



The Market Share and Development Prospects of Electric Scooters and Bicycles in NCR, or the National Capital Region

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Abstract

This study examines the growing market for electric bicycles (e-bikes) and electric two-wheels (e2Ws) in Delhi's National Capital Region (NCR). Historical expansion, contemporary market patterns, consumer behavior, government actions, environmental effects, technological developments, difficulties, and prospects are all included in the study. The study demonstrates how the EV (Electric Vehicle) sector is positioned to revolutionize urban transportation and support sustainable development in India by analyzing Both primary and secondary sources of information sources.



1. Overview

A mix of legislative, economic, and environmental concerns are driving the transition to electric transportation in urban areas like Delhi NCR. A move toward greener and more sustainable modes of transportation has become necessary due to rising air pollution levels and traffic jams.

Electric vehicles, particularly bicycles and two-wheels, provide a cost-effective and environmentally responsible substitute for traditional automobiles with internal combustion engines (ICEs). With an emphasis on the particular opportunities and problems faced by Delhi NCR, this study examines the continuous changes in the EV market.

2. Development of India's Electric Vehicle Market.

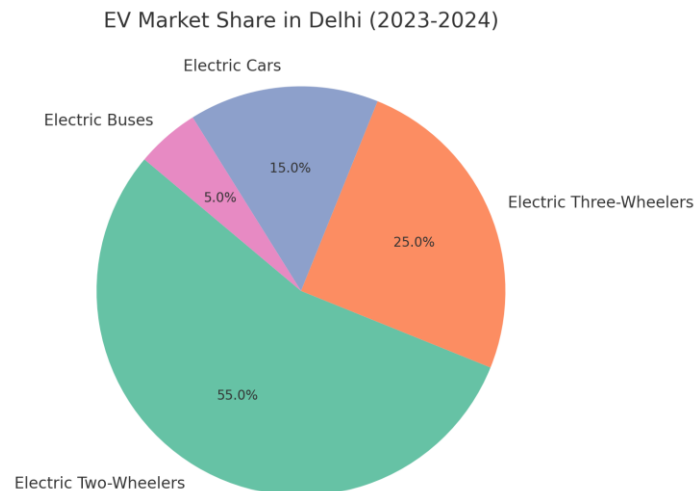
Early in the 2010s, the Indian EV market started to take off, with a focus on electric two-wheels and rickshaws. Government programs-such as the Both electric and hybrid vehicles Manufacturing and Adoption Acceleration (FAME) plan have caused the focus to broaden in recent years.

Improved battery technology, more customer awareness, and increasing investment from automakers have all contributed to the exponential growth in sales of two-wheeled electric vehicles since 2020.

3. Present Market Situation in Delhi NCR

Because of its aggressive policies, high levels of vehicle pollution, and widespread urbanization, Delhi NCR has become a leader in the adoption of EVs. Over 100,000 e2W registrations were made in the region in 2024, primarily for personal and business purposes.

The e-bike market is expanding quickly among students, athletes, and last-mile couriers services, despite being a smaller market. Companies like Destroyer, Motorcade, and Hero Lector are gaining traction in this specialized industry.



4. Major Market Participants and the Competitive Environment

A blend of well-known automakers and innovative startups characterize Delhi NCR's competitive environment. While e-bikes are led by smaller startups, the e2W market is dominated by Raja Auto, Ola Electric, TVS, and Eicher.

Joint ventures and distribution agreements are another way that foreign firms are joining the market, giving consumers more options and raising the bar for technology.

5. Market segmentation and consumer behavior

Cost-effectiveness, environmental awareness, and usability are the main factors influencing consumers in Delhi NCR. Electric two-wheels are widely used by small company owners, delivery workers, and college students.

The market for e-bikes is divided into three segments: eco-conscious urban commuters, health-conscious consumers, and leisure riders.

6. The Delhi government's EV Policy

Delhi 2025 seeks to register 25% of all new cars as electric by 2025. This is one example of government policies and subsidies. Rebates for purchases, exemptions from registration fees, and exemptions from road taxes are examples of financial incentives.

With 250 battery swapping stations and more than 4,646 public charging stations set up throughout the NCR, Developing infrastructure is also a major governmental priority.

7. Infrastructure for Charging and Advancements in Technology

Delhi NCR boasts one of India's most sophisticated EV charging networks, complete with fast chargers, home charging options, and battery-swapping stations.

Innovations in technology including regenerative braking systems, lithium-ion batteries, and Internet of Things integration are improving vehicle efficiency and customer satisfaction.

8. Economic and Environmental Effects

Compared to ICE vehicles, electric bicycles and two-wheels have a substantially less carbon footprint. Every year, one e2W can reduce CO₂ emissions by about one tonne.

The EV industry is helping Delhi achieve its green economy objectives by creating jobs in manufacturing, research and development, and maintenance services.

9. Obstacles in the Market

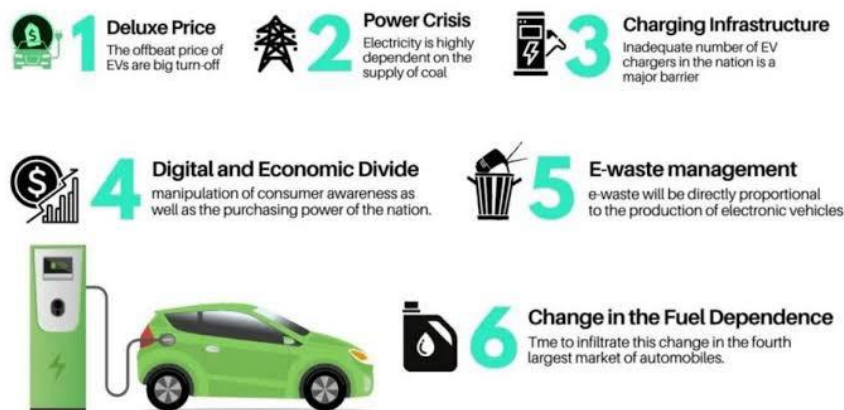
Despite advancements, a number of issues still exist, such as expensive initial expenses, short battery life, and inadequate rural outreach. Adoption is also impacted by range anxiety and insufficient maintenance assistance.

Traditional car dealers' resistance and consumer distrust make market penetration even more difficult.

The main obstacles in the electric vehicle market include the high upfront cost of EVs, limited charging infrastructure, and concerns about battery range and lifespan. Consumer awareness and acceptance remain low, while supply chain issues for key raw materials like lithium affect production.

Additionally, government incentives are sometimes insufficient or inconsistent, there are limited affordable model options, and charging compatibility problems create inconvenience for users.

ELECTRIC VEHICLES INDIA: CHALLENGES



10. Outlooks and Forecasts for the Future

The Delhi NCR EV market is anticipated to expand at a compound annual growth rate (CAGR) of more than 30% through 2030. To maintain this momentum, advancements in battery storage, finance schemes, and legislative incentives will be essential.

Industry projections indicate that by 2030, e-bikes would account foremost new two-wheels (80%) sales, with e-bikes emerging as a popular option for city commuting.

11. Examples and Optimal Techniques

Case Study 1: The potential of digital marketing and direct-to-consumer sales approaches is illustrated by Ola Dielectric's vigorous expansion in Delhi NCR.

A second case study demonstrates successful business-to-business tactics in the e-bike industry through Hero Electra's collaboration with delivery startups.

12. Final thoughts and suggestions

Delhi NCR is at a turning point in its transition to electric vehicles. By means of technological investments, awareness campaigns, and strategic policy making, the region has the potential to become a model for India's EV revolution.

It is imperative that stakeholders work together to harmonize battery and charging procedures technology, fill in infrastructure gaps, and educate consumers.

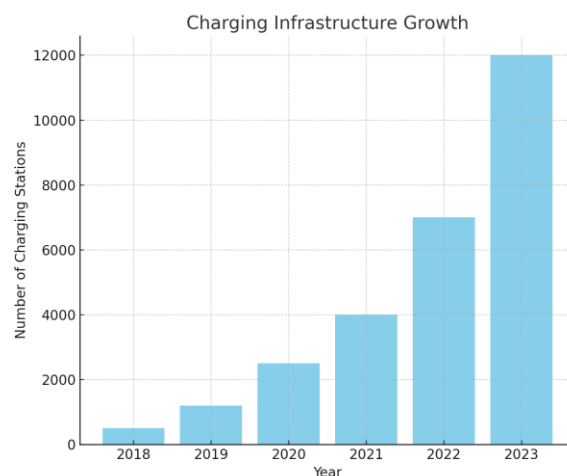
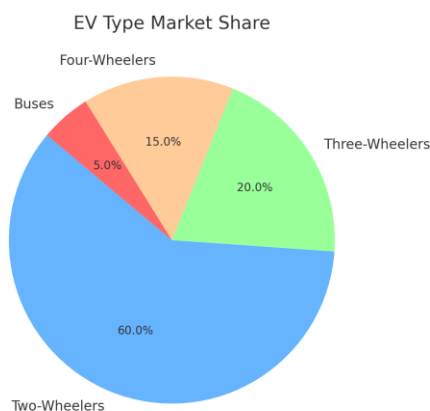
13. Graphical Perspectives on the EV Industry

In Delhi NCR, electric two-wheels are becoming more popular than others.



Here are the two charts:

- Left (Pie Chart): Shows EV market share, with two-wheelers leading at 60%.
- Right (Bar Chart): Displays the growth of charging stations from 2018 to 2023.

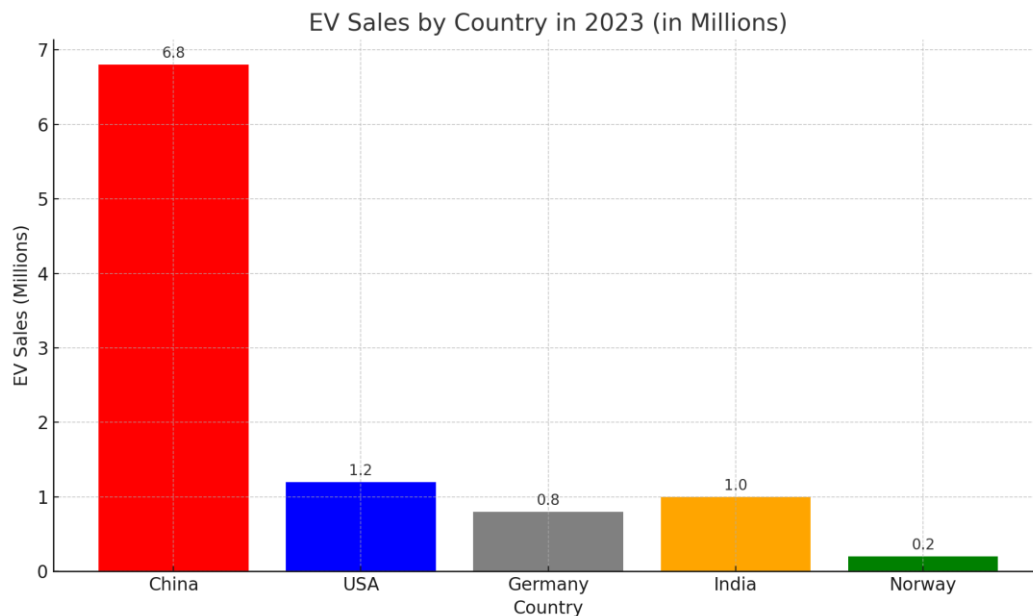


14. Startups' Function in EV Innovation

The adoption of electric vehicles is rising thanks in large part to startups. Starting companies like Bounce Infinity, Revolt Motors, and Zulu are revolutionizing the e-mobility market with creative business models that range from battery swapping to EV leasing services. They frequently fill the holes created by traditional automakers because of their agility, which enables them to quickly adjust to market demands and consumer expectations.

15. International Comparisons and Teachings

Globally, nations like the Netherlands and China have shown themselves to be effective models for the quick adoption of E Vs. Strong government backing, reliable infrastructure as well as private-public partnerships are important components. With the help of these examples, India may develop customized localized tactics that would hasten the expansion of e2Ws in cities and semi-cities.



This bar chart compares EV sales across key countries in 2023:

- China leads significantly with 6.8 million units.
- USA follows with 1.2 million.
- India and Germany are close, around 1 million and 0.8 million.
- Norway, despite its small size, has a notable presence due to high EV adoption rates per capita.

17. Trends in Gender and Mobility

Because they offer safe and reasonably priced mobility options, electric two-wheelers are becoming a powerful tool for women. Incentives and programs aimed at female riders can increase the electric car market share across a range of demographic groups and support the development of inclusive transportation.

18. Effect on Conventional Two-Wheeler Manufacturing

The market dynamics for conventional ICE vehicles are changing as a result of the increase in electric two-wheels. A lot of established manufacturers are now switching to hybrid or all-electric vehicles, making R&D investments, and modifying their supply networks to make room for new technology. The industry has both opportunities and challenges as a result of this shift.

19. Conclusion

Electric vehicles are growing quickly. In India, two-wheelers are the most popular. China sells the most EVs in the world. Charging stations are increasing, which helps more people use EVs. Other countries like the USA, Germany, and India are also growing in EV use.

Note from the Author

In addition to improving my knowledge of the markets for electric vehicles, this research has inspired me to look into new developments in green mobility. I would like to express my appreciation Attending the University of Galgotias for supporting scholarly study in such informative and developing fields.



Citations:

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