



Indian Perspective on Emerging EV Market in India

Dr Anita Sharma

Abstract

The automotive industry is undergoing a significant transformation with the increasing adoption of Electric Vehicles (EVs). These vehicles are considered a pivotal shift in the industry since they promise a cleaner, greener, and more sustainable mode of transportation—the study aimed to investigate and analyse the Indian perspective on the evolving Electric Vehicle (EV) landscape. The study examined the factors that discourage consumers from purchasing EVs, find out Opportunities for policy improvements and recommendations for policymakers and provide suggestions for meeting the challenges

Keywords: Electric Vehicles (EVs), Government, Policy, incentives

Introduction

The automotive industry is undergoing a significant transformation with the increasing adoption of Electric Vehicles (EVs). These vehicles are considered a pivotal shift in the industry since they promise a cleaner, greener, and more sustainable mode of transportation—the study aimed to investigate and analyse the Indian perspective on the evolving Electric Vehicle (EV) landscape. The study examined the factors that discourage consumers from purchasing EVs, find out Opportunities for policy improvements and recommendations for policymakers and provide suggestions for meeting the challenges

Objectives of the Study

The main aim of this project report is to investigate and analyse the Indian perspective on the evolving Electric Vehicle (EV) landscape. The specific objectives of the report include the following:

- To analyse the challenges faced in Indian EV market
- To find out Opportunities for policy improvements and recommendations for policymakers
- To provide suggestions for meeting the challenges

Challenges faced in the Indian EV market

- Limited charging infrastructure emerges as the primary reason for not considering an Electric Vehicle purchase. This highlights the critical importance of developing a robust charging infrastructure network to solve this issue and help increase demand of products.
- High initial cost is also a primary reason for not considering an Electric Vehicle purchase. This suggests that affordability remains a significant barrier for potential EV buyers, indicating the need for pricing strategies, incentives, and subsidies to make EVs more accessible.
- Lack of awareness is cited among people a reason for not considering an Electric Vehicle purchase. This underscores the importance of education, outreach, and awareness campaigns to inform consumers about the benefits, features, and availability of electric vehicles.
- High maintenance and repair costs are mentioned discourage the customers for not considering an Electric Vehicle purchase. This suggests concerns about the long-term ownership costs and reliability of EVs compared to traditional internal combustion engine vehicles.
- Range anxiety, which refers to concerns about the limited driving range of EVs and the availability of charging stations as a factor for not considering an Electric Vehicle purchase. This highlights the need for improvements in battery technology, vehicle range, and charging infrastructure to alleviate range anxiety and increase consumer confidence in EVs.

Opportunities for policy improvements and recommendations for policymakers

Opportunities for policy improvements and recommendations for policymakers in promoting Electric Vehicle (EV) adoption in India can be identified across various areas. Some of them are as follows

Enhanced Fiscal Incentives:

Increase fiscal incentives for EV buyers: To further stimulate demand, policymakers can consider enhancing fiscal incentives such as subsidies, tax exemptions, and rebates for EV purchasers. Targeted incentives based on vehicle type, battery capacity, and affordability criteria can help maximize the impact on relinquishment.

Introduce scrappage incentives: Implement incentives for scrapping old, polluting vehicles and replacing them with EVs to accelerate the transition to cleaner transportation and improve air quality.

Infrastructure Development:

Accelerate charging infrastructure deployment: Increase investment in the development of public and private charging infrastructure, particularly in urban areas, along highways, and in commercial hubs. Provide incentives and support for setting up charging stations, including fast chargers, and prioritize the establishment of charging infrastructure in underserved regions.

Standardize charging protocols: Develop and enforce standardized charging protocols and interoperability standards to ensure compatibility and ease of use for EV owners. Streamlining permitting and licensing processes for setting up charging stations can also facilitate infrastructure deployment.

Research and Development Support:

Foster innovation and localization: Provide uninterrupted support for research and development (R&D) activities in the EV sector, with a focus on battery technology, electric drivetrains, and charging infrastructure. Encourage collaboration between industry, academia, and research institutions to accelerate technology development, improve efficiency, and reduce costs.

Create innovation hubs and testbeds: Establish innovation hubs and testbeds for EV technology development, prototyping, and testing. Provide funding, infrastructure, and regulatory support to encourage startups, entrepreneurs, and innovators to develop and commercialize EV-related technologies.

Policy Alignment and Coordination:

Harmonize policies across states: Ensure consistency and alignment of EV-related policies and incentives across states to avoid fragmentation and create a conducive regulatory environment for industry stakeholders. Facilitate knowledge sharing, collaboration, and coordination between central and state governments to leverage best practices and lessons learned.

Review and update policy frameworks: Conduct regular reviews and evaluations of existing policies to assess their effectiveness, identify gaps, and address emerging challenges. Update policy frameworks based on evolving

market dynamics, technological advancements, and feedback from stakeholders to ensure relevance and impact.

Consumer Awareness and Education:

Launch awareness campaigns: Invest in public awareness campaigns to educate consumers about the benefits of EVs, dispel myths, and address misconceptions. Promote EV adoption through targeted marketing, incentives for early adopters, and engagement with community organizations, schools, and workplaces.

Provide consumer education and support: Offer resources, guides, and incentives to help consumers make informed decisions about EVs, including information on vehicle options, charging infrastructure, incentives, and cost savings. Facilitate test drives, demo events, and workshops to familiarize consumers with EV technology and address concerns.

Incentives for Industry Growth:

Support domestic manufacturing: Provide incentives, subsidies, and tax breaks to encourage domestic manufacturing and assembly of EVs, components, and charging infrastructure equipment. Foster a favourable investment climate, promote skill development, and reduce regulatory barriers to attract investment and spur job creation in the EV ecosystem.

Promote innovation clusters: Establish innovation clusters and industrial parks focused on electric mobility, with incentives for companies to locate and collaborate within these clusters. Encourage the development of supply chain ecosystems, innovation networks, and manufacturing clusters to drive competitiveness and innovation in the EV sector.

By implementing these recommendations and leveraging opportunities for policy improvements, policymakers can accelerate the adoption of electric vehicles in India, promote sustainable transportation, and contribute to the country's economic growth, environmental sustainability, and energy security.

Suggestions for meeting the challenges

1. Increase Fiscal Support:

- **More Subsidies and Tax Breaks:** Offer bigger discounts and tax cuts for buying EVs, especially cheaper models.
- **Scrappage Incentives:** Give money to people who trade in old cars for new EVs.

2. Improve Charging Infrastructure:

- **Build More Charging Stations:** Quickly set up more charging stations in cities, on highways, and in rural areas. Encourage private companies to invest in this infrastructure.
- **Standardize Charging:** Make sure all charging stations use the same system so any EV can use them easily.

3. Support Research and Development:

- **Encourage Innovation:** Support ongoing research in better batteries, motors, and charging methods. Promote partnerships between companies and universities.
- **Create Innovation Centers:** Set up special areas where startups and researchers can develop new EV technologies.

4. Refine Government Policies:

- **Regular Updates:** Continuously review and improve government policies to keep up with market changes and consumer needs.
- **Promote Local Manufacturing:** Support making EV parts in India to reduce reliance on imports and create jobs.

5. Increase Consumer Awareness:

- **Launch Awareness Campaigns:** Run campaigns to inform people about the benefits of EVs and available incentives.
- **Provide Clear Information:** Make information about charging stations, costs, and incentives easily accessible through websites and apps.

By following these suggestions, India can overcome current challenges and speed up the adoption of electric vehicles

Conclusion

There is an increasing awareness and interest in electric vehicles (EVs) among Indian consumers, indicating a positive trend towards sustainable transportation. High initial costs, limited driving range, insufficient charging infrastructure, and unclear government incentives remain significant barriers to the widespread adoption of EVs in India. Policies such as the FAME II scheme, GST reductions, and state-level incentives

have had positive effects, but further refinement is needed to address practical implementation issues and regional disparities. The current charging infrastructure is inadequate, necessitating accelerated deployment and standardization of charging stations to support the growing EV market. Enhanced fiscal incentives, such as increased subsidies, tax exemptions, and scrappage incentives, are critical to making EVs more affordable and appealing to a broader audience. Continuous support for research and development in battery technology, electric drivetrains, and charging solutions is essential to drive innovation and improve the performance and affordability of EVs. Regular assessment and refinement of government policies are required to align with market dynamics, ensure efficient disbursement of incentives, and promote domestic manufacturing. Comprehensive awareness campaigns and transparent information dissemination are vital to educate consumers about the benefits, available incentives, and advancements in EV technology. Despite the challenges, the transition to electric mobility in India is promising, with coordinated efforts from government, industry stakeholders, and consumers necessary to realize its full potential.

Bibliography

- <https://www.mordorintelligence.com/industry-reports/india-electric-vehicle-market>
- <https://www.india-briefing.com/news/indias-prospects-as-an-ev-hub-consumer-market-and-production-capacity-30157.html/#:~:text=The%20major%20players%20in%20the,MG%20ZS%2C%20and%20Mahindra%20XUV400.>
- <https://www.counterpointresearch.com/insights/global-electric-vehicle-market-share/#>