two-wheeler segment.[4] The upfront cost differential between electric and combustion two-wheelers in 2023 is 35%–37%, despite central and state subsidy support. 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 Delhi as of November 2023



3 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

4 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 incentive schemes that support a limited portion of 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 vehicle (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 favourable 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 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 the NCT of Delhi.[5]

Table 1

Summary of enabling authority for adoption of ZEV sales regulation in NCT of Delhi

Body	Relevant functions	Empowering framework	Potential role in enabling ZEV sales regulation
Environment, Forest, and Wildlife Department	Protection and improvement of the environment	Allocation of Business Rules, 1993 (ABR Delhi)	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
Delhi Pollution Control Committee	Regulate vehicular emissions	Air Act	Authorize ZEV sales regulation in state
Commission for Air Quality Management in National Capital Region (NCR)	Restrict or regulate any type of activity in the interest of air quality in the NCR	Commission for Air Quality Management in NCR Act	Authorize ZEV sales regulation in state

5 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 NCT of Delhi.

In view of the above representation of state capacity, there is no single authority which has authority to govern pathways relating to a ZEV sales regulation in the NCT of Delhi. However, any actions taken by the Delhi Pollution Control Committee and the Commission for Air Quality Management in the National Capital Region are through legislative interventions and are enforceable. For example, the Commission has taken stringent measures to control air pollution in Delhi such as the Graded Response Action Plan and a ban on the use of various diesel vehicles.

SUMMARY

There is broad authority available to multiple government agencies to authorize and enable a ZEV regulation on manufacturers supplying two-wheelers within the NCT of Delhi. Institutional delivery can further 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. Delhi 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.

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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