

# Electric Vehicles (EV) Sales Analysis and Market Trends: A Comparison between India and Global Market (2020 - 2024)

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## Abstract

The research paper compares the Electric Vehicles (EV) sales in India with Global Market from the year 2020 to 2024. For the research annual sales, market penetration rate and segment-wise purchase patterns are analysed. The databases for sales are analysed using statistical methods and research provides India is rapidly adapting to the EV vehicles. The comparison clearly indicates that Indian Market is far behind the Global Market in adopting electric vehicles. The study of historical nature enables all stakeholders to understand EV market better. The study conducted using Excel and SPSS for making comparison by creating charts and graphs.

## Key words

Comparison, Eco-friendly, Indian EV sales, Growth rate, Global EV sales, Sustainable , Policy, Sales Trend.

## 1. Introduction

The Electric Vehicles (EV) industry is one of the main focus for all stakeholders including Governments. There are many breakthrough in the EV industry which has caught the attention of many customers, Governments. Some of them are Government incentives, Battery technology, consumer awareness. In last preceding five years, India has seen significant changes in customer behaviour towards EVs. There is tremendous growth potential for EVs in near future in India.

Electric Vehicles (EVs) are recognised for their zero emissions, low noise and better comfort and making them more environmentally , economically user friendly compared to Diesel and Petrol vehicles. Despite these advantages India's EV market share stands at 1.5% compared to global average of 14% in 2022, Expected to raise in 2025.

## 2. Review of Literature

Current penetration of EV I India is very and it is only 76000 EV out of 52.6 million vehicles in 2022. It list measures of Increase penetration to 30% was researched in 'Shaping India's EV future: a policy framework inspired by global best practices', 2025 by Arindam Dutta, Sanjeevikumar Padmanaban.

Environmental Benefits and Economic benefits were huge and there were studies to improve the EV penetration. Article , The Evolution of the E-Vehicle Industry and its Path Towards Setting up Dominance in Automobile Industry - A Case Study, Anantha Murthy & Nethravathi P. S concluded with various measure to deepen the EV sales like charging infrastructure, More measures by Governement.

The paper The Charge of the EVs: An Overview of the Indian E-Mobility Roadmap, transition to EVs is essential for sustainable development and Government initiatives such as FAME II policy adoption.

### 3. Objectives

- ❖ To understand Global sales trend with India.
- ❖ Compare the India EV sales with Global EV sales.
- ❖ Compare Indian EV sales with Total (EV plus Non-EV) Global Sales.
- ❖ Analysis of Indian and Global EV sales Trend.

### 4. Research Methodology

The research follows the descriptive and explorative study of Indian and Global EV sales Trend in order to derive the relative percentage of Indian EV Market share. The data is collected from various web sources where the statistics of sales from 2020-2024 (5 Years data) is considered for analysis.

Statistical tools like Table, graphs, charts are adopted for comparison and interpretation of the result.

### 5. Indian EV sales : Scenario

India's electric vehicle (EV) market is experiencing significant growth, with sales crossing 2 million units in 2024. While electric two-wheelers dominate the market, sales of electric cars and buses are also on the rise, reflecting a broader shift towards sustainable transportation. Government initiatives, including subsidies and infrastructure development, are further fueling this growth, although challenges like charging infrastructure and price points remain.

#### 5.1 Sales Figures and Growth:

- Total EV sales in India reached over 2 million units in 2024, a 24% increase compared to the previous year.
- Electric two-wheelers lead the market, accounting for nearly 60% of total EV sales in India, with a 30% year-on-year growth, according to JMK Research & Analytics.
- Electric three-wheelers also constitute a significant portion of the market, with electric cars and buses showing promising growth.
- EV penetration in India's overall vehicle market is estimated to be around 8%, up from 6.8% the previous year.

#### 5.2 Factors Driving Growth

- **Government Support:**

The Indian government is actively promoting EV adoption through various initiatives, including the Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme, which provides subsidies and incentives for EV purchases and charging infrastructure development.

- **Increased Consumer Awareness:**

Growing awareness about the environmental benefits and cost savings associated with EVs is driving consumer demand.

- **Improved Charging Infrastructure:**

While still a work in progress, the expansion of charging infrastructure is making EVs more practical for a wider range of users.

- **Falling Battery Prices:**

Declining battery prices are contributing to the affordability of EVs, making them more accessible to a larger segment of the population.

## 6. Global E V Sales Trends:

2020 turned out to be a surprisingly positive year, with global **EV sales growing by 43% from 2019** and the global electric car industry market share rising to a record 46%.

The year **2021** was a major leap forward for **electric vehicle sales as they doubled from 2020 to 6.75 million**. The number of EVs sold in a week in 2021 was higher than how many were sold in the whole year of 2012. The year **2022** broke records with **EV sales exceeding 10 million**. That resulted in more than **26 million electric cars roaming global roads in 2022**, representing a 60% uptake from 2021.

Carried by a decarbonisation challenge and supported by various policies and incentives, global EV sales kept accelerating in **2023**. According to the IEA, the **global electric car sales reached almost 14 million**, which represented a **35% increase** from 2022. This growth meant that the **global electric fleet rose to 40 million** in 2023.

EVs are to play a central role in the ambitious objective of zero-emission targets set for 2050, and the industry is gearing up for it.

The year **2024** brought an increase of 3 million EVs, bringing the total to **17 million electric cars sold globally** and **exceeding 20%** of new car sales. Overall, the global electric fleet had almost **58 million cars** at the end of 2024.

The outlook for EVs in the near term is promising, with projections indicating a global total of 145 million electric vehicles on the road by 2030, constituting 7% of the total vehicle fleet.

## 7. Statistics of Indian sales and Global sales in EV Sector

Table 1: **India and Global total sales and India and Global EV sales**

Year	India total sales (in Million Units)	India EV sales (in Million Units)	Global sales (in Million Units)	Global EV sales (in Million Units)
2020	25.9	0.12	63.4	3.10
2021	27.5	0.32	65.9	6.60
2022	28.4	1.00	74.6	10.60
2023	30.0	1.53	72.0	14.00
2024	31.3	1.94	78.0	17.00

Graph1: India and Global total sales and India and Global EV sales

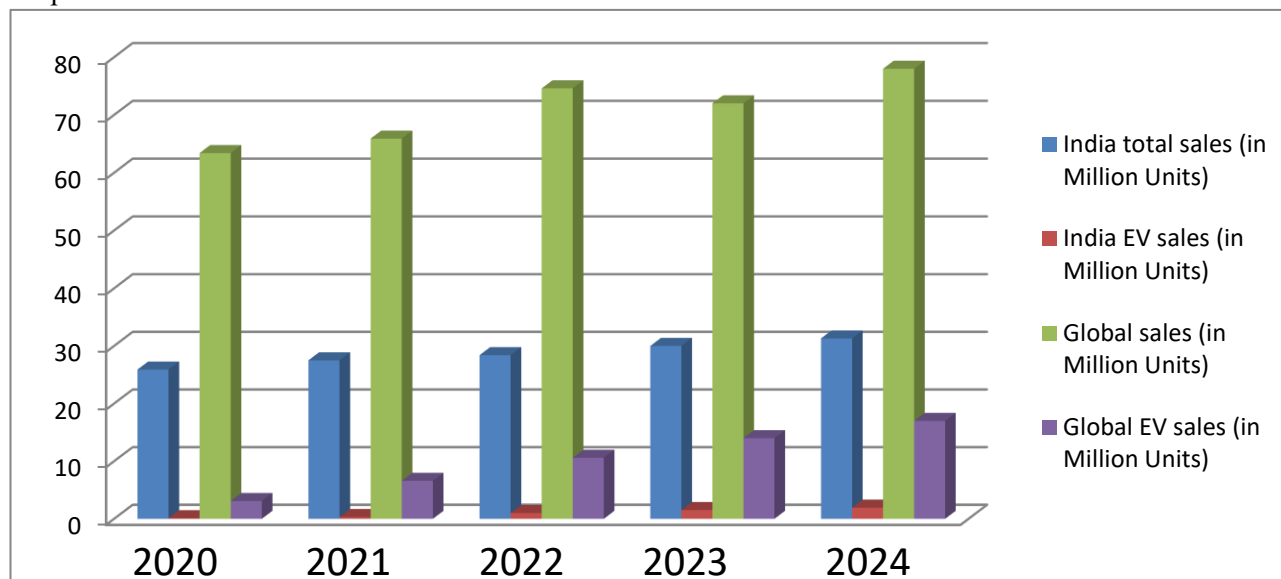
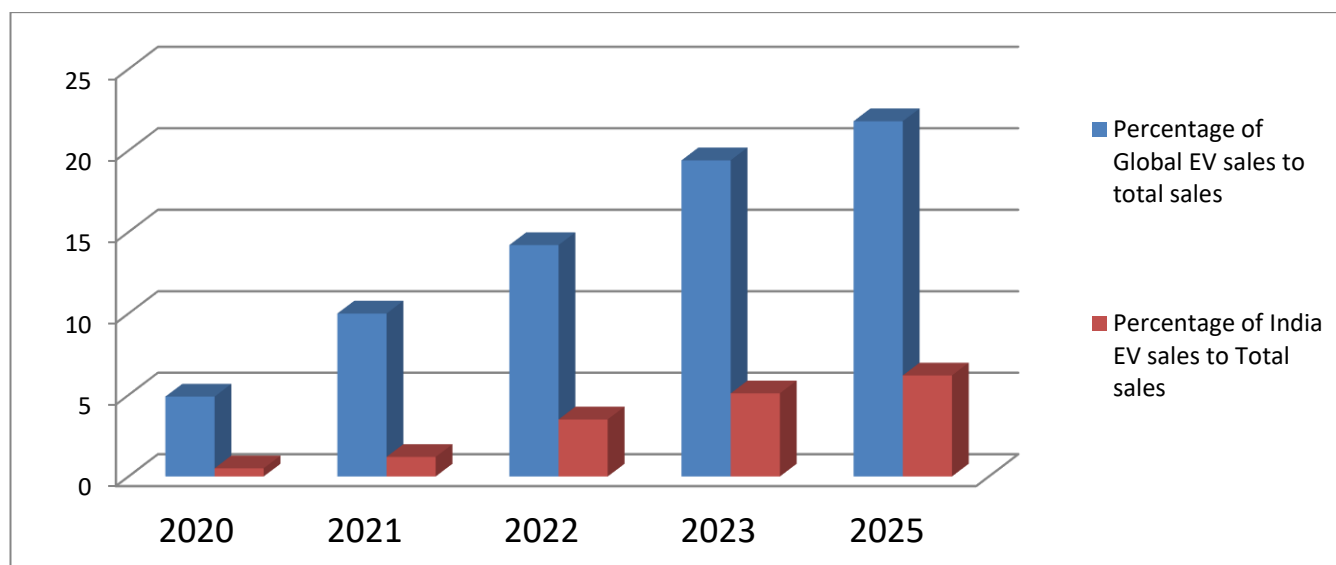


Table 2: Percentage EV sales: India EV sales vs Global EV sales

Year	Percentage of Global EV sales to total sales(percentage)	Percentage of India EV sales to Total sales(percentage)
2020	4.9	0.5
2021	10.0	1.2
2022	14.2	3.5
2023	19.4	5.1
2024	21.8	6.2

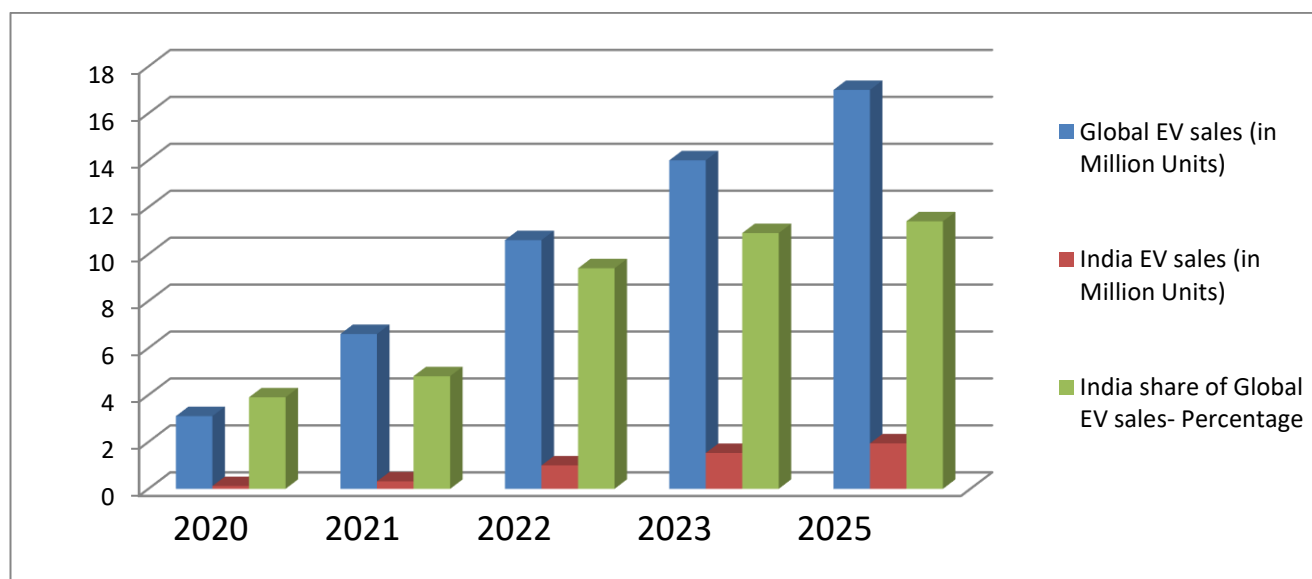
Graph 2:Percentage EV sales: India EV sales vs Global EV sales



**Table 3:Percentage Sales Comparison: India EV sales to Global EV sales**

Year	Global EV sales (in Million Units)	India EV sales (in Million Units)	India share of Global EV sales- Percentage
2020	3.10	0.12	3.9
2021	6.60	0.32	4.8
2022	10.60	1.00	9.4
2023	14.00	1.53	10.9
2024	17.00	1.94	11.4

**Graph 3:Percentage Sales Comparison: India EV sales to Global EV sales**



Data Source:

1. SIAM: Total vehicle sales FY2023-24
2. JMK Research: India EV sales 2020–2024.
3. IEA: Global EV sales 2020–2024.
4. IEA: Global EV sales for 2021
6. IEA: Global EV Outlook 2024:
7. ACEA: Global car sales 2022
8. ACEA: Global new car registrations 2023

## 7. Findings:

1. The % of EV sales in India was 0.5% in 2020, which has raised to 6.2% in 2024, which is an evidence that EV sales is in raising trend.
2. On the other Hand, the rate of growth in Indian EV sales in comparison with growth rate of Global EV sales, there is slow trend of % Growth( Global growth rate: 4.9% to 21.0% In 2024, Indian growth rate: 0.5% to 6.2 % in 2024)
3. As far as two wheelers are concerned, Global sales are relatively less as compared to Indian Two Wheelers sale.
4. Where as the four wheelers show greater sales in global market as compared to Indian Market.

## 8 .Conclusion:

India's electric vehicle (EV) adoption journey faces multifaceted challenges and holds substantial promise. With a rapidly growing automotive sector and the transportation industry contributing significantly to greenhouse gas emissions, the need for transitioning to EVs and zero-emission vehicles (ZEVs) is evident. This shift aligns with global climate commitments and can address India's objectives of reducing oil dependence, curbing air pollution, stimulating job creation, and strengthening the "Make in India" initiative. However, this path is complex, requiring substantial efforts.

In the realm of widespread electric vehicle (EV) adoption, India confronts both formidable challenges and promising opportunities. Our comprehensive study identified pivotal factors influencing EV penetration in India, Although India's progress in EV sales trails behind China, the United States, Germany, and Norway, a promising trajectory is discernible. The 2023 Economic Survey of India forecasts a robust 49% Compound Annual Growth Rate (CAGR) in the Indian EV market from 2022 to 2030, hinting at a positive trajectory, albeit one that may seem ambitious.

This study delved into a comparative analysis India and Global Market trend in sales illuminating areas where substantial financial allocation could catalyze

EV adoption. Recommendations encompassed the refinement of subsidies, dedicated EV parking, implementation of green license plates, and road tax exemptions, all aimed at augmenting the allure of EV ownership.

Effective public awareness campaigns for Indian roads can Emerge as a potent driver for EV adoption.

In our concluding segment, we proffer a series of recommendations rooted in supportive policies, financial strategies, and charging infrastructure development. These recommendations are carefully adapted to India's unique context, drawing insights from the experiences of leading nations. The analysis not only scrutinized sales variations among India and global market, but also probed India's struggle to attract significant Foreign Direct Investment (FDI) in the automobile sector, even with the 100% FDI investment policy , particularly for EV sector. The financial recommendations can be tailored to the distinctive characteristics of the Indian market, addressing specific policy incentive gaps for shared vehicles.

Overall, the Indian EV market is experiencing strong growth and holds significant potential for future expansion. While challenges remain, the increasing adoption of EVs, supported by government initiatives and technological advancements, is paving the way for a more sustainable transportation future in India. In conclusion, while India's target of achieving 30% EV penetration by 2030 may appear ambitious, current statistics reveal a stark reality.

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