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CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	<p style="text-align: center;">ELECTRIC VEHICLES IN INDIA: CHALLENGES AND PROSPECTS</p> <p style="text-align: center;"><i>Dr. B.M. HIREMATH & S.A. DESHPANDE</i></p>	1
2.	<p style="text-align: center;">EMPLOYEES ATTRITION AND RETENTION IN SELECTED IT, PRIVATE COMPANIES IN AND AROUND CHENNAI, BANGALURU AND MYSORE</p> <p style="text-align: center;"><i>GURUPRASAD A.R.</i></p>	3
	REQUEST FOR FEEDBACK & DISCLAIMER	13

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ELECTRIC VEHICLES IN INDIA: CHALLENGES AND PROSPECTS

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ABSTRACT

Owing to the burden of high fuel cost and increasing environmental issues, India is seriously exploring the options for these dual issues. The single remedy to these both issues is to switch the country from traditional fuel-based automobile industry to the cost effective and affordable electric vehicle industry. Large number of middle-class families are more worried about the affordable conveyance in the form of electric vehicles. The present study is an attempt to analyse the challenges and prospects of electric vehicles in India.

KEYWORDS

electric vehicles, battery, government support, environmental issues.

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INTRODUCTION

The automobile industry throughout the globe is in the transition stage. The United Nation's Convention on Climate change 2016 has mandated all the countries to reduce the carbon imprint to save the globe. Transportation sector accounts for nearly 70% of the use of the fossil fuels worldwide. So, the nations across the globe are shifting from traditional vehicles to electric vehicles. India, being a member country of the UNO, has committed to comply with the resolutions of the United Nations Framework Convention on Climate Change to shift to Electric Vehicles by 2030. Indian auto industry is the 4th largest in the world next to China, USA and Japan. India is surplus in electricity generation since 2015. Therefore, India has to make a rapid shift from fuel based traditional vehicles to electric vehicles to reduce crude oil imports, to reduce air and noise pollution and to tap the global opportunity of electric vehicle market. In this context the present study is an attempt to analyse the challenges and prospects electric vehicle in India.

OBJECTIVES

1. To know the EV market in India.
2. To analyse the Government Support to EVs in India.
3. To analyse the challenges of electric vehicles in India.
4. To analyse the prospects and benefits of electric vehicles in India.

METHODOLOGY

The present study is based on the secondary data to sourced online.

MARKET OVERVIEW

The India electric vehicle market was valued at USD 5.47 Billion in 2020, and it is expected to reach USD 17.01 Billion by 2026, growing at a CAGR of 23.47% over the forecast period (2021-2026).

The COVID-19 epidemic affected the auto sector, and demand for electric automobiles, two-wheelers, and three-wheelers suffered as a result of the disruption. According to the Society of Electric Vehicle Manufacturers (SMEV), total electric vehicle registrations fell 20% in FY21 to 236,802 units, down from 295,683 in FY20. However, as the sales of EVs are picking up, the market is expected to register positive growth during the forecast period.

GOVERNMENT SUPPORT

The government of India has undertaken multiple initiatives to promote the manufacturing and adoption of electric vehicles in India, to reduce emissions pertaining to international conventions, and to develop e-mobility in the wake of rapid urbanization.

- To promote the domestic electric vehicle industry, the Indian government has provided tax exemptions and subsidies to the EV manufacturers and consumers.
- The Ministry of Power issued a clarification stating that no license is required to operate EV charging stations in India. The reasoning for making it license-free is that the government considers EV charging station as a service and not the sale of electricity.
- The Ministry of Road Transport and Highways also announced that all battery-operated, ethanol-powered, and methanol-powered transport vehicles would be exempted from the requirement of permits.
- As per the phased manufacturing proposal, the government has imposed 15% customs duty on parts that are used to manufacture electric vehicles and 10% on imported lithium-ion cells. The revised duty under PMP has been proposed from April 2021.

Following the launch of the FAME India plan, which aims to transition toward e-mobility in the light of expanding international policy commitments and environmental difficulties, the EV market in India has gained substantial momentum. Additionally, India has the world's largest untapped market, particularly for electric two-wheelers. The automatic route market is likely to gain traction throughout the forecast period due to the fact that 100 percent foreign direct investment is permitted in this sector.

CHALLENGES

- a. Range concern:** Range concern is one of the crucial challenges ahead of the growth corridor for electric vehicles in India. The EV customers are often worried about the vehicles potential to reach the destiny before the battery runs out. This issue is closely connected to the limited charging infrastructure in India. The EV charging infrastructure in India too low compared to the fuel stations. Also, the available EV charging stations are concentrated in urban areas only.
- b. Consumer Perception:** The consumer perception about electric vehicles in India is still weak compared to traditional vehicles. The range concern, lack of charging infrastructure, a wide gap between EV and traditional vehicle prices, lack of assurance about satisfactory resale value play key roles in the consumer buying decision. Despite this Indian consumer are becoming more open about adopting e-mobility than before, the negative perception about EVs is still there.
- c. High Cost:** There is no price parity between electric vehicles and traditional vehicles in India. Electric vehicles are costlier than their conventional fuel-powered counterparts. For example, the Tata Nexon price costs ₹7.19 lakh, while the Tata Nexon EV costs ₹13.99 lakh. This high gap in price difference discourages many interested EV buyers to shy away from making the final decision to buy an EV.
- d. Scarce Battery Technology:** The lithium-ion battery is the most popular and widely used energy source for EVs. India doesn't produce lithium. India depends on import for EV batteries resulting in the high price for these important components and eventually the EVs as well.
- e. Majority of EVs are not covered under FAME scheme:** The Government of India is promoting the mobility of EVs by providing incentives and discounts through FAME scheme. But the low-speed electric two-wheelers having lead-acid battery powered EVs are not covered under Fame. The expensive high-speed EVs on the other hand require registration charge, driving license. This results in many customers stay away from buying.
- f. Lack of Wide Options:** The buyers of conventional vehicles are hundreds of options. But in case of EV segment the case is completely different. The buyers have very few options and majority of them are also not from the reputed and trustworthy brands. This makes the customers reluctant to buy electric vehicles.

PROSPECTS OF ELECTRIC VEHICLES IN INDIA

- Favourable government policies and subsidies
- Heavy investments from automakers
- Increasing diversity of products widening appeal to different groups
- Growing awareness of air quality and environmental issues
- Rising income levels in Tier-1 cities • Lower Total Cost of Ownership (TCO) for EVs as compared to ICE

ADVANTAGES OF ELECTRIC VEHICLES

- a. Low cost of ownership** - It is a proven fact by many researches that EVs offer way lower cost of ownership in their lifecycle compared to fossil fuel powered vehicles. At times, the cost of ownership for an EV is as low as 27% than a fossil fuel vehicle. The incessant rises of petrol and diesel costs are increasing the cost of ownership further for the conventional vehicles.
- b. Easier to maintenance** - An internal combustion engine usually contains more than 2,000 moving parts. An electric motor onboard an EV on the other hand contain around 20 moving parts. The only major components in an EV are the battery and the electric motor. This makes the EVs much easier for maintenance, reducing the cost of ownership significantly.
- c. State EV policies** - Several state governments across India have already announced their respective EV policies. Some of them promote the supply side, while some promote the demand side. There are EV policies that promote both the supply and demand side through incentives, discounts and other benefits. Delhi EV policy for example is one such state EV policy. These policies are driving the growth of the electric vehicles in India, in a slow but steady manner.
- d. Cleaner environment** - The direct and obvious advantage of adopting electric mobility is the cleaner environment. Electric vehicles don't emit pollutants into the air like their ICE counterparts. The EVs are silent as well unlike their ICE counterparts. This means EVs ensure a cleaner and quieter environment.

CONCLUSION

Electric vehicle making and marketing in India in its infant stage. The future for the electric vehicles is quite encouraging. Government support may help the different players to undertake the manufacturing of electric vehicles on mass scale leading to reduction in the cost. Consumers have all the hope to own and operate the electric vehicle most economically. The future for electric vehicles is very bright in India.

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