



Revolutionizing Automotive

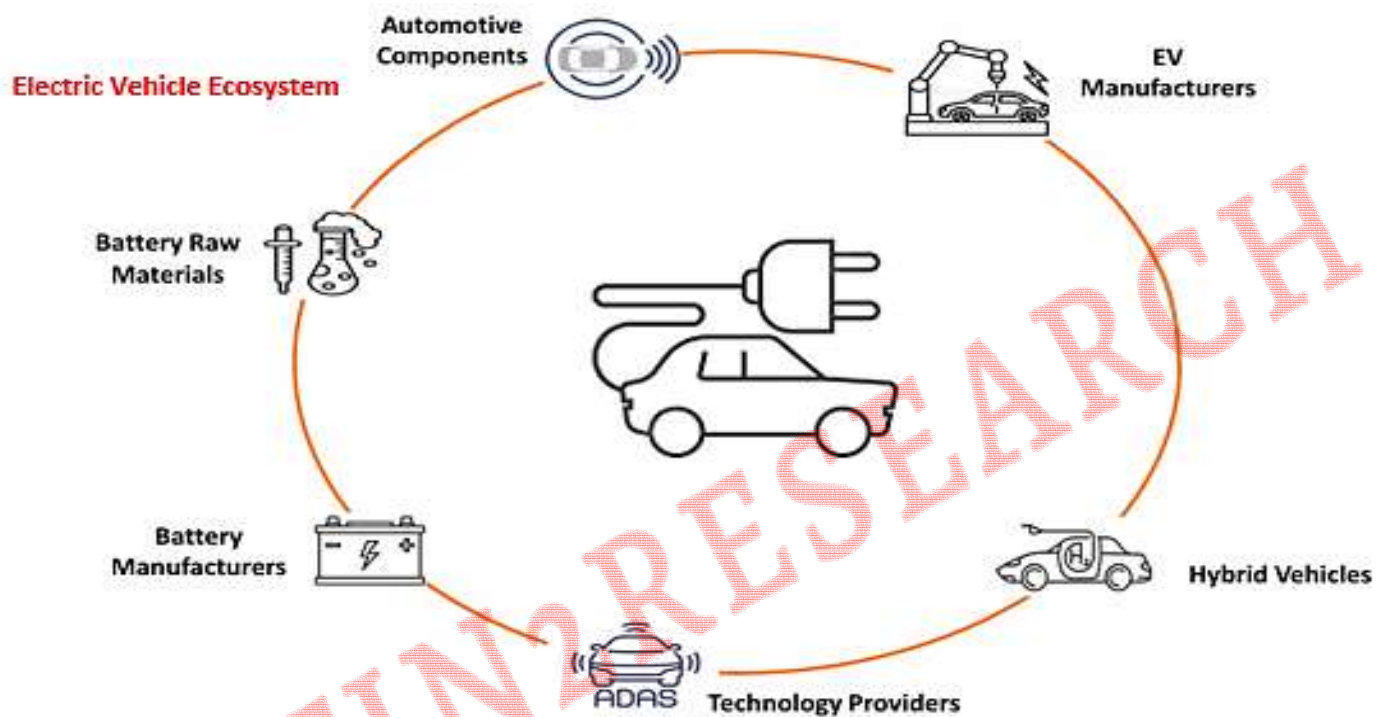
Investment Opportunities in Electric Mobility and Infrastructure



Sector	Company	Buy Range	Target(₹)	Upside
Auto	Mahindra & Mahindra Limited	3,000-3,050	3,500	16.1%
	Tata Motors Limited	770-800	1,050	33.2%
	TVS Motor Company Limited	2,400-2,500	2,780	14.8%
Ancillary	Samvardhana Motherson Limited	155-170	195	18.2%
	Uno Minda Limited	1,050-1,070	1,300	21.7%
	Exide Industries Limited	430-450	500	15.2%
	Tube Investments India Limited	3,320-3,360	4,130	22.1%
Chemical	Himadri Speciality Chemical Ltd.	510-525	610	20.6%
	Neogen Chemical Limited	2,065-2,090	2,610	22.7%
Technology	Tata Technologies Limited	935-950	1,050	11.3%
	KPIT Technologies Limited	1,400-1,420	1,680	19.4%
	L&T Technology Services Limited	5,445-5,470	6,300	15.8%
Infrastructure	Reliance Industries Limited	1,290-1,310	1,450	12.4%
	CG Power and Solutions Limited	750-765	900	20.3%

Revolutionizing Automotive: Overview

'New Age Automotive' refers to the evolving generation of vehicles that integrate cutting-edge technologies, significantly transforming the automotive landscape. This shift represents a move away from traditional gasoline-powered cars towards more sustainable, efficient, and technologically advanced vehicles. Central to this evolution are electric powertrains, autonomous driving features, connected car technologies, and data analytics, all of which are reshaping how vehicles operate, are driven, and interact with their environment. Key components of the new age automotive world include electric vehicles (EVs), which run entirely on electric power and offer an eco-friendly alternative to internal combustion engine (ICE) vehicles. These EVs are powered by advanced battery systems that are constantly evolving to provide longer ranges, faster charging, and lower costs. Alongside EVs, hybrid vehicles combine internal combustion engines with electric motors, offering the flexibility of both power sources and improved fuel efficiency. Additionally, hydrogen fuel cell vehicles (FCVs) are emerging as a promising alternative, utilizing hydrogen to generate electricity and emit only water vapor as a byproduct, making them a highly sustainable option.



The electric vehicle (EV) ecosystem comprises a comprehensive network of technologies, stakeholders, and infrastructure that facilitate the production, distribution, and adoption of electric vehicles.

At the core of this ecosystem is the electric vehicle, supported by a circular framework of interconnected entities that play pivotal roles in enabling its production and operation:

- **Battery Raw Materials:** The foundation of EV batteries, involving the extraction and processing of materials such as lithium, cobalt, and nickel, which are crucial for battery performance and longevity.
- **Battery Manufacturers:** Organizations that design and produce the energy storage systems for EVs, ensuring safety, efficiency, and scalability.
- **Automotive Components:** Manufacturers and suppliers of essential EV components, including electric motors, inverters, and other parts critical to vehicle operation.
- **EV Manufacturers:** Companies that assemble and produce electric vehicles, integrating advanced technologies and components to deliver sustainable mobility solutions.
- **Hybrid Vehicles:** Part of the ecosystem, these vehicles bridge the gap between traditional internal combustion engines and fully electric vehicles, offering a transitional step toward electrification.
- **Technology Providers:** Innovators developing advanced systems like **ADAS (Advanced Driver Assistance Systems)**, autonomous driving

EV Industry Participants

EV Service Provider

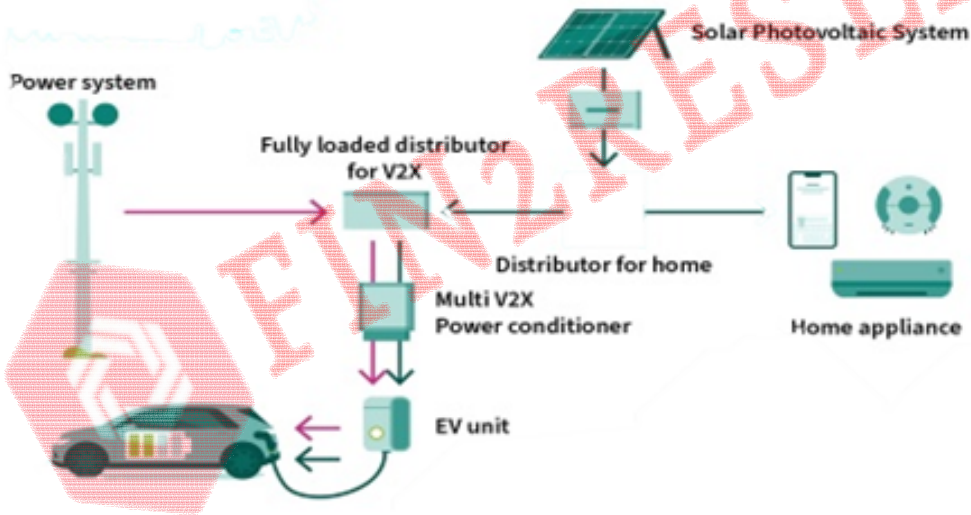


EV Charging Stations



EV Power Utilities

EV Service Operations



EV Infrastructure Planning

EV Charging Operations

Business Models And Strategies

Government Subsidies

EV Service Users



Private Car Owners



Commercial Fleet Operator



Public Fleet Operator

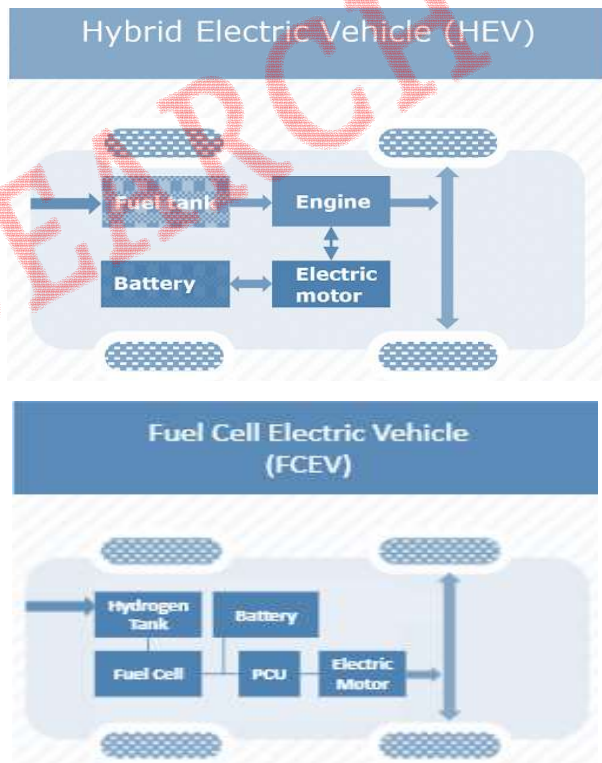
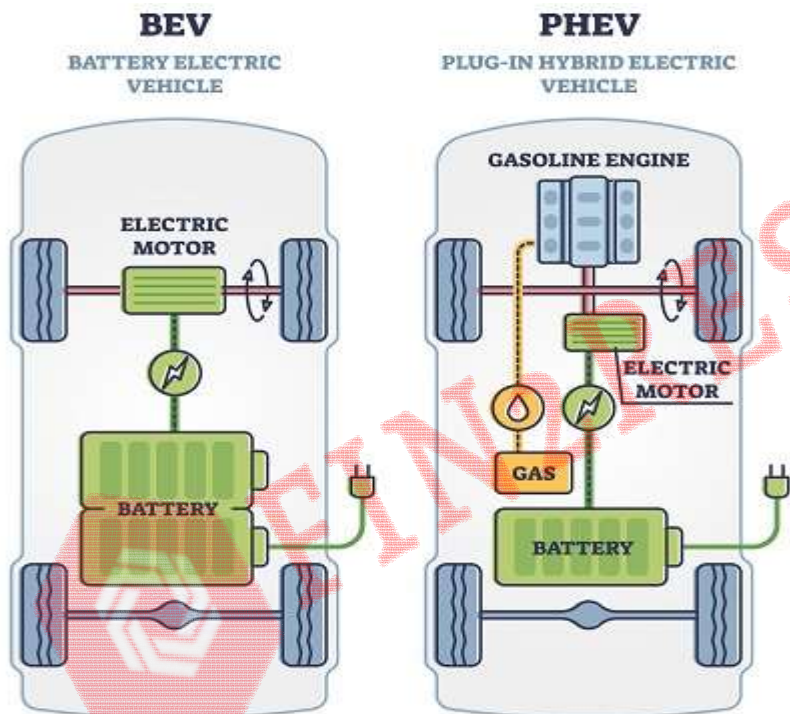
Types of Electric Vehicles (EVs)

Battery Electric Vehicles (BEVs)

These run solely on electricity stored in rechargeable batteries. They are powered by electric motors and recharged from external sources, offering ranges of 100-300+ miles. BEVs include vehicles like Battery Electric Buses (BEBs) and Electric School Buses (ESBs).

Plug-in Hybrid EVs (PHEVs)

It combine a rechargeable battery and a smaller internal combustion engine. The engine can either recharge the battery or power the wheels, extending the vehicle's range. PHEVs typically offer 20-50 miles of electric-only driving, reducing gasoline use and emissions for short trips.

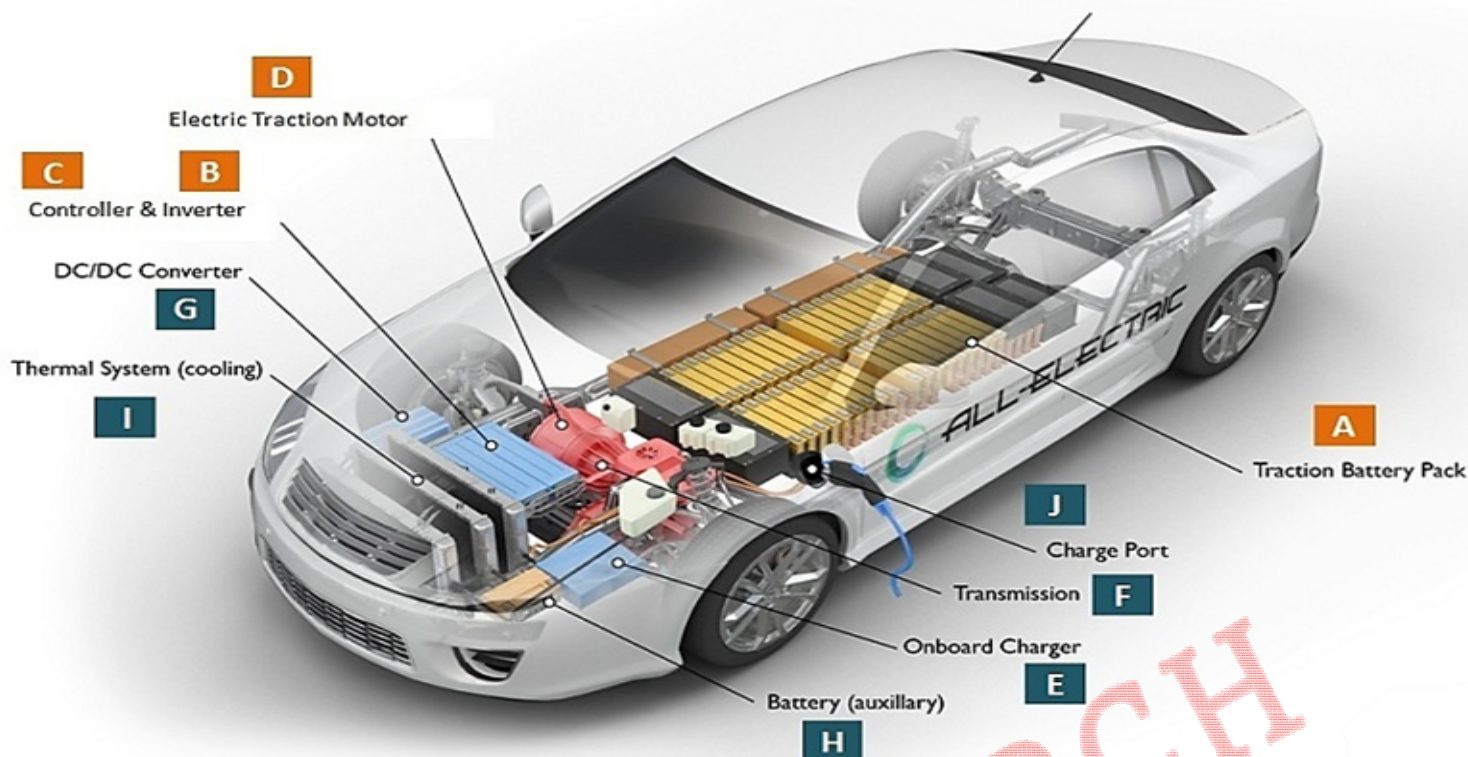


Fuel Cell EV (FCEVs)

It combine a rechargeable battery and Fuel Cell Electric Vehicles (FCEVs) generate electricity through an electrochemical process that converts hydrogen into power for the electric motor. Unlike other electric vehicles, FCEVs do not require external battery recharging. Instead, they are fueled by compressed hydrogen gas stored in onboard tanks.

Hybrid EV (FCEVs)

Hybrid Electric Vehicles (HEVs), also known as series or parallel hybrids, combine an internal combustion engine and an electric motor. The engine runs on fuel, while the motor is powered by a battery. Both power sources work together to rotate the transmission and drive the wheels. Key components include the engine, electric motor, battery pack with controller and inverter, fuel tank, and control module.

Functional Components of Electric Drive Vehicles


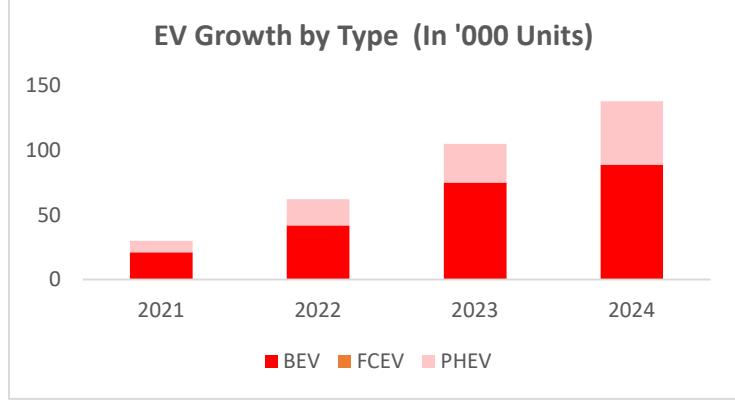
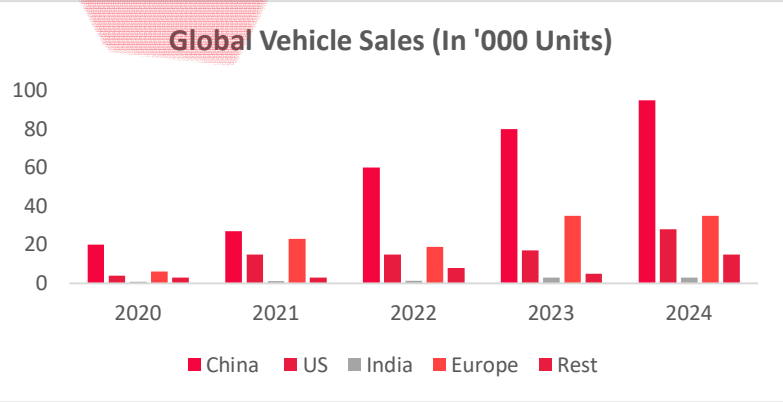
- Electric drive vehicles rely on several key components to ensure efficient operation, safety, and performance. At the heart of these systems is the **traction battery pack**, which stores electricity for the electric traction motor. The size and capacity of the traction battery determine the vehicle's range and energy efficiency, making it one of the most critical components.
- The **electric traction motor** utilizes power from the traction battery to drive the wheels. In addition to propelling the vehicle, many motors also support regenerative braking, capturing energy during deceleration and converting it back into electricity to recharge the battery. To manage this process, the **power electronics controller** regulates the flow of energy between the battery and the motor. It determines the speed and torque of the motor based on driver inputs and system demands, ensuring smooth acceleration and performance.
- The **electric transmission** transfers mechanical power from the motor to the wheels. With fewer moving parts than conventional transmissions, it is designed for high efficiency and minimal maintenance, further enhancing the appeal of electric vehicles.
- Charging the traction battery is facilitated by the **onboard charger**, which converts alternating current (AC) from external charging stations into direct current (DC) suitable for the battery. This component also monitors key charging parameters, such as voltage, current, temperature, and state of charge, ensuring safe and efficient battery charging. The **charge port** serves as the vehicle's connection point to the external power source, providing a secure interface for energy transfer.
- Supporting systems include the **DC/DC converter**, which steps down high-voltage DC from the traction battery to lower-voltage DC required for vehicle accessories and systems. This lower voltage is used to recharge the **auxiliary battery**, which powers essential low-voltage systems like lighting, infotainment, and climate controls independently of the traction battery.
- To maintain reliable performance, the **thermal system** manages the operating temperatures of critical components such as the traction battery, motor, and power electronics. By preventing overheating and ensuring components operate within their optimal temperature ranges, the thermal system enhances efficiency and longevity.
- Together, these components work in unison to deliver the clean, efficient, and high-performance driving experience that defines electric vehicles.



Global Outlook on Electric Vehicle

- Electric vehicles (EVs) are driving the vehicle market's growth in Greater China, with Chinese automakers expected to capture 78% of the market in 2024. These EVs are advancing rapidly, closing the gap in user experience compared to internal combustion engine (ICE) vehicles.
- Innovations in battery technology and improved charging infrastructure are alleviating charging concerns. The development of charging ecosystems, such as NIO's Battery Swap Alliance, Mercedes-Benz and BMW's Super Charging Network, and Lotus's Flash Charging Alliance, will further boost BEV market share. However, maintaining a growth rate above 50% this year is unlikely, as EVs have reached critical mass, and converting remaining EV skeptics will become increasingly challenging."
- Despite inflation and interest rate hikes, the European light vehicle market is projected to grow by 18.6% in 2023, with shipments reaching 15.7 million vehicles, reflecting resilience in the region following COVID-related supply chain disruptions. While EV sales are expected to grow by 18%, slightly below the overall market, their share is projected to remain around 20.3%, suggesting that Europe is still in the early stages of its electrification journey.
- The European light vehicle market is forecast to grow by 2-3% in 2024, with EVs taking up 24.2% of the market share, amounting to 3.9 million units. While BEV demand is slowing, the shift towards PHEVs could ease market pressures despite the EU's aggressive push to phase out combustion engines.
- Despite the global rise in electric car sales, their adoption remains heavily concentrated in a handful of key markets. In 2023, nearly 60% of all new electric car registrations occurred in the People's Republic of China (hereafter "China"), followed by just under 25% in Europe and 10% in the United States. Together, these three regions accounted for approximately 95% of global electric car sales.
- In these leading markets, electric vehicles have captured a significant share of the automotive sector. In China alone, more than one in three new cars registered in 2023 was electric, highlighting the rapid pace of EV adoption in the country and its position as a global leader in the transition to sustainable mobility.

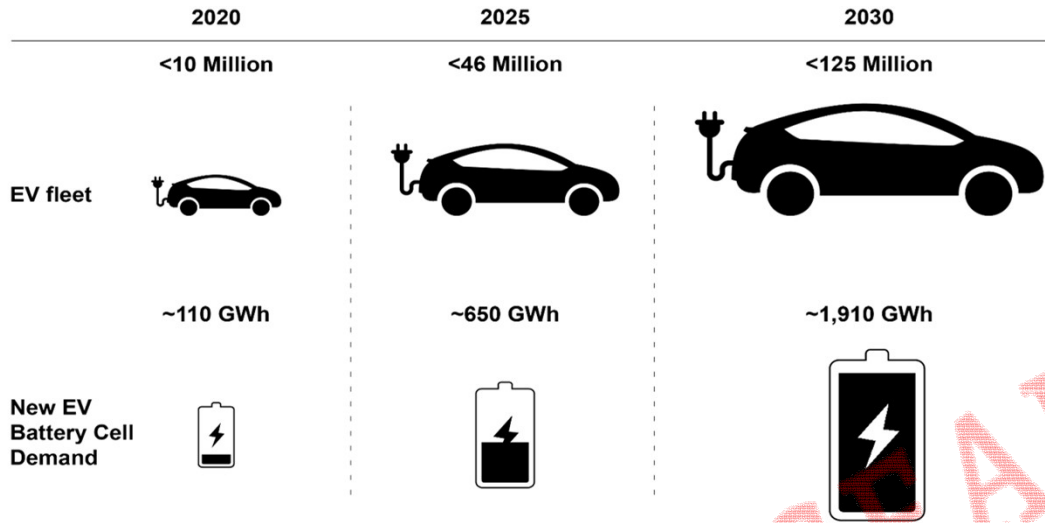
Adopters		Testers		Heavy Users		Market Leaders	
Country	EV Sales	Country	EV Sales	Country	EV Sales	Country	EV Sales
China	38%	Australia	38%	Switzerland	30%	Sweden	60%
France	25%	USA	25%	Germany	24%	Iceland	71%
UK	24%	India	24%	Finland	54%	Norway	93%
Portugal	32%	Canada	32%	Europe	21%	Denmark	46%



Electric Vehicle sales has increased from 450,000 units in 2012 to 17.5 million units in 2024 , a rise of almost 40 times since 2012.

70% of the total electric cars sold in 2023 were purely electric and 29% were plug-in hybrid vehicles

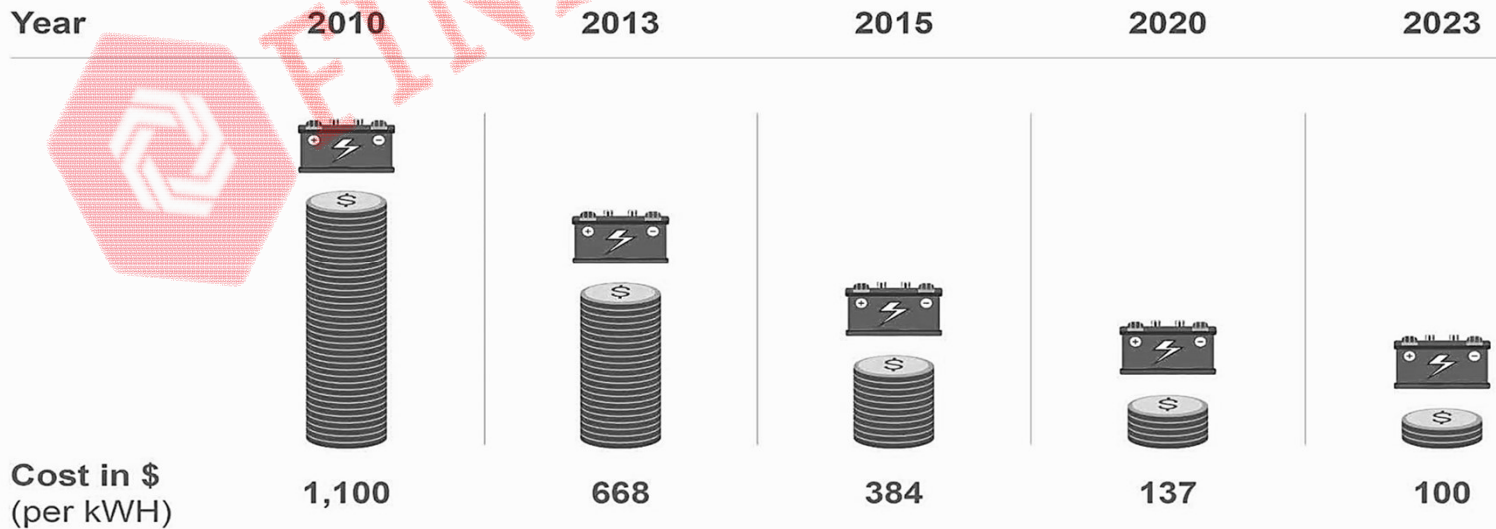
Source: Global EV Outlook 2024, IEA

Battery Technologies in Electric Vehicles (EVs)


Global electric vehicle (EV) stock surged from approximately 17,000 units in 2010 to over 10 million units in 2020. Notably, the 2020 figure marked a 43% increase from 2019, despite the global pandemic causing an overall 16% decline in car sales.

The global EV fleet is expected to continue growing, with projections estimating around 125 million EVs by 2030. This shift highlights a transition from early adopters and tech enthusiasts to broader mass adoption.

Correspondingly, the battery market is poised for significant growth, with demand forecasted to rise from approximately 110 gigawatt-hours (GWh) in 2020 to 1,910 GWh by 2030, even when considering potential future energy efficiency improvements.



Although the price gap between BEVs and ICE vehicles is narrowing, battery packs still represent about 39% of an EV's total cost, making them a crucial factor in achieving price reduction and broader adoption. The push for cost optimization is intensifying. According to BloombergNEF, the price of Li-ion batteries, which averaged over \$1,100 per kilowatt-hour (kWh) in 2010, has dropped by 89%, reaching about \$137 per kWh in 2020. It's projected to hit \$100 per kWh by 2023, with a goal of reaching \$50 per kWh within the decade to match the cost of conventional fossil-fueled vehicles.

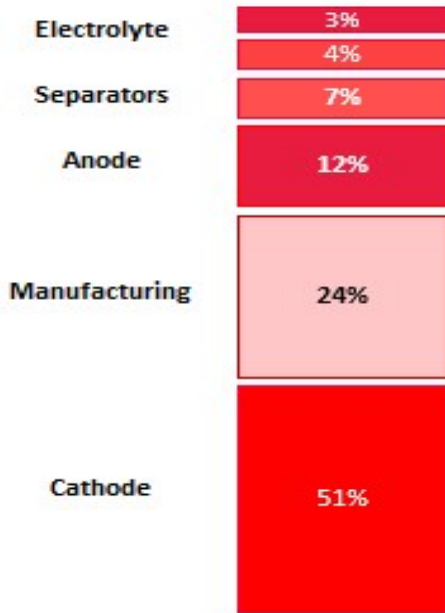
This price reduction in 2020 was driven by larger order volumes, growth in BEV sales, and the introduction of new battery pack designs. The drive to meet the \$100/kWh target is accelerating the development of more efficient, energy-dense, faster-charging, and safer battery packs, making it a key focus area in the industry.

Economic Considerations of Battery-Powered Electric Vehicles

Electric car batteries differ significantly from SLI (Starting, Lighting, and Ignition) batteries, which are commonly used in gasoline and diesel vehicles. While SLI batteries are designed for short bursts of energy to start the engine and power accessories, electric vehicle (EV) batteries function as energy storage systems that provide sustained power over extended periods

Types of EV batteries:

- **Lithium-Ion (Li-Ion)**
- **Nickel-Metal Hydride (NiMH)**
- **Lead-Acid (SLA)**
- **Ultracapacitors**
- **ZEBRA (Zero Emissions Batteries Research Activity)**



The components outside the cathode account for 49% of a battery cell's total cost. Manufacturing, which includes electrode production, component assembly, and cell finishing, contributes 24% to the overall cost.

Another crucial component, the anode, represents 12% of the cost—approximately one-fourth of the cathode's share. Typically made from natural or synthetic graphite, anodes are relatively less expensive compared to other battery materials. As electric vehicle (EV) battery prices continue to decline, the global supply of EVs and the demand for batteries are rising. Since 2010, the average cost of a lithium-ion (Li-ion) EV battery pack has dropped from \$1,200 per kilowatt-hour (kWh) to \$132/kWh in 2021.

An EV battery pack contains interconnected modules comprising tens to hundreds of rechargeable Li-ion cells. These cells account for approximately 77% of the total battery pack cost, equating to about \$101/kWh.

Cost of an EV Battery

As battery prices continue to decline, electric vehicles (EVs) are becoming more accessible and gaining widespread popularity. Despite this progress, producing battery cells for EVs at an affordable cost remains a major challenge.

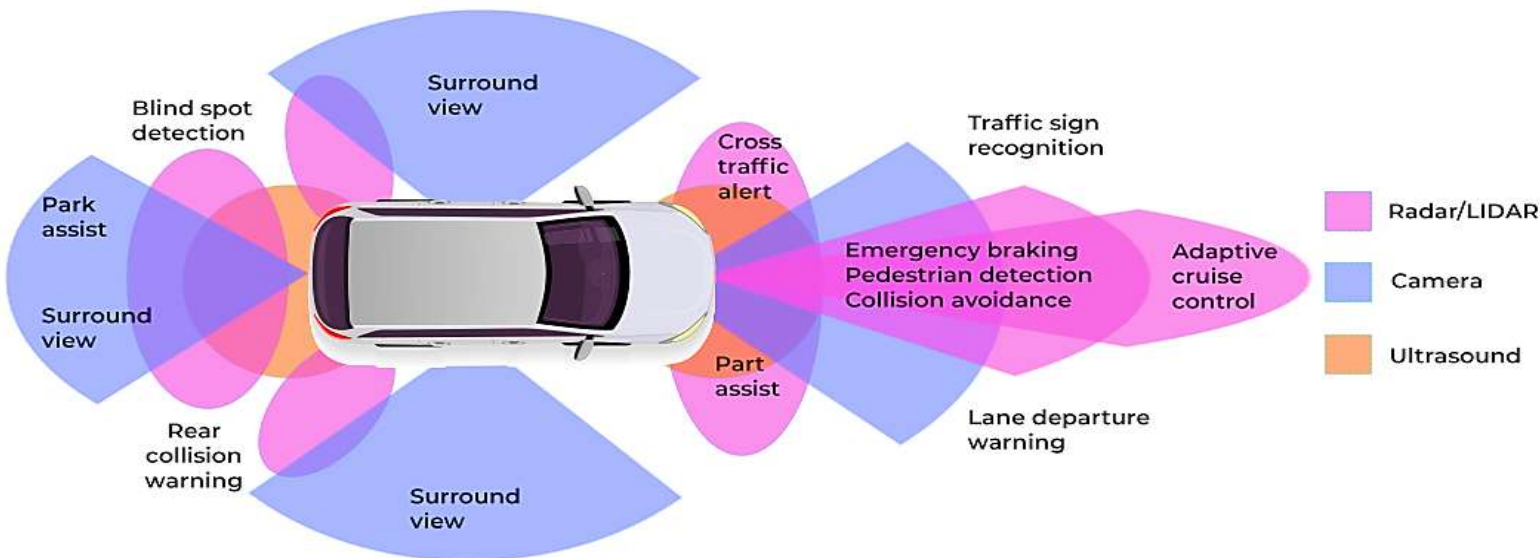
Since 2010, the average cost of lithium-ion (Li-ion) EV battery packs has dropped significantly, from \$1,200 per kilowatt-hour (kWh) to \$132/kWh in 2021. However, the recent surge in the prices of key battery metals, such as lithium, has raised concerns about the long-term affordability of EV batteries. In 2022, for the first time in over a decade, battery prices saw an uptick, rising to \$135/kWh. Although prices have since begun to decrease again, market volatility persists.

The cathode's mineral composition is one of the most variable and critical factors in battery design. It typically includes lithium combined with other minerals such as nickel, manganese, cobalt, or iron. This composition plays a vital role in determining the battery's capacity, power output, safety, lifespan, cost, and overall performance.

Lithium nickel cobalt aluminum oxide (NCA) batteries are priced at an average of \$120.3 per kilowatt-hour (kWh), while lithium nickel cobalt manganese oxide (NCM) batteries are slightly more affordable, averaging \$112.7 per kWh. Both NCA and NCM batteries feature high nickel content, enhancing energy density and enabling longer driving ranges for electric vehicles (EVs).

A more cost-effective alternative is lithium iron phosphate (LFP) batteries, which are less expensive to produce than their cobalt- and nickel-based counterparts. LFP cells have an average price of \$98.5 per kWh. While they offer lower specific energy compared to NCA and NCM batteries, LFPs are well-suited for standard- or short-range EVs, providing a balance between affordability and performance.

Source: An-Overview-of-Costs-for-Vehicle-Components-Fuels-Greenhouse-Gas, University of California.; Bloomberg NE

ADAS (Advanced driver-assistance systems)


Advanced Driver-Assistance Systems (ADAS) enhance vehicle safety by using a human-machine interface to help drivers respond to road hazards more effectively. ADAS improves safety with **early warnings** and **automated responses** to potential threats, reducing human error-related accidents. These systems can be integrated into vehicles as **standard features** or added as **aftermarket** options to customize vehicles for specific needs.

ADAS aims to **reduce accidents**, minimize injury severity, and prevent fatalities by providing critical data such as traffic conditions, road closures, and congestion.

Technological advancements and the proliferation of automation measures have contributed significantly to the popularity of car safety mechanisms. The following are a few examples of available systems:

- **Adaptive Cruise Control (ACC)**
- **Anti-lock Braking Systems (ABS)**
- **Forward Collision Alert**
- **Lane Departure Alert**
- **Traffic Light Recognition**
- **Blind-Spot Warning**

Technologies Used in ADAS: ADAS leverages a combination of **microcontrollers**, **sensors**, **LIDAR (Light Detection and Ranging)**, and **RADAR (Radio Detection and Ranging)** to detect objects, obstacles, and hazards in the vehicle's surroundings, helping to enhance safety by providing real-time data and warnings to the driver.

Camera Placement and Field of View: ADAS cameras are typically mounted behind the **rear-view mirror** and near the **front windshield**, ensuring optimal visibility. The camera's field of view is strategically positioned within the **wiper area** of the windshield to keep it clean and free from debris, ensuring accurate and continuous detection of potential hazards.

Data Fusion: **Data fusion** refers to the integration of data from multiple sensors, including cameras, RADAR, and LIDAR. This fusion process combines input from different sources to create a more comprehensive and precise understanding of the environment, improving the system's ability to detect hazards and make informed decisions in real-time.

Reliance on Advanced Technologies: The success and reliability of ADAS depend heavily on **advanced interface standards**, **computer vision algorithms**, and **real-time sensor fusion**. These technologies work together to process and analyze the vast amounts of data collected from various sensors, allowing the system to respond quickly and accurately to potential threats or driving conditions.

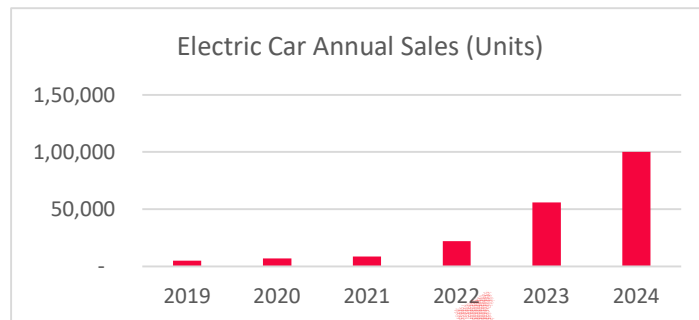
ADAS offers a wide range of functions, from **driver convenience** to **accident prevention**, blurring the lines between **optional** and **standard safety features**.

Indian EV Sector Outlook

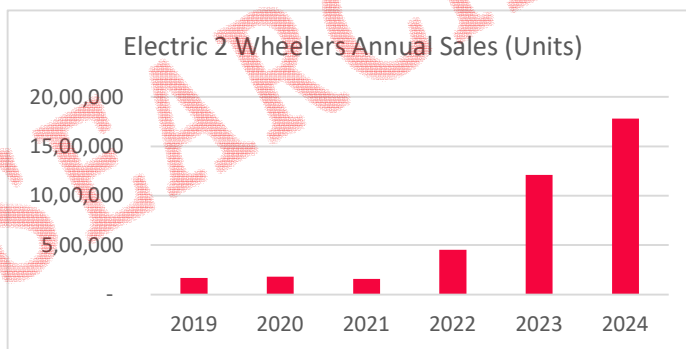
The Indian EV market is projected to grow significantly, rising from USD 3.21 billion in 2022 to USD 113.99 billion by 2029, achieving a CAGR of 66.52%. India has set ambitious EV sales targets to be met by 2030, aiming for 30% of private cars, 70% of commercial vehicles, 40% of buses, and 80% of two- and three-wheelers to be electric. This translates to a goal of having 80 million EVs on Indian roads by 2030, according to CII estimates.

In FY24, the EV industry surpassed 100,000 units, marking a 70% growth over FY23. Over recent years, most barriers to purchase have been addressed, with more EV models available, an expanding charging network, and greater awareness of EV technology. However, some remaining challenges still need to be tackled to achieve widespread EV adoption. The Indian electric mobility sector is poised for significant growth, driven by government initiatives, increasing consumer demand, and advancements in charging infrastructure.

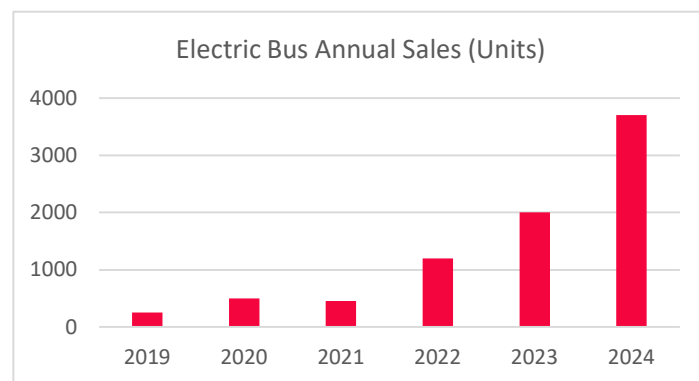
- The government has outlined a strategic shift to e-mobility, and has targeted EVs to account for 30% of its mobility requirements by 2030.** Growing consumer awareness about the need to use eco-friendly transport and the wallet-friendly nature of EV cost of ownership over the long run is proving to be a big catalyst to adoption of electric mobility. What's more, there's fast-paced demand coming in from the e-commerce industry and logistics players for EVs on two and three wheels, and from taxi fleet operators for electric passenger vehicles.
- FY2024 has ended on a very strong note for the Indian electric vehicle (EV) industry, setting a new benchmark for sales across vehicle segments as also delivering the best-ever 12-month sales for the electric two-wheeler, three-wheeler and passenger vehicle sub-segments.
- E2W sales totaled 556,091 units in H1 2024, representing about 58% of the total E2W sales for the entire year of 2023.
- E2W Segment:** Ola Electric maintains its market leadership with over 2.40 lakh units registered in H1 2024, commanding a 43% market share. The top five players together account for 86% of the total E2W market.
- E3W Passenger Segment:** The market remains highly fragmented with over 400 players. Bajaj Auto made significant gains, entering the top five in H1 2024 with a 4.44% increase in market share.
- E3W Cargo Segment:** Mahindra LMM experienced a ~4% decline in market share compared to last year but retained its position as the market leader in H1 2024.
- E-Car Segment:** Despite a 6% drop in market share, Tata Motors continues to lead in H1 2024. MG Motors and Mahindra saw slight increases in their market shares, driven by new model launches this year.
- E-Bus Category:** Tata Motors, JBM, and VE Commercial recorded notable increases in market share during H1 2024, with Tata Motors maintaining its leadership position from the previous year.



Source: VAHAN Dashboard



Source: VAHAN Dashboard

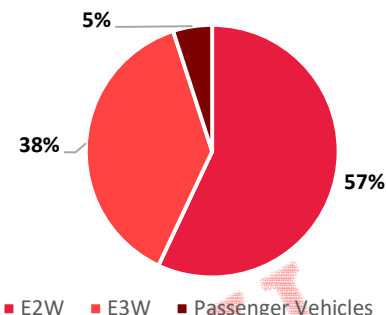


Source: VAHAN Dashboard

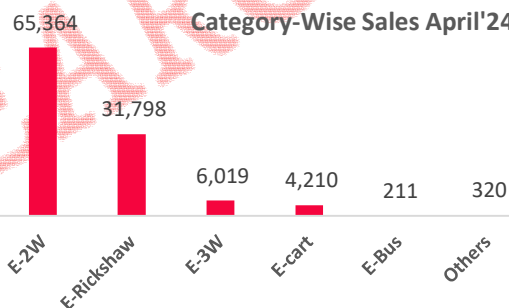
EV OEM Market Share Comparison

OEM	Segment	Market share H12023 (%)	Market share H12024 (%)
Ola Electric	E2W	28.84	43.22
TVS Motors		18.03	17.53
Bajaj Auto		6.16	12.43
Ather Energy		13.91	9.94
Greaves Electric		9.65	2.91
Mahindra LMM	E3W P	8.73	8.99
YC Electric		7.63	6.66
Saera Electric		5.21	4.59
Bajaj Auto		0.05	4.49
Dilli Electric		4.39	3.67
Mahindra LMM	E3W C	16.56	12.65
Omega Seiki		6.08	7.95
YC Electric		3.21	4.71
Dilli Electric		4.91	4.57
Piaggio		9.96	4.48
Tata Motors	E-Cars	73	67.45
MG Motors		10.18	16.18
Mahindra & Mahindra		4.76	7.89
BYD		3.71	2.06
PCA		3.22	1.98
Tata Motors	E-Bus	28.12	34.41
JBM		8.28	19.70
PMI Electro mobility		19.43	16.48
Olectra Greentech		17.38	14.35
VE Commercial		0.10	5.98

Electric vehicle sold by category in FY24



Category-Wise Sales April'24

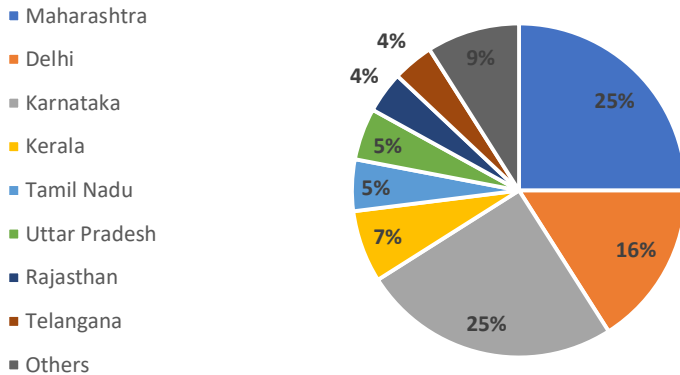


Source : Vahan Dashboard, Telangana Dashboard

- Tata Motors:** Sold 4,752 EVs in July 2024, a 13% YoY decline (July 2023: 5,470 units), with a market share of 63%, down from 70% a year ago. The portfolio includes Nexon EV, Tigor EV, Tiago EV, Xpres-T, and Punch EV.
- MG Motor India:** Achieved its best monthly performance of 1,520 units in July, improving its market share to 20% from 16% in July 2023.
- Mahindra & Mahindra:** Sold 485 XUV 400s in July, a 27% YoY increase, capturing 6.45% of the market.
- BYD India:** Recorded its best monthly sales of 342 units (4.54% market share) in July, outperforming Hyundai since April 2024.
- PCA Motors (Citroen India):** Sold 155 units of the e-C3 in July, with strong demand from fleet operators and bulk orders exceeding 7,000 units earlier this year.
- Hyundai Motor India:** Sold 55 Ioniq 5 EVs in July after discontinuing the Kona.
- Luxury EVs:** Retail sales of luxury electric vehicles dropped 14.5% YoY in July (165 units) but saw a 28% YoY growth in cumulative sales for January-July 2024, totaling 1,525 units.
- Ola Electric** led the e-two-wheeler market in July 2024 with 41,597 units sold, a 114% YoY increase, capturing a 39% market share. TVS Motor followed with 19,471 iQube scooters (up 87% YoY, 18% share), while Bajaj Auto ranked third, selling 17,642 Chetak (375% YoY growth, 16.49% share), closely trailing TVS.
- Mahindra Last Mile Mobility (MLMM)** leads the electric three-wheeler market with 6,975 units sold, securing an 11% market share and staying over 3,000 units ahead of its nearest competitor. Before the government's EMPS subsidy extension, MLMM actively promoted its models, including the Treo series, Zor Grand, and e-Alfa variants, catering to passenger and cargo mobility.
- Saera Electric Auto** secured the third spot with 30,124 units sold, slightly surpassing its CY2023 tally of 29,306 units. Dilli Electric Auto retained fourth place with 26,164 units.
- Piaggio Vehicles ranked fifth, selling 24,877 units, up from 20,742 in CY2023. The company's growth is driven by new models and an expanding network. Its Apé E-City FX Max (145km range) and Apé E-Xtra FX Max (115km range) are fully assembled by an all-women team at its Baramati plant in Maharashtra.

Electric Vehicle Infrastructure

Public EV Charging Stations



As of February 2024, India has a total of **12,146 operational public EV charging stations**, with **Maharashtra** leading in the number of stations, followed by **Delhi** and other states.

Key developments in India's EV ecosystem include:
Reduced GST Rates: The GST on electric vehicles has been reduced from **12% to 5%**, while the GST on EV chargers and charging stations has been lowered from **18% to 5%**, making EV adoption more cost-effective.

Infrastructure Needs: According to a recent **Confederation of Indian Industry (CII)** report, India will require at least **1.32 million charging stations** by 2030 to support the rapid growth of electric vehicles, necessitating the installation of over **400,000 stations annually**.

Source: EY Parthenon Electrifying Indian Mobility, PIB

Government's Aid To EV Industry

1. FAME II for EV

Ministry of Heavy Industries (MHI) has approved funding to bolster India's electric vehicle charging infrastructure. This includes the establishment of **7,432 new Electric Vehicle Public Charging Stations (EVPCS)** by three Oil Marketing Companies (OMCs) and an additional allocation of **₹73.50 crore (US\$ 8.83 million)** to upgrade **980 existing low-capacity EVPCS** across the country. The scheme primarily focuses on electrifying public and shared transportation, offering demand incentives for **7,090 e-buses, 5 lakh e-3 wheelers, 55,000 e-4 wheeler passenger cars, and 10 lakh e-2W**

2. Electric Mobility Promotion Scheme

A new scheme with a budget of **₹778 crore (US\$ 93.5 million)** is set to run for six months, from **April 1, 2024, to September 30, 2024**. This initiative provides incentives for the purchase of **electric two-wheelers (e-2Ws)** and **electric three-wheelers (e-3Ws)** equipped with advanced batteries. The scheme aims to support a total of **3,72,215 electric vehicles**, including **3,33,387 e-2Ws** and **38,828 e-3Ws**. The e-3W category covers **13,590 e-rickshaws and e-carts** and **25,238 e-3Ws in the L5 category**.

3. Approvement of new EV Policy by Bihar Government

The Bihar Government has introduced the **Bihar Electric Vehicle (EV) Policy-2023**, aiming for EVs to account for **15% of all vehicle registrations** in the state by **2028**. The policy offers incentives such as up to **75% subsidies on Motor Vehicle (MV) Tax** and purchase incentives of up to **₹1.25 lakh (US\$ 15.04 billion)** for the first **1,000 personal four-wheeler EVs**. It also promotes the use of renewable energy for EV charging, with approved tariff rates set at **₹8/kVA (US\$ 95.78/VA)** for high-tension EV charging stations in **FY 2023-24**.

4. Battery Manufacturing Policy

Tamil Nadu aims to reveal a battery manufacturing policy as it strives to establish itself as a key player in global electric vehicle (EV) manufacturing. This policy is integral to the state's efforts to bolster the EV sector's value chain. Tamil Nadu currently produces around **40% of the country's EV four-wheelers** and **70% of two-wheelers**.

Source: Media Resources



New-Age Automotive: Top Investment in Auto Stocks

Company	Range (₹)	Target(₹)	Upside
Mahindra & Mahindra Limited	3,000-3,050	3,500	16.1%
Tata Motors Limited	770-800	1,050	33.2%
TVS Motor Company Limited	2,400-2,500	2,780	14.8%



Latest Price: ₹3,015

52W High: ₹3,222

52W Low: ₹1,542

Mahindra
1Y Price Chart
Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	90,171	1,21,269	1,39,078
Net Profit	7,253	11,374	12,270
EPS (Basic)	52.91	82.68	90.62
OPM	16%	17%	18%
ROE (%)	14.52%	19.17%	18.31%
ROCE(%)	11.99%	15.05%	15.68%
P/E	13.71	12.6	19.08

Source: Company, Fin2research

Mahindra & Mahindra Limited
Target: ₹3,500

- Mahindra & Mahindra Ltd., headquartered in Mumbai, Maharashtra, is one of India's most diversified automobile manufacturers. The company has a robust presence across various vehicle segments, including two-wheelers, three-wheelers, passenger vehicles (PVs), commercial vehicles (CVs), tractors, and earthmovers.
- It was incorporated in 1945 by Ghulam Mohammad and two Mahindra Brothers (KC & JC Mahindra) and was later renamed as Mahindra & Mahindra in 1948
- The company is dedicated to accelerating its transition to electric vehicles (EVs), aiming to achieve 100% EV adoption by 2030. However, the current regulatory landscape for hybrid vehicles remains uncertain, with a clear emphasis on EVs as the primary driver of growth in the automotive sector.
- In Q2FY25, the company delivered robust growth across its businesses, with consolidated PAT increasing by 35% to ₹3,171 crore and YTD growth of 27%.

Key Risk:

Building EV-specific infrastructure, such as charging networks, battery manufacturing facilities, and R&D centers, requires substantial capital investment. These expenditures can strain profitability in the short term, particularly as the company navigates high fixed costs

TATA MOTORS

Latest Price: ₹788

52W High: ₹1,179

52W Low: ₹674

1Y Price Chart
Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	2,78,454	3,45,967	4,37,928
Net Profit	-11,309	2,690	31,807
EPS (Basic)	-34.46	7.27	94.47
OPM	9%	9%	14%
ROE (%)	-24.11%	5.37%	48.22%
ROCE(%)	1.29%	7.55%	20.07%
P/E	0	66.9	12.13

Source: Company, Fin2research

Tata Motors Limited
Target: ₹1,050

- Tata Motors Group, a prominent global automobile manufacturer and a part of the esteemed Tata Group, offers a comprehensive portfolio of vehicles, including cars, sports utility vehicles, trucks, buses, and defense vehicles, catering to markets worldwide.
- Aiming for net carbon zero by 2039 and a complete transition to BEVs by 2036, with digital platforms like **Fleetedge** and **Fleetverse** driving strong growth and improving customer engagement and service delivery.
- The groundbreaking ceremony for the new Chennai plant represents a significant milestone in the company's efforts to enhance its product portfolio. Key upcoming launches include **the Harrier EV, Sierra EV, and additional variants of the Curvv**, all slated for release by late 2025.
- In Q2FY25, Tata Motors reported an 11% decline in net profit, amounting to ₹3,343 crore, as revenue fell by 3.5% to slightly over ₹1.01 trillion. The decline was attributed to challenges in the sales of electric vehicles (EVs) and small commercial vehicles (SCVs).

Key Risk:

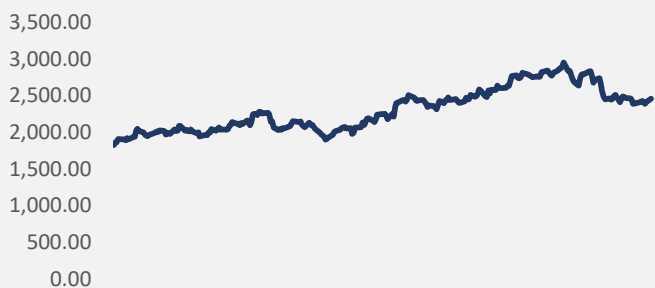
The elevated upfront cost of EVs compared to internal combustion engine (ICE) vehicles remains a barrier, especially in price-sensitive markets like India.



Latest Price: ₹2,422

52W High: ₹2,958

52W Low: ₹1,799

TVS Motors Limited
Target: ₹2,780
1Y Price Chart

Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	24,355	31,974	39,145
Net Profit	731	1,309	1,779
EPS (Basic)	15.93	27.97	35.5
OPM	11%	13%	14%
ROE (%)	18.40%	26.83%	27.45%
ROCE(%)	16.04%	22.52%	24.86%
P/E	39.27	38.52	60.6

- TVS Motor Company Ltd (TVSM) specializes in the production of two-wheelers, three-wheelers, and their accessories. The company offers a diverse portfolio of vehicles, catering to a broad spectrum of customer needs across various segments.
- The EV segment is poised for significant growth, driven by the **PM E-DRIVE scheme**, which provides a strong foundation for long-term expansion and market visibility.
- Furthermore, plans are in place to enhance the EV product lineup with new launches and to expand the dealership network, ensuring broader market reach and improved customer access.
- The company launched the all-new **TVS Jupiter 110**, which has garnered a positive response in the market. Additionally, the **TVS Apache RTR 310** has been introduced, featuring a build-to-order customization option.
- In Q2FY25, TVS Motor Company's net profit surged 45% to ₹560.49 crore, driven by record sales of two-wheelers and three-wheelers. Revenue from operations rose 14% to ₹11,301.68 crore, compared to ₹9,932.82 crore in Q2FY24.

Key Risk:

The two-wheeler and three-wheeler markets are highly competitive, with both domestic and international players, which may impact market share and pricing power.

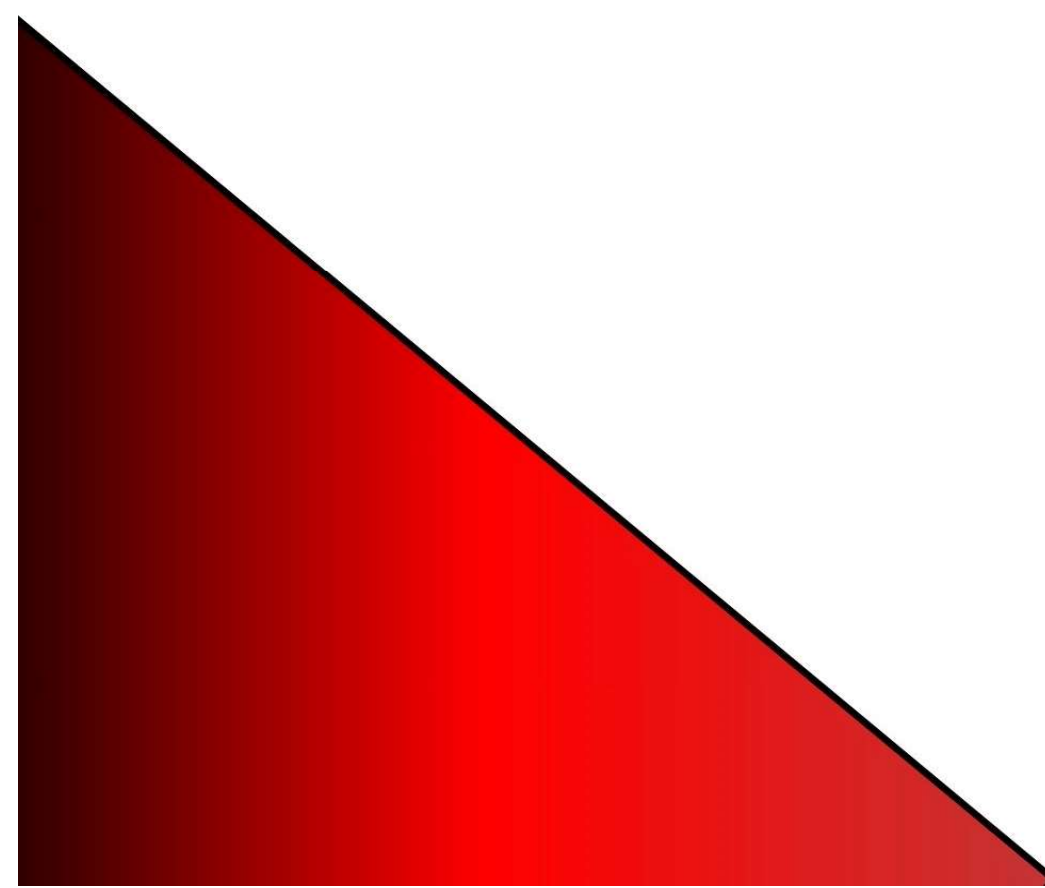
Source: Company, Fin2research

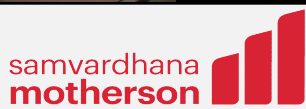


New-Age Automotive:

Investment Picks For Ancillary Sector Growth

Company	Range (₹)	Target(₹)	Upside
Samvardhana Motherson Limited	155-170	195	18.2%
Uno Minda Limited	1,050-1,070	1,300	21.7%
Exide Industries Limited	430-450	500	15.2%
Tube Investments India Limited	3,320-3,360	4,130	22.1%





Latest Price: ₹165
52W High: ₹217
52W Low: ₹86.8

Samvardhana Motherson Limited

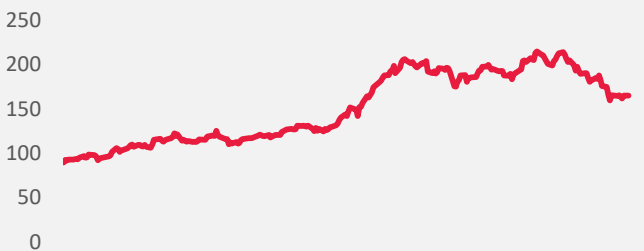
Target: ₹195

- Samvardhana Motherson International Limited (formerly Motherson Sumi Systems Limited) is a globally diversified manufacturer and full system solutions provider, serving customers in the automotive and other industries.
- It is one of the world's largest and fastest-growing suppliers to Original Equipment Manufacturers (OEMs) in the automotive sector.
- The company is expanding into non-automotive sectors, including consumer electronics and aerospace, with a current annual revenue run-rate of ₹3,000 crore.
- **Five out of 19 greenfield projects** have been operationalized, with an additional eight expected to be commissioned in H2 FY25. The consumer electronics plant has begun operations and delivered its first batch of customer orders, with plans to scale up production.
- In Q2FY25, the company's consolidated net profit surged 222.5% to ₹948.81 crore, compared to ₹294.15 crore in the same period last year.

Key Risk:

The company faces the risk of not keeping pace with rapid technological advancements, especially in electric vehicles, autonomous driving, and smart manufacturing processes.

1Y Price Chart



Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	63,774	78,788	98,692
Net Profit	1,182	1,670	3,020
EPS (Basic)	1.29	2.21	4.01
OPM	7%	8%	9%
ROE (%)	5.27%	6.95%	11.18%
ROCE(%)	6.46%	8.19%	11.63%
P/E	55.67	30.36	29.2

Source: Company, Fin2research



Latest Price: ₹1,068
52W High: ₹1,255
52W Low: ₹605

Uno Minda Limited

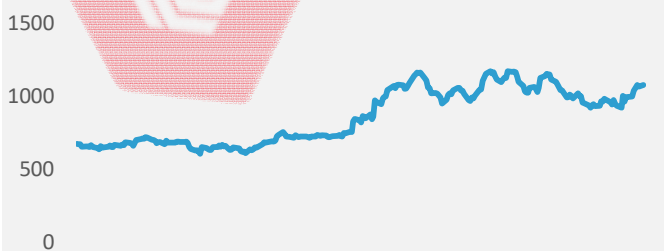
Target: ₹1,300

- Founded in 1958, Uno Minda Limited (formerly Minda Industries Limited) is a prominent global Tier-1 manufacturer and supplier of innovative automotive solutions and systems to OEMs.
- The company designs and manufactures over 20 categories of components and systems for vehicles across various segments, including passenger cars, commercial vehicles, and two- and three-wheelers, serving both internal combustion engine (ICE) and electric/hybrid vehicles.
- The company has secured new orders for hub motors and mid-drive motors **from e-2-wheeler OEMs, signaling strong growth in the EV segment.** Additionally, the company has won significant orders for **EV charging solutions, including wall-mounted chargers, from a Japanese OEM.**
- In Q2FY25, Uno Minda Ltd reported an 11% increase in consolidated profit after tax (PAT), reaching ₹266.1 crore, compared to ₹237.16 crore in the same period last year. Revenue from operations rose by 18%.

Key Risk:

As a Tier-1 supplier to OEMs, Uno Minda faces risks specific to the automotive supply chain. Any changes in OEM production strategies, reduced order volumes, or shifts to in-house production by their customers.

1Y Price Chart



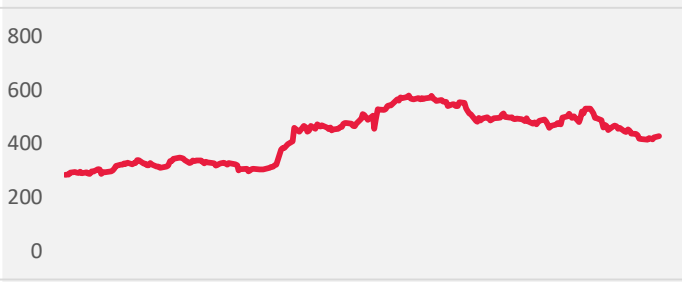
Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	8,313	11,236	14,031
Net Profit	413	700	925
EPS (Basic)	6.23	11.41	15.33
OPM	11%	11%	11%
ROE (%)	12.49%	17.21%	19.35%
ROCE(%)	15.30%	18.55%	20.62%
P/E	74	42.31	44.62

Source: Company, Fin2research



Latest Price: ₹434
 52W High: ₹620
 52W Low: ₹278

Exide Industries Limited
Target: ₹500
1Y Price Chart

Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	12,789	15,078	16,770
Net Profit	4,357	823	883
EPS (Basic)	51.38	9.68	10.31
OPM	11%	11%	11%
ROE (%)	48.91%	7.58%	7.30%
ROCE(%)	5.84%	10.61%	10.59%
P/E	2.94	18.39	29.53

Source: Company, Fin2research

- Exide Industries Ltd is primarily engaged in the manufacturing of storage batteries and allied products in India. It designs, manufactures, markets and sells the widest range of lead acid storage batteries in the world from 2.5Ah to 20,600Ah capacity.
- A significant investment of **₹550 crore has been made in the current fiscal year, bringing the total investment to ₹2,852 crore to date.** Production is expected to commence in mid-2025, followed by a phase of stabilization and customer approvals.
- The company is investing in lithium-ion technology to serve both the mobility and energy storage markets. It also plans to target high-margin markets with new products and expanded distribution networks.
- In Q2 FY25, the company's revenue from operations grew by 4% year-on-year (YoY) to ₹4,267 crore. EBITDA remained stable at ₹484 crore, resulting in a margin of 11.3%. Profit after tax stood at ₹233 crore, compared to ₹287 crore in the same period last year.

Key Risk:

Company's reliance on lead-acid batteries, which are being replaced by lithium-ion batteries in automotive and energy storage sectors, poses a risk if the company fails to diversify or transition to newer, sustainable technologies.



Latest Price: ₹3,383
 52W High: ₹4,811
 52W Low: ₹3,259

Tube Investments India Ltd.
Target: ₹4,130
1Y Price Chart

Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	12,447	14,964	16,890
Net Profit	991	1,325	1,723
EPS (Basic)	39.85	49.48	62.08
OPM	12%	13%	12%
ROE (%)	28.56%	27.22%	26.53%
ROCE(%)	30.11%	33.40%	25.09%
P/E	40.73	51.51	60.14

Source: Company, Fin2research

- Tube Investments of India Limited (TII) is a leading manufacturer in India, offering a diverse range of products for key industries such as automotive, railway, construction, mining, and agriculture. The company operates across three main verticals: Engineering, Metal Formed Products, and Bicycles.
- The Company has forayed into TMT bars and Truck Body Building business and is additionally exploring opportunities in optic lens and other vision systems for the Auto industry.
- The **cargo version of the electric 3-wheeler is set to launch in the next few months**, along with other products such as small commercial vehicles and tractors.
- Electric 3-wheeler segment currently has 83 operational dealers, with plans to reach 150 by the end of the fiscal year.
- In a regulatory filing, Tube Investments of India Ltd (TIIL) reported a consolidated net profit of ₹346.19 crore for the same quarter last fiscal. Consolidated revenue from operations for the quarter under review stood at ₹4,782.51.

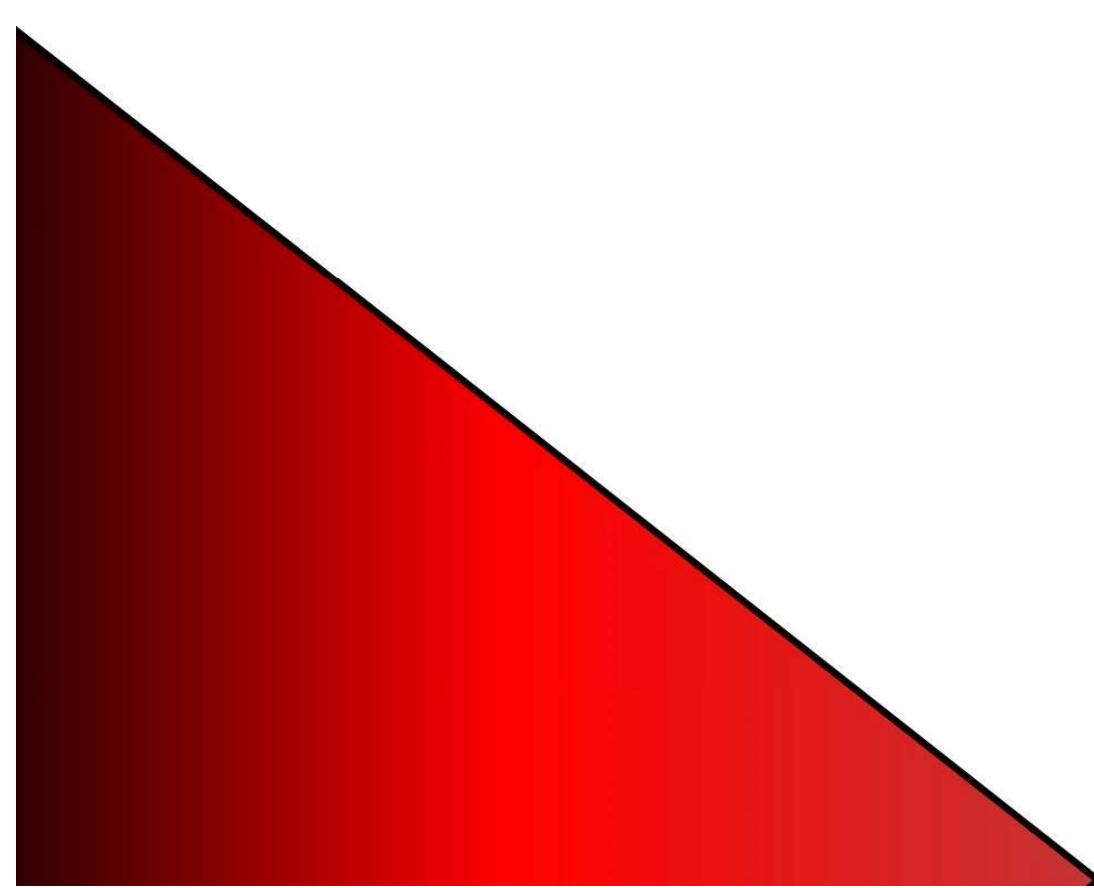
Key Risk:

TII's expansion into optic lenses and vision systems for the automotive sector introduces exposure to new regulatory and compliance challenges, particularly around intellectual property rights, safety standards, and environmental regulations.



New-Age Automotive: Investment Opportunities in Chemical Sector

Company	Range (₹)	Target(₹)	Upside
Himadri Speciality Chemical Ltd.	510-525	610	20.6%
Neogen Chemical Limited	2,065-2,090	2,610	22.7%





Latest Price: ₹506
52W High: ₹689
52W Low: ₹249

Himadri Speciality Chemical Ltd.

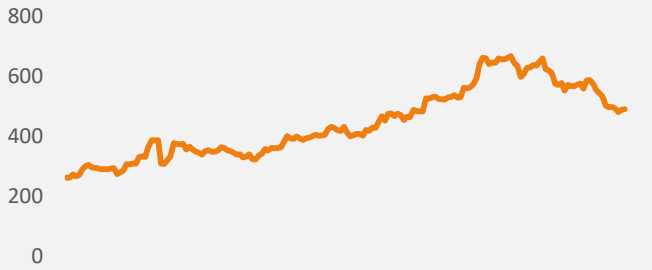
Target: ₹610

- Himadri Specialty Chemicals is a leading manufacturer of carbon materials and chemicals. It holds the distinction of being India's top coal pitch manufacturer and is the sole producer of advanced carbon materials in the country. Additionally, the company is the largest player in the Indian markets for Naphthalene and Sodium Naphthalene Formaldehyde (SNF).
- The capital expenditure (Capex) for the construction of the first commercial plant for producing 40,000 MTPA of LFP Cathode Active Material is progressing as planned and is expected to be operational by Q3FY27.
- Additionally, the company is expanding its capabilities with a new specialty carbon black line, which will have a production capacity of 70,000 MTPA, further strengthening its position in the market.
- In Q2 FY25, Himadri Specialty Chemical Ltd reported a 33% year-on-year increase in net profit, reaching ₹134 crore for the quarter ending September 30, 2024 (Q2FY'25), driven by higher margins.

Key Risk:

HSCL's reliance on coal pitch and other coal-based materials as a core part of its product offering exposes it to risks associated with the volatility in coal prices, regulatory changes, and environmental concerns.

1Y Price Chart



Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	2,791	4,172	4,185
Net Profit	39	216	411
EPS (Basic)	0.98	4.99	8.34
OPM	6%	10%	15%
ROE (%)	2.24%	10.41%	15.43%
ROCE(%)	4.14%	14.72%	22.26%
P/E	75.87	17.03	32.93

Source: Company, Fin2research



Latest Price: ₹2,128
52W High: ₹2,390
52W Low: ₹1,149

Neogen Chemicals Limited

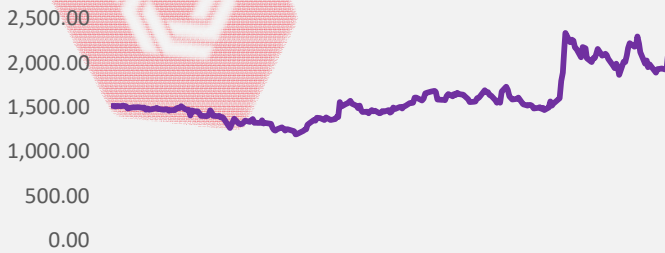
Target: ₹2,610

- Neogen Chemicals Ltd, established in 1991, specializes in producing bromine- and lithium-based organic and organometallic compounds, which serve the pharmaceutical, agrochemical, and engineering industries.
- Neogen Chemicals plans a ₹750-850 crore capex over 3-4 years to expand its EV battery materials segment. This includes a **400 MTPA lithium electrolyte facility (₹180-200 crore)** and a **1,000 MTPA lithium salt plant (₹300-350 crore)**, with combined revenue potential of ₹850-1,100 crore annually.
- Additionally, ₹150-200 crore will go toward backward integration to lower costs, and ₹50-70 crore for sustainability initiatives like recycling. These investments aim to add ₹1,000-1,200 crore in revenue by FY26, solidifying Neogen's presence in the EV ecosystem.
- In Q2FY25, revenue grew by 20% YoY to ₹193 crore, driven by higher volumes in the core business and an additional contribution from BuLi Chem. EBITDA rose 33% YoY to ₹35 crore.

Key Risk:

As the company scales its lithium-based products, it faces increased exposure to global lithium supply volatility. Without direct ownership of lithium resources, it depends on external suppliers, primarily from Australia and South America, where geopolitical and trade risks could affect raw material availability and costs.

1Y Price Chart



Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	487	686	691
Net Profit	45	50	36
EPS (Basic)	17.9	20.04	13.51
OPM	18%	16%	16%
ROE (%)	14.34%	10.84%	5.74%
ROCE(%)	16.73%	15.46%	11.47%
P/E	93.31	64.05	85.44

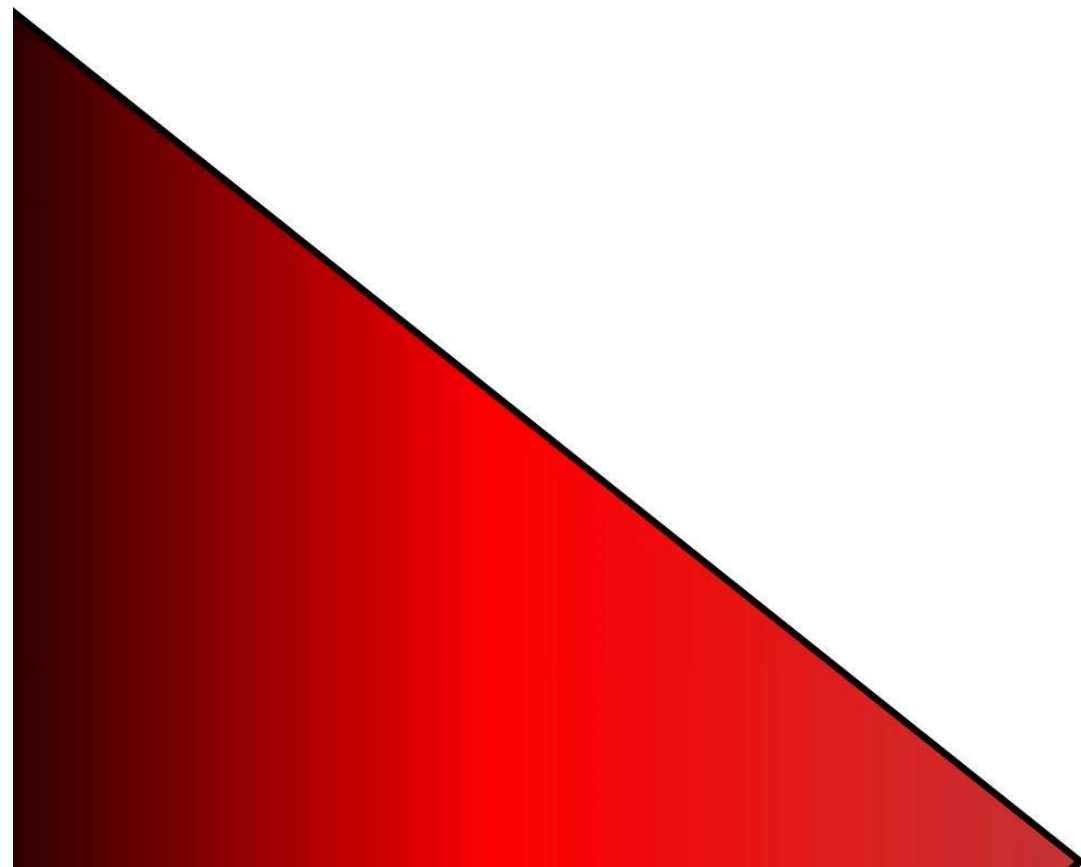
Source: Company, Fin2research



New-Age Automotive:

Top Investment Picks For Transformation

Company	Range (₹)	Target(₹)	Upside
Tata Technologies Limited	935-950	1,050	11.3%
KPIT Technologies Limited	1,400-1,420	1,680	19.4%
L&T Technology Services Limited	5,445-5,470	6,300	15.8%





Latest Price: ₹943
52W High: ₹1,400
52W Low: ₹931

Tata Technologies Limited

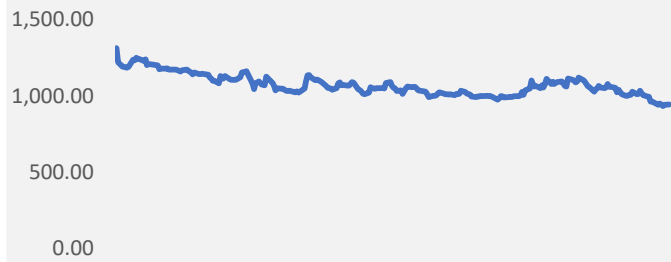
Target: ₹1,050

- Tata Technologies Limited is an Indian multinational technology company specializing in product engineering, offering services to automotive, aerospace OEMs, and industrial machinery companies. It is a subsidiary of Tata Motors.
- The company has secured significant wins across various sectors, including projects with **the Maharashtra and Tamil Nadu Industrial Development Corporations in the Education segment**.
- It has also been selected by an Asian automotive OEM for a mid-cycle **refresh turnkey project for two vehicles**, providing comprehensive automotive engineering services.
- In the automotive space, the company is collaborating with a global Tier 1 leader to develop embedded software for electric powertrain products.
- In Q2 FY25, Tata Technologies reported a 2% decline in consolidated net profit for Q2 FY25, at ₹157 crore, down from ₹160 crore last year. However, revenue from operations grew by 2% year-on-year.

Key Risk:

Company is involved in providing engineering solutions for cutting-edge technologies in automotive (e.g., electric vehicles) and aerospace. Rapid technological advancements, such as new innovations or shifting market trends, could pose a risk if the company fails.

1Y Price Chart



Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	3,530	4,414	5,117
Net Profit	624	679	647
EPS (Basic)	15.38	16.75	15.95
OPM	19%	18%	18%
ROE (%)	19.76%	23.68%	21.88%
ROCE(%)	24.78%	28.32%	28.46%
P/E			61.06

Source: Company, Fin2research



Latest Price: ₹1,407
52W High: ₹1,929
52W Low: ₹1,283

KPIT Technologies

Target: ₹1,680

- KPIT is a global technology company delivering software solutions to accelerate the mobility industry's transition toward an autonomous, sustainable, smart, and connected future.
- With over 13,000 passionate professionals worldwide, KPIT specializes in embedded software, artificial intelligence, and digital solutions.
- Company enables customers accelerate implementation of next generation mobility technologies . With development centers in Europe, USA, Japan, China, Thailand and India.
- Investments in **QORIX and N-Dream** are progressing, with initial revenue generation observed, though substantial contributions are anticipated over time.
- The management is actively exploring partnerships and potential acquisitions to strengthen their market position.
- KPIT Technologies reported a 44.7% year-on-year rise in profit after tax, reaching ₹2,037 million for the second quarter ending September 30, 2024, marking its 17th consecutive quarter of growth.

Key Risk:

The company specializes in cutting-edge areas like middleware, AI, and electrification. Rapid technological changes or failure to keep up with innovation could impact competitiveness.

1Y Price Chart



Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	2,432	3,365	4,872
Net Profit	276	387	599
EPS (Basic)	10	13.9	21.69
OPM	19%	19%	20%
ROE (%)	21.80%	25.73%	31.31%
ROCE(%)	23.72%	27.41%	34.99%
P/E	59.8	66.31	68.27

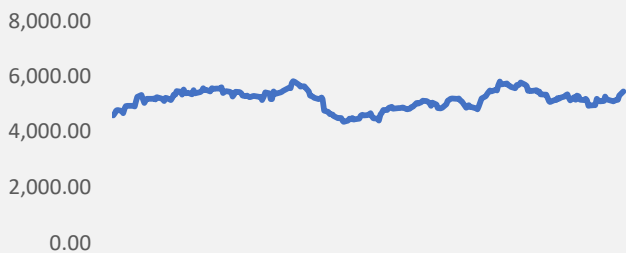
Source: Company, Fin2research


L&T Technology Services

Latest Price: ₹5,440

52W High: ₹5,990

52W Low: ₹4,228

L&T Technology Services Limited
Target: ₹6,300
1Y Price Chart

Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	4,964	5,874	7,910
Net Profit	918	1,153	1,258
EPS (Basic)	87.04	109.2	119
OPM	22%	21%	21%
ROE (%)	25.07%	28.20%	26.71%
ROCE(%)	31.13%	36.03%	34.22%
P/E	56.26	29.51	44.57

Source: Company, Fin2research

- Incorporated in 2012, LTTS is an engineering services provider offering Engineering, Research and Development (ER&D), and digitalization solutions across various sectors, including Transportation, Industrial Products, Telecom and Hi-Tech, Medical Devices, and Plant Engineering.
- The company filed **51 new patents, bringing its total cumulative filings to 1,394**—a strong reflection of its focus on innovation and intellectual property. Industry analysts such as HFS, Avasant, and Zinnov have recognized the company as a leader across various segments, highlighting its expertise and market position.
- It also **launched GenIQ, an advanced software development platform tailored for AI and Generative AI applications**, enabling customers to accelerate their AI transformation journeys.
- In Q2 FY25, The company reported revenue of ₹25,729 million, reflecting a sequential growth of 4.5% and an 8% increase year-on-year.

Key Risk:

While LTTS operates across various industries like transportation, industrial products, telecom, medical devices, and plant engineering, an over-reliance on specific sectors (e.g., transportation) could expose it to demand fluctuations or sector-specific downturns.

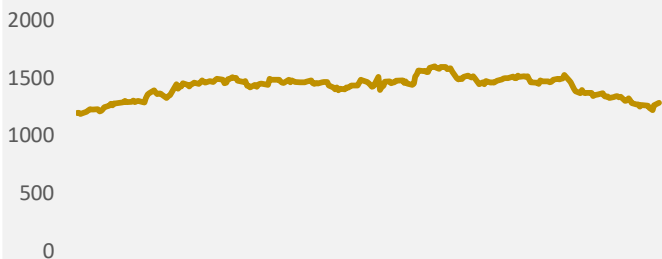


New-Age Automotive:

Investment Opportunities In Electric Mobility Infrastructure

Company	Range (₹)	Target(₹)	Upside
Reliance Industries Limited	1,290-1,310	1,450	12.4%
CG Power and Solutions Limited	750-765	900	20.3%


 Latest Price: ₹1,290
 52W High: ₹1,609
 52W Low: ₹1,185

Reliance Industries Limited
Target: ₹1,450
1Y Price Chart

Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	6,94,673	8,76,396	8,99,041
Net Profit	67,845	74,088	79,020
EPS (Basic)	44.87	49.29	51.45
OPM	16%	16%	18%
ROE (%)	8.21%	8.92%	9.22%
ROCE(%)	8.64%	9.41%	9.84%
P/E	26.77	21.82	28.88

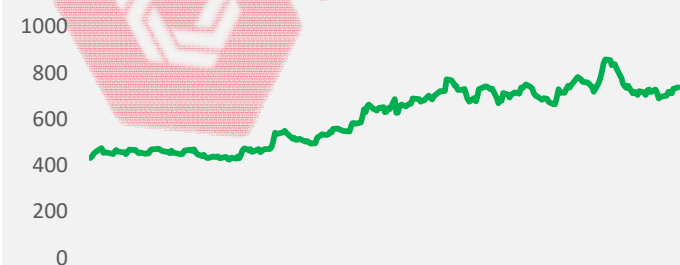
Source: Company, Fin2research

- Reliance was founded by Dhirubhai Ambani and is currently led by his elder son, Mukesh Dhirubhai Ambani. The Ambani family holds approximately 50% of the conglomerate's shareholding.
- The company has a strong presence across multiple sectors, including petrochemicals, refining, oil & gas exploration, retail, and telecommunications.
- The company aims to establish a **20 GW solar capacity and contribute significantly to the green energy and EV sectors** as part of its plan to become carbon neutral by 2035.
- Company also plans substantial investments, focusing on the development of a fully integrated renewable energy ecosystem in **Jamnagar, Gujarat. This includes a 10 GW solar photovoltaic (PV) plant to be operational by 2024**
- Company reported a 3.6% year-on-year decline in its Q2FY25 consolidated net profit, which dropped to ₹19,101 crore

Key Risk:

Reliance is committing significant capital towards its EV and new energy infrastructure, including investments in battery manufacturing and green hydrogen. However, the long-term returns on these investments may take time to materialize, creating pressure on the company's free


 Latest Price: ₹748
 52W High: ₹875
 52W Low: ₹410

CG Power Limited
Target: ₹900
1Y Price Chart

Key Financials

Particulars	FY22	FY23	FY24
Net Sales (₹ cr)	5,484	6,973	8,046
Net Profit	913	963	1,428
EPS (Basic)	6.33	6.3	9.34
OPM	12%	14%	14%
ROE (%)	198.75%	68.92%	59.36%
ROCE(%)	75.58%	63.69%	47.30%
P/E	29.8	47.63	57.87

Source: Company, Fin2research

- CG Power & Industrial Solutions is a global company offering end-to-end solutions for efficient and sustainable electrical energy management. It provides products, services, and solutions across two key segments: Power Systems and Industrial Systems.
- In FY2024, CG Power & Industrial Solutions has allocated a capital expenditure of **₹230 crore to expand the capacity of its Low Tension (LT) Motors.**
- This expansion will increase the plant's output from **the current 9.93 lakh units per year to 19.92 lakh units annually**, driven by growing demand for AC motors. The expansion will occur in two phases over a four-year period and will be funded through internal accrual.
- QIP of **INR 3,500 crores planned** to support acquisitions and expansion strategies.
- In Q2 FY25, CG Power reported strong performance with consolidated revenue of ₹2,413 crore and Profit After Tax (PAT) of ₹220 crore. Although profit margins saw a slight dip, the company achieved substantial growth

Key Risk:

While CG Power is expanding its LT motor production capacity, its current offerings are still more focused on traditional industrial motors. The scaling of production to meet the unique needs of EVs—such as fast-charging stations and high-performance power electronics—could pose a challenge.

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