EV Report July 2025

GYANIKI

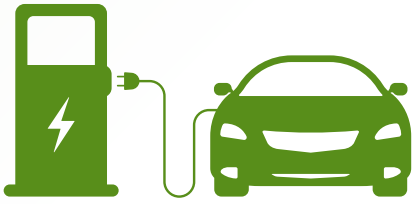
YOUR ACCESS TO FUTURE MOBILITY

BMS OPTIONS FROM LITHIUM OPTIM

INDIA EV SALES JUNE 2025

TOP MONEY MOVEMENT IN MOBILITY WORLD

NEWS, JOINT VENTURES & PARTNERSHIPS



UPCOMING EV SHOW & EXPO

EV LAUNCH

GYANIKI REPORTS

'gyaniki' undertakes specialized and customized research in the areas of Future Mobility.
'gyaniki' provides an online repository for understanding the mobility ecosystem.
'gyaniki' database covers manufacturers, suppliers, technologies and ecosystem players in mobility including Electric, Autonomous, ADAS, Connected and Shared vehicles.
'gyaniki' also provides training programs across mobility domains.

BMS Options from Lithium Optima

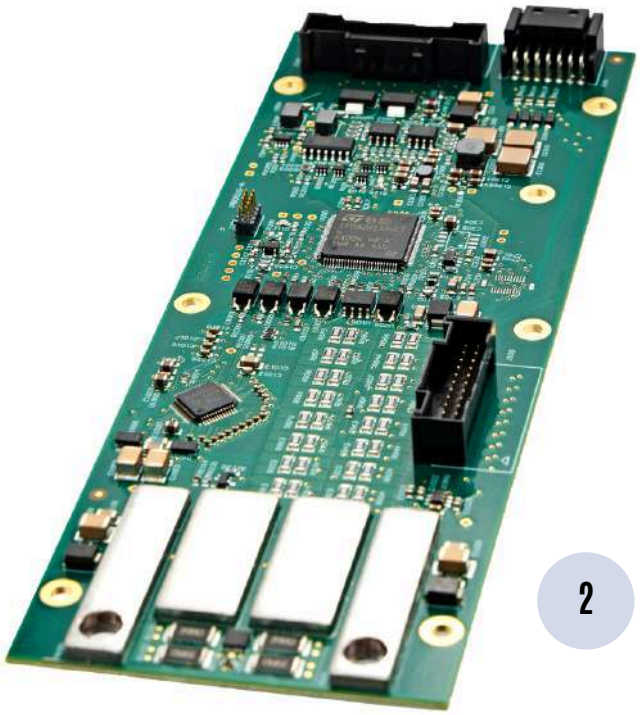
LO-BMS16-M™ stands at the forefront of advanced Battery Management Systems (BMS) engineered specifically for both lithium and sodium cell applications.
Founded in Denmark in 2025, **Lithium Optima ApS** may be a relatively new entrant in the industry, yet the company's core is comprised of technical and commercial veterans whose collective expertise in BMS surpasses seventy years, many of whom previously contributed to the renowned Lithium Balance.

Kasper Torpe, CEO and Founder, distinguished himself early on by pioneering the introduction of sophisticated, high-performance battery systems to the Indian market, notably in collaboration with **Pune-based Devise Electronics as far back as 2016**. At that time, the ARAI conference in Pune, orchestrated by Torpe and his associates, drew participation from over sixty leading professionals representing India's foremost automotive OEMs.

With close to a decade's cumulative experience within the Indian sector, Torpe and his team have designed and supplied specialized, cutting-edge products tailored for the unique demands of the Indian two- and three-wheeler market, with manufacturing localized within India to meet both cost and performance expectations. These efforts have culminated in the imminent launch of a new 48V BMS lineup—LO-BMS16-M™—which will be available in three distinct iterations:

LO-BMS16-MS™, a standard, cost-optimized version engineered to compete directly with Chinese-manufactured BMS units.

LO-BMS16-MA™, an advanced model featuring sophisticated State of X (SoX) algorithms designed to optimize power estimation, maximize capacity utilization, and substantially prolong battery lifespan, while also delivering advanced functionalities such as hot-swap capability and parallel pack support, crucial for modular systems like those being developed by HERO. The flexibility afforded by this system extends to serial pack configurations, enabling the same battery pack to be deployed in higher voltage vehicles (e.g., 2 × 48V = 96V), or within architectures that require both parallel and serial arrangements—thus realizing a truly modular "LEGO"-like battery solution.



BMS Options from Lithium Optima

LO-BMS18-MN™ variant, uniquely supporting sodium (Na) battery technology, incorporates custom algorithms and safety configurations to extend the operational life of sodium-based batteries, which are anticipated to become a competitive alternative to LFP cells.

Capitalizing upon an in-depth understanding of the Indian market, Lithium Optima has judiciously selected hardware and software components to ensure a product that is both highly advanced and exceptionally cost-competitive, capable of addressing the demanding use cases presented by the Indian environment. Furthermore, the entire product family is engineered to comply with relevant functional safety standards and to meet rigorous cybersecurity requirements.

Notably, the LO-BMS16-MA/S was unveiled at the recent Battery Show in Stuttgart, Germany, where it garnered significant interest from major OEMs and battery assemblers worldwide. The most profound enthusiasm, however, emanated from the Indian sector, where the rapid movement toward the electrification of two- and three-wheelers has sparked considerable interest from both customers and potential investors, positioning Lithium Optima at the vanguard of this transformative market shift.

Kasper Torpe
kto@lithiumoptima.dk

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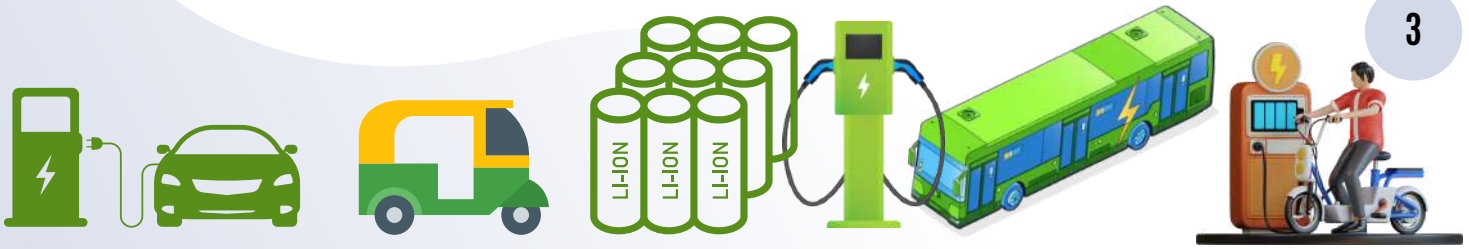


Gyaniki TECH TALKS - Convert Petrol Bikes into EVs

Unlocking the Billion-Dollar EV Retrofitment Opportunity: Insights from Gyaniki TECHTALKS with ASTRIX EV

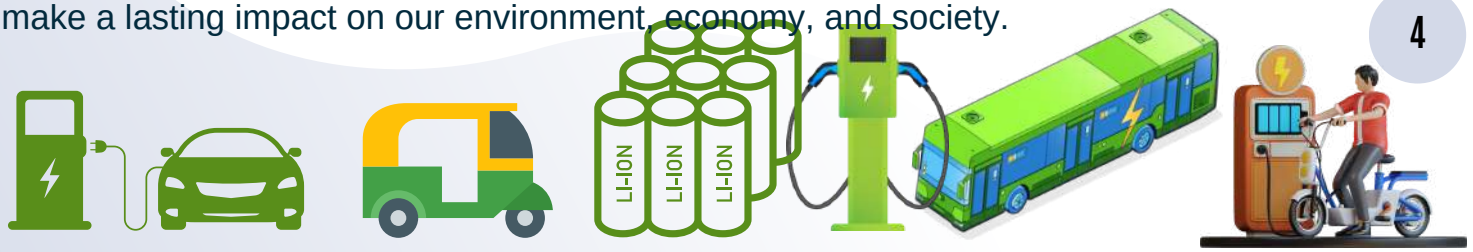
India stands on the brink of a transformative shift in personal mobility. With over 20 crore petrol motorcycles on the road, the potential for electric vehicle (EV) retrofitment is not just massive—it's revolutionary. The recent **Gyaniki TECHTALKS session**, held on July 5th, 2025, brought this opportunity into sharp focus through an engaging conversation with **Saket Dongre, Founder & CEO of ASTRIX EV.**

EV retrofitment wave as one of the most exciting trends of 2025. With global oil prices fluctuating and urban air pollution at critical levels, India's focus on sustainable mobility is both timely and necessary. The rise of AI-driven smart kits, government push for cleaner transport, and the growing ecosystem of EV startups position India as a potential global leader in two-wheeler electrification.

Moreover, the intersection of **technology, policy, and entrepreneurship—exemplified by ASTRIX EV**—demonstrates how innovation can drive real change. As battery technology improves and charging infrastructure expands, the barriers to EV adoption will continue to fall.

The billion-dollar opportunity in EV retrofitment is here—and it's open to every two-wheeler owner and aspiring entrepreneur. If you're ready to convert your petrol bike or explore franchise opportunities, connect with **Saket Dongre, Founder & CEO of ASTRIX EV, at +91 9370795843.**

India's journey to sustainable mobility is gathering pace. Let's ride the wave together and make a lasting impact on our environment, economy, and society.



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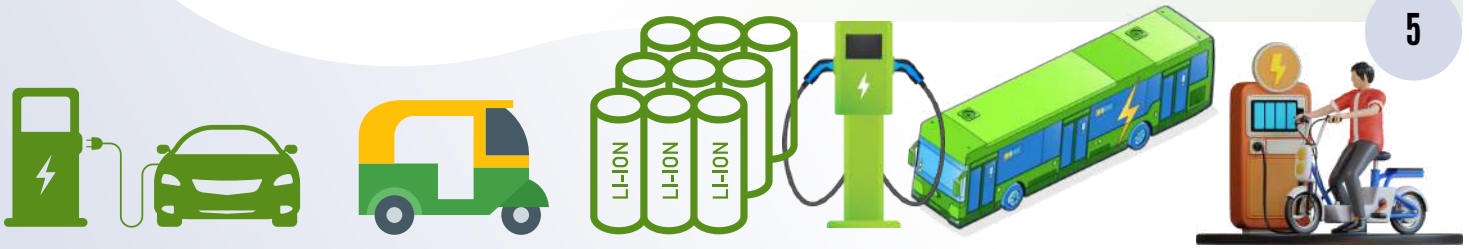
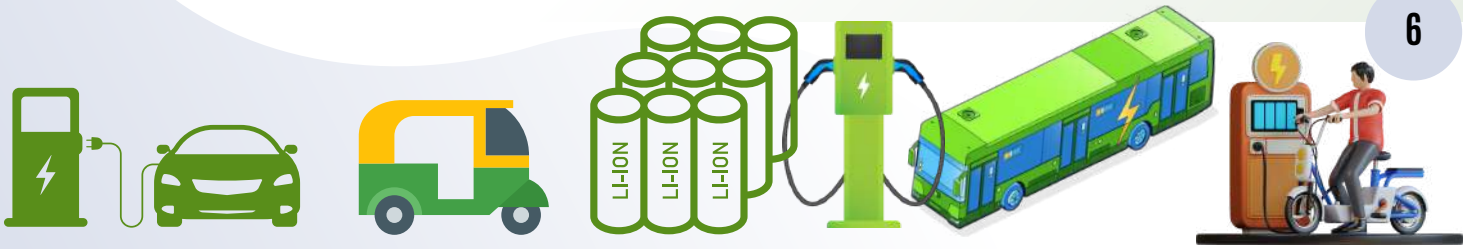


Whats' Inside



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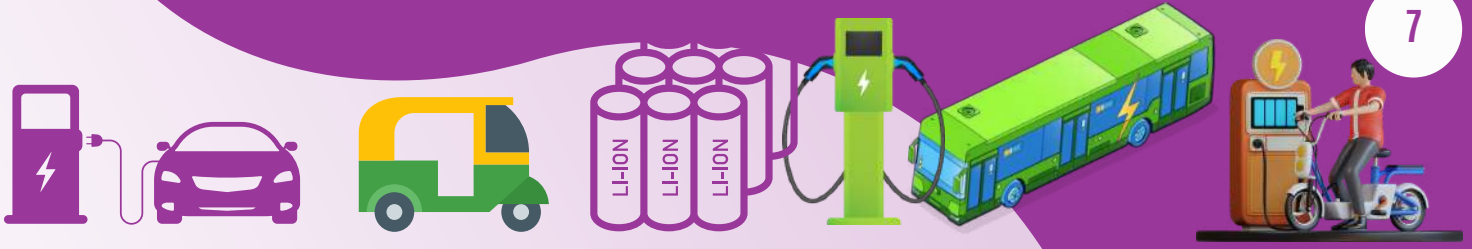
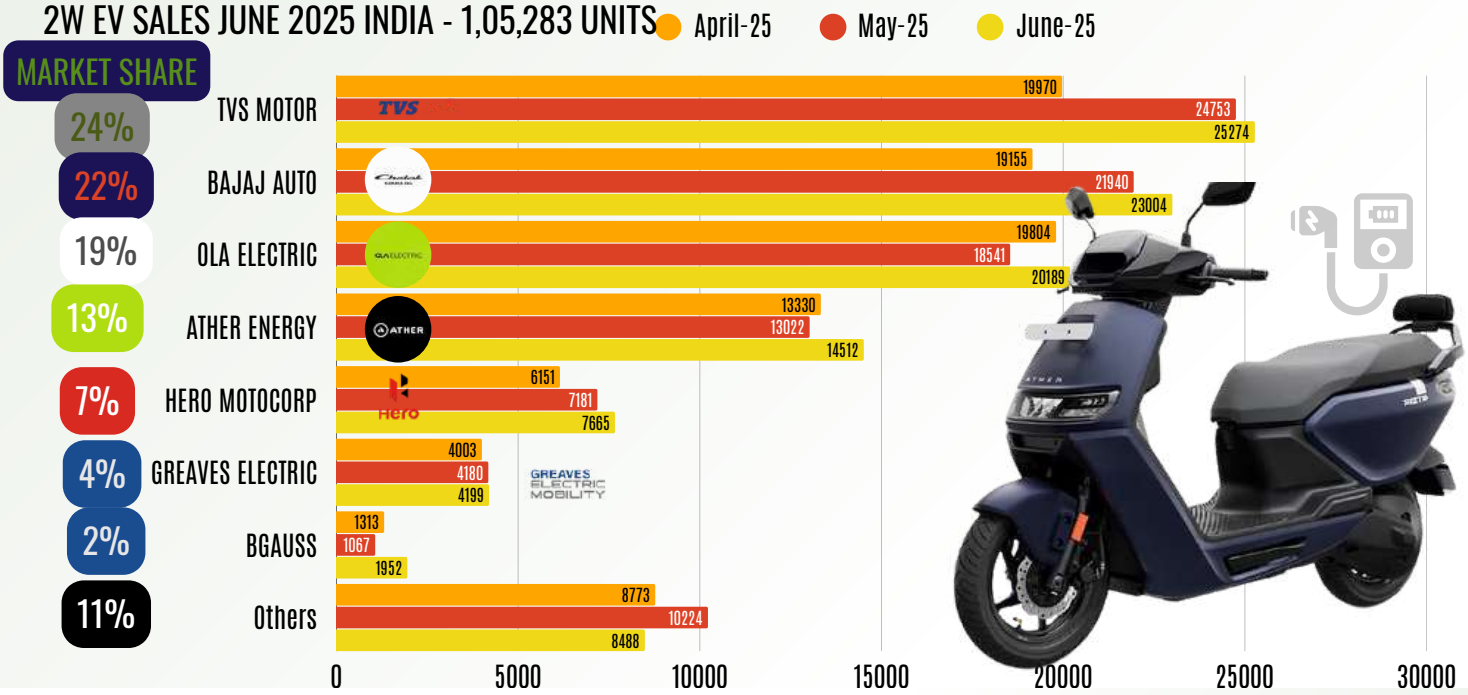


India EV 2W Sales June 2025

TOP EV-2W Sales by OEM



India's electric two-wheeler (E2W) market delivered a record-breaking performance in June 2025, with retail sales soaring to **105,282 units**, marking an impressive **32% year-on-year growth**. This surge underscores the nation's accelerating transition towards sustainable mobility, driven by robust consumer demand, expanding charging infrastructure, and aggressive product strategies from both legacy and emerging manufacturers.

VIDA V2 Pro

Price: ₹ 1,40,000/-*

Range: 165 km

App Connectivity: Bluetooth

Removable Batteries: 3.9 kWh

Top Speed : 90 km/h

Riding Modes : Eco | Ride | Sport | Custom

India's Electric Two-Wheeler Market

India's Electric Two-Wheeler Market: June 2025 Sales Surge, Legacy Brands Lead the Charge

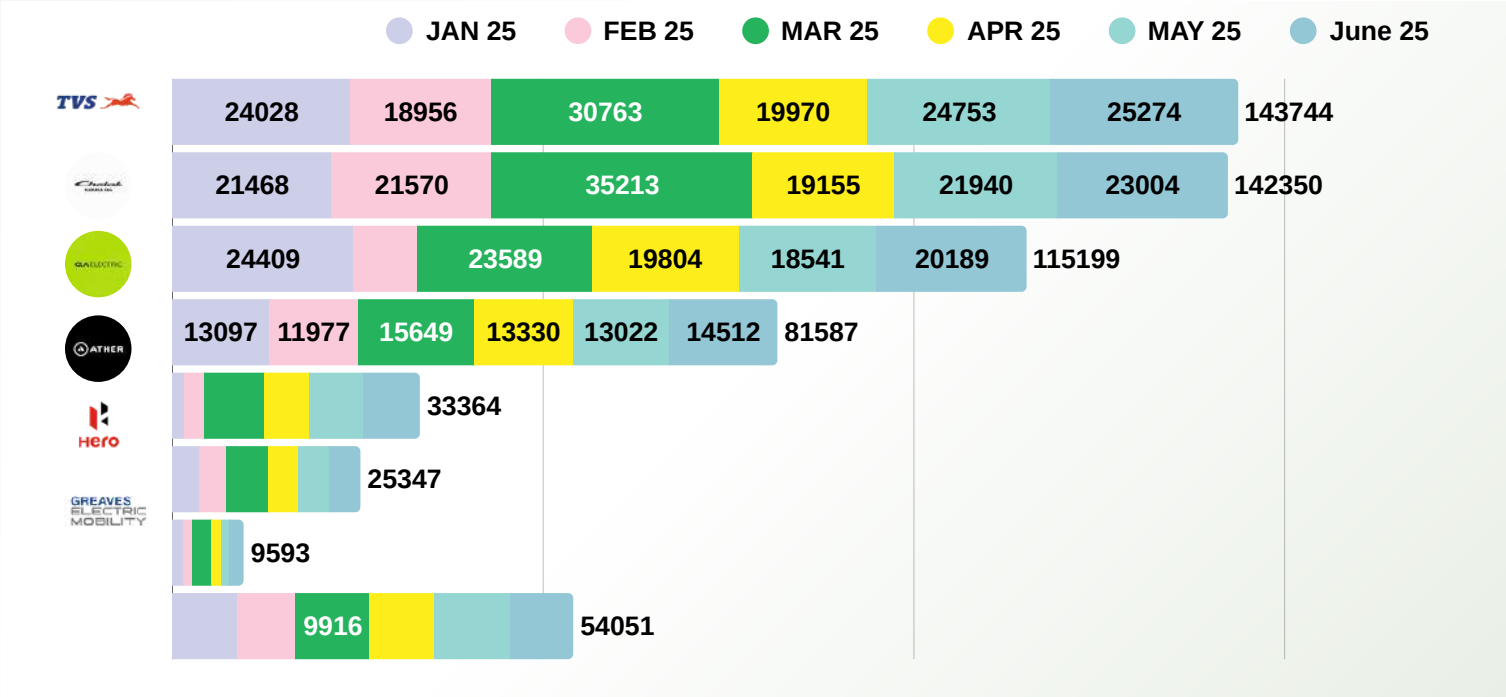
India's electric two-wheeler (E2W) market delivered a record-breaking performance in June 2025, with retail sales soaring to **105,282 units**, marking an impressive **32% year-on-year growth**. This surge underscores the nation's accelerating transition towards sustainable mobility, driven by robust consumer demand, expanding charging infrastructure, and aggressive product strategies from both legacy and emerging manufacturers.

Market Leaders and Shifting Dynamics

The June 2025 leaderboard reflects a significant shift in market dynamics, with legacy brands outpacing new-age disruptors.

Here's how the top OEMs performed:

TVS Motor retained its leadership for the third consecutive month, capturing a **24%** market share, followed closely by Bajaj Auto at **21.8%**. Ola Electric, once the market disruptor, now holds **19.2%**, reflecting a narrowing gap as legacy players intensify their EV focus.



Company Spotlights & Case Studies

TVS Motor: Consistent Growth and Innovation

TVS Motor's dominance is built on a foundation of product innovation, extensive distribution, and a strong brand legacy. The company's electric scooters, especially the iQube series, have resonated with urban consumers seeking reliability and advanced features. TVS's strategic investments in R&D and its expanding charging infrastructure have further solidified its leadership

.

India's Electric Two-Wheeler Market

Bajaj Auto: Rapid Scale and Urban Penetration

Bajaj Auto's aggressive push in the E2W segment, particularly with the Chetak EV, has paid off, with the company posting a **5% month-on-month sales increase** in June. Bajaj's established dealer network and focus on urban mobility solutions have enabled it to quickly scale and challenge the market leader.

Ola Electric: From Disruptor to Challenger

Ola Electric's early-mover advantage is now being tested by legacy players. While still a top-three player, its market share **slipped to 19% in June, down from 21% in April**. Ola's focus on direct-to-consumer sales and rapid rollout of charging stations initially gave it an edge, but the intensifying competition is prompting a strategic rethink.

Ather Energy: Technology-Driven Premium Experience

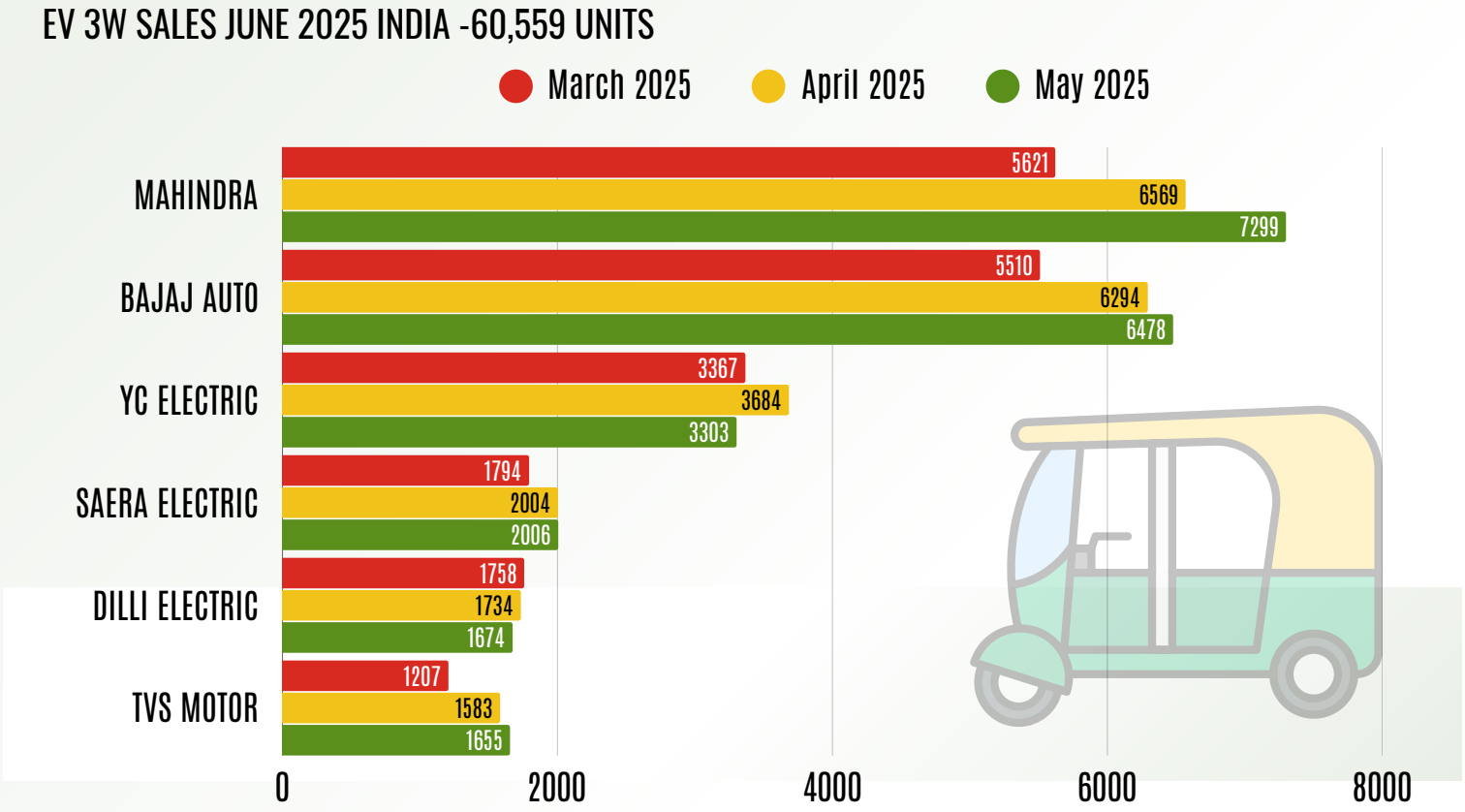
Ather Energy continues to carve out a niche with its high-performance, tech-centric scooters. Its business model emphasizes in-house innovation, premium features like connected dashboards, and proprietary charging infrastructure (Ather Grid). Despite robust revenue growth, Ather faces challenges in scaling profitably, given the capital-intensive nature of its operations.

Hero MotoCorp: Gaining Ground with New Launches

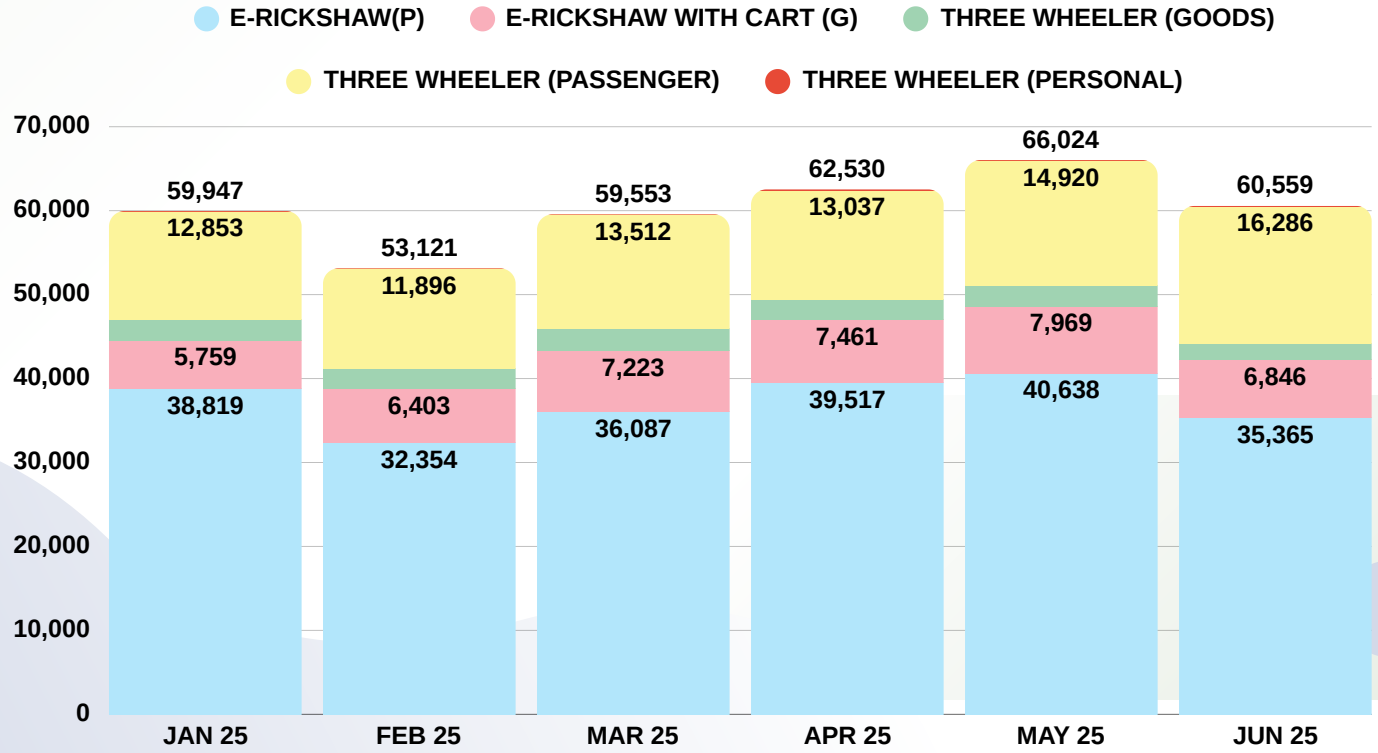
Hero MotoCorp, India's largest two-wheeler manufacturer, is preparing to launch two new affordable EVs in July 2025, aiming to further increase its market share. The company's Vida range has already driven a **175% year-on-year growth** in its EV segment, and the upcoming launches are expected to make electric mobility more accessible to mass-market consumers

India EV 3W Sales June 2025

TOP EV 3W Sales Trend by OEM



The Indian electric three-wheeler (3W EV) market continues its robust growth trajectory in 2025, reflecting the nation's accelerating shift toward sustainable mobility. From January to June 2025, the sector has witnessed dynamic competition, innovation, and strategic expansion among leading OEMs, with Mahindra Last Mile Mobility Ltd, Bajaj Auto Ltd, and YC Electric Vehicle setting the pace for the industry.



India EV 3W Sales June 2025

Key Growth Highlights:

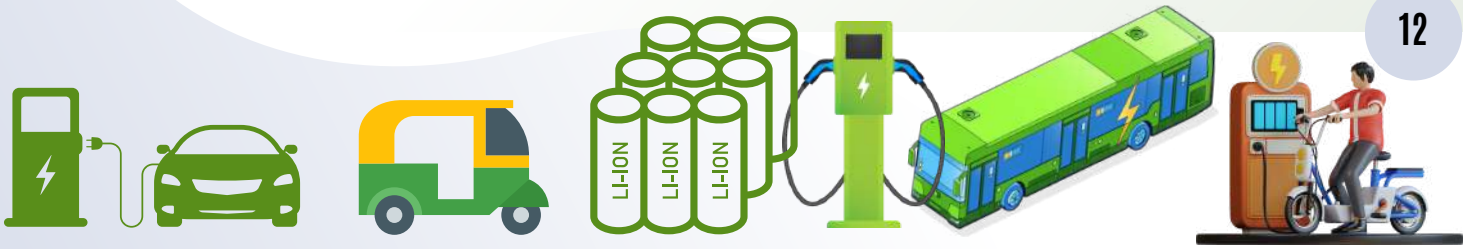
- **Mahindra Last Mile Mobility Ltd** maintained its leadership, registering a **16.81% MoM increase in May and a 48.22% YoY** surge, driven by strategic expansion and product innovation.
- **Bajaj Auto Ltd** posted a **14.23% MoM rise** in May and an impressive **166.88% YoY growth**, reflecting its successful electric transition and expanding dealer network.
- **YC Electric** Vehicle continued to disrupt the market with its value-driven Yatri Super, designed for last-mile passenger transport, and maintained steady volumes despite market fluctuations.
- **Saera Electric Auto Pvt Ltd** capitalized on increased manufacturing capacity and strategic partnerships, anticipating a **100% revenue rise** as it scales up production across new facilities
- **TVS Motor Company Ltd** demonstrated rapid momentum, with three-wheeler sales **growing by 50% in April and EV sales up 59% YoY**, signaling its strong entry into the electric mobility space.

Mahindra Last Mile Mobility Ltd

Mahindra Last Mile Mobility Ltd (MLMML) has solidified its position as India's No.1 commercial EV manufacturer, surpassing **200,000 units** in cumulative sales by April 2025. The company's focus on last-mile delivery solutions, robust aftersales support, and continuous product upgrades have enabled it to capture over 10% of the 3W EV market share. Its scalable manufacturing, strategic dealer expansion, and investment in digital platforms have set industry benchmarks for operational excellence.

Market Dynamics and Future Outlook

- Market Share: The electric three-wheeler segment accounted for **63.2% of total three-wheeler sales** in May 2025, up from **55.7% a year earlier,** underscoring the rapid electrification of Indian last-mile mobility.
- Innovation: OEMs are investing in battery efficiency, digital fleet management, and customer-centric features to differentiate in a crowded market.
- Policy Support: Central and state incentives, along with tightening emission norms, continue to accelerate EV adoption across urban and semi-urban India.



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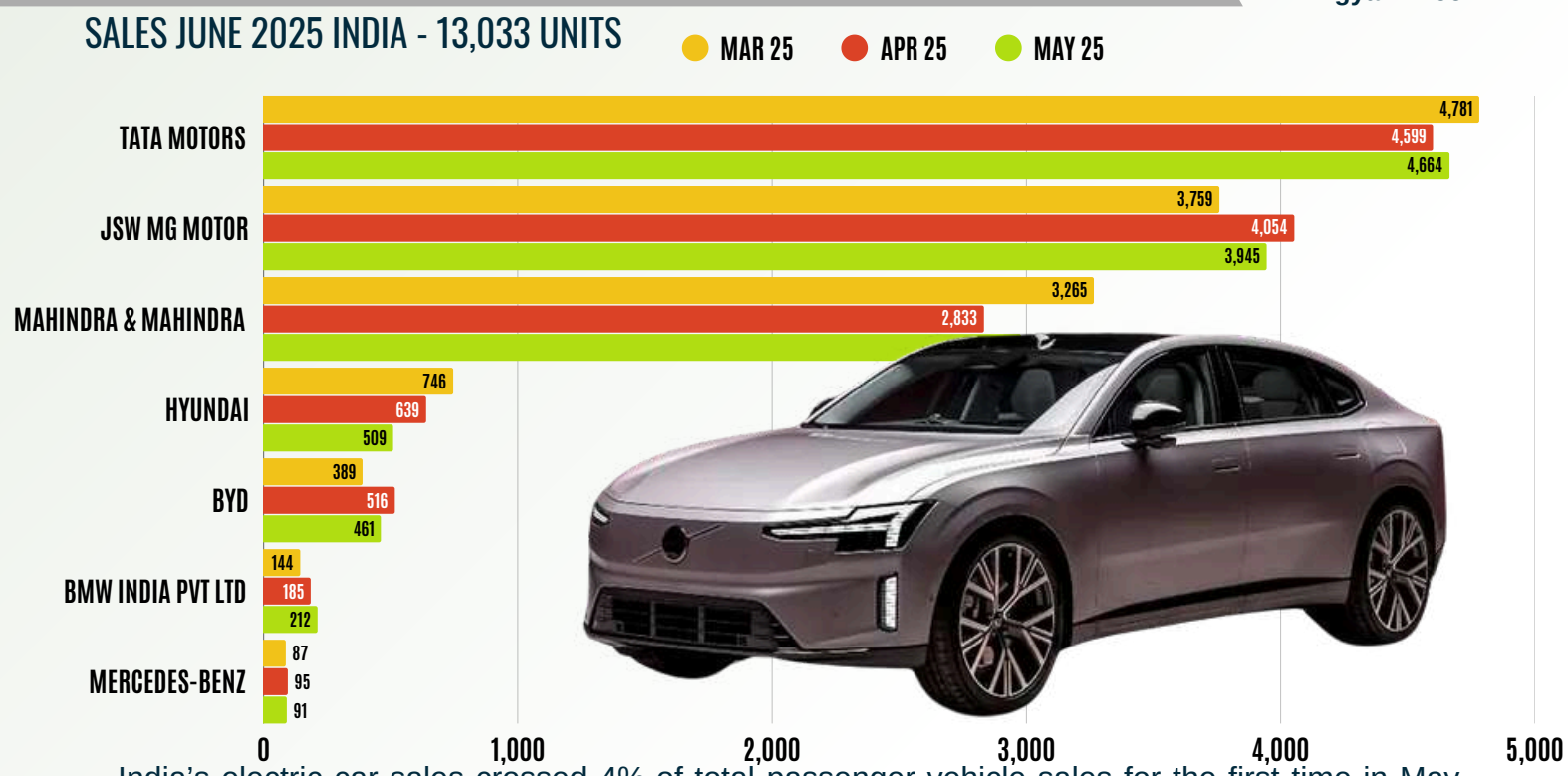
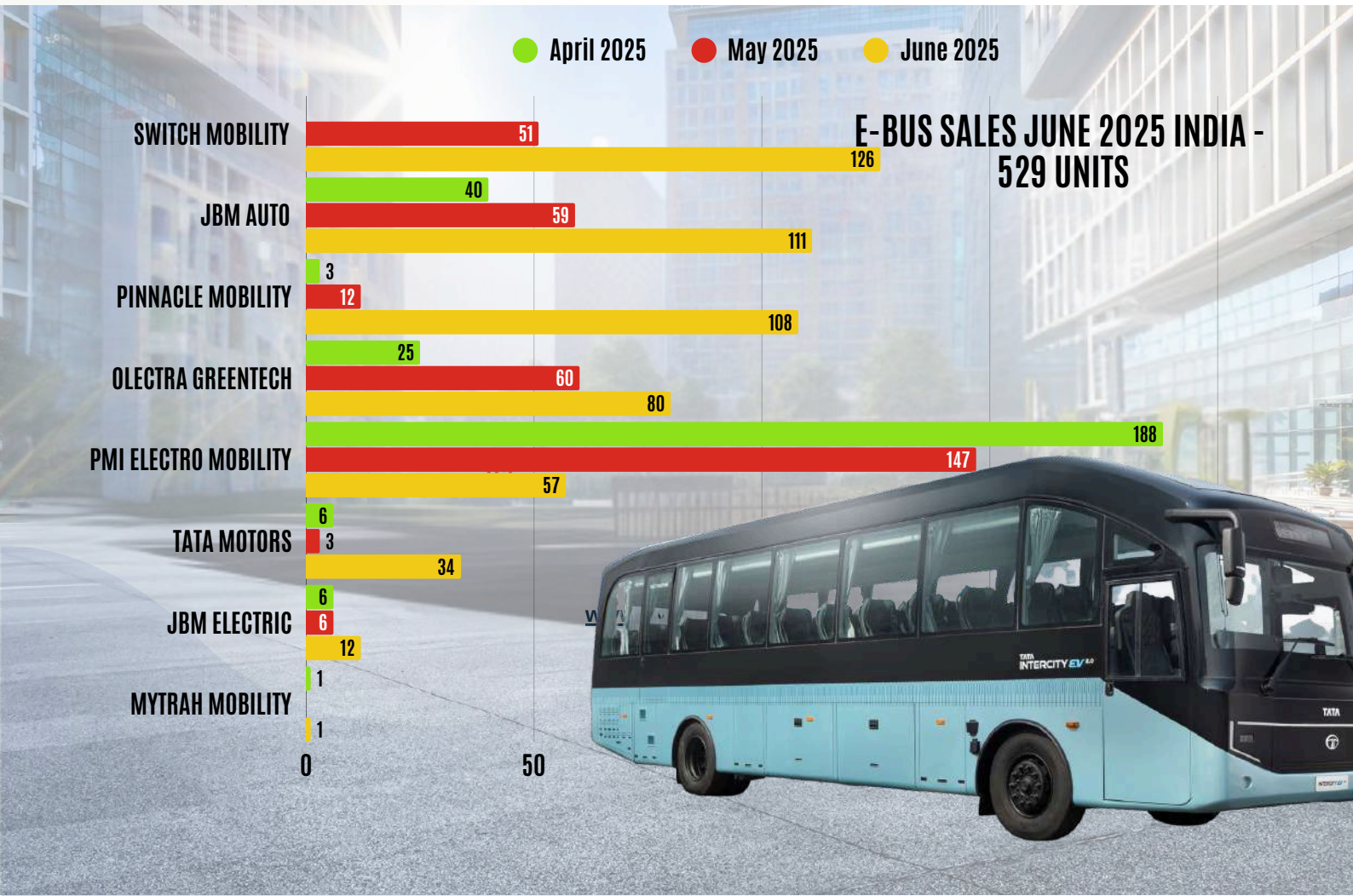
India EV Sales June 2025

EV 4W Passenger Sales Trend by OEM



India's electric car sales crossed 4% of total passenger vehicle sales for the first time in May 2025, up from 2.6% a year ago. This signals a significant shift in consumer adoption and growing momentum for clean mobility, even as the broader passenger vehicle market faced challenges



India's Electric Four-Wheeler Sales

India's Electric Four-Wheeler Sales: January–June 2025 Performance Analysis and Industry Insights

The first half of 2025 has marked a pivotal period for India's electric four-wheeler market, with sales data revealing both surges and slowdowns among the country's leading automotive players. As the nation's EV adoption crosses new milestones, let's break down the numbers, spotlight key company strategies, and examine the trends shaping the future of mobility.

Monthly Sales & Growth: Company-wise Breakdown

Company	Jan→Feb (%)	Feb→Mar (%)	Mar→Apr (%)	Apr→May (%)	May→Jun (%)
TATA MOTORS	-24.3	24	-4	-3.8	1.4
JSW MG MOTOR	-22.9	20.6	-10.5	7.8	-2.7
MAHINDRA & MAHINDRA	-31.4	325.9	51.5	-13.2	5.2
HYUNDAI MOTOR	134.1	16.6	-17.5	-14.3	-20.3
BYD INDIA	-18.9	63.9	-13.4	32.6	-10.7
BMW INDIA	23.8	13.8	-47.1	28.5	14.6
MERCEDES-BENZ	-24.3	24	-4	-3.8	1.4

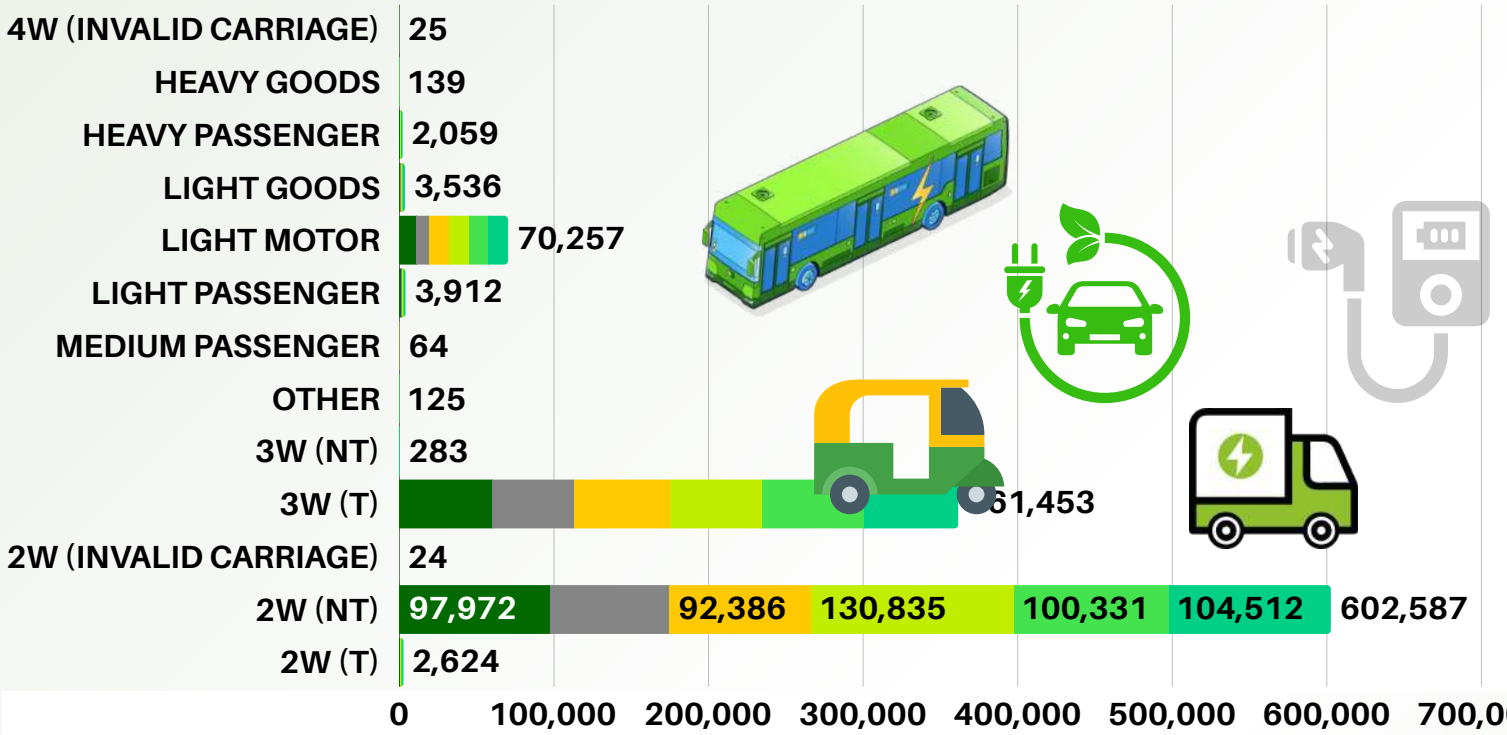
Tata Motors: Continues to lead the market in absolute sales, despite a volatile start to the year. The company's robust Q1 performance is backed by a diverse EV portfolio and strong nationwide presence.

JSW MG Motor India: Maintains a strong position, especially in South India, where nearly half its annual EV sales originate. The MG Windsor remains India's best-selling EV, and the brand's affordable, practical lineup is driving widespread adoption.

Mahindra & Mahindra: Demonstrated explosive growth in March and April, reflecting the impact of new launches and a holistic approach to the EV lifecycle. The company's focus on manufacturing, green logistics, and end-of-life recycling has been recognized as a model for sustainable mobility.

India EV Sales Jan - June 2025 -Category-Wise

EV SALES JUNE 2025 INDIA - 1,80,035 UNITS



The first half of 2025 has marked a dynamic phase for India's electric vehicle (EV) sector, with robust month-wise data revealing clear shifts in consumer preferences and industry focus. At Gyaniki – Your Access to Future Mobility

Dominance of Two- and Three-Wheelers

Two-wheeler (NT) EVs remain the undisputed leader, accounting for over 600,000 units in six months, underscoring their critical role in urban and peri-urban mobility.

Three-wheeler (T) EVs also demonstrated strong adoption, particularly in the commercial and shared mobility segments, with over 360,000 units sold.

Growth in Light Motor Vehicles

Light motor vehicles (LMVs) and light passenger vehicles are gaining ground, reflecting increased consumer confidence in EV technology for personal and family use.

Global Trends Shaping India's EV Journey

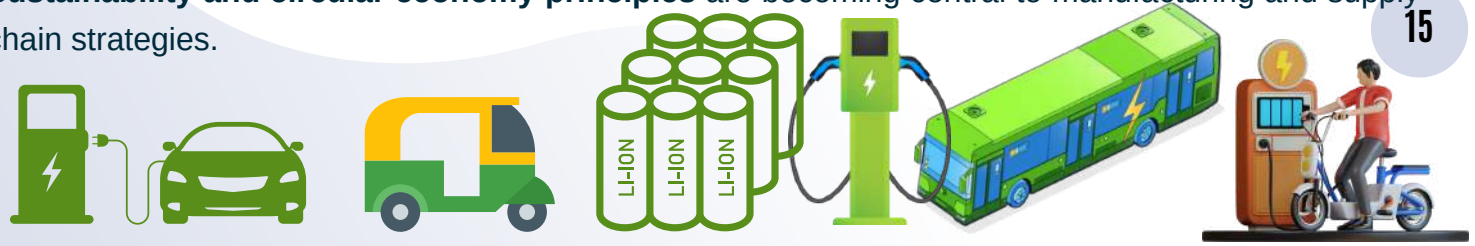
The Indian EV market's trajectory aligns with several global trends:

Rapid adoption of electric two- and three-wheelers in Asia is driven by urbanization, last-mile delivery needs, and cost efficiency.

Advancements in battery technology are improving range and reducing charging times, making EVs more practical for daily use.

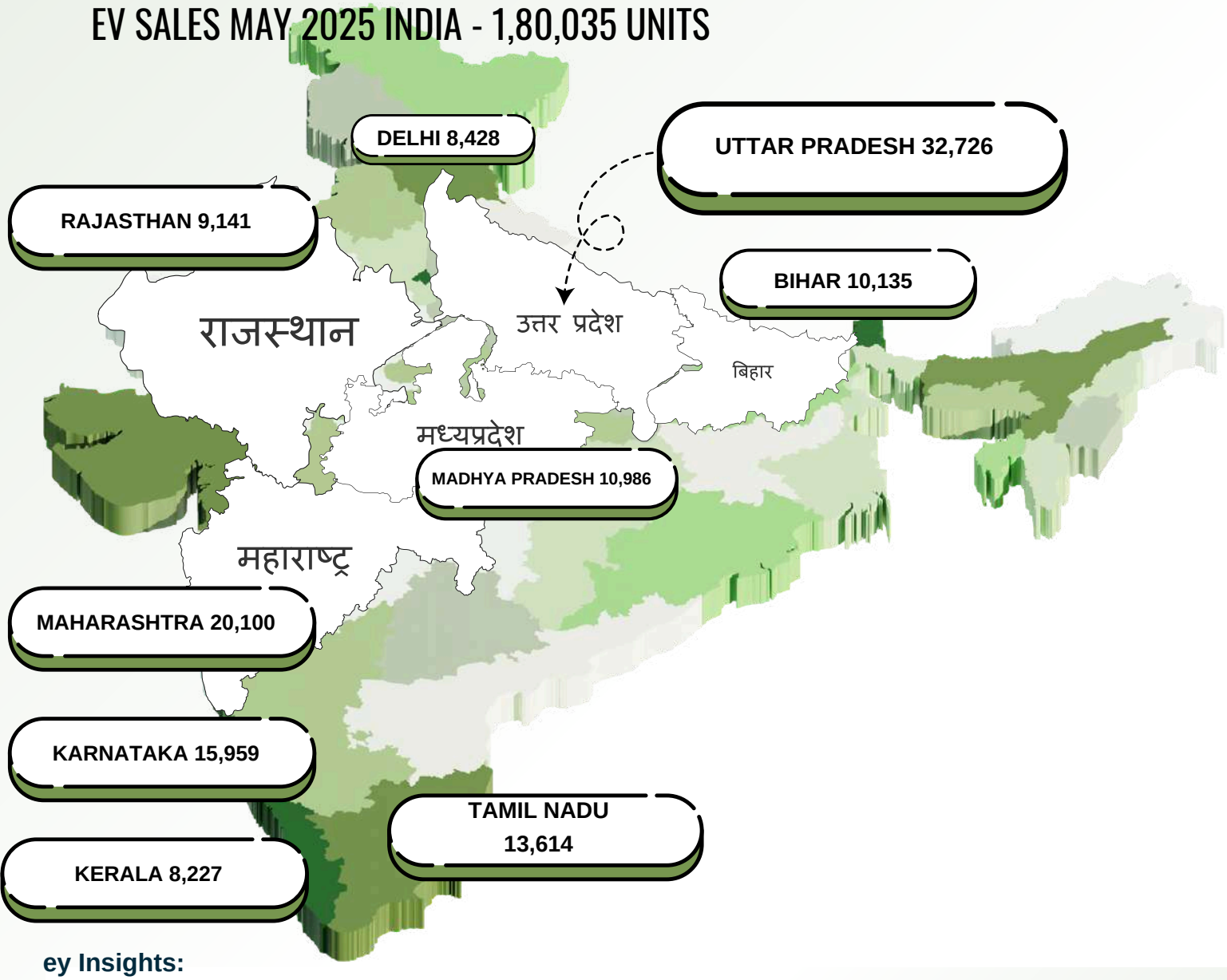
Expansion of charging infrastructure and **government incentives** are accelerating adoption rates.

Sustainability and circular economy principles are becoming central to manufacturing and supply chain strategies.



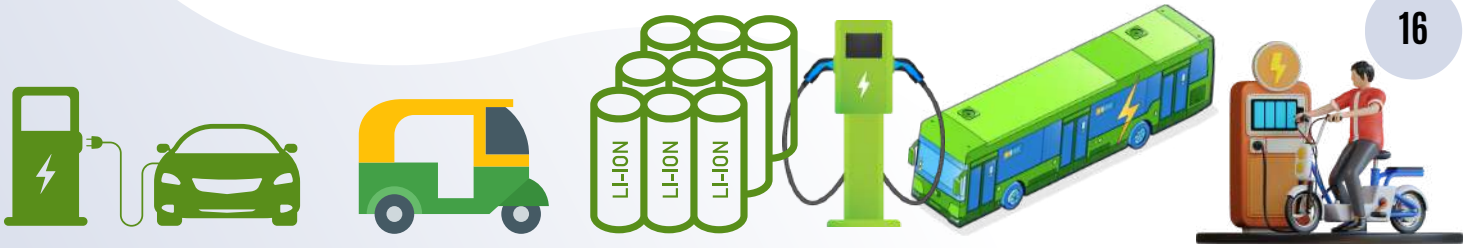
State Wise EV Sales in June- 2025

EV SALES MAY 2025 INDIA - 1,80,035 UNITS



ey Insights:

- **Uttar Pradesh** remains the largest EV market, though it saw a notable month-on-month dip of nearly **15%.**
- **Maharashtra and Karnataka** posted modest growth, reflecting steady consumer demand and robust charging infrastructure.
- **Tamil Nadu** led the growth charts among the top five, with a **15.48% jump**, driven by new EV manufacturing investments and state incentives.
- **Madhya Pradesh** also saw strong momentum, up **9.33% over May**.



State Wise EV Sales in June 2025

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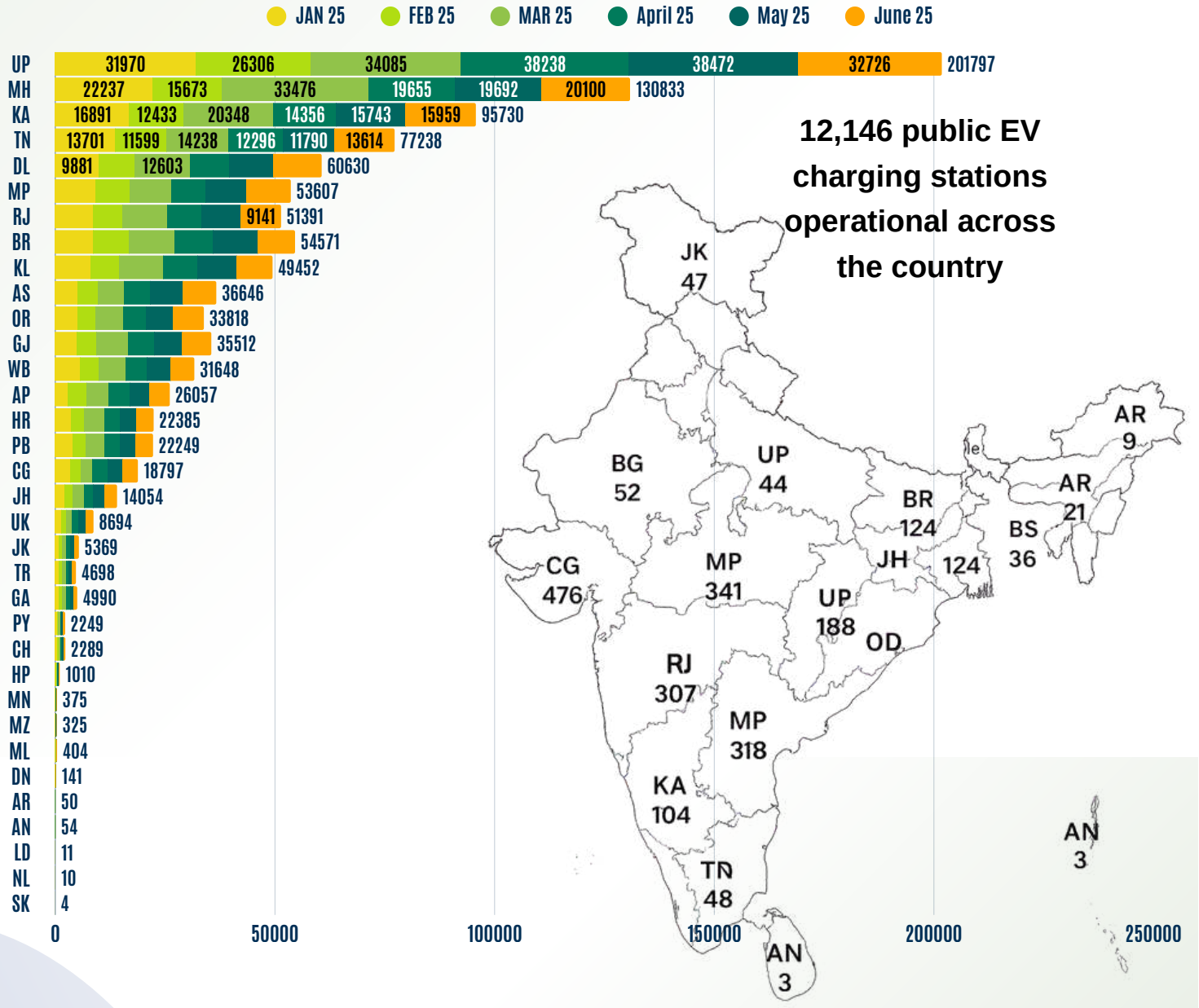
National Market Trends

India's EV market is experiencing a record-breaking year:

- 1.96 million EVs registered in FY 2024-25, a 17% increase year-on-year2.
- Electric two-wheelers dominate, with 1.14 million units sold in FY25, up 21.1% YoY. April 2025 alone saw nearly 91,791 e2Ws sold, marking 40% YoY growth2.
- Electric car sales surged 52% YoY in May 2025, with 12,197 units sold that month. EVs now account for approximately 4% of monthly car sales, with the share expected to rise rapidly



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SITARC EV Foundation and Devise Electronics Forge Strategic Partnership

A New Era for Electric Vehicle Innovation and Skilling

The electric vehicle (EV) landscape in India is witnessing a transformative leap forward with the recent signing of a Memorandum of Understanding (MoU) between **SITARC EV Foundation and Devise Electronics**. This strategic partnership marks a significant milestone in the quest to **accelerate innovation, foster advanced skilling, and drive impactful solutions** within the rapidly evolving EV sector.

Key Pillars of the Collaboration

At the heart of this alliance lies a shared vision to empower the next generation of mobility through:

Benchmarking & Reverse Engineering of EV Components:

By leveraging cutting-edge methodologies, the partnership aims to analyze, deconstruct, and improve existing EV components, setting new benchmarks for quality and performance.

Design & Development Consultancy:

The collaboration will focus on creating high-efficiency motors and compact, cost-effective controllers specifically tailored for light electric vehicles—a segment poised for exponential growth in India's urban and rural landscapes.

Hands-on Training and Skilling Programs:

Recognizing the urgent need for skilled professionals in the EV ecosystem, SITARC EV Foundation and Devise Electronics will jointly roll out comprehensive training modules. These programs are designed to equip engineers, technicians, and students with practical knowledge and hands-on experience in EV technologies.

Resource Planning and Impactful Solutions:

Through joint resource planning, the partnership aims to deliver solutions that not on address current industry challenges but also anticipate future trends and requirements.

SITARC EV Foundation and Devise Electronics Forge Strategic Partnership

Leadership Driving the Initiative

This ambitious collaboration is steered by visionary leaders from SITARC EV Foundation:

- **Mr. Sureandhar Viswanathan**
- **Mr. R. Karthikeyan (Director)**
- **Mr. K. Mohan Senthil Kumar**
- **Mr. Arun Ranganathan (Director)**

Their collective expertise and Commitment is instrumental in shaping the roadmap for sustainable and innovative mobility solutions.

Why This Partnership Matters Now

The Indian EV market is at a pivotal juncture, with government policies, consumer awareness, and technological advancements converging to create unprecedented opportunities.

1. Bridging the Skilling Gap

The EV industry's biggest bottleneck is the shortage of skilled talent. By prioritizing hands-on training, this partnership directly addresses the workforce gap, ensuring that India is not just a consumer but also a creator of world-class EV technology.

2. Fostering Homegrown Innovation

Reverse engineering and benchmarking will enable Indian companies to develop indigenous solutions, reducing reliance on imports and fostering self-reliance—a key goal under the "Make in India" initiative.

3. Supporting the Light EV Revolution

With two- and three-wheelers dominating India's EV adoption curve, the focus on efficient and affordable components for light EVs is both strategic and impactful.

4. Aligning with Global Trends

Globally, the EV sector is abuzz with advancements in battery technology, AI-driven vehicle management, and sustainable manufacturing. This partnership positions India to not only keep pace with these trends but also set new standards.

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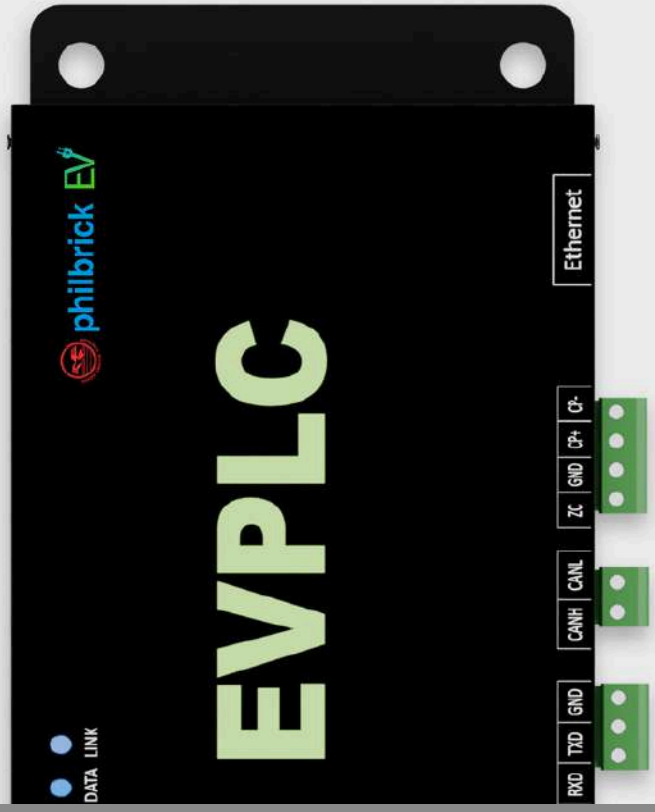

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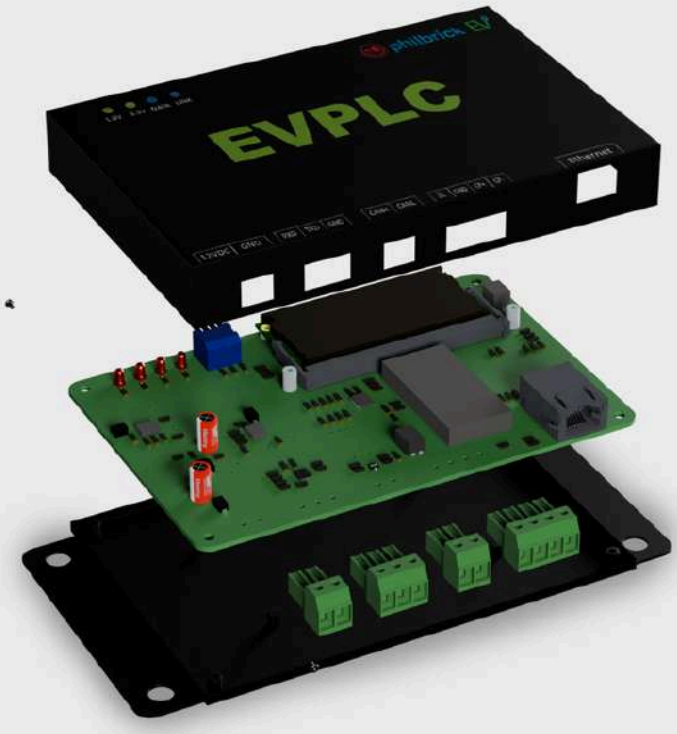

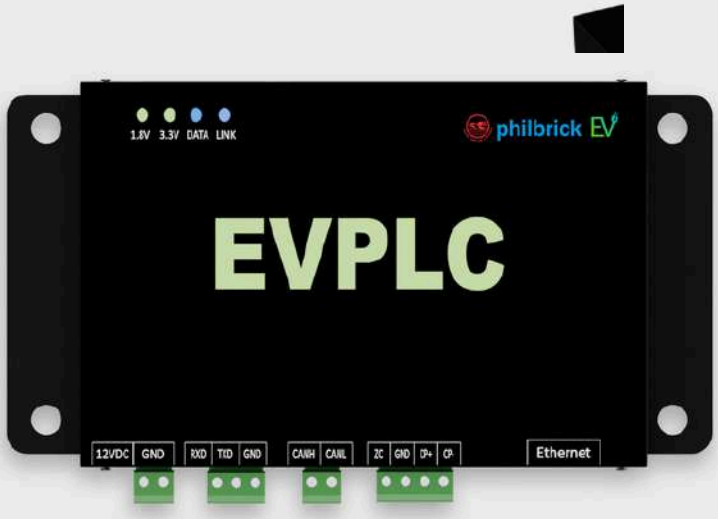

philbrick EV

EVPLC Modem

POWERLINE COMMUNICATION FOR EVSE SUPPORTING DC EV CHARGING– FULLY COMPLIANT WITH ISO 15118 AND DIN SPEC 70121 STANDARDS

FUTURE MOBILITY PARTNERS

vroomble® Transformation for Future Mobility

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EMERGE
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Top Money Movement

Evera Cabs

Evera Cabs, the all-electric taxi service based in New Delhi, has successfully raised **$4 million** from **Mufin Green Finance** via convertible debentures and debt funding.

This fresh capital injection will be used to scale up Evera's EV fleet and strengthen operations, especially in high-demand segments like airport transfers and corporate mobility

Uno Minda

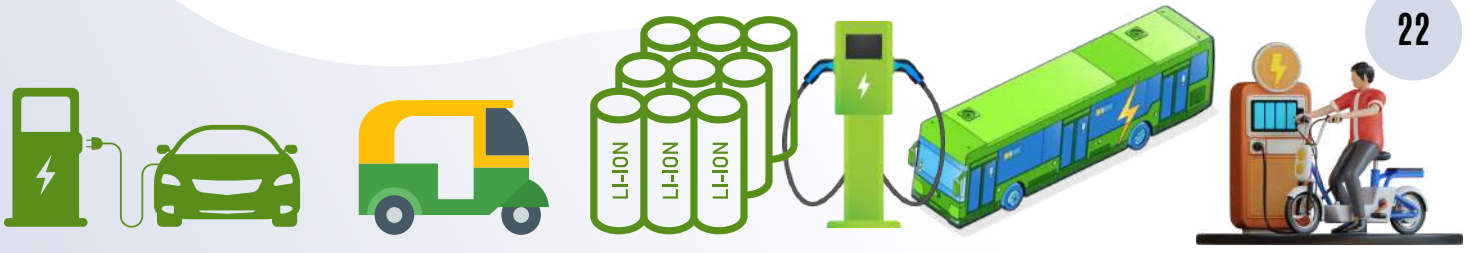
Uno Minda Limited has announced plans to establish a greenfield manufacturing facility for high-voltage electric powertrain components used in four-wheeler passenger and commercial vehicles. The board-approved investment aims to strengthen the company's capabilities in the electric mobility space, with an estimated project cost of **INR 423 crore**. The plant will initially be developed under Uno Minda Auto Innovations Private Limited, a wholly-owned subsidiary, and later converted into a joint venture with China-based Suzhou Inovance Automotive, subject to regulatory clearance. Uno Minda is expected to hold a 70 percent stake in the joint venture.

Kazam

Kazam has raised **$6.2 million in fresh funding led by IFC - International Finance Corporation** , with backing from Vertex Ventures SE Asia & India and Avaana Capital. This takes Kazam's **total funding** to **$19.2 million** as it continues building a smarter, scalable EV infrastructure ecosystem.

Attero

Attero, an Indian company specializing in e-waste and lithium-ion battery recycling, has announced plans to expand its rare earth element (REE) recycling capacity from 300 tonnes to **30,000 tonnes annually** over the next 12 to 24 months. The expansion will be supported by an investment of **₹100 crore** and aligns with the National Critical Mineral Mission (NCMM), launched by the Government of India to reduce reliance on imports and strengthen domestic supply chains for critical minerals.



Top Money Movement

Endurance Technologies Ltd.

Endurance Technologies Ltd. is powering ahead in the hashtag#EV ecosystem with a major investment of **INR 47.3 crores** to set up a state-of-the-art lithium-ion battery pack manufacturing facility at Maval, hashtag#Pune.

Expected to roll out by January 2026, the facility will produce nearly 35,000 packs per month, catering to e-mobility, energy storage, and other emerging applications.

UP Govt

The Uttar Pradesh government has announced a groundbreaking initiative to develop a massive **500-acre Electric Vehicle (EV) Park** near Bhimsen, Kanpur, under the Kanpur Metropolitan Development Vision 2030.

- Estimated Project Cost: **₹700 Crores**
- Objective: Transform Kanpur into a major EV manufacturing hub
- Model: Public-Private Partnership (PPP)

Oben Electric

Electric has successfully closed its **Series A round** at **₹200 crore**, with fresh funding led by **Helios Holdings, Sharda Family Office, and Kay Family**.

With this momentum, Oben is set to scale big:

✅ 150+ showrooms across 50 cities by FY26
✅ Expansion of its Bengaluru plant
✅ Launch of the O100 platform for sub-₹1 lakh motorcycles

Zenergize

Gurgaon-based Zenergize, a cutting-edge power electronics company, has secured **$2 million in seed funding** led by **Mohit Tandon (Co-Founder, Delhivery) and Himanshu Aggarwal (Founder, Aspiring Minds).**

Specializing in EV chargers and solar inverters built using Silicon Carbide (SiC)-based indigenous technology, Zenergize is creating solutions designed specifically for Indian conditions — a major leap for the domestic EV ecosystem.

Kinetic Engineering Limited (KEL)

Kinetic Engineering Limited (KEL) has granted a brand licence to its subsidiary, Kinetic Watts and Volts Ltd (KWV). This marks the brand's entry into the electric vehicle market. KWV is preparing to unveil its product portfolio, rollout strategy, and partnerships. KEL and other promoters have so far injected **Rs 42.83 crore** in KWV, and another Rs 29 crore is to be released, which will give an 80 per cent ownership stake in the company.

Top Money Movement

Vecmocon Technologies

Vecmocon Technologies has successfully closed its **$18 Million Series A funding round**, accelerating the innovation roadmap for intelligent EV solutions. Phase 2 of this round brings $8M fresh funding, led by Ecosystem Integrity Fund (EIF) with participation from Aavishkaar Capital.

This builds on their $10M raise in Nov 2024, supported by BII and Blume Ventures.

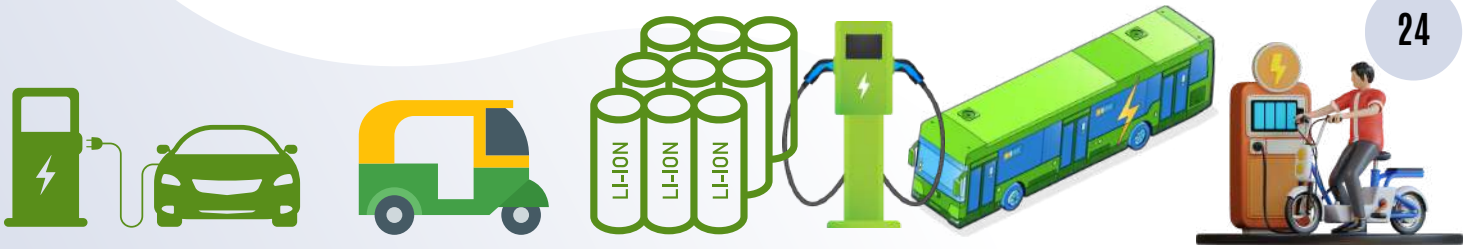
Nidec Motor Corporation

Nidec Unveils **$55 Million** Orchard Hub in Karnataka to Supercharge India's Clean Tech Manufacturing!

Spanning 50 acres, this next-gen facility in Hubli-Dharwad will become a powerhouse for clean energy and mobility solutions—supporting EV motors, BESS, wind turbines, industrial drives, and more.

Volt14 Solutions

Volt14 Solutions has successfully **raised $1.87M in a Pre-Series A round** led by Blume Ventures, with strong backing from Beyond NEXT VENTURES., Spectrum Impact, Supermorpheus, and Cocoon Capital – taking their total funding to **$4.02M**!



EIM and Foton: Powering India's Electric Truck Revolution

India's commercial vehicle sector is on the cusp of a major transformation, with electrification at the forefront. In a significant move, **Mumbai-based Energy In Motion (EIM)** has entered into an exclusive agreement with **China's Foton Motor Co. Ltd.** to assemble and market **Foton's electric heavy-duty trucks** in India. This partnership is poised to accelerate the adoption of clean mobility solutions in the country's logistics and freight industry

EIM-Foton Partnership: A Strategic Leap

Exclusive Rights and Market Impact

EIM now holds exclusive rights to assemble and market Foton's advanced electric heavy-duty goods vehicles across India. The agreement covers a range of commercial EVs, including trucks, tippers, and refrigerated vans. The commercial rollout is scheduled to begin in the second quarter of FY 2025–26, marking a pivotal moment for India's green freight transition.

Technology and Innovation

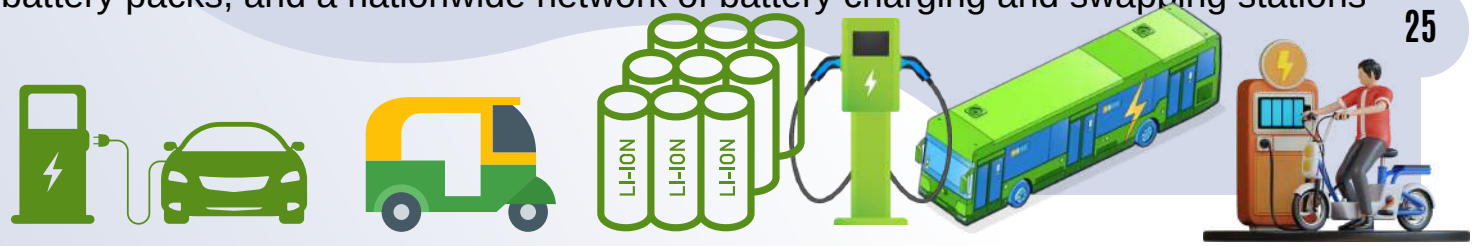
The test vehicle, recently spotted near Pune, is based on a 4x2 chassis and mirrors the design of Foton's Chinese models.

The truck is powered by a 282 kWh LFP battery, mounted just behind the cab. Notably, the battery is swappable and can be replaced in just five minutes at EIM's automated battery swapping stations, addressing a major pain point in EV logistics—downtime for charging.

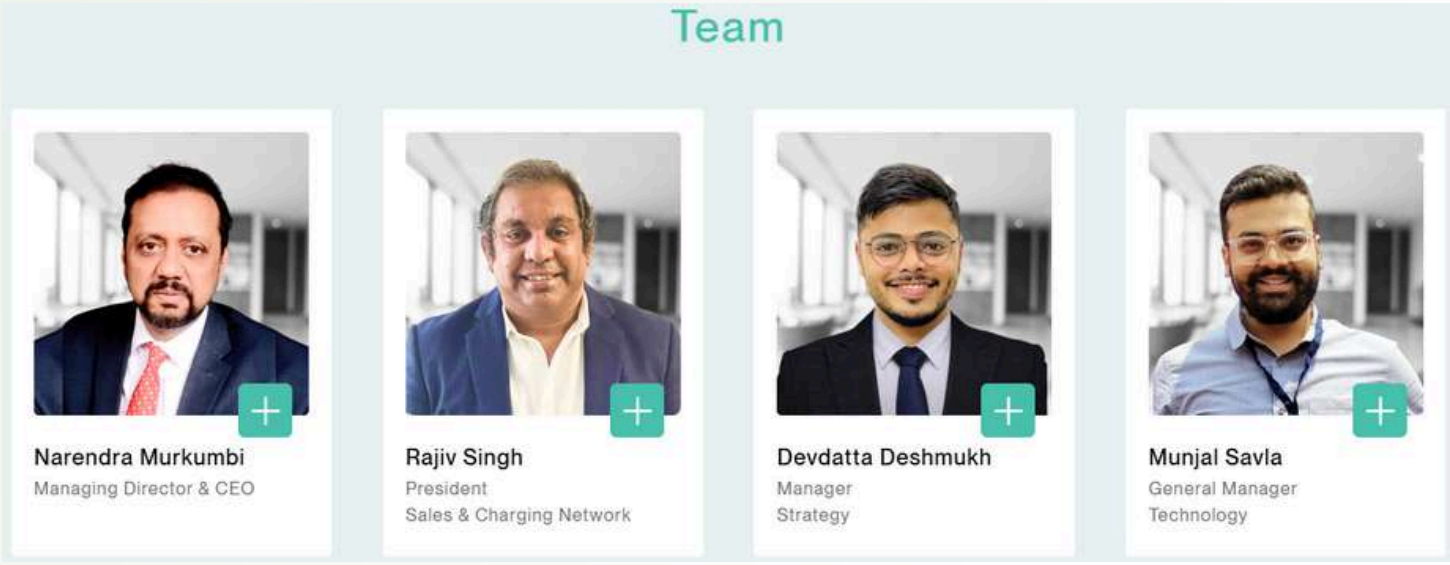
Energy In Motion: Company Profile

Founded: March 2024
Headquarters: Belgaum, Karnataka, India
Business: Manufacture of electric commercial vehicles and e-mobility solutions
Employees: 201–500

EIM is a 49.5% subsidiary of Ravindra Energy Limited, a listed company specializing in renewable energy projects. The remaining shares are held by other investors. EIM's mission is to revolutionize range-specific logistics with sustainable, future-proof solutions, including renewable energy-powered vehicles, advanced battery packs, and a nationwide network of battery charging and swapping stations



EIM and Foton: Powering India's Electric Truck Revolution



Leadership and Shareholding

Ravindra Energy Limited owns 49.5% of EIM, with the balance held by other investors

Financials and Funding

Authorized Share Capital: ₹101 crore

Paid-up Capital: ₹100.48 crore

Latest Updates from EIM

- EIM's electric truck was recently spotted near Pune, returning to JNPT after successful road trials.
- The company is gearing up for a commercial launch in Q2 FY 2025–26.
- EIM is rapidly expanding its battery swapping and charging network, powered by renewable energy from Ravindra Energy Limited

The EIM-Foton alliance is a landmark development for India's commercial vehicle industry. By combining Foton's global manufacturing prowess with EIM's innovative, sustainable logistics solutions, the partnership is set to redefine freight mobility in India. With robust financial backing, a clear vision, and a focus on cutting-edge technology like battery swapping, EIM is well-positioned to lead the electric truck revolution in the country.

EV NEWS

Schneider Electric

Schneider Electric has announced a new **500,000 sq ft state-of-the-art facility** at **Horizon Industrial Park in Hosur, Tamil Nad**u. This project strengthens its 'Make in India' commitment while boosting production of Battery Management Systems (BMS) and other key products for energy and automation.

This state-of-the-art plant will scale production of:

- **Battery Management Systems (hashtag#BMS)**
- **Uninterruptible Power Supply (UPS) systems**
- **Power Distribution Units (PDU)**

NueGo

NueGo has expanded its **electric intercity bus network** across India with the launch of multiple new routes, including its longest service connecting **Delhi to Lucknow** in approximately 10 hours.

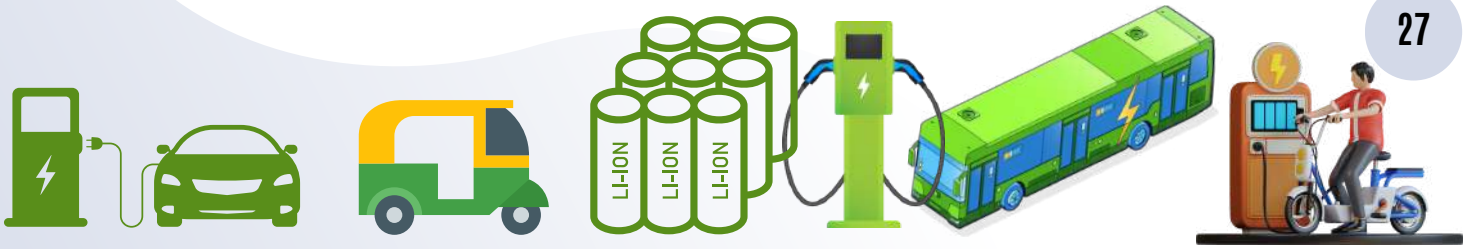
The new routes include connections between Amritsar and Delhi, Bengaluru to Davanagere and Madurai, Chennai to Madurai and Salem, Delhi to Bareilly and Haldwani, and Guntur to Visakhapatnam. Additional services now operate between Gurugram and Haldwani, Jaipur and Kota, Delhi and Hisar, Amritsar and Jammu, Indore and Ratlam, Hyderabad and Kurnool, and Bangalore and Mysore.

Exponent Energy

The World Economic Forum has selected Exponent Energy for its 2025 Technology Pioneers list, recognizing 100 early-stage companies from 28 countries driving innovation across industries.

Ten Indian startups earned spots on the list, with Exponent Energy joining companies developing technologies in space, robotics, healthcare, and logistics sectors.

xponent Energy has developed a charging system that powers EV batteries from 0 to 100% in 15 minutes while providing a 3,000-cycle life warranty. The system works with standard Li-ion cells.



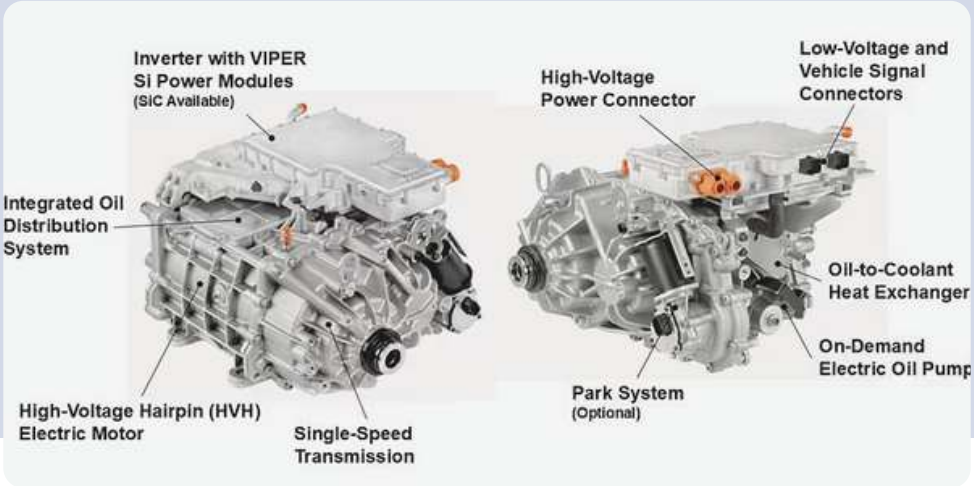
BatX Energies

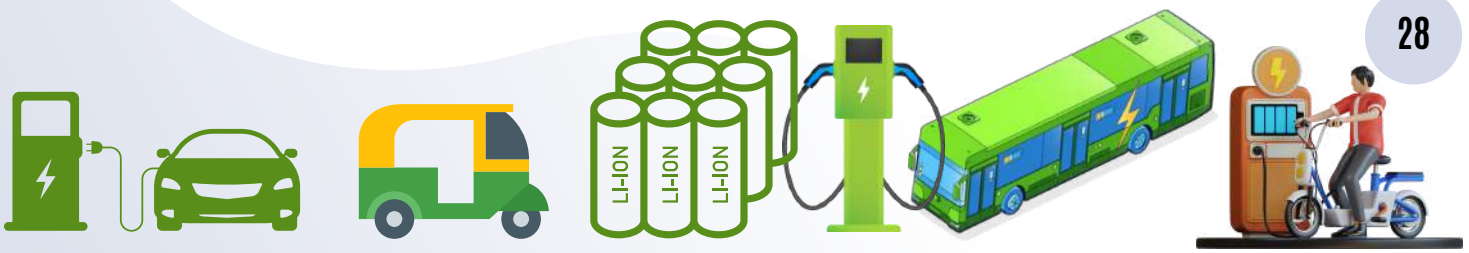
BatX Energies has unlocked a breakthrough in battery recycling with its patented, low-temperature & low-pressure hydrometallurgical process—capable of recovering 97–99% of critical materials across multiple lithium-ion chemistries.

This innovation, fully developed in-house, supports India's goal of Aatmanirbhar Bharat, cuts import dependence on critical minerals, and boosts the circular economy. With support from TDB and seven patents already in place, BatX is now scaling from a pilot to full-scale operations—empowering India to lead the clean-tech race globally.

BorgWarner

BorgWarner has unveiled a major expansion to its electric drive motor portfolio, focusing on high-efficiency, scalable technologies that cater to the growing demand for next-generation electric and hybrid mobility. These new developments aim to increase power density, boost efficiency, and offer greater flexibility across various vehicle types—from compact EVs to high-performance luxury models.





EV NEWS

EMO.energy

Bengaluru-based startup EMO.energy has just unveiled NEXO – a game-changing integrated energy ecosystem designed for India's booming quick-commerce sector. By combining solar power, AI-enabled energy management, battery storage, and ultra-fast charging, NEXO is set to cut operational costs at dark stores by up to 40%!

Horse Powertrain

Horse Powertrain is revolutionizing hybrid mobility with the launch of its fully integrated HR18 HEV powertrain. This breakthrough system merges advanced engineering, global manufacturing, and regulatory compliance to deliver a scalable hybrid solution for OEMs worldwide.

Dive into the latest industry trends, company insights, and case studies that highlight the future of sustainable automotive technology.

Key Features:

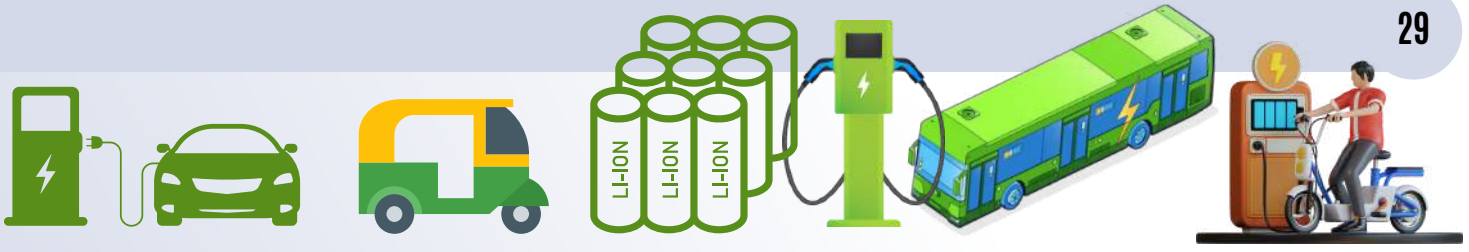
- Integrated Hybrid Architecture
- Advanced Engineering
- Global Manufacturing Footprint
- Regulatory Compliance

Component Highlights

- HR18 Engine
- BTA Gen2 Battery
- DB45S Transmission
- 5DH Electric Motor

EKA Mobility

EKA Mobility has officially received the Automotive Production Linked Incentive (PLI) Certificate under the Advanced Automotive Technology (AAT) Vehicles category from the Automotive Research Association of India (ARAI).



EV NEWS

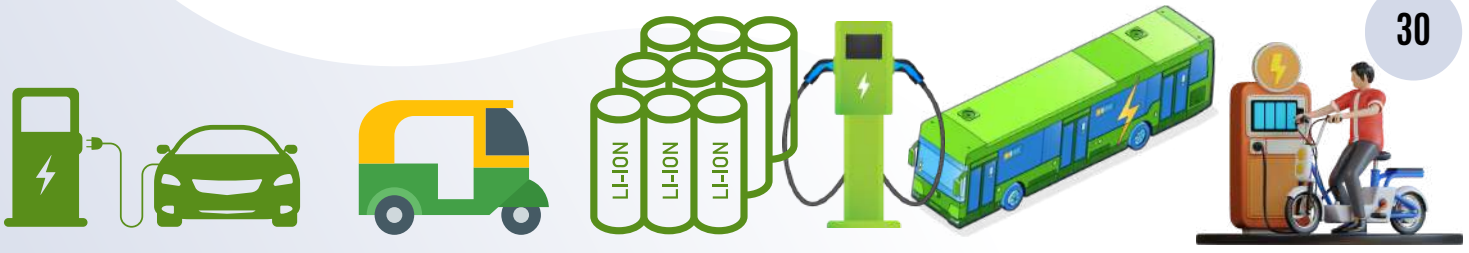
EV91Technologies Pvt Ltd

EV91Technologies Pvt Ltd officially launched its electric two-wheeler fleet operations in Delhi, marking a major milestone in its national expansion. With a dedicated service facility now operational in the capital, the startup aims to power India's transition to clean, inclusive, and accessible electric mobility

ChargeZone

CHARGE ZONE inaugurated India's largest electric vehicle charging hub in Bangalore on Monday, establishing the country's single most powerful EV charging facility with over 210 charging points and a 4-megawatt capacity at Beguru, Chikkanahalli, Bandikodegehalli Amanikere, Karnataka.

The facility comprises 80 DC fast chargers with 160 charging outlets and 50 AC chargers with 50 charging outlets. The hub can fully charge vehicles within 35 to 45 minutes and operates 24/7 to support fleet operators, airport shuttles, corporate transport vehicles, electric buses, and EV trucks.



EV NEWS

Neuron Energy

Neuron Energy has unveiled its next-gen lithium-ion battery packs tailored for India's electric two-wheelers, three-wheelers, and LCVs—set to roll out pan-India starting July 2025.

Designed with Indian road conditions in mind, these Gen 2 battery packs come with:

- **Enhanced vibration protection**
- **Advanced heat dissipation**
- **Smart BMS for longer lifespan**
- **Low-maintenance architecture**

With a revenue target of ₹**250 crore**, Neuron Energy aims to serve OEMs, fleet operators, logistics firms, and public procurement bodies.

Mercedes-Benz Trucks

Mercedes-Benz Trucks UK is set to redefine electric freight transport by introducing new variants based on the eActros 600, with orders opening in Autumn 2025. These additions are designed to meet a wide range of operational needs from payload optimization to extended range — supporting the industry's broader decarbonization goals.

🔋 What's New?

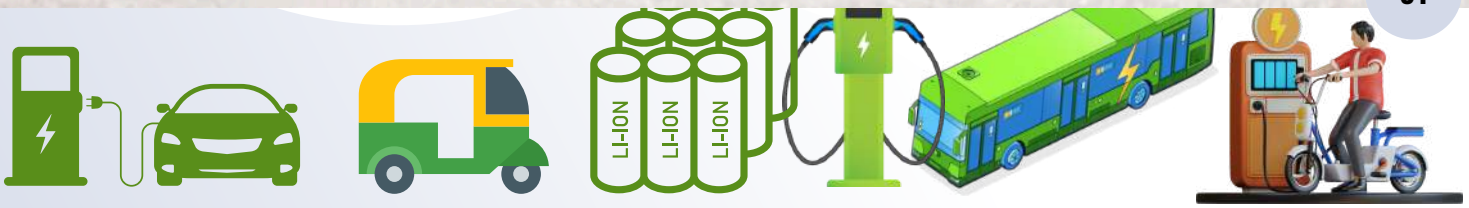
✅ Semitrailer tractors & platform chassis with more wheelbase options

✅ Flexible battery packs for either longer range or higher payload

✅ Advanced LFP battery tech & electric drive axle

✅ New long cab designs with customizable roof shapes

✅ Seamless digital control with the Multimedia Cockpit Interactive 2



EV NEWS

Atlas Copco

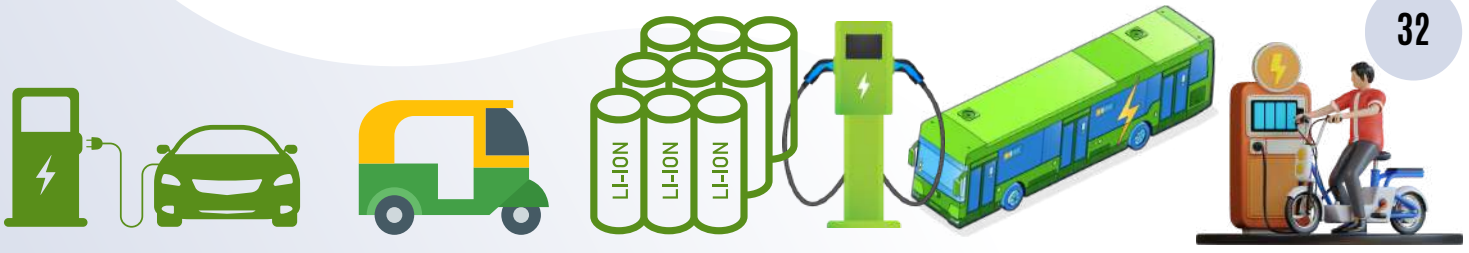
Atlas Copco Tools and Industrial Assembly Solutions hosted its EVolution Days event at the company's Innovation Centre in Bavdhan, Pune. The event brought together over 110 stakeholders from the electric vehicle (EV) sector, including OEMs, Tier 1 suppliers, and line builders, to demonstrate technologies designed for EV manufacturing.

Hero MotoCorp

Hero MotoCorp is set to redefine electric two-wheeler ownership in India! From July 1, 2025, the company's EV brand VIDA will roll out a Battery-as-a-Service (BaaS) model for its VX2 electric scooter

Tata Electronics

Tata Electronics Pvt. Ltd. is taking bold steps to bridge India's semiconductor talent gap. As it prepares to launch its ₹91,000 crore AI-enabled chip fabrication plant in Dholera, Gujarat, hundreds of its engineers are undergoing hands-on training in Taiwan, in partnership with Powerchip Semiconductor Manufacturing Corp (PSMC).



MAN Truck & Bus SE

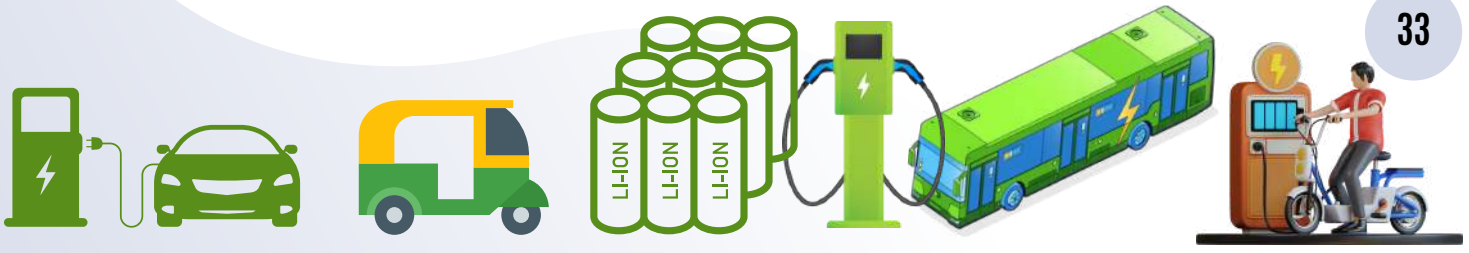
MAN Truck & Bus has officially launched series production of its new electric trucks, marking a historic shift for the company. In a landmark event at its Munich plant, company executives celebrated the beginning of a new era in transportation, moving from a century of diesel manufacturing to embracing electric mobility. The new production process integrates both electric and diesel trucks on a single assembly line, a pioneering approach in the industry.

Key Highlights

- MAN has commenced series production of heavy-duty electric trucks at its Munich facility.
- The company is using a flexible, integrated assembly line to manufacture both electric and conventional diesel trucks simultaneously.
- Significant investments include nearly €400 million in research and development and approximately €1 billion for the electrification of its European plants.
- MAN has already received 700 orders for the new e-trucks and aims to deliver the first 1,000 units by the end of the year.
- The electric trucks feature a modular battery design, offering a range of up to 740 kilometers with an optional seventh battery pack

ZF's CeTrax electric drive

ZF's CeTrax achieved a production milestone in May as the ten thousandth unit of the electric central drive rolled off the assembly line. ZF's compact e-drive is particularly suitable for electrifying conventional bus model platforms. In addition to bus manufacturers, the drive has also attracted other customer segments such as terminal tractors for yard applications. Designed with an open technology approach, CeTrax can be powered by both battery-electric and fuel cell systems.



CATL Unveils Next-Gen Battery Tech

500km Range, Ultra-Fast Charging, and Mass-Produced Sodium-Ion Breakthrough

As the global race for electric vehicle (EV) supremacy intensifies, Chinese battery giant **Contemporary Amperex Technology Co. Limited (CATL)** has once again raised the bar. At its "**Tech Day**" event on April 21, 2025, CATL introduced three revolutionary battery technologies that promise to reshape the competitive landscape between pure electric and hybrid vehicles, while addressing long-standing industry pain points.

Freevoy Dual Power Battery: A 1500km Leap Forward

The headline innovation is the Freevoy Dual Power Battery, a dual-core architecture that delivers a staggering range of over 1500 kilometers (932 miles) on a single charge. This "battery within a battery" Concept cleverly blends multiple chemistries—Including lithium-ion, sodium-ion, and Nickel-Cobalt-Manga (NCM)—to optimize performance across a variety of Driving scenarios and climates.

- **How it works**: The Freevoy system divides energy storage into two independent zones: one for daily needs and another for long-distance travel. This approach not only solves the range anxiety associated with EVs but also enhances reliability for autonomous vehicles and adapts to extreme temperatures by leveraging sodium-ion cells when lithium-ion efficiency drops.
- **Technical edge**: The battery features a self-forming anode technology, boosting volumetric energy density by 60%. This means more energy is packed into a smaller space, improving both range and efficiency36.

Shenxing Superfast Charging Battery: 520km in 5 Minutes

CATL's second-generation Shenxing Superfast Charging Battery sets a new global benchmark for rapid charging. With the ability to add 520 kilometers of range in just five minutes, this technology nearly matches the refueling speed of internal combustion engine vehicles and far outpaces Western competitors—**Tesla's Superchargers**, for example, provide about 270 km in 15 minutes.

- **Real-world impact**: This breakthrough directly tackles consumer concerns about charging downtime, making EVs far more practical for long-distance travel and daily use.
- **All-weather performance**: The battery maintains strong charging speeds even in low temperatures, down to -10°C, outperforming many current industry offerings.

Naxtra Sodium-Ion Battery: Mass Production by 2025

The third major announcement is the Naxtra Battery, the world's first mass-producible sodium-ion EV battery, slated for full-scale production by the end of 2025. Sodium-ion technology offers several compelling advantages:

- **Resource sustainability**: Sodium is far more abundant and affordable than lithium, cobalt, or nickel, reducing both costs and environmental impact.
- **Cold-weather resilience**: These batteries excel in low temperatures, maintaining stable performance down to -20°C, and can charge to 80% in just 15 minutes under normal conditions.

Performance: With an energy density of up to 175 Wh/kg, Naxtra batteries are closing the gap with curre lithium iron phosphate (LFP) cells, offering up to 500 km range and over 10,000 cycles for passenger vehicles.

SAEINDIA Society of Automotive Engineers INDIA

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IEEE Advancing Technology for Humanity

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TECH HIVE

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TECHHIVE ROADSHOW

Empowering Mobility Startups

Your one-stop shop to showcase your products and services to the Investors, global and Indian Automotive market and its pioneers and enable great networking and fruitful business opportunities.

WHY SHOULD YOU JOIN?

What are the advantages of joining me, you might wonder..

- Ideal opportunity to present an innovation or technology
- Display your product(s), give a demo to the investors & delegates, and put on a show!
- An exclusively dedicated space for you to chat, network, and break a deal!
- Increase your brand image and awareness
- New Customer Generation
- Higher Contact Quality
- Differentiate yourself from the rest
- Bring your key team members
- Hand out your product/services flyers & brochures to the attendees

Technology Presentation:

Provide a genuine platform/stage in the form of 6th ITEC INDIA 2025 for the upcoming and present start-ups in the mobility ecosystem to present and showcase their technology and services to potential investors and the key stakeholders in the Industry and its leaders for achieving a smart and sustainable world.

Marketplace Expo:

Build an opportunity to network with the major organizations and stake holders for brand visibility and better engagement with Industry pioneers and stalwarts to get up and running in the mobility domain!

Send us your demo proposal of 3 pages in double-column format (PDF) addressing: ilangois@saeindia.org

Registration fee

Start-up - 2m X 2m - INR 24,000 *

(*Extra GST 18%)

Fee includes:

- 2 delegate passes for all the 3 conference days (Pass includes Delegate kit, Lunch for 3 days, Access pass for Gala Dinner)
- Dedicated Roundtable for product display and B2B discussion

#startupindia

Contact: Mr. Ilango | +91 8870471511 | ilangois@saeindia.org | www.saeindia.org

Joint Ventures & Partnerships

Volektra - Jendamark Forge

Volektra Inc a leader in magnet-free electric motor technology, has signed a Memorandum of Understanding (MoU) with Jendamark India Pvt Ltd a global expert in advanced manufacturing and automation systems. Under this collaboration, Jendamark will serve as the key partner for industrializing Volektra's patented Virtual Magnet Motor (VMM) technology, focusing on building production lines that will drive global adoption of Volektra's rare-earth-free motors. These motors are designed specifically for micro-mobility and electric vehicle (EV) applications, providing a more sustainable alternative to traditional technologies.

Indofast Energy - IOCL - Sun Mobility

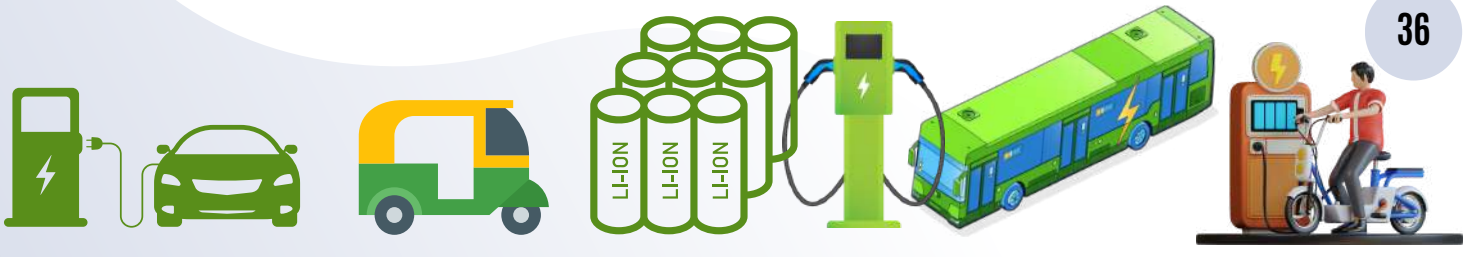
Indofast Energy, a joint venture between Indian Oil Corporation and Sun Mobility, has announced a partnership with Motovolt Mobility to integrate battery-swapping technology with the latter's MVS7 electric scooter. The collaboration aims to address cost barriers and charging infrastructure challenges in India's electric vehicle market.

IONAGE - HPCL

IONAGE has partnered with Hindustan Petroleum Corporation Limited (HPCL) to integrate their 5000+ EV charging network onto their platform. This will enhance accessibility and visibility and simplify the charging process for electric vehicle owners.

Delta Electronics India - Compage Automation

Delta Electronics India and COMPAGE AUTOMATION SYSTEMS PRIVATE LIMITED have announced a strategic partnership through a Memorandum of Understanding (MoU) aimed at advancing the adoption of smart, efficient, and reliable electric vehicle (EV) systems in India's rapidly growing L5 electric auto (3-wheeler) segment. This collaboration is set to deliver high-performance, energy-efficient powertrain systems to the market, leveraging Delta's industry-leading BTDS motor controllers and encoder solutions, fully integrated with Compage's 100% Made in India Powertrain EV Solutions.



Joint Ventures & Partnerships

Toyota Kirloskar Motor - Ohmium

Toyota Kirloskar Motor (TKM) and Bengaluru-based Ohmium International have signed a Memorandum of Understanding (MoU) to jointly develop green hydrogen-based power solutions for India. The collaboration aims to support India's clean energy goals and establish scalable hydrogen systems for diverse sectors.

Toyota Kirloskar Motor will contribute technical expertise and fuel cell modules, while Ohmium will manage design, development, and performance evaluation of the microgrid solutions. The two companies aim to create commercial solutions that align with India's long-term plans to achieve energy independence and net-zero emissions.

Elektrobit - Foxconn

Elektrobit and Hon Hai Technology Group (Foxconn) have signed a landmark joint development agreement to build EV.OS — a next-gen AI-centric software platform for software-defined electric vehicles.

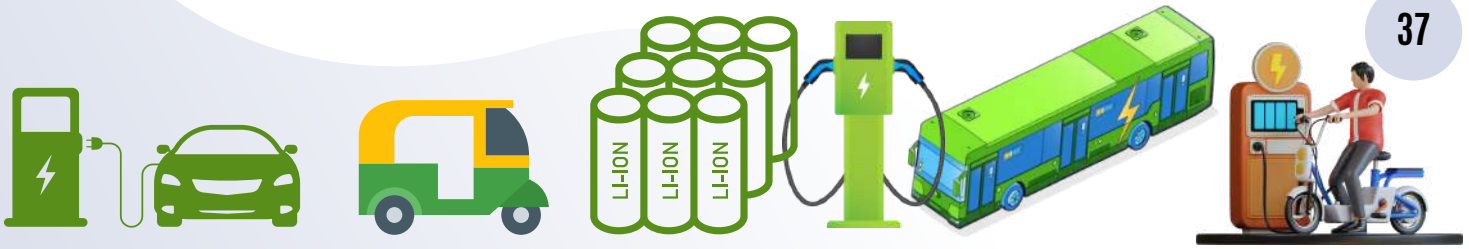
- The EV.OS platform will merge Elektrobit's deep software integration expertise with Foxconn's massive hardware capabilities.
- Key features include a reference EV.EEA, a simplified EV operating system, and real-time control across domains via semantic vehicle APIs.
- Designed to reduce total cost of ownership and complexity, while scaling production rapidly.

LG Energy Solution - Toyota Tsusho

LG Energy Solution and Toyota Tsusho Corporation have formed a joint venture — Green Metals Battery Innovations, LLC — focused on battery recycling in North Carolina.

The facility, set to begin operations in 2026 in Winston-Salem, will process 13,500 tons of EV battery scrap annually, extracting valuable materials like nickel, cobalt, and lithium.

This venture is a key part of building a battery-to-battery circular loop, aimed at reducing dependency on virgin materials and cutting carbon emissions in the EV supply chain.



Joint Ventures & Partnerships

NexiGO Energy - Alium Batteries

Hyderabad-based NexiGO Energy has joined hands with Alium Batteries (USA) a subsidiary of 1776 Energy Group. This partnership is set to unlock cross-border opportunities in medical, industrial, power tools, and light EV segments — tailored for both Indian and US markets.

NexiGO, known for its innovation in BMS, battery packs, and EV chargers, will now explore global demand under this strategic alliance.

Tellus Power Globe Holding Limited - BinHendi Holding - Sing Family Enterprise (SFE) Group

Tellus Power Globe Holding Limited, a global provider of electric vehicle (EV) charging solutions, has officially entered into a joint venture agreement with BinHendi Holding and Sing Family Enterprise (SFE) Group. Announced on May 30, 2025, this strategic collaboration aims to establish one of the first EV charging equipment manufacturing companies in the Middle East, responding to the region's rapidly growing EV market and the critical need for advanced e-mobility infrastructure. The partnership is strongly supported by the UAE Ministry of Investment, highlighting the nation's commitment to becoming a hub for sustainable technologies.

Cyient Semiconductors - MIPS

Cyient Semiconductors Private Limited and MIPS announced a strategic collaboration on June 12, 2025, to develop custom silicon solutions that combine MIPS processor IP with Cyient's power management expertise. The partnership will target applications in automotive, industrial, and data center markets.

The collaboration will focus on creating domain-optimized ASIC and ASSP solutions using the MIPS Atlas portfolio of processor IP. The companies plan to develop products for motor control, power delivery management, and safety-critical applications, with particular emphasis on real-time compute workloads.

Eastman Auto & Power Limited (EAPL) - Vande Bharat E-Vehicles

Eastman Auto & Power Limited (EAPL) has inked a ₹50 Cr annual MoU with Vande Bharat E-Vehicles to supply lithium-ion batteries, supercharging the electric three-wheeler revolution in India.

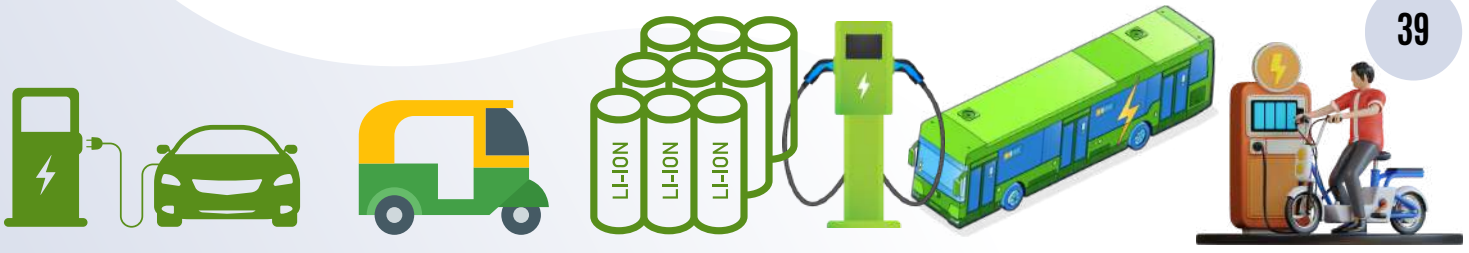
This strategic partnership focuses on battery leasing models, offering a cost-effective and scalable solution for commercial and fleet operators—especially those driving the heart of last-mile logistics across Indian cities.

Joint Ventures & Partnerships

Minda Corporation - Toyodenso Co., Ltd. (Japan)

Minda Corporation has announced a Joint Venture with Toyodenso Co., Ltd. (Japan) to deliver Advanced Automotive Switch Solutions across two-wheelers, passenger vehicles, and more.

This JV is not just about manufacturing—it spans the entire value chain, from design and development to marketing and production, right here in India. It's a leap forward in local innovation with global tech integration—fueling Make in India and the future of connected mobility.

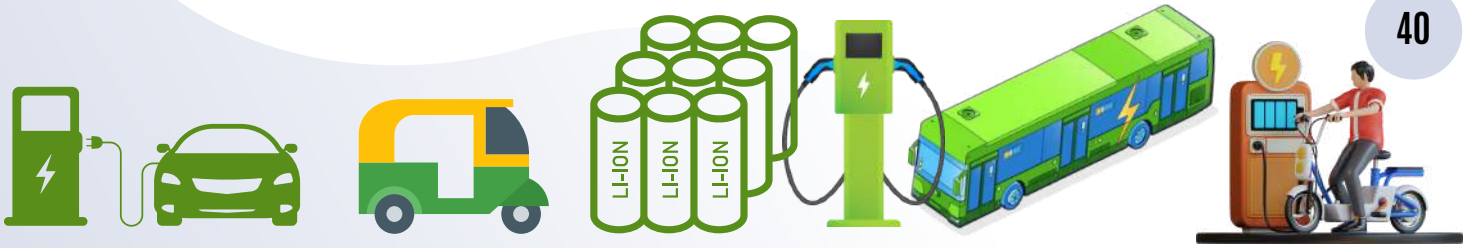


Joint Ventures & Partnerships

JK Fenner (India) Ltd - Korea's NMC Motors

JK Fenner (India) Ltd partners with Korea's NMC Motors to develop e-axle manufacturing capabilities for 3-wheelers & small commercial vehicles

The strategic alliance marks a bold step towards localizing critical EV components and building a strong domestic supply chain for electric mobility. With technology transfer and R&D support from NMC Motors



UPCOMING FUTURE MOBILITY EVENTS

ETAuto Manufacturing Innovation Summit 2025

11th July, 2025
IACE, Gandhinagar

ET Auto Manufacturing Innovation Summit 2025

Supported by

Auto Components Show 2025
11-13 July 2025 at Chennai Trade Centre, Nandambakkam, Chennai, Tamil Nadu.

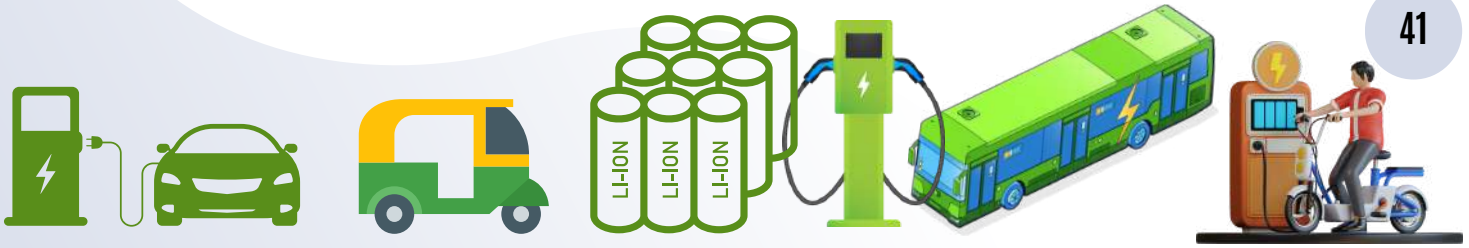
AUTO COMPONENTS SHOW 2025

India's Leading Exhibition on
Machine Tools & Automation Technology

MACHAUTO DELHI
An Exhibition on Machine Tools & Automation Technology

30-31 JULY / 01-02 AUGUST 2025

BHARAT MANDAPAM, NEW DELHI



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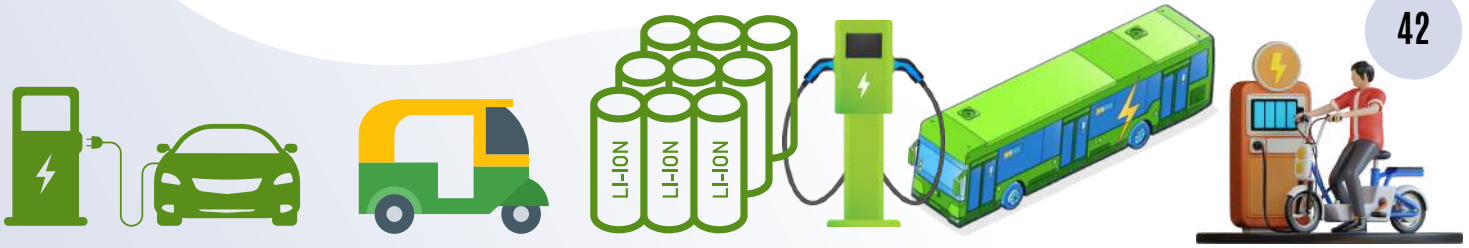


New Launch

Komaki Launches XR1 Series Electric Moped

Range: 70KM to 80KM
Ex-showroom Price : 29,999/-

ZELIO E-Mobility Cargo Scooter

ZELIO E-Mobility will unveil an updated version of its Logix cargo scooter in July 2025, featuring an increased range of 120 kilometers per charge

60/72V BLDC motor
25 km/h top speed

Montra Electric SUPER CARGO

Montra Electric Launches INR 4.37 Lakh SUPER CARGO Three-Wheeler in Delhi
Electric three-wheeler features 13.8 kWh battery with 170 km range and 15-minute charging capability.

13.8 kWh lithium-ion battery
70 Nm torque
11 kW peak power
1.2-tonne gross vehicle weight
Payload 580 kg

New Launch

VIDA VX2

Range Upto : 142 km
Acceleration : 0-40 in 3.1 sec
Top Speed Upto : 80 kmph
Removable Batteries : upto 2units

TVS iqube 3.1

₹1.03 Lakh || Range of 123 km ||

Ather Rizta S 3.7kWh launched at Rs 1.38 lakh

The Rizta S 3.7kWh gets a larger battery pack, fewer features and a lower price tag.

- 159km IDC range
- 7-inch LCD screen, auto hold
- turn-by-turn navigation

New Launch

MG M9 EV

The MG M9 EV, globally known as the Mifa 9, will be launched in July.

Report - Guide to EV Charging Infrastructure and Grid Integration

Rising oil prices and rising energy demand have led to the high cost and capital consumption, as the transportation ecosystem's reliance on non-renewable energy sources has played an adverse role in recent years. The Government of India has developed a number of policies to encourage and facilitate the development of EV charging infrastructure in India.

The Indian government does not plan to mandate standardized charging ports for electric scooters, allowing manufacturers to use their own standards. This flexibility has resulted in a diverse charging infrastructure, posing challenges for EV owners in ensuring compatibility with public charging stations. Resulting in a varied landscape for EV charging infrastructure.

EV infrastructure encompasses **Level 1, Level 2, and DC fast chargers**, meeting diverse user needs, from home charging to rapid refuelling at public stations. AC charging is ideal for overnight charging at homes or workplaces with Level 1 & Level 2 standard chargers.

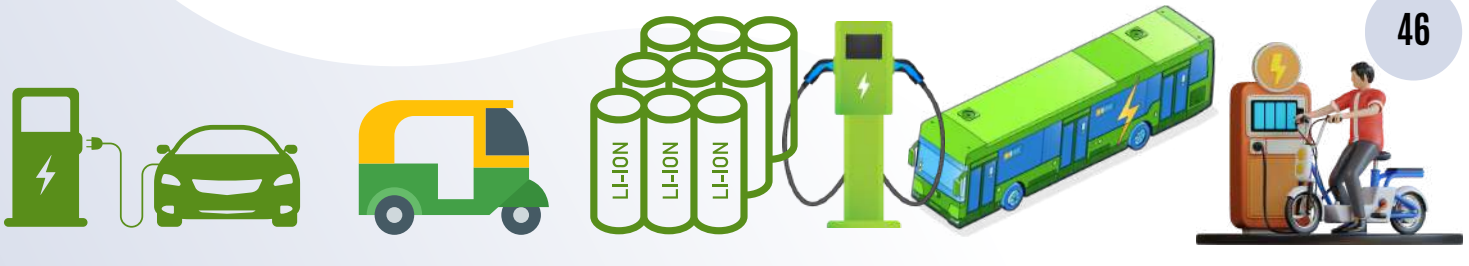
On November 7, 2023, the Ministry of Heavy Industries (MHI) introduced a new phased manufacturing program (PMP) for electric vehicle (EV) charger components under the **FAME India Scheme Phase-II** to boost domestic production. Outlined a comprehensive list of charger components and their timelines for the transition to domestically manufactured parts.

DC charging, including Level 3 fast chargers, is suitable for rapid charging in commercial areas, highways, and high-traffic locations. **Battery swapping** innovations offer quick alternatives, reducing downtime and addressing range anxiety. EVs can now be charged wirelessly via inductive or resonant systems, thanks to emerging technologies.

Smart grid integration optimizes charging times based on grid demand and renewable energy availability for efficient load management. Charging stations require reliable power, proper infrastructure, spacing, signage, safety features, and compliance with regulations and environmental guidelines. Balancing charging stations in urban and rural areas ensures widespread accessibility. Collaborations among governments, private corporations, and utility suppliers expedite infrastructure expansion by leveraging their assets. **Adhering to international charging standards** like CCS and CHAdeMO ensures interoperability among EVs and various charging stations through open communication protocols.

Obtaining **Environmental certifications** for charging stations and integrating solar and wind energy into infrastructure enhances sustainability and reduces EVs' carbon footprint.

In this article you will get the Idea of EV infrastructure promises a cleaner, more accessible world. Embrace the journey, where every charge fuels not just vehicles, but a greener tomorrow. The road ahead is electrifying, and the future is now.



Report - Guide to EV Charging Infrastructure and Grid Integration

Annexures

1. EV Charging Infrastructure Strategy in India
a) Working Principle
b) Types of Charging
c) Charging levels
d) Speed of Charger
e) Fast Charging
f) Types of Connector
g) Battery Swapping
2. Grid Integration
a) Distribution from HV bus to charging station unit
b) Arranging supply
c) Planning & Requirements for Charging Station
d) Utilization of different segments
e) Benefits and Guidelines
3. Implementation of Charging Station
a) Planning and Allocation
b) Mode of Implementation
c) Indian Regulation and Standards
d) Costing and setting up EV public charging station (PCS)
e) Roles and Responsibilities
4. Communication Protocol
5. Smart-connected EV Charging
6. Government Initiatives and Schemes under Fame II

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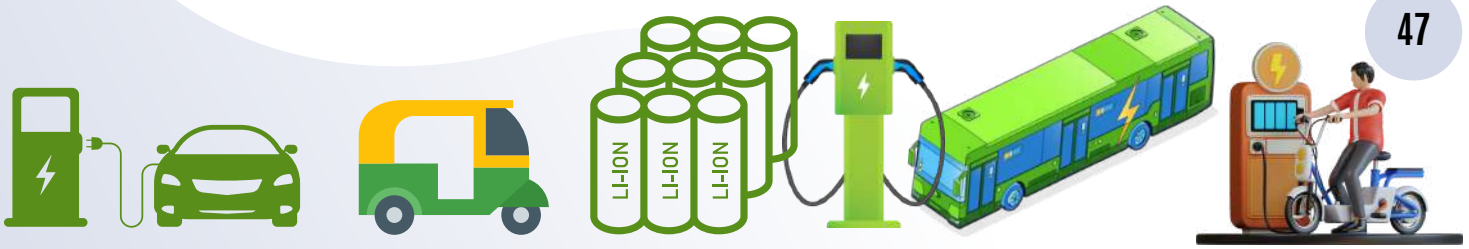


Report - Guide to Basics of Semiconductor

The transition of from traditional internal combustion engines (ICE) to electric vehicles (EVs) marks a significant shift in the automotive industry, presenting both challenges and opportunities for individuals and businesses alike.

As the **Indian Automobile ecosystem adapts to this transformative trend from the conventional mechanical to electrification path,** it becomes **imperative for newcomers from mechanical backgrounds to familiarize themselves with the basics of semiconductors and its manufacturing process, a vital component in electrification roadmap.**

With **OEM's and Tier-1 suppliers gearing up to build their teams and capacities** in response to the growing demand for next generation mobility, **understanding the fundamental principles of semiconductors becomes crucial for effectively contributing to this dynamic industry.**

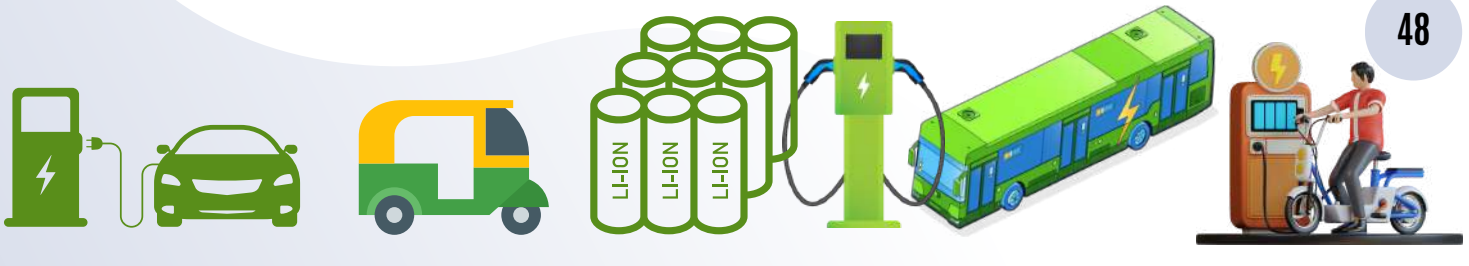
This **compiled report serves as an essential guide** commences with an introduction to **key PCB components, semiconductors**, explaining their role as materials that lie between conductors and insulators. It gets into the atomic structure of semiconductors and the concept of doping, which enhances their electrical properties. An exploration of semiconductor devices, such as **microcontrollers, microprocessors, transistors, IC's, diodes, showcases their significance in electronic circuits and their impact on the efficient functioning of automobiles.**

Next, the report briefs the **semiconductor manufacturing process**, Moore's Law and steps involved in producing integrated circuits in **fabrication facilities (fabs)**. It discusses the **distinction between fabs, foundries and IMD**, emphasizing their relevance in the current Indian semiconductor ecosystem, where suppliers are positioning themselves to cater to the surging demand for semiconductor chips in the EV market.

Semiconductors play an indispensable role in the efficient functioning of electric drivetrains, battery management systems and charging infrastructure.

As Indian Tier-1 suppliers slowly build their teams and capacity to meet the demands of the fast-growing Indian EV sector, there are **challenges and stiff competition** that are ahead and Government of India is supporting through with necessary research infrastructure and launching incentive schemes through "India Semiconductor Mission".

Overall, this **report guides new entrants transitioning from mechanical to electrification stream and focusing on the semiconductor domain** to navigate their transition successfully and empowering them to contribute effectively to the **growing Electrification in Indian Automobile ecosystem.**



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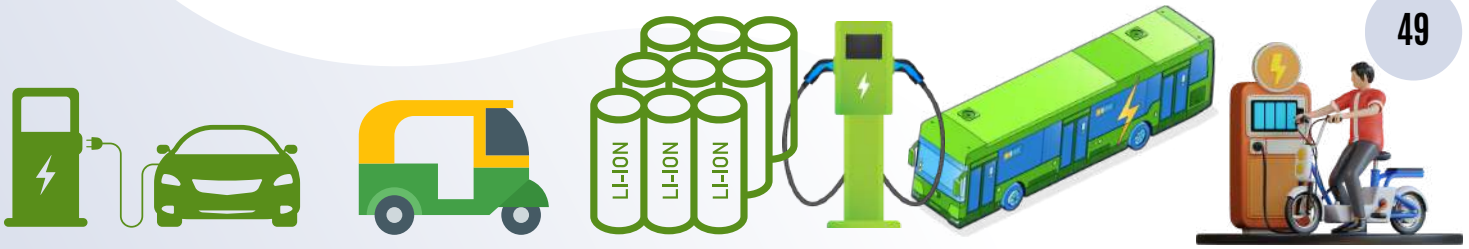

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'gyaniki' has evolved as a technology based digital portal platform created for researchers, product developers, industry professionals and academia members with a vision of incremental expansion in bridging the future mobility ecosystem through our services.

'gyaniki' undertakes specialized and customized research in Future Mobility

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- Benchmarking
- Key Components and Process
- Technologies
- Manufacturers and Suppliers
- Latest & upcoming industry trends (LiDAR, Neural Networks, Sensor fusion)
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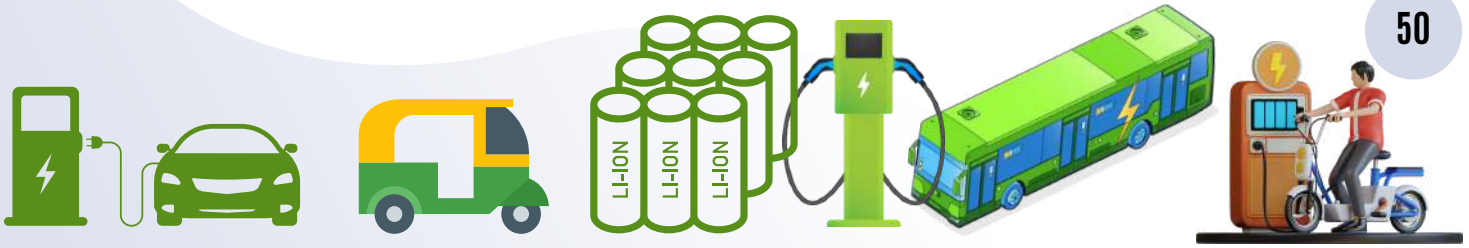

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