

PRESS RELEASE
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Electric vehicles penetration to remain low in the medium-term: ICRA

- *Unless there is standardisation of battery specification (including charger specifications) across the OEMs, a meaningful success in the battery-swapping adoption is unlikely*
- *The modality of vehicle financing in a battery-swappable model, where core battery is owned/leased by the third party and financiers only have control over residual vehicle is another challenge*
- *Government support in the form of direct/indirect financial incentive and supportive regulation will be crucial for EVs to gain traction in the Indian market*

ICRA Ratings has ruled out any meaningful domestic penetration of electric vehicles (EVs) in the key automotive segment like the PVs and the CVs, given their high prices; and absence of strong direct and indirect financial stimulus from the Government encouraging EV adoption. At present, FAME II incentive for electric PVs is restricted to the commercial taxi segment only which also highlights the Govt's awareness that the attractiveness of EVs for personal car buyers will remain distant in the near to medium term. This apart, the EV vendor systems needs substantial investments to keep costs under check and reduce dependence on imported electronic systems. ICRA believes that battery swapping will face strong resistance from automobile OEMs due to a possible impact on their product differentiation capabilities as well as pricing flexibility. Its acceptance therefore will be limited to certain less complex automotive sub-segments like the 3W. Further, given the importance of battery hardware and software in the overall performance of an EV, battery swapping will face strong resistance in technologically complex products like cars or two-wheelers.

Giving more insights, Mr. Ashish Modani, Vice President & Co-Head, ICRA says, "The price sensitivity nature of the Indian market implies the EVs need to be priced competitively which in turn demands 'economies of scale'. At present, EV prices are much higher than their ICE counterparts. This coupled with a limited / lack of public charging infrastructure has resulted in minimal EV penetration in the country. Government support in the form of direct/indirect financial incentive and supportive regulation will be crucial for EVs to gain traction in the Indian market. We expect the automotive sub-segments like the three-wheelers (3W), two-wheelers (2W, especially scooters), intra-city buses and small commercial vehicles (SCVs) to emerge as early adopters due to the comparable total cost of ownership with their ICE counterparts. However, EV penetration is likely to remain low in the passenger vehicle (PV) and heavy trucks segment. Over the next five years, EVs will account for 8-10% of the new vehicle sales in 2W and intra-city buses, whereas its share will remain about 3-5% in the PV segment. However, the 3W segment may witness rapid transition with sizable EV penetration (in new vehicle sales) by 2025."

Through a recent decision, registration of EVs without battery has been allowed. The idea is to overcome one of the key barriers for EV adoption i.e. high upfront cost by segregating battery cost (which accounts for about 40% of vehicle cost) thereby lowering the price of the EVs below ICE counterparts by adopting the battery-sharing/ swapping model. Battery swapping solves the problem of range anxiety, if there are adequate battery-swapping stations in a region. It is primarily targeted at the commercial segment, especially 3Ws, SCVs and delivery bikes (2w). This directive has paved the way for the adoption of the battery-swapping model, where batteries can be provided on rent/lease and can be swapped at authorised outlets. However, there are concerns despite noble intent. Inherent

challenges regarding the standardisation of battery specifications, technology-sharing between the OEMs, financing availability, the subsidy-sharing mechanism and the tax structure exists.

Unless there is standardisation of battery specification (including charger specifications) across the OEMs, a meaningful success in the battery-swapping adoption is unlikely. ICRA believes that battery design along with battery management system (BMS) is a core technology of any OEM/platform. Hence it may be difficult for the OEMs to share them with competitors, which may limit the success of battery-swapping in India. Moreover, in the battery-swapping model, a sizeable share of the overall value addition (due to battery) will be outside the scope of the OEMs, which will impact their pricing flexibility and hence profitability in the long run. Given the importance of battery hardware and software in overall performance of an EV, battery swapping will face strong resistance in technologically complex products like cars or performance two-wheelers.

One of the key drivers of automobile sales, and residual value of a vehicle after 3-4 years is financing and its penetration. The EVs are generally priced at a premium, and their resale value takes considerable hit after getting out of the showroom as compared to ICE counterparts. The concerns on resale value can only be addressed, when there is a large population of such vehicles in the market, which will take some time. The modality of vehicle financing in a battery-swappable model, where core battery is owned/leased by the third party and financiers only have control over residual vehicle is another challenge for the industry.

ICE vehicle financing is currently available at sub 9% and getting similar fine rates for EV counterpart remains a challenge in the medium term. Given the liquidity crunch and risk aversion in the NBFC sector, ICRA believes that retail funding will become another big roadblock for battery swapping to gain any meaningful traction in the non-commercial segment of the Indian market.

To incentivise EV customers, the Government has allowed an additional income tax deduction of upto Rs 1.5 lakh under Section 80EEB on interest taken on the electric vehicle loan. In addition, a leading PSU bank and car financier in India is providing additional 20 bps benefit on prevailing car loan. However, the overall consumer as well as the financiers' interest in EVs has remained low.

“With respect to the battery-swapping mechanism, there are other key concerns like the mechanism of subsidy-sharing and inverted duty structure, when battery is sold separately. At present there is no clarity regarding the bifurcation of the FAME II subsidy between a vehicle manufacturer and a battery provider. Also, the GST of the EV vehicle is 5% compared to 18% for the EV battery and this could result in a cost escalation. Moreover, in case of a fire mishap due to short-circuit in battery, product liability and insurance could become another area of conflict. ICRA believes that while some of these issues can be resolved through Government clarification, financing and battery standardisation are big roadblocks for the industry, which should be addressed adequately for battery swapping to gain any meaningful traction in the medium term,” added Mr. Modani.

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