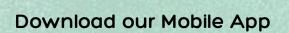


EDUCTAE | AWARE | PROMOTE

August-2025















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India's First Multi-Brand EV Charger Listing Platform





Belectriq EV Charger





Servotech EV Charger





Roadgrid EV Charger

An Initiative by All India EV

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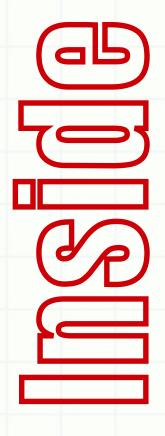


Sales Data

- Electric 2W Sales Data (Aug 2025)
- E-Rickshaw Sales Data (Aug 2025)
- Electric 3W, Loader & Passenger Sales Data (Aug 2025)
- Electric Bus Sales Data (Aug 2025)
- Electric Cars Sales Data (Aug 2025)

Editorials / Interviews

- EV Finance Hub: EVRise Finance: Bridging the Credit Gap for India's Growing EV Ecosystem
- Grid-Makers: From Frustration to Confidence:
 Building a Dependable EV Charging Network
- Founders Garage: The Hidden Dangers of Jugaad Charging — And the Smarter Alternative
- Kazam at 100,000+: Building Smarter, Sustainable, and Global EV Charging Solutions
- The Battery Passport: Powering a Transparent & Sustainable Future
- The Energy-Mobility Flywheel. How Carbon Policy Fueled EV Markets





- Engineering the Transition: How Retrofitting is Repowering India's Trucks
- Powering the Future of Agriculture with Electric Tractors

What All Happened in August-25

- EV Milestones
- New Product Launch
- Joint Ventures & Partnerships
- Who Got Funded
- Other EV Update





MAXWELL

ONE STOP FOR EVERY DRIVE & EVERY DEVICE

- Your complete solution for EV electronics all under one roof
- From OTS, Custom Solutions to IP/License Sharing, we offer end-to-end services tailored to meet your advanced electronics needs.
- Future-ready solutions spanning futuristic battery chemistries, rare-earth-free drives, V2G, localisation, and x-in-1 integration to accelerate the future of mobility.

Your partner for advanced electronics — driving today's performance and tomorrow's mobility.

marketing@maxwellenergy.co





Electric 2W Sales - Aug 2025

TVS	24,087	1,219 e- SPRINTO
OLA	18,972	♦ 1,075
(A) ATHER	17,856	BOUNCE idivity 681
I; Hero	13,313	ф ымр ь 667
BAJAJ	11,730	& LECTRIX 478
GREAVES ELECTRIC MOBILITY	4,498	ward wizard
7 PURE	1,779	HONDA 377
BG BGAUSS	1,720	₹oben 293
River	1,657	224
KINETIC	1,513	KUMAKI® 205

E-Rickshaw Sales - Aug 2025

1	No. constitution for the least 1	3,421	1	1	TERRA MOTORS	820
2	MAYURI I	2,069	1	2	INDO WAGEN	779
3		1,607	1	3	BADSHAH	721
4	Mini Metro™	1,129	1	4	ZEOPLUS	658
5	उड़ान	1,080	1	5	IARGAM E NOE	655
6	mahindra LAST MILE MOBILITY	1,054	1	6	SAARTHI Indees with 1784	632
7	JSA THREE WHEELERS	894	1	7	AAHANA ®	604
8	Panther MOST TRUNTED EV BRAND	871	1	8	KHALSA =	583
		055		9		503
9	VANDE BHARAT	855		9	,	



E-3W Goods & Passenger -Aug 2025

3W Goods	Sales
Bajaj Auto	470
Mahindra Last Mile	436
E Royce Motors	265
Omega Seiki	242
Euler Motors	231
Kinetic Green Energy	124
Piaggio Vehicles	109
3EV Industries	67
Green Evolve	51
Atul Greentech	38
Thukral Electric	38
Atul Auto	35
Dilli Electric	34
TI Clean Mobility	34
Altire Electric	24
Saera Electric	16
KLB Komaki	14
Champion Polyplast	11
ECO Dynaamic	5
GRD Motors	4

3W Passenger	Sales
Mahindra Last Mile	7296
Bajaj Auto	5775
TVS Motor Company	2203
Piaggio Vehicles	1090
TI Clean Mobility	545
Omega Seiki	161
Atul Greentech	140
Dilli Electric	110
Saera Electric	87
Euler Motors	65
Atul Auto	61
J. S. Auto	41
P. S. Enterprise	38
MLR Auto	37
Baxy Ltd	29
Thukral Electric	28
EVCO Automobiles	23
Khalsa E-Vehicles	19
Mini Metro	19
Avon Cycles	13

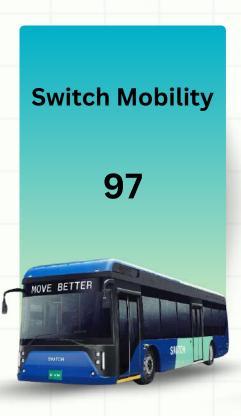






Electric Bus Sales - Aug 2025



















Electric 4W Sales - Aug 2025

Company	Sales
Tata Passenger	7,079
JSW MG Motor	4,758
Mahindra Electric	3,236
Hyundai Motor India	584
BYD India	447
KIA India	441
BMW India	362
Mahindra & Mahindra	259
Mercedes Benz AG	47
Mercedese Benz India	30





Milestones



Servotech Powers Up: 28% Revenue Surge Driven by EV Charging & Solar Momentum

"We're pleased with our strong performance in this quarter. We have had great opportunities to step into new territories and expand our reach across India and beyond in both Solar and EV sector. However, we view this growth as a stepping stone, there's still immense potential to unlock and we remain committed to pushing boundaries, delivering superior products, and building on this momentum in the quarters ahead."

Rechargion Energy Achieves ARAI Safety Validation for Sodium-Ion Batteries

The Homologation and Technology Centre of ARAI successfully tested several sodium-ion battery cells manufactured by Rechargion Energy over a period of two months.

Omega Seiki Mobility to Establish EV Manufacturing Hub in the UAE

Omega Seiki Mobility (OSM), an Indian electric vehicle manufacturer, has announced plans to invest \$25 million in setting up a state-of-the-art electric vehicle assembly plant in Dubai

05

Ashwa Rolls Out: India's First ARAI-Certified Battery-Swappable 55-Ton

Ravindra Energy Limited's associate company, Energy In Motion (EIM), has received Automotive Research Association of India (ARAI) certification and completed the first commercial sale of its **Battery-Swappable 55-Ton Electric Tractor "Ashwa"**.

Electric Tractor by EIM

Bhubaneswar Shifts Gears: EV Sales Surge with 50% Rise in Cars & 39% in Scooters

Improvement in infrastructure, primarily charging stations at public places, has also become a game-changer for rapid EV adoption.

04

BMW Group India on Friday announced it has surpassed the milestone of 5,000 electric vehicle (EV) deliveries in the country, becoming the first luxury automaker to achieve this feat.

07

Exponent Energy brings together design and engineering in a revamped charging station with 15-minute rapid charging

Bengaluru-based energy tech startup Exponent Energy has unveiled its next-generation charging station, code-named P4, powered by its 15-minute rapid charging technology.

EV Evolution Accelerates: Mercedes-AMG Raises the Bar with Record-Breaking Performance

"The goal is to redefine the limits of what is technically possible in the age of electric drives."

Markus Schäfer, Mercedes' Chief Technology Officer

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EV Finance Hub





EVRise Finance: Bridging the Credit Gap for India's Growing EV Ecosystem

Mr. Sumeet Gambhir Founder EVRise Finance

EVRise Finance caters to two types of customers: established businesses and individual drivers.

With the rapid rise of electric vehicle (EV) adoption in India and the national goal of reaching 30% penetration by 2030, we are witnessing the emergence of new business models and a growing shift among commercial vehicle owners from internal combustion engines (ICE) to EVs.

Despite this momentum, many customers in the nascent EV industry struggle to access credit from traditional lenders, who typically require long business vintage, large scale, and extensive financial documentation. These rigid requirements make it difficult for new-age businesses and first-time borrowers to secure the financing they need.

The EV sector, therefore, calls for a different approach to credit—one that focuses on tailored assessment models and flexibility in loan structures. Recognising this strategic shift in mobility.

EVRise Finance is enabling financing solutions that support new business models and drive the transition from ICE to EVs.

Broadly, EVRise Finance caters to two types of customers: established businesses and individual drivers.

On one hand, we support businesses already operating ICE fleets for captive use, as well as new ventures emerging from the EV opportunity—such as fleet operators working with e-commerce platforms, charging infrastructure providers, and battery operators.

On the other hand, we empower individual drivers who are acquiring EVs for deployment in logistics or passenger mobility.

While the majority of financing to date has gone towards the purchase of new EVs, we are also seeing the rise of second-life vehicles in the market. EVRise is pioneering financing in this space as well, with support from OEMs through warranties and refurbishment programs.

To date, EVRise has enabled financing across leading OEMs in the two-wheeler, three-wheeler, and four-wheeler segments, as well as in the battery and charging ecosystem. Our customer base includes driver-cum-owners (DCOs), captive businesses, SMEs, fleet operators, charging point operators (CPOs), and battery operators.

As we look ahead, EVRise remains committed to expanding access to credit, enabling innovative business models, and accelerating India's journey towards electric mobility.



Fleet Operator Financing

ring electric fleet expansion Investin tailored financial solutions vehic

vehicle fleet growth with EVRise Finance's specialized financing solutions. We understand the unique challenges of fleet electrification and provide strategic capital to transform logistics infrastructure

Accelerate your electric



Charging Infrastructure Financing

Investing in the future of electric vehicle charging solutions

EVRise Finance provides comprehensive financial support for charging infrastructure development. We bridge the capital gap, enabling businesses to build robust, sustainable charging networks



Battery Swapping Station Funding

Revolutionizing electric vehicle

EVRise Finance provides specialized funding for battery swapping stations, supporting the next generation of electric vehicle infrastructure. Our innovative financing approach accelerates sustainable energy solutions









From Frustration to Confidence: Building a Dependable EV Charging Network

Mr. Rishabh Sakhlecha Founder & Director: Reliable Charge



For property owners, there's no cost at all - we invest, install, operate, and maintain the chargers. You simply get a share of the revenue without spending a rupee.

If you've ever driven an EV in India, you've probably experienced the frustration - you find a charger on an app, drive there, and it's out of order. It's not just inconvenient; it's stressful.

This single issue is one of the biggest reasons many people still hesitate to switch to electric mobility. I started Reliable Charge to fix that.

My goal was simple: make sure EV charging works every single time. I'm not chasing big numbers or trying to cover every inch of the map. I'm chasing uptime - the confidence that when you pull into one of our stations, you'll be back on the road quickly.

The Real Problem with EV Charging

Most people believe India just needs more chargers. While that's partly true, the bigger problem is that many chargers already out there don't work reliably.

I hear the same complaints from EV drivers all the time - chargers that show as "available" but are actually broken, "fast chargers" that slow down after a few minutes, charging bays blocked by parked cars, stations placed in low-demand areas just for the sake of numbers, and payment systems that make you jump through hoops.

From Day 1, I decided we would do things diOerently. When our first public charger went live in Noida on January 1, 2025, I made two promises to myself: we would only build chargers in places people actually need them, and we would keep them working - no matter what.





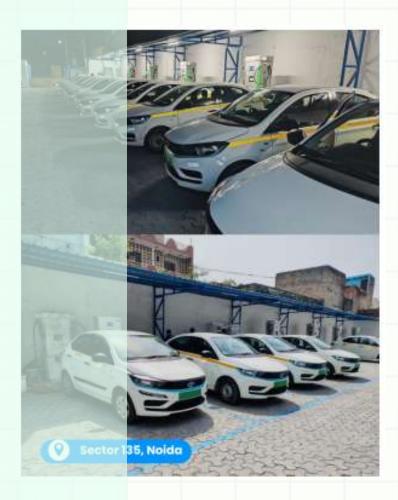
How We're Building a Better Charging Network

Our approach is straightforward but disciplined. For property owners, there's no cost at all - we invest, install, operate, and maintain the chargers. You simply get a share of the revenue without spending a rupee.

When it comes to location selection, we rely on real data - analysing traffic flow, EV density, surrounding infrastructure like offices, malls, hotels, and most importantly, power supply.

If a location doesn't have enough grid capacity, we upgrade it rather than installing something that won't work. And above all, uptime comes first. We monitor all chargers remotely, run preventive maintenance, and keep field teams ready to respond.

If something goes wrong, we aim to fix it in hours, not days. Plus, our chargers are OCPI-ready, which means that in the near future, drivers and fleets will be able to charge across networks seamlessly with one account and one payment.



Where You'll Find Us

Right now, Delhi NCR is home base, with Noida and Greater Noida leading the way.

We're expanding across commuter corridors in the region, focusing on fleet hubs, highways, and high-footfall partners like Grade-A offices, hotels, QSRs, malls, logistics parks, hospitals, and dealerships.

Our highway strategy includes dedicated bays, onsite attendants, and high-power DC chargers up to 200–240 kW for premium 4Ws, e-buses, and light trucks. Wherever dwell time and demand meet, we're there

What Makes Us Different

I don't measure success by how many chargers we have - I measure it by how many are actually used.

Every site is designed for utilisation, not just to make a press release look good. We work directly with power companies to ensure every site has the energy it needs.

We keep property owners happy with transparent revenue sharing and monthly reports. For fleets, we provide dedicated bays, RFID cards, and consolidated billing.

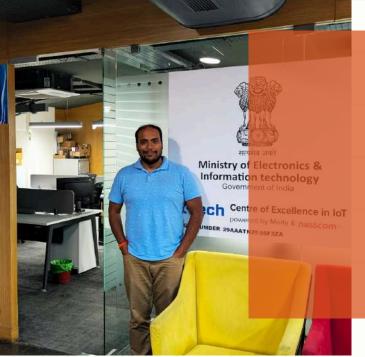
And we focus on preventing breakdowns, not just fixing them after they happen.

What's Next (2025-26 Roadmap)

The road ahead is exciting. Over the next year, we're deepening our Delhi NCR coverage before moving into high-traOic corridors across North and Central India.

We're adding more high-power bays for buses, LCVs, and premium 4Ws, enabling roaming readiness through OCPI integrations, expanding predictive maintenance, and piloting battery storage solutions with OEM partners to speed up deployments and improve economics.







From Frustration to Confidence: Building a Dependable EV Charging Network

Mr. Tanmay Varun Founder: Plugin Energy



In most Indian homes, the wiring is just good enough to charge your home appliances, but not ready to charge a vehicle.

Dear friends and EV enthusiasts,

- EV अच्छे हैं क्यों कि पेट्रोपे ट्रोल की ज़रूरत नहीं!
- EV अच्छे हैं क्यों कि इन्हें कहीं भी चार्ज किया जा सकता है
- EV अच्छे हैं क्यों कि इनमें खर्च कम है और सफर आरामदायक है
- EV का ज़माना आ गया है लेकिले न क्या EV को उसी सॉकेट से चार्ज करना चाहिए जिससे आप अपना TV चलाते हैं? थोड़ी सुरक्षा तो बनती है ना!

The Reality Today: The Era of Jugaad Charging

These days, majority of EV Charging is done through some form of jugaad (makeshift) method.

In society basements, long extension cords are being pulled from wall sockets to charge vehicles. Sometimes, electricity is drawn from guard room power points. In many places, EVs are silently being charged from shared meters without any formal setup.

It might look convenient, but here's what's actually happening:

- The wiring gets overloaded
- Circuit breakers trip frequently
- There's a real fire hazard
- Electricity theft is becoming common
- Neighbors end up in disputes over power usage

And most importantly — if something goes wrong, who takes responsibility?

In most Indian homes, the wiring is just good enough to charge your home appliances, but not ready to charge a vehicle.

Why?

A vehicle needs high power for long durations to charge, many Indian homes were not wired for EV charging, they were wired just good enough to power home appliances like TV, Fridge, Washing machine.

But, how can one say no to the convenience of charging at your home or in your society?

True, the easy charging of an EV is one of the main things that make it exciting. By adding just a little bit of safety to your electric supply, you can protect your home wiring, your EV and gain peace of mind.





Real Risks of Jugaad Charging:

The most common risks in EV charging are following:

- Over current
- Over voltage
- · Earth leakage

Also:

- No load balancing: A single extension cord may serve 2-3 vehicles — no regulation or safety control.
- No accountability: Bijli kaun use kar raha hai?
 Kya bill barabar split ho raha hai?
- Manual billing & disputes: Koi pen-paper pe likh raha hai units, koi photo bhej raha hai meter ka.
- High labor dependency: Kahi jagah pe full-time guard gaadi charge karta hai, cash leke. Lossprone, inefficient.

What if your plug protected your vehicle and your electric wiring from all these risks? Wouldn't it be a delight!

That's exactly what we thought when we decided to build the safest, cheapest and most feature-packed EV smart plug, Plugin Mini.

Plugin Mini gives you the delight of charging at your home/apartment/society without worrying about unknown power risks.

Plugin Mini is essential for EV users for their domestic or frequent charging needs.

Plugin Mini transforms an ordinary power supply to an EV-ready power supply.

But, safety is just the first key reason why one should use a Plugin Mini.

Are you an EV user living in an apartment or gated society who wants to charge vehicle and also earn extra income by helping other residents charge from your charger?

- Are you a shop owner who wants to make extra income by selling bijli to EV users?
- Are you a RWA member, dealing with the challenge of providing a EV charging point to growing number of EVs in your society?
- Are you a businessman looking to start an EV charging business?
- Are you an existing charging point operator?

Plugin Mini is the right solution for All of You.

In many cities, charging zones are being operated in a completely manual manner where money is collected in cash from EV users and an attendant charges their vehicle.

No safety, poor accuracy in billing customer, higher cost due to manual labor involved. This is not a good solution in the long term.











Kazam at 100,000+: Building Smarter, Sustainable, and Global EV Charging Solutions

Mr. Akshay Shekhar CEO and Co-Founder: Kazam EV Tech

66

Our extensive charging network generates rich data streams that we analyze to optimize operations across multiple dimensions

With 100,000+ charge points now live, how will Kazam ensure sustained uptime and user trust, especially in tier-2/3 cities where servicing and power stability can be tricky?

Sustainability is integrated throughout our operational framework. Working with bus depots, CPOs, and OEMs has taught us that demand-side flexibility is crucial for effective energy management.

We implement dynamic load balancing systems that help reduce energy costs while optimizing grid stability.

Our solutions include Time-of-Day (ToD) scheduling consultancy, helping depots and fleet operators structure their charging to minimize costs during peak tariff periods.

For comprehensive fleet management, we offer integrated routing and scheduling systems that automatically coordinate vehicle deployment with optimal charging windows.

Our in-house hardware incorporates safety features for voltage fluctuation protection and renewable energy integration capabilities, supporting both rooftop solar and grid-connected renewable sources.

We've also developed Kazam Buzz, a peer-to-peer energy trading platform that's already facilitating active trading of surplus solar energy, enabling users to monetize excess generation while supporting grid stability and addressing the duck curve challenge.

How is Kazam leveraging the massive charging data—from peak loads to fleet vs. personal use—to drive predictive maintenance, dynamic pricing, and energy optimization?

Our extensive charging network generates rich data streams that we analyze to optimize operations across multiple dimensions.

We track usage patterns, peak demand periods, and differentiate between fleet and individual user behaviors to inform our strategies.

This data enables predictive maintenance algorithms that identify potential equipment issues before they cause downtime, reducing service disruptions and operational costs.

For pricing optimization, we use real-time demand analytics to implement dynamic tariff structures that balance grid load while maintaining affordability.

Our energy optimization systems analyze consumption patterns to help both individual users and fleet operators schedule charging during off-peak hours, reducing costs and grid strain.



Beyond CO₂ offset numbers, how is Kazam embedding sustainability into daily operations—like renewable integration, grid-friendly scheduling, or energy-efficient hardware?

As we moved on to work with OEMs setting up charging operations, CPOs using our software, and building charging solutions with bus depots, we understood that demand side flexibility was an important part of managing energy demand for utilities.

Through this we are able to reduce energy costs for bus depots by not only managing their energy with dynamic load balancing, but by identifying ToD and non -ToD hours and consulting depots on how to structure their charging schedule to reflet lower operating costs with not only energy, but overall operations as well, through offerings like routing and scheduling of EV fleets where the routes of travel and scheduling of charging would be taken care of automatically.

Our hardware also being built in-house has levels of safety incorporated into it to account for voltage fluctuations, and has the ability to incorporate solar either from rooftop solar, or from the grid supply.

We have developed solutions for CPOs, OEMs, Bus depots and more to integrate renewable energy into their operations.

We have also recently developed a peer to peer energy trading platform for users to sell their surplus solar energy to their neighbours called Kazam buzz, which is currently operational and piloting in Lucknow.

As EV adoption accelerates, what role do you see Kazam playing in enabling V2G (Vehicle-to-Grid) or energy trading models within India's evolving UEI framework?

We're already implementing grid resilience technologies through our depot partnerships, focusing on demand-side flexibility that benefits both grid stability and customer economics.

Our systems help facilities optimize their charging schedules using ToD pricing structures, significantly reducing electricity costs while supporting grid balancing. Kazam Buzz represents our entry into energy trading, addressing India's duck curve challenge by facilitating peer-to-peer solar energy transactions.

With approximately 10GW of rooftop solar capacity already installed across India, our platform has the potential to significantly increase renewable energy utilization in the national grid mix.

As the UEI framework evolves, we're positioned to expand these capabilities toward full V2G implementation, leveraging our existing infrastructure and data analytics capabilities to enable bi-directional energy flows that benefit both EV owners and grid operators.

Given your recent international ambitions, how will the learnings from India's 100,000+ charge points shape your global strategy—especially in Southeast Asia and other emerging EV markets?

As a leading player in EV infrastructure in the global south, Kazam has developed deep technological expertise in accelerating EV transitions within developing economies. India's rapid EV adoption - with over 5 million electric two-wheelers and extensive charging infrastructure - demonstrates the potential for emerging markets to achieve transformative growth when supported by the right technology solutions.

Southeast Asian markets like Thailand, Indonesia, and Vietnam are experiencing their own EV momentum, and we're positioned to support their unique transition pathways through our comprehensive software platform. Beyond basic charging statistics, our solution focuses on intelligent energy management, helping operators optimize grid integration and reduce operational costs across diverse market conditions.

Our Operations & Maintenance module is particularly valuable - it helps CPOs maintain strict SLAs with charger OEMs while providing strategic consultation on infrastructure scaling and deployment. This combination of energy optimization and operational excellence, proven across India's varied economic and geographic landscape, positions us to help emerging economies worldwide accelerate their EV transitions by addressing the specific challenges of developing market infrastructure efficiently and cost-effectively.







The Battery Passport: Powering a Transparent & Sustainable Future

Mr. Nayan Anand Depty Manager - R&D (BESS): Waaree



A Battery Passport is a digital record attached to a physical battery, storing verified information about its materials, performance, carbon footprint, and lifecycle

In the age of electrification, batteries are not just components – they are the backbone of the clean energy transition. From EVs to grid-scale storage, their demand is skyrocketing. But with this growth comes an urgent need for traceability, sustainability, and accountability.

This is where the Battery Passport comes in — a digital identity for every battery that ensures transparency across the entire value chain.

What is a Battery Passport?

A Battery Passport is a digital record attached to a physical battery, storing verified information about its materials, performance, carbon footprint, and lifecycle.

Think of it as a "digital twin" of the battery, enabling end-to-end visibility — from mining raw materials to recycling.

It was first introduced by the Global Battery Alliance (GBA), supported by initiatives under the EU Battery Regulation, to establish a global standard for responsible batteries.

Key Elements of a Battery Passport

Unique Identification

- Each battery has a scannable ID (QR code/NFC).
- Enables real-time tracking through its lifecycle.

Material Provenance & Traceability

- Source of raw materials (cobalt, lithium, nickel, etc.).
- Ethical mining certification & proof of responsible sourcing.

Carbon Footprint Disclosure

- Total CO₂ emissions across production, use, and recycling.
- Supports net-zero commitments.

Technical & Performance Data

- Capacity, State of Health (SoH), State of Charge (SoC).
- Lifecycle history (charge/discharge cycles, energy throughput).

Recycling & Second Life Information

- Recyclability data and material recovery potential.
- Second-life applications (e.g., repurposed EV batteries for BESS).

Compliance & Certification

- Proof of compliance with EU Battery Regulation, ISO standards, and ESG frameworks.
- Acts as a digital compliance passport for global trade.



Why Do We Need a Battery Passport?

- Transparency Prevents greenwashing by verifying sustainability claims.
- Circular Economy Encourages repair, reuse, and recycling.
- Consumer Trust Provides users with real-time data about battery health.
- Regulatory Compliance Meets EU & global supply chain regulations.
- Investor Confidence Attracts green financing by proving ESG alignment.

The Global Push for Battery Passports

- European Union (EU): From 2027, all EV and industrial batteries sold in the EU must have a Battery Passport.
- United States: Similar initiatives are being considered under supply chain transparency acts.
- Asia-Pacific: China, Korea, and Japan are aligning battery traceability standards for global exports.

Battery Passport in India:

India, led by NITI Aayog, is developing its own Battery Passport framework as a digital ID for EV and storage batteries.

Much like an "Aadhaar for batteries," it will use QR/NFC tags to store verified data on origin, chemistry, performance, safety, and lifecycle history.

The initiative aims to improve safety (preventing fire risks, mixed-age cells), support battery swapping ecosystems, boost recycling efficiency, and align Indian manufacturers with global export standards.

Integrated with the Battery Waste Management Rules, 2022, the system is expected to make India's EV industry future-ready and compliant with emerging EU Battery Regulations.

Industry Impact

- Automakers (Tesla, BMW, VW) → Using passports to prove ethical sourcing of cobalt & lithium.
- Battery Manufacturers → Tracking carbon footprint and lifecycle performance.
- Recyclers → Access to detailed material data for efficient recovery.
- Consumers → Greater confidence in EVs & storage batteries.

Future of the Battery Passport

The Battery Passport will not remain just a compliance tool. It is set to become:

- A global digital standard like an "International Battery ID Card."
- · A gateway for carbon credits & green financing.
- A data-driven enabler for Al-based predictive battery management.
- A building block for circular economy platforms.

BATTERY PASSPORT – UNIQUE ID FOR EACH BATTERY PACK

Data Architecture & Infrastructure & Interoperability

Data Architecture & Infrastructure & Interoperability

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The Energy-Mobility Flywheel. How Carbon Policy Fueled EV Markets

Pallavi NB Content Lead - Kazam

"

Countries that coordinated coal phase-out with renewable expansion created electricity surpluses that made EV charging extraordinarily cheap.

The global journey from coal-fired smokestacks to clean electric highways is not just an environmental story, it's an economic transformation.

Around the world, governments, utilities, and automakers have discovered a powerful truth: you cannot decarbonize mobility without decarbonizing electricity first.

The decline of coal and the rise of electric vehicles (EVs) are deeply connected narratives, each accelerating the other.

United Kingdom: The Carbon Price Floor Revolution

The Setup (2012): In 2012, coal generated 39% of UK electricity generation, making Britain one of Europe's most coal-dependent economies.

But that same year, Chancellor George Osborne introduced a revolutionary economic weapon: the Carbon Price Floor (CPF).

The Government confirmed the price support would continue until coal was phased out, creating a direct economic link between coal retirement and clean energy investment.

The Economic Mechanism: In 2013 the UK government set a rising minimum carbon price, adding to the EU carbon price paid by power generators.

This wasn't just environmental policy, it was economic warfare against coal. The CPF started at £16 per tonne of CO2 and was designed to rise annually, making coal-fired electricity increasingly expensive compared to gas and renewables.

Power companies like E.ON and RWE faced a stark choice: invest billions in carbon capture technology for aging coal plants or shut them down and pivot to cleaner alternatives.

The Private Sector Response: The carbon price floor triggered a cascade of corporate decisions. Major utilities began announcing coal plant closures ahead of schedule, not because of environmental pressure, but because the economics no longer worked. Simultaneously, companies like Tesla and Nissan saw an opportunity: as the UK grid became cleaner due to coal retirement, electric vehicles became genuinely "zero emission" rather than merely shifting pollution from tailpipes to power plants.

The Acceleration Effect: Coal fell more rapidly than expected to just 2% in 2019, and in 2021 the phase-out date was brought forward to 2024. This created what economists call a "virtuous cycle", cleaner electricity made EVs more attractive to environmentally conscious consumers, increasing demand. Tesla's UK sales surged from 3,000 units in 2013 to over 50,000 by 2023, while the government's messaging shifted from "buy EVs to help the environment" to "buy EVs because they're powered by clean British electricity."



Denmark: The Wind-Powered Model

The Wind Revolution (2000-2015): Denmark's story begins not with policy but with geography and necessity. With limited fossil fuel resources and strong coastal winds, Denmark invested heavily in wind power throughout the 2000s. By 2015, wind provided 40% of Denmark's electricity, but this created a new problem: what to do with surplus wind energy when the wind blew harder than demand required.

The Smart Grid Solution: Danish utility companies like Ørsted (formerly DONG Energy) pioneered smart grid technology that could predict wind patterns and coordinate electricity supply with demand. But the breakthrough came when they realized EVs could serve as mobile energy storage units. When wind generation exceeded demand, the surplus electricity would automatically flow to EV charging stations at reduced prices, creating an economic incentive for drivers to charge their cars when the grid was cleanest.

The Policy Innovation: The Danish government introduced time-of-use electricity pricing in 2018, making wind-powered electricity significantly cheaper during high-wind periods. This wasn't just an environmental policy, it was designed to solve Denmark's grid balancing problem. EV owners could charge their cars for as little as €0.05 per kWh during windy periods, compared to €0.30 per kWh during peak demand times.

Private Sector Integration: Companies like Better Place initially tried battery-swapping technology in Denmark, but the real breakthrough came when traditional automakers like Volkswagen and BMW partnered with Danish energy companies to create "intelligent charging" systems. These systems automatically charged EVs when wind power was abundant and paused charging when demand exceeded clean supply.

The Coal Elimination: As wind power expanded and EVs provided grid flexibility, Denmark's last coal plants became economically redundant. The closure of the Studstrup Power Station in 2023 wasn't driven by environmental regulations, it was driven by economics. Wind-powered EV charging had created such efficient demand management that baseload coal power was no longer needed.

Germany: The Industrial Transformation Regional Economic Transition

The Energiewende Challenge (2010): Germany faced a unique challenge—how to phase out both nuclear power and coal while maintaining its position as Europe's industrial powerhouse. The Energiewende (energy transition) policy committed to closing all nuclear plants by 2022 and all coal plants by 2038, but this created a massive economic problem: what would happen to the 300,000 workers in coal mining and coal-fired power generation?

The Regional Strategy: The German government developed a revolutionary approach: instead of simply closing coal plants, they would transform coal-dependent regions into clean energy manufacturing hubs. The North Rhine-Westphalia region, home to Germany's largest coal deposits, would become Europe's largest EV battery production center.

The Corporate Pivot: Major German companies led this transformation. RWE, previously Europe's largest coal utility, announced in 2020 that it would invest €50 billion in renewable energy by 2030. Simultaneously, the company partnered with Tesla and CATL to build battery factories on former coal mining sites. ThyssenKrupp, the steel giant dependent on coal for production, pivoted to producing steel for EV batteries using hydrogen fuel cells.

The Policy Bridge: Germany's coal phase-out auctions, beginning in 2020, created a unique financing mechanism. Power companies received compensation for closing coal plants early, but only if they invested equivalent amounts in EV-related infrastructure or renewable energy projects. This wasn't just transition funding; it was transformation funding.

The Jobs Connection: The closure of the Neurath coal plant in 2023 provides the perfect example. Rather than laying off 2,800 workers, RWE retrained them for battery manufacturing and renewable energy maintenance. The same engineers who once operated coal boilers now manage EV charging networks. The same electricians who maintained coal plants now install solar panels and wind turbines.



The Economic Success: By 2024, Germany had become Europe's largest EV market with 18% market share, while reducing coal consumption by 60% since 2010. The Ruhr Valley, once synonymous with coal mining, now produces 40% of Europe's EV batteries. Former coal mining communities like Bottrop have unemployment rates below the national average—not despite the energy transition, but because of it.

The Integration Effect: German automakers BMW, Mercedes-Benz, and Volkswagen didn't just benefit from this transition, they drove it. VW's commitment to invest €35 billion in EVs by 2025 was directly linked to Germany's coal phase-out timeline. As coal plants closed and renewable capacity increased, these companies could market their EVs as truly "climate neutral", powered by German wind and solar rather than imported fossil fuels.

The Three-Pillar Strategy Framework

Pillar 1: The Carbon Price Connection

The Economic Logic: The breakthrough insight shared by successful countries was treating carbon emissions as a unified economic problem rather than separate sectoral challenges. The UK's Carbon Price Floor exemplifies this approach, by making coal-fired electricity more expensive, it simultaneously made EVs more attractive relative to gasoline cars.

The Market Signal Mechanism: When the UK announced its carbon price floor would continue until coal was completely phased out, it sent a clear signal to both power companies and automakers. Utilities knew coal investments would become stranded assets, while car manufacturers knew clean electricity would become abundant and cheap. This dual certainty triggered coordinated investment decisions across both sectors.

The Regulatory Alignment: Countries succeeded created what economists call "policy complementarity", where regulations in one sector reinforced market incentives in another. Denmark's renewable energy certificates could only be earned by wind farms that provided dedicated EV charging capacity. Germany's coal plant closure compensations were conditional on equivalent investments in EV infrastructure.

Pillar 2: The Grid Transformation Story

Smart Grid Innovation: The technical breakthrough came when utilities realized EVs could solve renewable energy's biggest problem, intermittency. Denmark's Ørsted developed algorithms that predicted when wind generation would exceed demand and automatically offered discounted charging rates to EV owners during these periods.

Investment Flow Architecture: Rather than treating coal plant decommissioning as a cost, successful countries redesigned it as a revenue source for EV infrastructure. In Germany, RWE received €2.6 billion in coal closure compensation, but only after committing to spend €3 billion on EV charging networks and battery manufacturing.

The Timing Coordination: The critical insight was synchronizing coal plant closures with renewable capacity additions and EV infrastructure deployment. The UK's coal phase-out schedule was explicitly designed to match offshore wind farm completion dates, ensuring that EV charging would be powered by clean electricity from day one.

Pillar 3: The Just Transition Innovation

Worker Retraining Programs: Germany's approach became the global model: instead of offering severance packages to coal workers, they offered retraining programs for EV manufacturing jobs. Siemens partnered with mining unions to create apprenticeship programs where coal engineers learned battery chemistry and electric motor maintenance.

Regional Economic Redesign: The most successful transformations treated coal-dependent regions as clean energy opportunity zones rather than stranded communities. North Rhine-Westphalia's transformation from Europe's coal capital to its largest EV battery production hub required €15 billion in public and private investment—but created 180,000 new jobs.



Supply Chain Integration: The breakthrough was recognizing that coal regions often had the perfect industrial infrastructure for EV manufacturing—existing power transmission lines, skilled industrial workers, and established transport networks. Tesla's choice to locate its German Gigafactory in Brandenburg wasn't accidental; it was strategic use of former coal region assets.

The Multiplier Effect

Clean Energy Abundance Effect: Countries that coordinated coal phase-out with renewable expansion created electricity surpluses that made EV charging extraordinarily cheap. In Denmark, surplus wind power reduced EV charging costs to €0.05 per kWh, making electric cars cheaper to operate than gasoline vehicles even before considering purchase incentives.

Investment Magnetism Principle: The data shows that countries with integrated coal-EV strategies attracted 3x more clean energy investment than those pursuing separate timelines. When Tesla announced its European expansion, it chose Germany specifically because the country's coal phase-out timeline guaranteed abundant renewable electricity for manufacturing.

Consumer Confidence Acceleration: The psychological factor proved crucial—consumers embraced EVs more readily when they knew their cars would be powered by clean grids. UK EV sales accelerated after 2019 not just due to vehicle improvements, but because buyers knew their cars were genuinely zero-emission thanks to the coal phase-out.

Technology Innovation Spillovers: The pressure to solve both coal retirement and EV adoption simultaneously spurred breakthrough innovations. Smart grid technology, developed initially to manage wind intermittency, became the foundation for intelligent EV charging systems that optimized both grid stability and charging costs.









Engineering the Transition: How Retrofitting is Repowering India's Trucks

Mr. Anshu Dewan, Founder & CEO



The retrofitting market is not a side show—it's a ₹20,000+ crore industry in the making. By unlocking latent vehicle value, it makes India's EV transition inclusive, local, and faster

India has over 6 million diesel commercial vehicles that are under 12 years of age, most of which still have years of useful life. Instead of letting these trucks run on diesel till end-of-life (or scrapping prematurely), retrofitting provides a pragmatic, scalable, and profitable solution for fleet operators and the economy.

Market Size and Opportunity

According to Vahan data and SIAM estimates:

- ~2.4 million trucks fall under the 3.5T to 7.5T GVW segment—ideal for retrofits.
- A typical LCV in this class consumes ~4,500— 6,000 litres of diesel/year, costing ₹4–5 lakhs annually.
- Retrofitting can reduce TCO by up to 45% over 5 years through savings in fuel, maintenance, and regulatory costs.

Fleet Operator Economics

An electric retrofit typically costs ₹14–17 lakhs and can be recovered in 2.5 to 3.5 years for medium-utilization fleets. Operating cost reductions come from savings in diesel, reduced maintenance, and fewer regulatory hassles in low-emission zones.

However, there is currently no financial support from the government for retrofitted vehicles, unlike OEMmanufactured EVs which benefit from FAME-II subsidies and other incentives. This creates a non-level playing field, despite both vehicle types ultimately delivering the same environmental benefits and operational savings.

Addressing this disparity is essential—particularly when retrofits are helping decarbonize existing fleets faster and at a fraction of the cost.

Use Case Demand Clusters

- FMCG & Beverage Logistics: Need low-noise, low-emission last-mile trucks.
- Urban Distribution: E-commerce players (Flipkart, Amazon, etc.) actively pursuing EV targets.
- Municipal Fleets: Cities like Pune and Indore adopting electric garbage compactors and sweepers.
- Pilgrim and Tourist Routes: Silent, clean trucks for religious towns and heritage areas.

Environmental and Economic Impact

Retrofitting 100,000 trucks can save over 500 million litres of diesel/year and reduce 1.3 million tonnes of CO_2 emissions. At the same time, it sustains jobs in local service centres and spares networks.





Powering the Future of Agriculture with Electric Tractors

Mr. Ojashwin R Senior Business Development: Torus Robotics

India is projected to become the 4th largest EV producer by 2030, overtaking the EU. For agriculture, this means farmers will gain access to world-class, locally manufactured electric tractors, micro tractors, and AGVs.



India's agricultural landscape is entering a new era with the electrification of tractors and farm machinery. At the heart of this shift are compact, efficient powertrains that make electric tractors and AGVs a practical reality for farmers.

Why Electrification Matters in Agriculture

Electric tractors deliver distinct advantages over traditional diesel machines:

- Lower Operating Costs Minimal fuel and maintenance needs.
- Zero Emissions Cleaner, sustainable farming aligned with India's green goals.
- Low Noise Silent operations for rural communities.
- Ease of Use Simple, farmer-friendly controls.



Powertrains Enabling the Transition

The real game-changer lies in the EV powertrain architecture:

- High-Torque Motors Deliver consistent pulling power even at low speeds, essential for field work.
- Compact Design Enables micro tractors and AGVs to operate in narrow fields and orchards.
- Battery Integration Swappable and fastcharging packs designed for long hours of operation.
- Efficiency at Every Watt Smart controllers optimize energy use for tasks like spraying, trenching, and tilling.

Images shared by author, All India EV don't own the



Rise of Micro Tractors and AGVs

With landholdings shrinking, micro tractors and autonomous AGVs are becoming essential. These electrified machines are designed for precision tasks, electric weeding, soil monitoring, and crop spraying where size, maneuverability, and efficiency are critical.

Policy Tailwinds Driving Adoption

India's EV revolution is backed by powerful policy support:

- Import Duty Cut Premium EVs (>\$35K) will now be taxed at just 15% (vs. 110%) under the SPMEPCI framework, with rollout expected by Aug 2025.
- PLI + FAME Schemes Strong incentives for battery manufacturing (ACC), auto components, and consumer adoption through FAME and PM e-Drive.
- Strategic Minerals & Localization A push to secure critical minerals and build localized supply chains.

These measures don't just accelerate passenger EV adoption—they also enable faster electrification of agricultural machinery, lowering costs and driving scale.

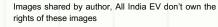
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The integration of advanced electric powertrains is not just a technological upgrade, it is a pathway to sustainable farming, reduced oil dependency, and stronger energy sovereignty.

With relentless demand, fresh EV models, and policy support, India's EV revolution is accelerating. And in agriculture, this is just the beginning.







Joint Ventures & Partnerships 🐇











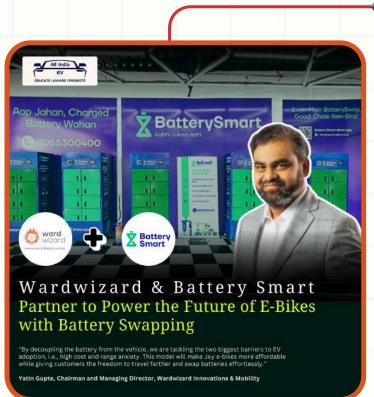




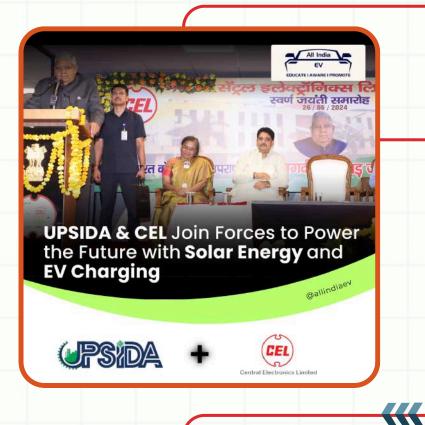




















New Product Launch























Who Got Funded?







Other EV Updates



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Ola Electric, whose shares have plunged roughly 50% this year amid safety and market-share concerns, has entered preliminary talks to raise about ₹10,000 crore (~\$116 million) in high-yield debt financing with interest rates ranging from 17.5% to 20% and a possible tenor of around 36 months to shore up its working capital.

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Chandigarh has launched a pilot initiative to power four of its 35 existing public EV charging stations using solar energy—leveraging installations like rooftop panels at an IT Park to promote sustainable mobility and reduce reliance on grid electricity.

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Ultraviolette Automotive has rapidly bolstered its retail reach by launching five new "UV Space Stations" in Madurai, Kolkata, Berhampore, Jaipur, and Yelahanka (Bengaluru), marking its entry into Rajasthan and West Bengal and expanding its footprint to 17 cities nationwide.

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NITI Aayog has proposed a strategic pivot in India's EV policy—shifting from consumer incentives to a framework of phased mandates and disincentives—with pilot targets for full electrification of buses, paratransit, and freight vehicles in specific cities.

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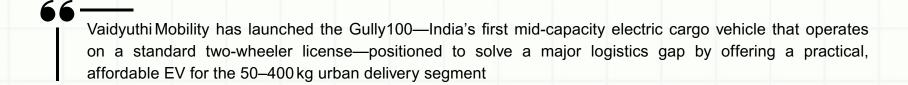
Tamil Nadu's government plans to roll out high-speed charging stations for intercity commercial EVs, starting with the first facility in Ulundurpet, aiming to fast-charge up to 70% battery in 15 minutes and full charge in 30 minutes to support long-distance bus and goods vehicle operations.

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VinFast has inaugurated its first EV assembly plant in India, located in Thoothukudi (Tamil Nadu), with an initial capacity of 50,000 vehicles per year, scalable up to 150,000, as part of a larger \$2 billion investment strategy in the region.

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India's trucking sector—currently contributing disproportionately to national emissions—needs a push toward zero-emission trucks (ZETs) through policies that drive total cost of ownership parity, promote local innovation (especially heat-resilient technologies), and build a robust charging and hydrogen infrastructure to ensure cleaner freight operations by 2050.



- Maruti Suzuki's Partho Banerjee highlights that EVs are seldom chosen as a household's primary vehicle—mainly due to inadequate public charging infrastructure causing range anxiety—despite EV sales growing by approximately 17.6% in 2024–25
- Refex eVeelz has rebranded as Refex Mobility and named Anirudh Arun, previously with BluSmart, as its new CEO to drive the company's next growth phase. The rebrand highlights a stronger focus on reliability, sustainability, and scaling its fleet of around 1,400 EVs.
- For the first time, Karnataka saw a decline in electric two-wheeler registrations, falling from over 1.4 lakh units in 2023–24 to around 1.3 lakh in 2024–25—despite zero registration tax and increased model availability.
 - Euler Motors and Magenta Mobility clock 2 Crore EV kilometres, cut 1,700+ tons of CO₂ emissions
 - Tripura will install 45 new EV charging stations across the state ahead of the upcoming Durga Puja festival, aiming to strengthen clean energy mobility infrastructure. This initiative, announced by Power Minister Ratan Lal Nath, complements railway electrification efforts and the promotion of solar and wind energy under schemes like PM-KUSUM, aligning with national sustainability goals.
- Jitendra New EV Tech (Jitendra EV) has signed a Memorandum of Understanding (MoU) with MET's Institute of Engineering in Nashik on August 5, 2025, to collaborate on research, product development, and real-world EV innovation.
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The Society of Indian Automobile Manufacturers (SIAM) has urged the Ministry of Heavy Industries to include N1 category light commercial vehicles (under 3.5 tonnes) in the PM E-Drive scheme, emphasizing their role in reducing emissions, enhancing energy security, cutting operational costs for small businesses, and supporting urban logistics.

India's public EV charging infrastructure has surged fourfold in just 15 months—with over 18,000 new stations added—boosting the network from around 5,500 units in 2023 to nearly 24,000 by mid-2025.

VinFast has filed a design patent in India for the Minio Green, a compact 3-door city EV poised to rival the MG Comet EV in affordability and urban friendliness. The hatchback features a minimalist yet practical design, with a 14.7 kWh battery, 27 PS motor, claimed 170 km range (NEDC), top speed of 80 km/h, and 12 kW AC charging capability.

India's network of DC fast chargers is projected to skyrocket from just 14,000 today to 1.1 million by 2040, driven by solid policy backing and rapid EV adoption. This aligns with global trends—for instance, worldwide EV charging ports are expected to expand at a 12.3% CAGR through 2040, reaching over 206 million units, with India emerging as a key growth market.

Zingbus has launched its first all-electric premium intercity service, Zingbus Plus Electric—on the Delhi–Dehradun route, offering spacious seats, trained crew, digital-first amenities, and free travel insurance, all with zero tailpipe emissions.

China has decisively stopped expanding NMC (nickel-manganese-cobalt) battery capacity and is focusing solely on scaling up LFP (lithium-iron-phosphate) production, paving the way for global dominance in EV battery manufacturing.

Delhi Chief Minister Rekha Gupta, alongside Lieutenant Governor V.K. Saxena, flagged off 24 air-conditioned electric buses for Sardar Patel Vidyalaya, aiming to safeguard the physical and mental health of nearly 1,200 students daily by replacing approximately 400–500 private vehicles, thereby reducing pollution and easing congestion.

JSW Group has transformed its EV charging division into JSW AutoComp, marking its entry into electric and hybrid vehicle components, and is leveraging its steel manufacturing strengths to build a vertically integrated automotive ecosystem.





Community of 58K+



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5 Million+
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