

India at the cusp of **EV Revolution**



PURE

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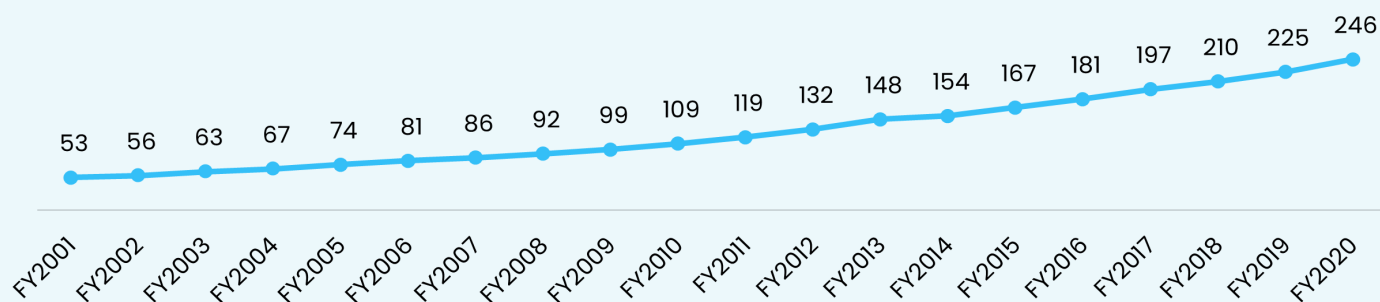
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Mobility Transformation in India

The mobility sector in India has witnessed a remarkable transformation over the past 30-40 years. As economic liberalization unfolded in the 1990s, vehicle ownership surged. From 53.4 motor vehicles per 1000 population in FY 2001, the number jumped to 246 in FY 2020. ([Statista, 2020](#))

No. of vehicles per 1,000 population in India



At present, Indian automobile industry is a significant contributor to the macroeconomic growth, contributing **7% to overall GDP**, while providing employment to **over 35 million people**. ([Business Today, 2024](#))

As India accelerates its shift towards cleaner energy, the electric vehicle (EV) market is set to play a pivotal role in reducing emissions and transforming the country's energy landscape. With the government targeting 30% of new vehicle sales to be electric by 2030, the segment is projected to grow at **over 40% CAGR until 2027**. ([Economic Times, 2024](#))

Two-wheelers continue to dominate India's mobility landscape, making up nearly 75% of the total vehicle population. ([Mckinsey, 2023](#)) In recent years, the landscape has started to shift towards electric mobility, particularly in the two-wheeler segment. In 2023, over 86% of Indian consumers indicated a willingness to consider electric two-wheelers for their next purchase, signaling a massive potential for growth. ([Mckinsey, 2023](#))

Electric Vehicles – Driving the push towards Sustainable Mobility

The rapid development of urban centers and the expansion of transportation networks have undeniably improved mobility across the globe. However, this progress has come at a significant environmental cost, with the transportation sector accounting for **over 20% of direct CO2 emissions** from fuel combustion ([International Energy Agency, 2020](#)).

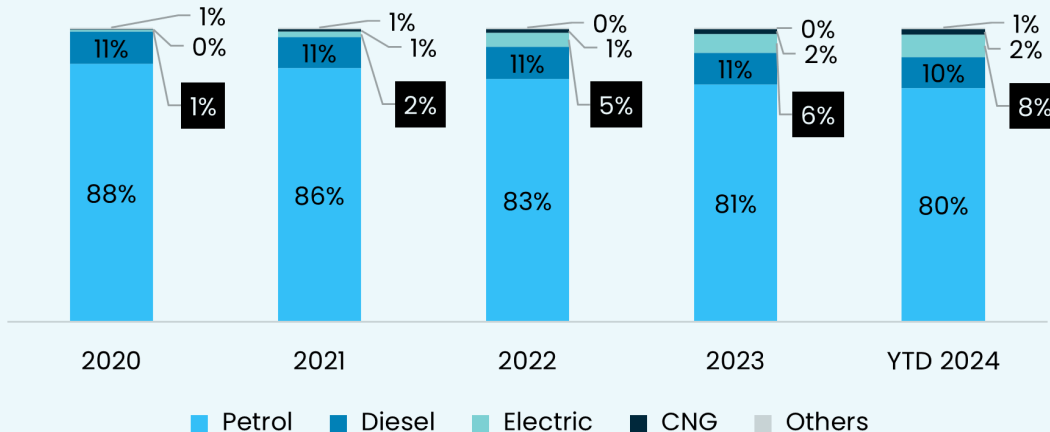
In India, road transport alone contributes to **about 12% of the nation's CO2 emissions** ([IEA Report with NITI Aayog](#)). While mobility needs have been effectively addressed with the rise of personal and commercial vehicles, sustainability remains a critical challenge. In this regard, Electric vehicles (EVs) are an appealing solution to this problem.

The adoption of electric vehicles (EVs) is driving a significant transformation in the automotive industry, positioning EVs as a key growth catalyst. As demand surges for cleaner and more efficient mobility solutions and government initiatives, such as the **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME)** schemes, the EV market is propelling innovation, new business models, and investments, particularly in emerging markets like India. This shift isn't just a response to environmental concerns but is shaping the future of the automotive sector, with EV technology becoming central to industry expansion.

India's EV Landscape

India's EV sector is rapidly evolving, with **over 1.5 million electric vehicles** already on the road by 2023. By 2030, it is expected that India will have approximately **50 million electric vehicles** on its roads, with the market size projected to reach **USD 48.6 billion**. ([Autocar](#))

Vehicle Sales – By Fuel Type

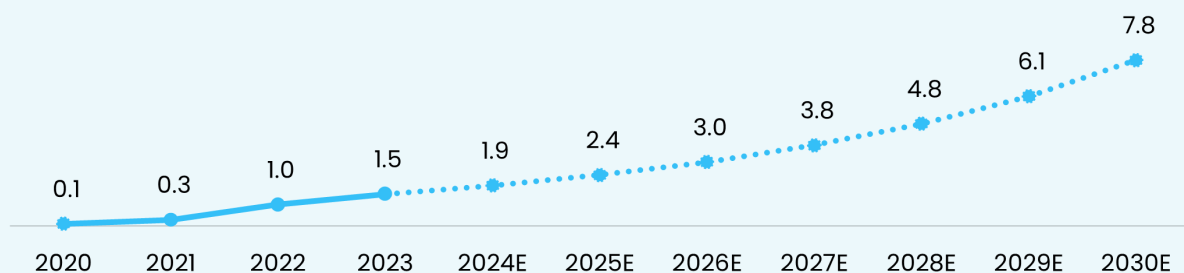


Share of EVs in total vehicle sales increased from 1% in 2020 to 8% in 2024.

Source: [Vahan Portal Data](#)

EV Sales Forecast ([Source](#))

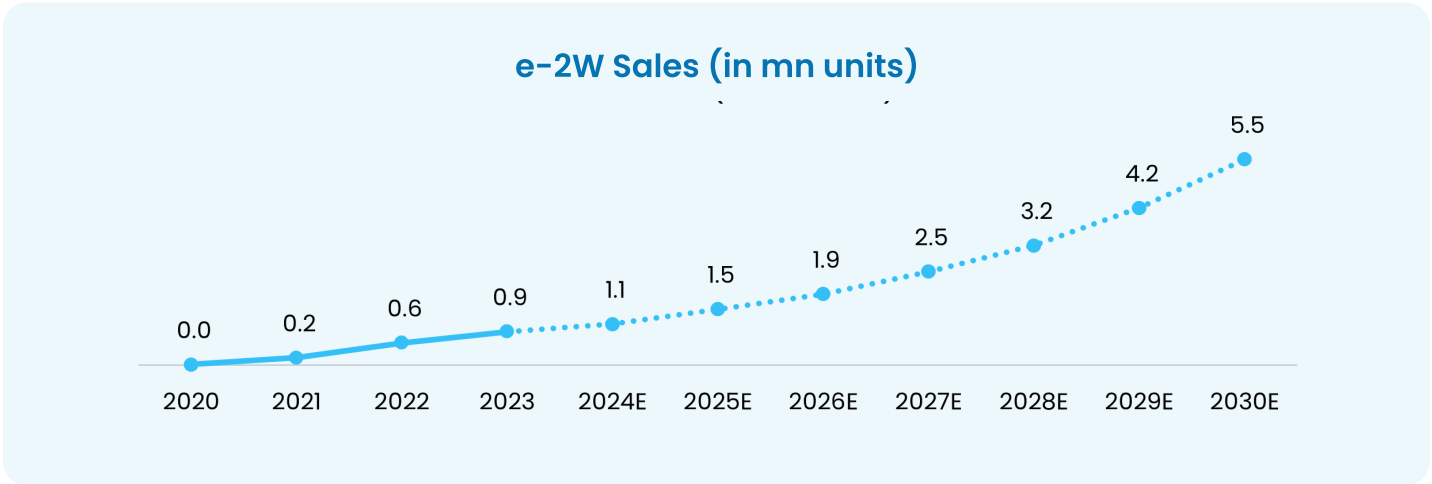
EV Sales (in mn units)



*Estimates consider 30% EV penetration target as suggested by Niti Aayog

The e-2W segment accounts for a significant portion of the EV growth, with over 900,000 electric two-wheelers sold in FY 2024 alone, a 33% increase compared to FY 2023 ([Vahan Portal](#)). Of the total EV sales in India, nearly 60% is accounted for by e-2W segment. With the support of favorable government policies and an increasing number of start-ups entering the market, the e-2W sector is flourishing.

e-2W Sales Forecast [\(Source\)](#)



*Estimates consider 30% EV penetration target as suggested by Niti Aayog

EV Investment Landscape

The Private Markets investment landscape for Electric Vehicles in India is promising. PE investments during the 5-year period from 2020 to 2024 grew at 48% CAGR. From \$78 mn in 2020, the PE deal value in Electric Vehicles grew to \$552 mn in 2024 (YTD). While the M&A activity has been stable across the last 5 years, there has been a jump in deal value, from \$20 mn in 2021 to \$143 mn in 2024 (YTD). Exit volume from the segment is at lower levels, suggesting investors are optimistic about future growth opportunities of the industry.

At present, there are 399 startups in India within the Electric Vehicles, with more players set to join in coming years. [\(Niti Aayog\)](#)

Key Players

Key e-4W Players	Key e-2W Players	Key Battery Manufacturers	Key Charging Station Providers
<div>TATA MOTORS Connecting Aspirations</div> <div>Mahindra ELECTRA</div> <div>BLU SMART MOBILITY</div>	<div>OLA ELECTRIC</div> <div>BAJAJ</div> <div>TVS</div> <div>Ather</div>	<div>EXIDE</div> <div>AMARA RAJA Gotta be a better way</div> <div>KABRA Extrusion Technik</div>	<div>BOLTEARTH</div> <div>charzer</div> <div>TATA POWER</div>

The Role of Renewable Energy

To ensure that e-2Ws fulfill their potential as a low-carbon solution, it is crucial to integrate renewable energy into their charging infrastructure. The widespread use of solar-powered battery chargers and rooftop microgrids, especially in rural and town areas, can significantly reduce the carbon footprint of electric vehicles. With ample rooftop space available in rural regions, solar-powered systems are a practical solution to ensure that electric 2Ws are truly emissions-free.

With the evolution of Li-ion battery and IoT/AI technologies, e-2Ws can also act as vehicle-to-grid (V2G) by plugging them back into grid during the working/vehicle-idle hours, which offers efficient power distribution by balancing the demand and easing the strain on the system.

Building the Ecosystem for e-2Ws

The successful adoption of electric two-wheelers relies not only on the vehicles themselves but also on the ecosystem that supports them. An efficient network of charging and battery swapping stations, advancements in battery technology with Smart connectivity, and policy incentives are essential to making e-2Ws a practical choice for everyday commuters. The government, in partnership with private players, is already working to create the necessary infrastructure. However, more needs to be done to improve the availability of charging/swapping stations, skilled technicians and a deeper network of after-sales services to ensure vehicle uptime of 100%, especially in smaller cities and rural areas.

PURE EV Case Study: Pioneering Sustainable Mobility

PURE EV, a Hyderabad-based electric vehicle startup incubated at IIT Hyderabad, is contributing to sustainable mobility by focusing on electric two-wheelers and energy storage solutions.

The company was founded in 2015 by Nishanth Dongari, an associate professor at IIT Hyderabad, and Rohit Vadera. It aims to make electric mobility accessible and reliable for Indian consumers. PURE EV's commitment to sustainable energy began with their expertise in energy storage technology, which later evolved into the development of electric vehicles and lithium battery systems designed for India's diverse terrain.

"PURE EV was founded keeping in mind the aspirational needs of Indian customers to deliver to them a reliable, cost-effective scooter that also speeds up the transition from petrol to EVs in the two-wheeler mobility segment." - Rohit Vadera, CEO of PURE EV.

PURE EV stands out as one of the few electric two-wheelers (e-2W) OEMs with advanced R&D capabilities and the technology to manufacture its own batteries. The company is a leader among born-electric e-2W manufacturers, particularly in terms of technological innovation, as demonstrated by its 100+ intellectual property filings. This strong focus on R&D underscores its commitment to advancing battery technology and electric mobility solutions.

The company has grown at 92.23% CAGR in the last 5 years, jumping from total income of INR 10.3 crore in FY 2020 to INR 140 crore in FY 2023. The company is currently also exporting its products to South Asia and has plans to expand into the Middle East and African markets. In terms of growth, the company has seen significant success, with over 50 dealer outlets across 14 states and a manufacturing capacity of 2,000 units per month.

80%

PURE EV customers clock a daily commute of more than 40 KM.

Rs. 450 cr

Total savings in running costs by PURE EV customers

20%

Less Lithium consumption per km than other key e-2W manufacturing peers

Rs. 60K


Savings per customer

Source: PURE EV Impact Report



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