EXPLORING COST-REDUCTION STRATEGIES FOR ELECTRIC VEHICLE (EV) BATTERIES

Electric Vehicles (EVs) can help in reducing greenhouse gas emissions, encouraging sustainable economic growth, improving air quality and reducing import dependence among other things.

But their cost vis-a-vis traditional vehicles is a major cost barrier to their uptake. The battery in an EV is its most expensive component, accounting for 50% of its total cost; thus, the affordability of EVs is directly proportional to the affordability of a battery.

Reducing battery costs can drastically bring down the cost of EVs and so improve their uptake in the transport and mobility system in India. Some strategies that can contribute to the cost reduction of EV batteries are:

INCENTIVISING CELL MANUFACTURING

Manufacturing at scale along with efforts to improve the efficiency of value chains and resource utilisation can not only help reduce the cost of batteries but also allow the country to reap economic benefits from the transition to EVs.

STANDARISATION

Standards and regulations for cell manufacturing, battery pack assembling, and testing are important to prevent dumping of inferior technology products in the market, while encouraging innovation and improvements in the manufacturing processes. Standards and regulations are not only a low-cost strategy but will also help improve investors’ confidence in the market. They will also help end users in decision making and will address any lingering anxieties over the safety of batteries and EVs.

BATTERY AS A SERVICE

This allows the cost of the battery to be transferred to the end-user as a service and promote the concept of circular economy. For example, in the case of passenger cars or two-wheelers, users can pay a part of the battery cost upfront when they buy a vehicle, which will reduce the initial cost of ownership, while the remaining cost can be recovered during the lifecycle of the battery.

DEMAND AGGREGATION

Demand aggregation or bulk procurements reduce cost and could help in creating further demand. Assured demand is important to attract private investment and aggregation in case of government procurements, and public transport could result in assurance of demand. This may not only help in reducing the unit cost of vehicles but could also increase the demand for batteries in the future.

Read more about the factors that drive costs in electric vehicle batteries and the measures that can be taken to reduce battery costs in this report: Exploring Cost-Reduction Strategies For Electric Vehicle (EV) Batteries. https://shaktifoundation.in/initiative/exploring-cost-reduction-strategies-for-electric-vehicle-batteries.php

References:

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