

A Study on the Growth and Market Dynamics of Electric Two-Wheelers in India

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ABSTRACT

The electric vehicle (EV) industry in India has witnessed rapid growth over the last decade, driven by rising fuel prices, environmental concerns, technological advancements, and supportive government policies. Among various EV segments, electric two-wheelers (E2Ws) dominate the Indian EV market due to their affordability, suitability for short-distance travel, and widespread usage in personal and commercial applications. This study aims to analyse the growth trends, market structure, and competitive landscape of the electric two-wheeler industry in India. The research is based on secondary data collected from government publications, industry reports, and EV registration databases. The study highlights month-wise and year-wise sales growth, market share of leading manufacturers, and emerging trends such as battery swapping, fleet electrification, and penetration in tier-II and tier-III cities. The findings indicate a strong upward trajectory for E2Ws, positioning them as a key driver of sustainable mobility in India and a crucial component of the country's future transportation ecosystem.

Keywords: Electric Two-Wheelers (E2Ws), Market Growth, Sustainable Mobility, EV Market Structure, Government Policy,

Introduction

India is one of the world's fastest growing markets for Electric Two Wheelers. The two-wheeler segment dominates the Indian automobile market, accounting for more than 70% of all registered vehicles. E2Ws are a convenient and efficient mode of transportation for short-distance travel, especially in cities. In India, the two-wheeler segment accounts for more than 50% of all petrol transactions. Two-wheelers are utilised in commercial applications such as logistics fleets for food and groceries, parcel and courier services, and passenger transport-related services. Two-wheelers that can effectively negotiate traffic are also being tested for first and last-mile connection via shared trips and bike taxi services. According to a study, electric two-wheeler sales penetration in India might surpass 80% by 2030.

The Electric Vehicle (EV) market in India is quickly evolving into a complex sector that is governed by various demands made by various key stakeholders. India is on track to become the largest EV market by 2030, with a total investment opportunity of more than US\$ 200 billion over the next 8-10 years. Electric vehicle registrations have climbed by 168%, from 120,000 in 2020 to 330,000 in 2021. India's EV sector includes electric two-wheelers (E2Ws), electric three-wheelers (E3Ws), electric four-wheelers (E4Ws) and electric buses (E-Bus). With a growing population, increased environmental concerns, and rising fuel

prices, there is a growing desire for economical and sustainable transportation solutions, and E2Ws are the best-suited option. India is the largest E2W and E3W manufacturer in the world. The Indian government has been encouraging the adoption of electric vehicles (EVs) through a variety of policy incentives, including subsidies, tax incentives, and the construction of charging infrastructure.

Market Structure of Electric Vehicle industry

The market structure of electric vehicle industry is rapidly growing, globally competitive oligopoly (few dominant players) shifting towards monopolistic competition, characterized by intense innovation, high capital investment, and significant government influence, with dominant regional markets in China, Europe, and the US, but seeing strong growth in emerging markets like India (especially 2- & 3-wheelers), driven by battery tech, charging infrastructure, and environmental policies. Key players like Tesla, traditional OEMs (Mercedes, BMW), and Chinese manufacturers compete fiercely, while new segments (batteries, charging, software) create diverse opportunities

The electric vehicle industry is still a dominant segment accounting for around 58 per cent of total EV sales in India. A total of 605501 units were sold in first half of the year showing a healthy year on year growth of around 15 per cent compared to the first half of 2024. The market structure has become more competitive. TVS Motor (24 per cent) and Bajaj Auto (24 per cent) are now the joint leaders, while Ola electric (20 per cent) has seen its share moderate after its 2023-24 peak. Two-wheeler adoption is driven by affordability, shared mobility and delivery fleet electrification. The growth of battery swapping ecosystems and expanding low speed e-scooter usage in tier two and three cities is also adding penetration.

Statement of the Problem

India's dependence on fossil fuels, increasing urban congestion, and rising environmental pollution have intensified the need for sustainable transportation solutions. Although electric two-wheelers offer a viable alternative to conventional petrol-powered vehicles, challenges such as infrastructure limitations, cost sensitivity, and market competition persist. Understanding the growth pattern, market structure, and adoption drivers of electric two-wheelers is essential for policymakers, manufacturers, and consumers. This study seeks to examine these aspects in the context of the rapidly evolving Indian E2W market.

The primary objectives of the study are:

- To study the growth trend of electric two-wheelers in India.
- To analyse the market structure of the electric two-wheeler industry.
- To examine month-wise and year-wise sales performance of E2Ws.

Methodology

The study follows a descriptive and analytical research design, focusing on understanding the growth patterns and market dynamics of electric two-wheelers in India. The study is based on secondary data collected from Society of Manufacturers of Electric Vehicles (SMEV), Vahan Portal, EV Reporter Magazine, Redseer Strategy Consultants, and Government and industry publications. In order to analyse the data, the study used simple percentage analysis, growth rate analysis, Compound Annual Growth Rate (CAGR) and tabular and graphical representation were also used.

Limitations of the Study

1. The study relies solely on secondary data, which may have inherent limitations.

2. The accuracy of the analysis depends on the reliability of published reports and databases.
3. The study does not include primary data such as consumer opinions or dealer feedback.
4. Market dynamics may change due to policy shifts or technological advancements.

Significance of the Study

- Helps to understand the rapid expansion of electric two-wheelers in India.
- Useful for policymakers to assess the effectiveness of EV policies and incentives.
- Assists manufacturers and investors in understanding competitive dynamics.
- Provides academic insight into one of India’s fastest-growing EV segments.

Top 35 Electric Two – Wheeler Manufacturers in 2025

Rank	Name of the Company	2025	2024	% Change
1	TVS Motor Co	298867	220817	35%
2	Bajaj Auto	269836	193660	39%
3	Ather Energy	200785	126357	59%
4	Ola Electric	199316	407700	-51%
5	Hero MotoCorp (Vida)	109167	43710	150%
6	Greaves Electric Mobility	56639	36149	57%
7	Bgauss Auto	22883	18033	27%
8	Pur Energy	17847	5539	222%
9	River Mobility	15260	2515	507%
10	Kinetic Green	12610	11460	10%
11	Revolt Motors	11015	9955	11%
12	E-Sprinto Green Energy	8418	882	854%
13	Simple Energy	6039	1417	326%
14	Lectrix E-Vehicles	5335	5255	2%
15	Wardwizard Innovations	4516	10922	-59%
16	Bounce Electric	4095	6972	-41%
17	Honda M&S India	3451	NEW	--
18	Oben Electric Vehicles	3032	634	378%
19	KLB Komaki	2993	3570	-16%
20	Motovoit	2893	310	833%
21	Odysse Electric Vehicles	2629	1534	71%
22	Okinawa Autotech	2221	4855	-54%
23	Quantum energy	2221	5612	-60%
24	Okaya EV	1901	6104	-69%
25	Ultraviolette Automotive	1368	408	235%
26	Battre Electric Mobility	1202	3102	-61%
27	Gaura	1121	437	157%
28	Booma Innovative	1114	851	31%
29	Ivoomi Innovation	745	1115	-33%
30	Matter Motor Works	627	24	2513%

31	Sokudo Electric India	611	418	46%
32	Hero Electric Vehicles	515	2916	-82%
33	Yadew Tech (Importer)	500	11	4445%
34	Warivo Motor India	475	118	303%
35	Goreen E-Mobility	340	1372	-75%

Source: Vahan, Jan.1 – 2026

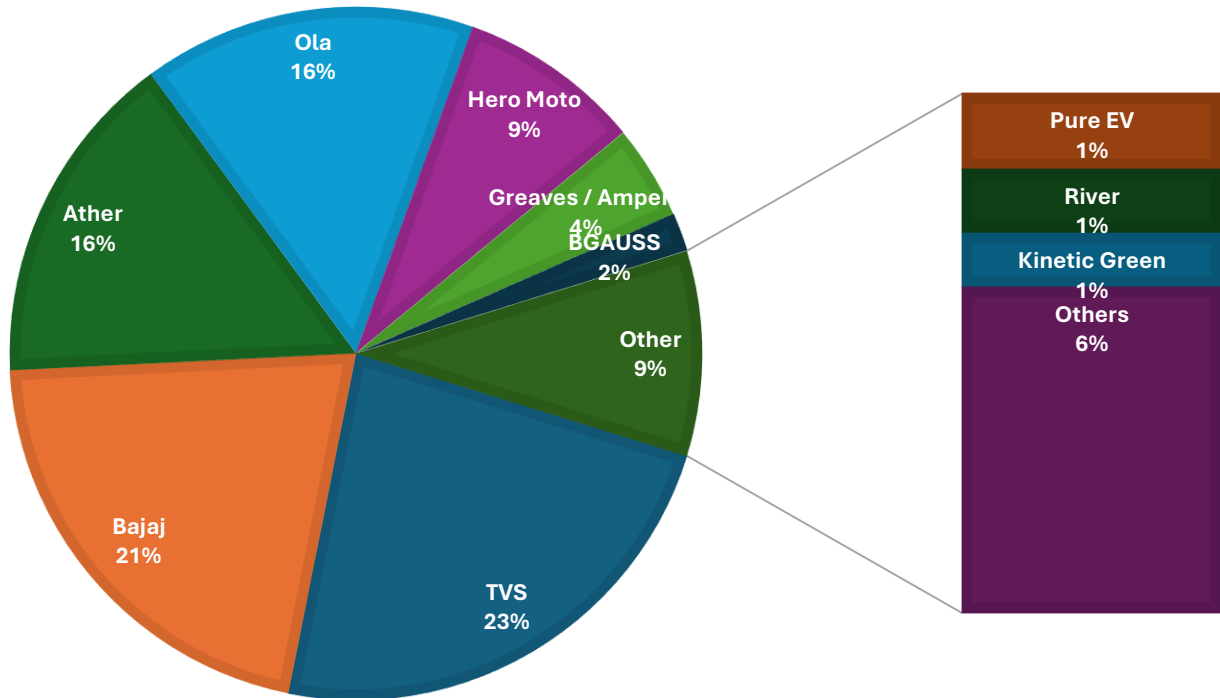
The above table clearly reveals the performance of top 35 electric two – wheeler manufacturers in 2025. It is seen from the data given in the table that TVS, Bajaj, and Ather dominate in the manufacture of 2025, driven by strong dealer networks and reliability perception. On the contrary, Ola Electric (-51%) is the standout decline — biggest volume drops among top players. The high performers are Yadew Tech (+4445%), Matter Motor Works (+2513%), E-Sprinto (+854%), Motovoit (+833%). The market pressure is for Hero Electric (-82%), Okaya (-69%), Battre (-61%), Quantum (-60%), Wardwizard (-59%). This may be due to distribution, quality perception, and subsidy impact.

Top Selling Electric 2 Ws

Sl.No	Vehicle Category	2025	2024	Difference	% Growth	% Share
1	TVS	298881	220819	78062	35.35	23.35
2	Bajaj	269847	193663	76184	39.34	21.08
3	Ather	200797	126357	74440	58.91	15.69
4	Ola	199318	407700	-208382	-51.11	15.57
5	Hero Moto	109168	43712	65456	149.74	8.53
6	Greaves / Ampere	56486	35060	21426	61.11	4.41
7	BGAUSS	22883	18033	4850	26.90	1.79
8	Pure EV	17847	5539	12308	222.21	1.39
9	River	15261	2515	12746	506.80	1.19
10	Kinetic Green	12610	11460	1150	10.03	0.99
11	Others	76853	84558	-7705	-9.11	6.00
	TOTAL	1279951	1149416	130535	11.36	100.00

Source: Vahan, Jan.10 – 2026

TOP SELLING ELECTRIC 2WS IN 2025



Month wise – Registered Electric Two-wheeler Sales in India

Sl. No	Period	Sales	% growth
1	December.21	24725	--
2	January .22	27568	11.50
3	February.22	32416	17.59
4	March.22	49591	52.98
5	April 22	49141	-0.91
6	May 22	39438	-19.75
7	June 22	42245	7.12
8.	July 22	45563	7.85
9	August 22	51517	13.07
10	September 22	52999	2.88
11	October 22	79844	50.65
12	November 22	76400	-4.31
13	December 22	64349	-15.77
14	January 23	64648	0.46

15	February 23	66003	2.10
16	March 23	86067	30.40

Source: Society of Manufacturers of Electric Vehicles (SMEV)

Month wise - registered electric two-wheeler sales in India are given in the table. Strong growth phase was observed in March 2022 and October 2022. It shows a sharp spike, may be due to typical financial year-end buying and festive season impact. In March 2023 (86,067 units sales) is the highest monthly volume in this period. The slowdown was noticed in May 2022 (-19.75%) and Dec 2022 (-15.77%). From June–September 2022, sales grow steadily (7–13%), indicating market maturity. Again, Jan–Feb 2023 shows flat but stable demand before the March surge. Monthly sales grew from 24,725 (Dec’21) to 86,067 (Mar’23).

The below line graph depicts the registered E2W sales between December 2021 to March 2023. It clearly illustrates the rising trajectory of E2W penetration in the Indian economy. In the month of March 2023, 86,067 registered E2W sales were recorded by the Society of Manufacturers of Electric Vehicles (SMEV).

Year wise Sales of E-2 Wheelers in India

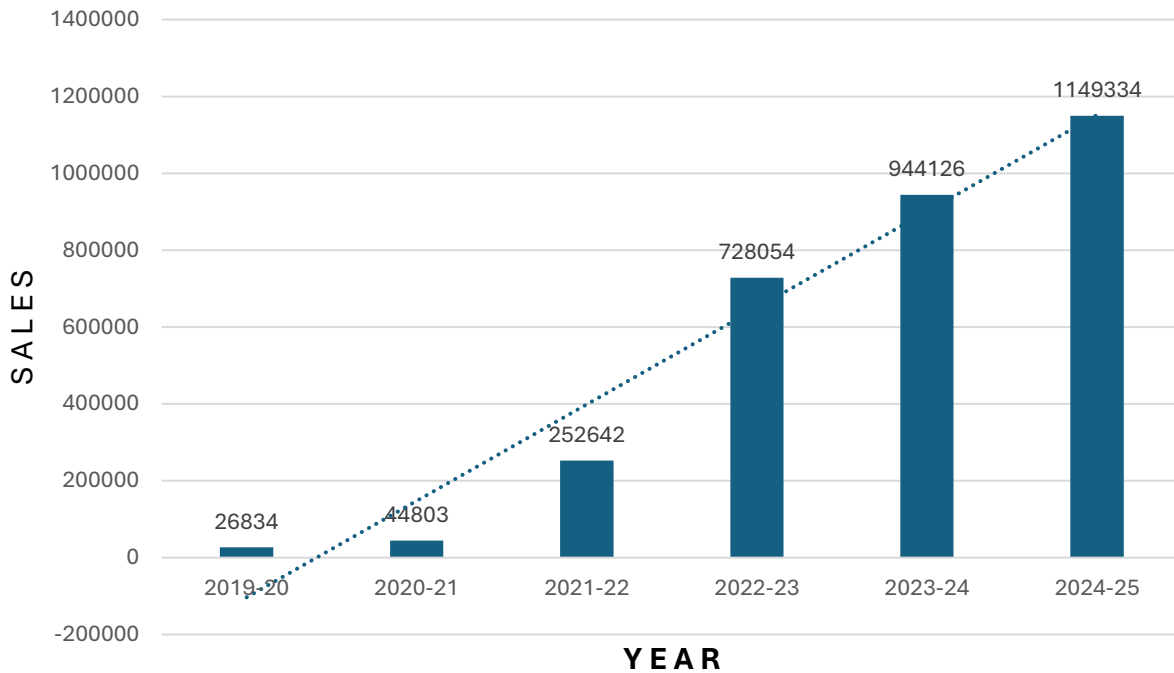
Year	Volume of Sales	% growth
2019-20	26834	--
2020-21	44803	66.96
2021-22	252642	463.90
2022-23	728054	188.18
2023-24	944126	29.68
2024-25	1149334	21.74
CAGR	112%	

Source: Vahan, Jan.10 – 2026 Note: CAGR: Compound Annual Growth Rate

Based on the data provided and current industry reports for the fiscal year ending in 2025, the electric two-wheeler (E-2W) market in India has reached a significant milestone, crossing the 1.1-million-unit mark for the first time. While the market continues to grow, the triple-digit growth rates seen in 2021-2023 have stabilized into a more mature growth phase. The year 2025 marked a major shift as legacy manufacturers like TVS Motor Co. and Bajaj Auto gained significant ground. By the end of 2025, TVS emerged as the market leader in monthly registrations, overtaking Ola Electric, which saw its market share decline due to service concerns and increased competition. E-2Ws now account for approximately 6.3% of the total two-wheeler market in India (including petrol models), up from roughly 6% in the previous year.

The industry is currently navigating the transition from the FAME-II subsidy to the PM E-DRIVE scheme. This has led to a reduction in upfront subsidies, pushing manufacturers to launch more "affordable" variants (like the Bajaj Chetak C25 and TVS iQube entry-level models) to keep prices competitive. The market is consolidating around the top 5–6 players (TVS, Bajaj, Ola, Ather, and Hero Vida), who now control nearly 90% of the total high-speed electric scooter sales. The Compound Annual Growth Rate (CAGR) of 112% over these five years is exceptionally high, reflecting the industry's jump from a niche experiment to a mainstream transport category.

SALES OF E2 WHEELERS IN INDIA



E-2W Sales in 2025 (Month wise) in India

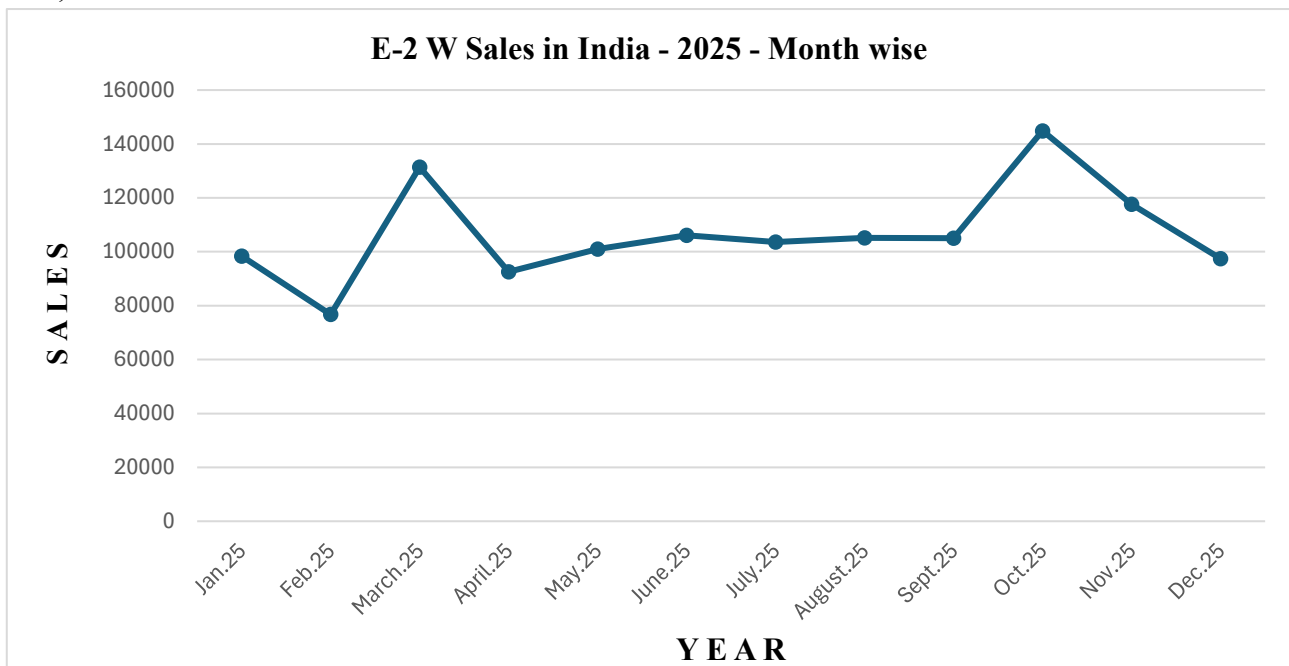
Sl.No	Month	E-2W Sales	% Growth
1	January.25	98426	--
2	February.25	76720	-22.05
3	March.25	131458	71.35
4	April.25	92535	-29.61
5	May.25	101061	9.21
6	June.25	106056	4.94
7	July.25	103604	-2.31
8	August.25	105118	1.46
9	September.25	105032	-0.08
10	October.25	144894	37.95
10	November.25	117648	-18.80
12	December.25	97399	-17.21
T O T A L		1279951	

Source: EV Reporter January 2026 Magazine

The monthly data for electric two-wheelers (E-2Ws) in India (2025) reflects a landmark year with total annual registrations crossing the 1.27 million for the first time. The year was characterized by two major spikes like a fiscal-year-end surge in March and a record-breaking festive season in October. The month

October became the highest-selling month in the history of the Indian E-2W industry. The surge was driven by the Diwali/Navratri festive season and the introduction of "Battery-as-a-Service" (BaaS) models by players like Ather, which significantly lowered upfront costs for buyers. In the month March (1.31 Lakh and add). This high volume was primarily due to the fiscal year-end rush, as customers and businesses looked to utilize available tax benefits and subsidies before the potential transition of government incentive schemes.

The year 2025 saw a dramatic shift in power. TVS Motor Company emerged as the market leader for a significant portion of the year (topping charts for 8 months), while Bajaj Auto and Hero Vida saw triple-digit year-on-year growth. Conversely, Ola Electric faced a sharp decline in market share due to service-related challenges and increased competition from legacy manufacturers. It is observed from the data given in the table that between April and September, the market stabilized at a "baseline" of approximately 1,00,000 units per month, indicating that E-2Ws have moved beyond the "early adopter" phase and into mainstream acceptance. In 2025, the industry maintained an average of approximately 106,662 units per month,



**Exports of E2W from India
(in US\$ Millions)**

Sl. No	Year	Exports
1	2017	17.6
2	2018	20.2
3	2019	21.2
4	2020	17.4
5	2021	15.1
6	2022	13.5
7	2030*	30.0

Source: Redseer Strategy Consultants

Note: * Forecasted Export value for 2030

Based on recent trade data and industry reports from late 2025 and early 2026, India's electric two-wheeler (E-2W) exports have seen a dramatic turnaround. While the period between 2020 and 2022 was a low point due to pandemic-related supply chain disruptions and a focus on domestic demand, the years 2023–2025 have marked the "Global Expansion" phase.

The observation from the data is that companies like TVS Motor Co. and Bajaj Auto have utilized their existing global distribution networks (across Africa, Latin America, and SE Asia) to push "Made-in-India" electric scooters. Indian brands have established assembly points in countries like Nepal, Colombia, and the Philippines, which are now receiving high volumes of E-2W kits from India. Unlike the early low-speed models exported in 2017-2019, the current exports are high-performance models (like the TVS iQube and Bajaj Chetak) that meet international safety and performance standards. Government initiatives like the Production Linked Incentive (PLI) scheme have encouraged OEMs to target global markets, leading to the Revised 2030 Projection. Industry experts now believe the \$30M target set years ago will be far exceeded, potentially crossing \$85M as India positions itself as a global hub for affordable EVs. The Major Export Destinations (2025) are Nepal (remains the largest market due to favourable import duties on EVs), Sri Lanka, Latin America (particularly Colombia and Mexico) and Southeast Asia (Thailand and Vietnam)

Conclusion and Suggestions

The study reveals that the electric two-wheeler (E2W) segment has emerged as the backbone of India's electric vehicle ecosystem. With the two-wheeler segment accounting for a dominant share of the Indian automobile market, the transition from internal combustion engine vehicles to electric two-wheelers is both economically and environmentally significant. The analysis of year-wise and month-wise sales data clearly indicates a strong and consistent growth trend in E2W adoption, particularly after 2021, supported by government incentives, rising fuel prices, and increased consumer awareness toward sustainable mobility.

The market structure of the electric two-wheeler industry in India reflects a shift from early-stage dominance by startups to increasing participation and leadership by established automobile manufacturers such as TVS Motor and Bajaj Auto. While new-age players like Ola Electric initially captured substantial market share, recent trends indicate a consolidation phase where reliability, distribution networks, and product quality are becoming critical success factors. The growth of players like Ather Energy and Vida (Hero MotoCorp) further highlights the importance of technology, brand trust, and after-sales support. Additionally, the expansion of battery swapping infrastructure, fleet electrification in logistics and shared mobility, and increasing penetration in tier-II and tier-III cities have significantly contributed to the growth of the E2W market. Despite short-term fluctuations in monthly sales, the long-term outlook remains highly positive. Overall, electric two-wheelers are poised to play a crucial role in achieving India's clean energy goals, reducing urban pollution, and transforming the country's transportation landscape.

Based on the analysis, we can conclude that India is at the cross-roads and a shift to electric mobility, particularly, in the two-wheelers segment, may happen faster than anticipated. There is a positive mindset about electric mobility among the consumers and recent rise in the price of petroleum fuels has played a major role towards this shift. Public awareness about electric mobility has increased. Demand incentives increase the penetration level of electric two-wheelers. But more important issues appear to be the manufacturing cost of the vehicle which is mainly influenced by the cost of the battery. Reduced

dependence on the import of electric vehicle components and sub-systems may be one of the crucial factors in enhancing domestic manufacturing capacity along with other policy related measures.

Suggestions

Based on the findings of the study, the following suggestions are offered:

1. *Strengthening Charging and Battery Swapping Infrastructure:* The government and private players should accelerate the development of charging stations and battery swapping networks, especially in semi-urban and rural areas, to reduce range anxiety and increase adoption.
2. *Continued Policy Support and Incentives:* Sustained government support in the form of subsidies, tax benefits, and reduced GST rates is essential to maintain affordability and encourage first-time EV buyers.
3. *Focus on Quality and After-Sales Service:* Manufacturers should prioritize product durability, battery safety, and reliable after-sales service to build long-term consumer trust and reduce market volatility.
4. *Encouraging Fleet Electrification:* Greater incentives should be provided for commercial fleet operators in logistics, delivery, and shared mobility services to accelerate large-scale E2W adoption.
5. *Promoting Indigenous Manufacturing:* Encouraging local manufacturing of batteries and key EV components can reduce dependency on imports, lower costs, and strengthen India's position as a global E2W hub.
6. *Consumer Awareness and Education:* Awareness programs highlighting long-term cost savings, environmental benefits, and ease of maintenance of E2Ws can further boost consumer confidence and acceptance.
7. *Technological Innovation:* Continuous investment in battery technology, vehicle software, and energy efficiency will be critical for manufacturers to remain competitive in an increasingly crowded market.

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