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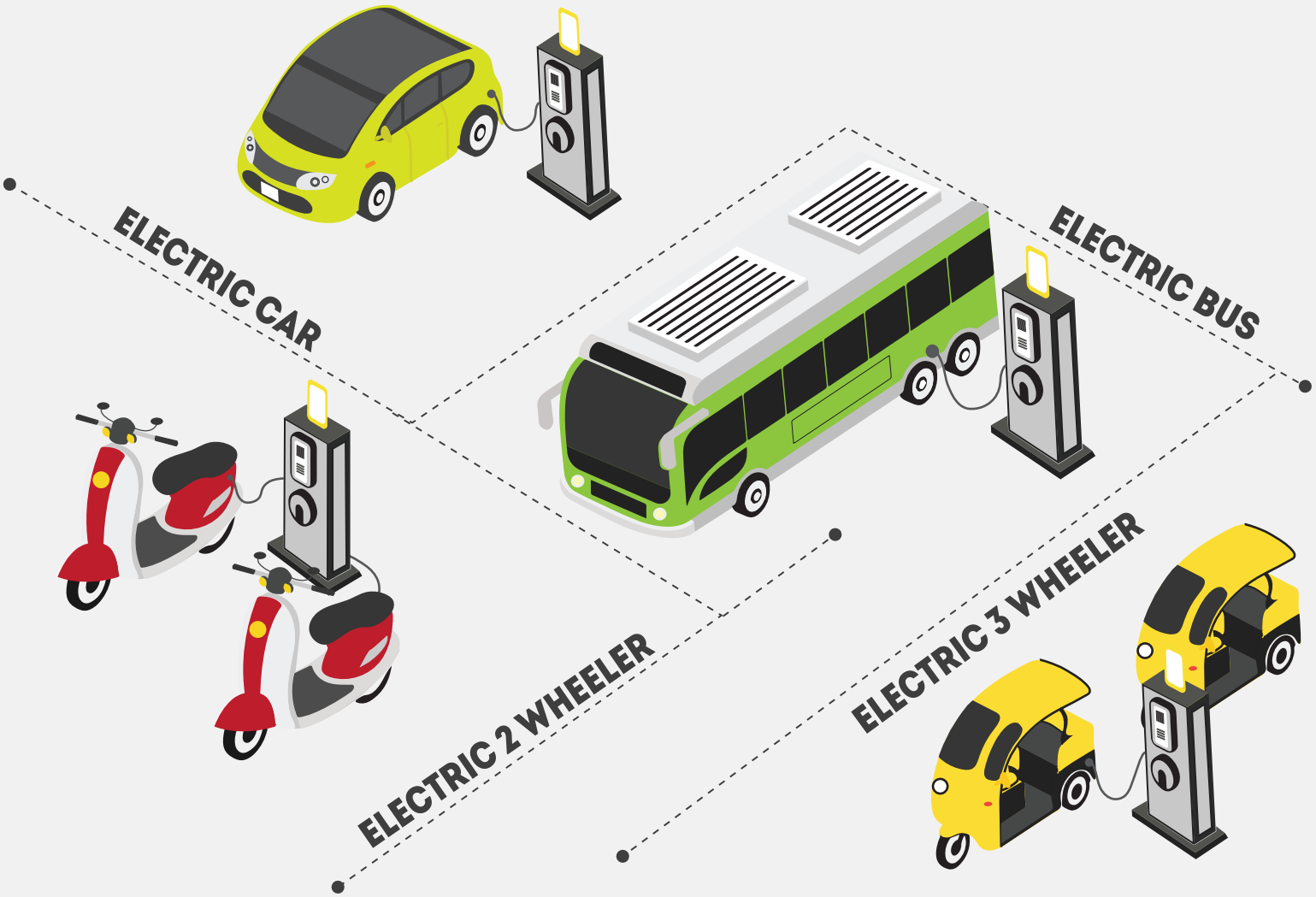

EV monthly update

August 2022

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Total 5.03GWh installed in 2021, far ahead in sales worldwide

Top 3 market share in Indian E2W market for 5 continuous years

18/66/133

Material	LMO+NCM/LMFP
Dimension	18*66*133mm
Voltage	3.65-3.7V
Capacity	14Ah
Application	E2W

21/115/103

Material	LFP/LMO+NCM
Dimension	21*115*108mm
Voltage	3.2-3.7V
Capacity	24Ah
Application	E2W,E3W,EV,ESS

15/119/129

Material	LFP/LMFP/LMO+NCM
Dimension	15*119*133mm
Voltage	3.2-3.7V
Capacity	23Ah/24Ah
Application	E2W,E3W,EV,ESS

17/119/133

Material	LFP/LMFP/LMO+NCM
Dimension	17*119*133mm
Voltage	3.2-3.7V
Capacity	26Ah/27Ah
Application	E2W,E3W,EV,ESS

30/110/300 *Coming 2023

Material	LFP/LMFP/LMO+NCM
Dimension	30*110*300mm
Voltage	3.2-3.7V
Capacity	100Ah
Application	E3W,EV,ESS

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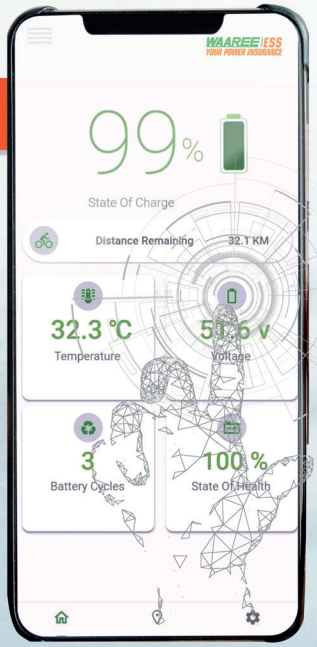

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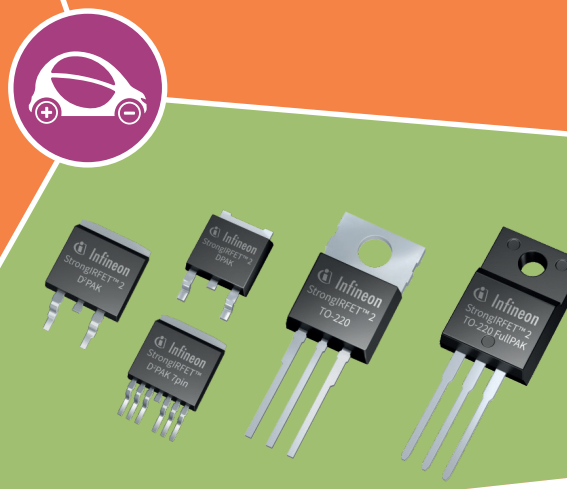


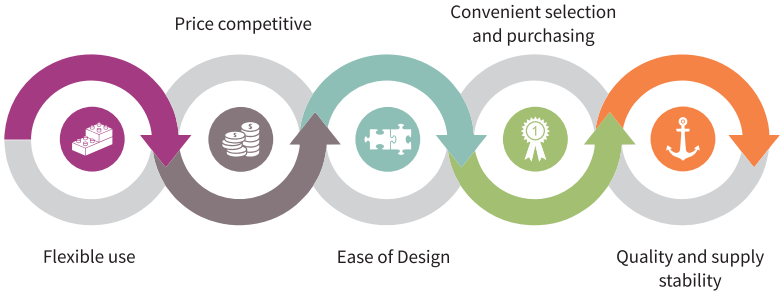
StrongIRFET™ 2 Technology in 80/100V

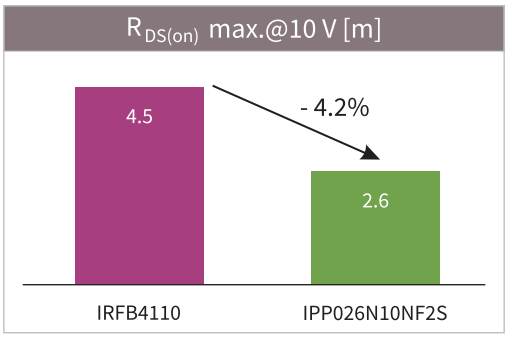
The Power MOSFET addressing a broad range of applications

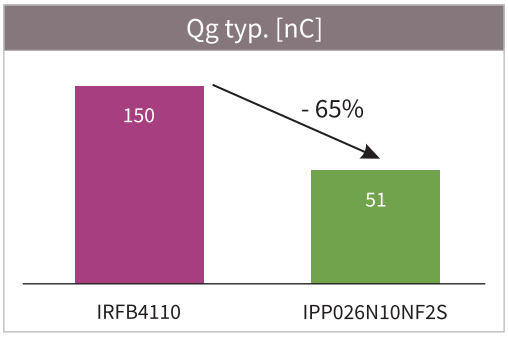
StrongIRFET™ 2 is the new Infineon Power MOSFET technology in 80V and 100V targeting a broad range of applications such as motor drives and battery management systems for LEV application. Featuring broad availability and excellent price/performance ratio make these right-fit products an easy choice for designers interested in convenient selection and purchasing.

This new technology offers 40 percent RDS(on) improvement and over 50 percent lower Qg compared to the previous StrongIRFET™ devices, translating into higher power efficiency for improved overall system performance. Increased current ratings allow for higher current carrying capability, eliminating the need to parallel multiple devices translating to lower BOM costs and board savings.

StrongIRFET™ 2 is available in D2PAK, D2PAK-7pin, DPAK, TO-220 and TO-220 FullPAK in 80V and 100V.







"80V and 100V targeting a broad range of applications such as motor drives and battery management systems for LEV application"

https://www.infineon.com/strongirfet2

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1 NEW PRODUCT LAUNCHES

Table 1.1: India Launches – August 2022

Product	Vehicle type	Battery specifications	Other specifications	Price
GT Force Soul	E2W (E-scooter)	48V/28Ah Lead-acid and 48V/24Ah Lithium-ion	• Range – 50-60 km (Lead), 60-65 km (Lithium) • Top Speed – 25 km/hr	INR 49,996
GT Force One	E2W (E-scooter)	48V/28Ah Lead-acid and 48V/24Ah Lithium-ion	• Range – 50-60 km (Lead), 60-65 km (Lithium) • Top Speed – 25 km/hr	INR 59,800
Benling Believe	E2W (E-scooter)	3.2 kWh Lithium ferro phosphate	• Range – 120 km (Eco Mode), 70-75 km (Sport Mode) • Top Speed – 75 km/h	INR 97,520
Ola S1 (new)	E2W (E-scooter)	3 kWh Lithium-ion	• Range – 141km (ARAI Certified), 128 km (True Range) op Speed – 95 km/h	INR 99,999
Ola S1 Pro (new)	E2W (E-scooter)	4 kWh Lithium-ion	• Range – 181km (ARAI Certified), 170 km (True Range) • Top Speed – 116 km/h	INR 1,39,999
PURE EV ETRYST 350	E2W (E-motorbike)	3.5 kWh Lithium-ion (NMC Chemistry)	• Range – 140 km • Top Speed – 85 km/h	INR 1,55,000
Mahindra Zor Grand	E3W (Cargo)	10.24 kWh Lithium-ion	• Range – 153 km • Top Speed – 50 km/h	INR 3,60,000
Mercedes-AMG EQS 53 4MATIC+	E-Car	107.8 kWh Lithium-ion	• Range – 526-580 km • Top Speed – 250 km/h	INR 2.45 crore
BYD e6	E-Car (Multi-purpose vehicle)	71.7 kWh Lithium-ion	• Range – 520 km • Top Speed – 130 km/h	INR 29,15,000
Switch EiV 22	E-Bus	231 kWh Lithium-ion	• Range – 250 km	INR 1.8-2.3 crore

Source: Industry News Articles, Company Websites, JMK Research; Note: Switch India has already secured an order for 200 electric double-decker buses from Mumbai

Upcoming Launches

KL Group company eRise Electric to launch 5 E-2W models in coming months

eRise - Drive Electric, the automotive arm of KL Group, has announced its entry into the Indian markets. The company intends to launch three low-speed electric scooters immediately and two high-speed vehicles in the coming three months. The electric scooters shall be manufactured in the 95,000 sq ft. manufacturing facilities in Rohtak, Haryana.

Mahindra unveils 5 new e-SUVs based on the Inglo platform, XUV.e8 launch in December 2024

Mahindra & Mahindra, one of India's leading SUV manufacturers has unveiled its new state-of-the-art INGLO EV platform and five electric SUVs under two EV brands as part of its vision for the future. The five electric SUVs include the XUV.e8, XUV.e9, BE.05, BE.07, and BE.09. The first four of these will be launched by the next four years, between 2024 and 2026.

World's largest EV maker BYD to enter Indian mainstream market, with an electric SUV

BYD, the world's largest electric vehicle company by volumes, plans to enter the Indian mainstream EV market with Atto3, an electric SUV, in the upcoming festive season. It is expected to cost around INR 25 lakh and have a range of over 450-500 kilometres on a single charge.

Mercedes Benz plans 2 new EV models by year-end

Mercedes Benz plans to launch the all-electric sedan EQS 580 in September 2022 which will be available as knocked-down kits imported from Stuttgart and locally assembled at its Chakan plant in Pune. Another model to be launched will be Mercedes EQB SUV around November this year. This will be the luxury carmaker's first 7-seater offering for the EV portfolio in India.

Ashok Leyland to roll out their electric LCVs within six months

Ashok Leyland, the flagship company of the Hinduja group is eyeing to release its electric light commercial vehicle (eLCV) within six months. The e-commerce boom post-Covid, the changes in

purchasing habits, and demand from the agricultural sector have resulted in an increase in last-mile transport requirement which has led to a surge in demand for small trucks.

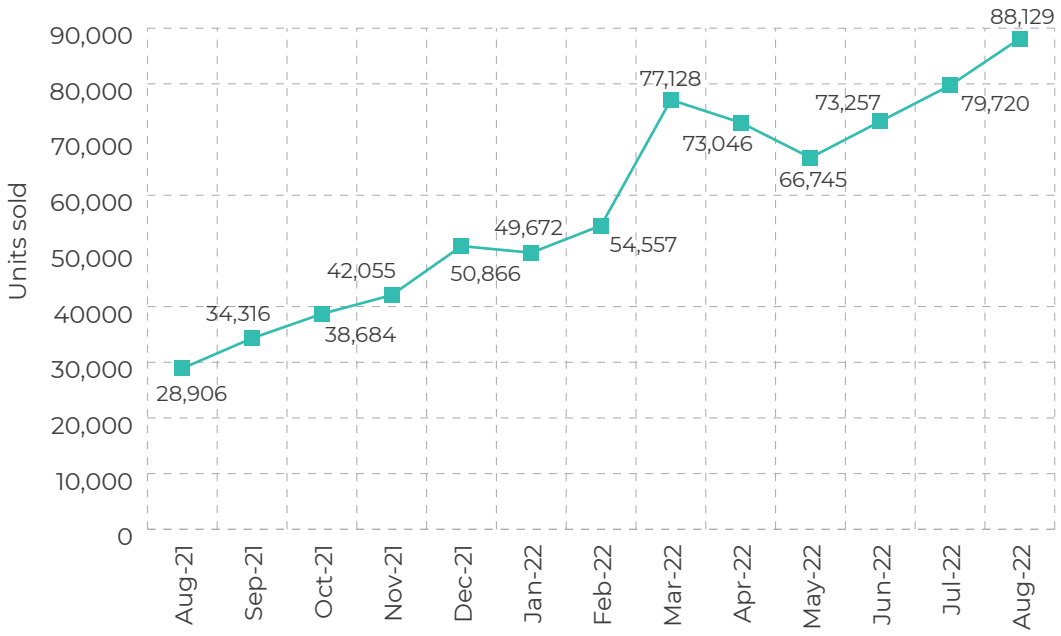
Mahindra XUV400 EV to be revealed soon; Will rival Tata Nexon EV

Mahindra and Mahindra has officially teased the XUV400 EV for the first time. The new electric SUV will be revealed on September 8th according to the teaser. Mahindra will finally be launching its first fully electric SUV and it is considered to be competing against the Tata Nexon EV.

2 EV SALES TRENDS

The overall EV sales in August 2022 increased m-o-m by 10.5% to reach 88,129 units. In addition, there was a y-o-y leap of more than 200%.

Fig 2.1: Registered EV Sales Trend in India (August 2021–August 2022)

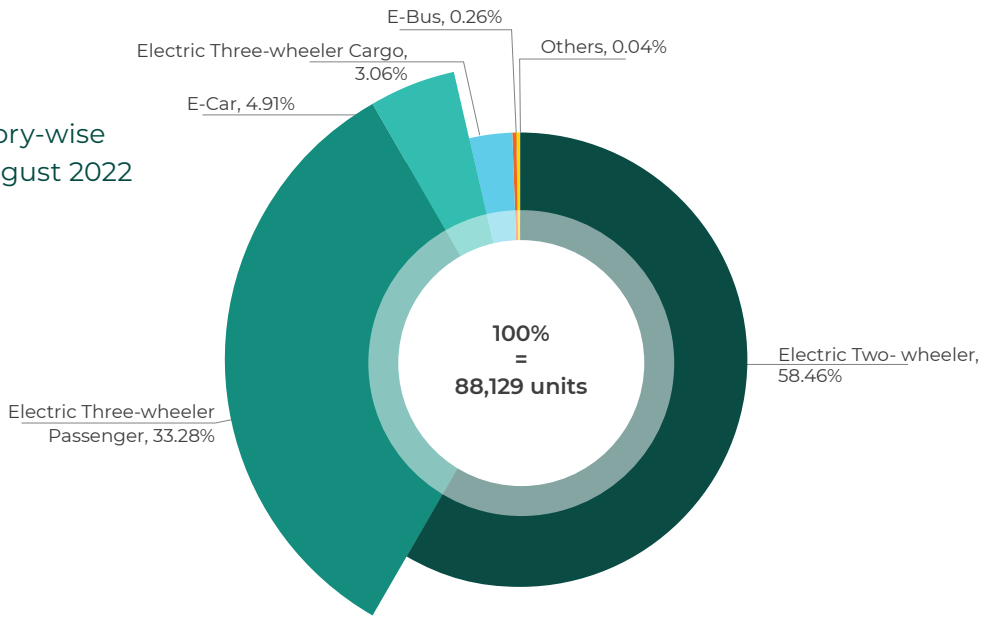


Source: Vahan Dashboard, Company Press Releases, JMK Research
Note: Sales figures represent EVs registered across 1,355 RTOs in 34 states/ UTs.

As depicted in the figure below, EV registrations in August 2022 were driven by electric two-wheelers and passenger-type electric three-wheelers, which together accounted for 91.74% of total registrations in the month. The shares of these categories were followed by E-Cars (4.91%), cargo-type electric three-wheelers (3.06%), and so on.

Category-wise EV sales

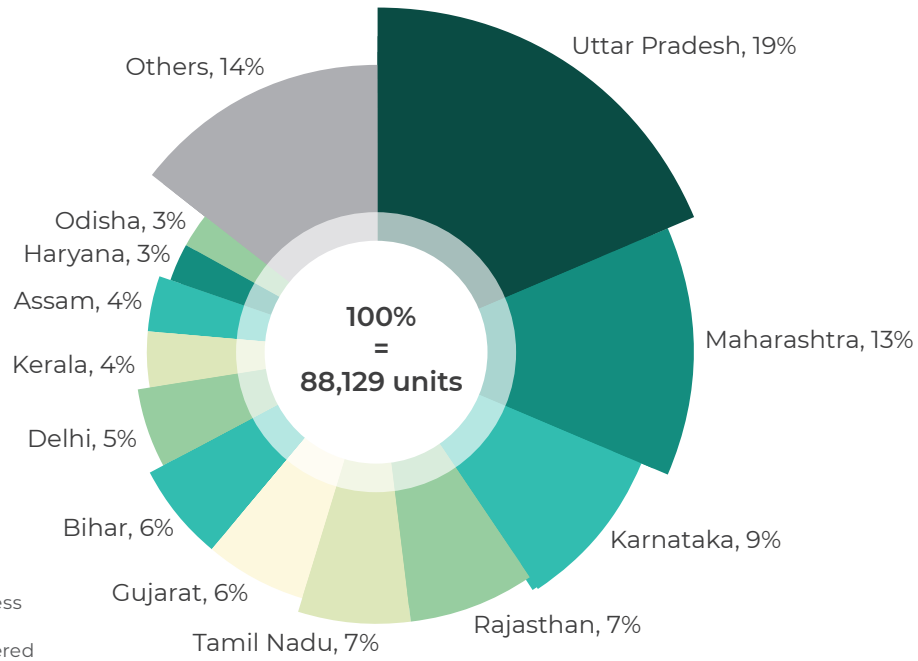
Fig 2.2: Category-wise EV Sales in August 2022



Source: Vahan Dashboard, Company Press Release, JMK Research
Note: Sales figures represent EVs registered across 1,355 RTOs in 34 states/ UTs; Others include adapted vehicles, fork-lifts, goods carriers, and power tillers.

Among all the states and UTs, Uttar Pradesh retained its top spot of EV share with 18.6% of overall sales, followed by Maharashtra with 12.8% share. Karnataka stood at third spot this month with 9.3% share while Rajasthan went from number three position in July 2022 to the fourth position this month with 7.5% share. This was followed by Tamil Nadu (6.6%), Gujarat (6.3%), and Bihar (6.2%). Delhi witnessed a decline of ~18% in registrations this month from July 2022.

Fig 2.3: Category-wise EV Sales in August 2022

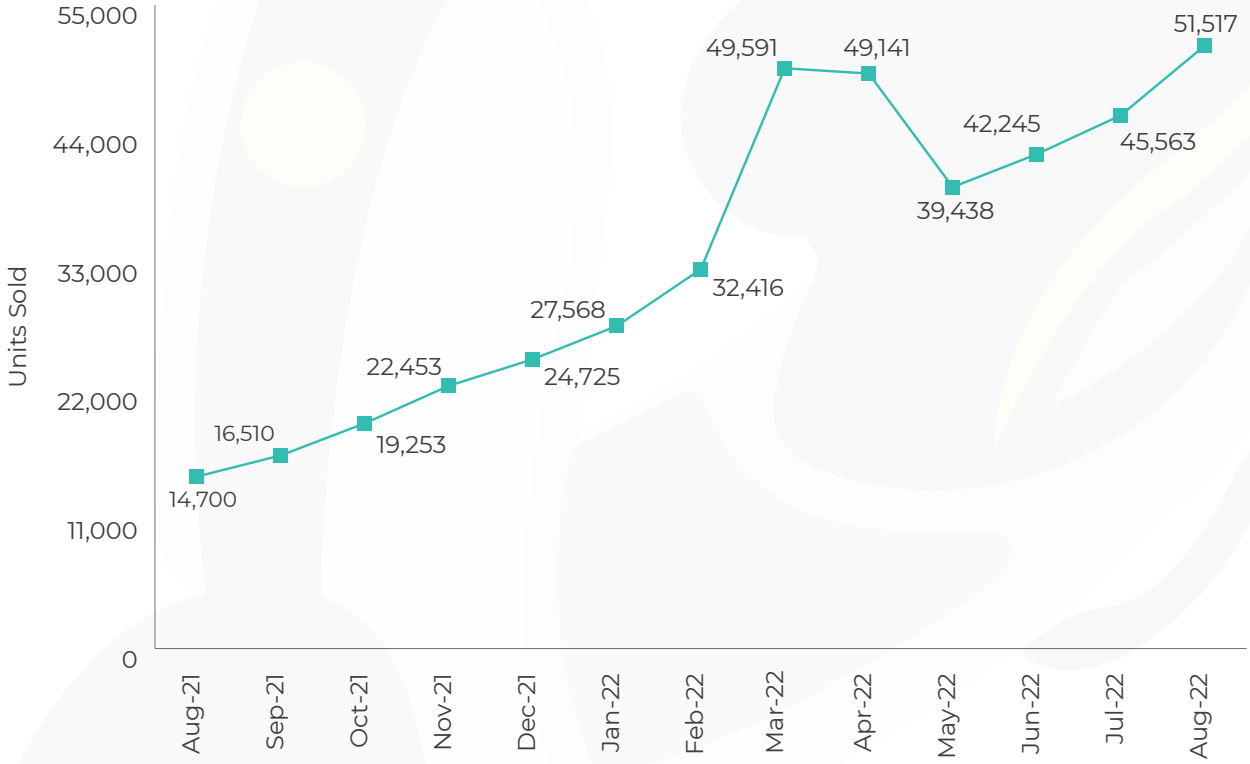


Source: Vahan Dashboard, Company Press Release, JMK Research
Note: Sales figures represent EVs registered across 1,355 RTOs in 34 states/ UTs. Others include Chhattisgarh, Andhra Pradesh, Uttarakhand, Punjab, and 18 other states/UTs.

High-Speed Electric Two-Wheeler (HS-E2W)

The overall HS E2W sales in the country in August 2022 stood at 51,517 units, signifying an increase of 13.07% m-o-m and more than 250% y-o-y leap in registrations. The Top 10 players accounted for 93% of the total registrations witnessed in the month of August 2022.

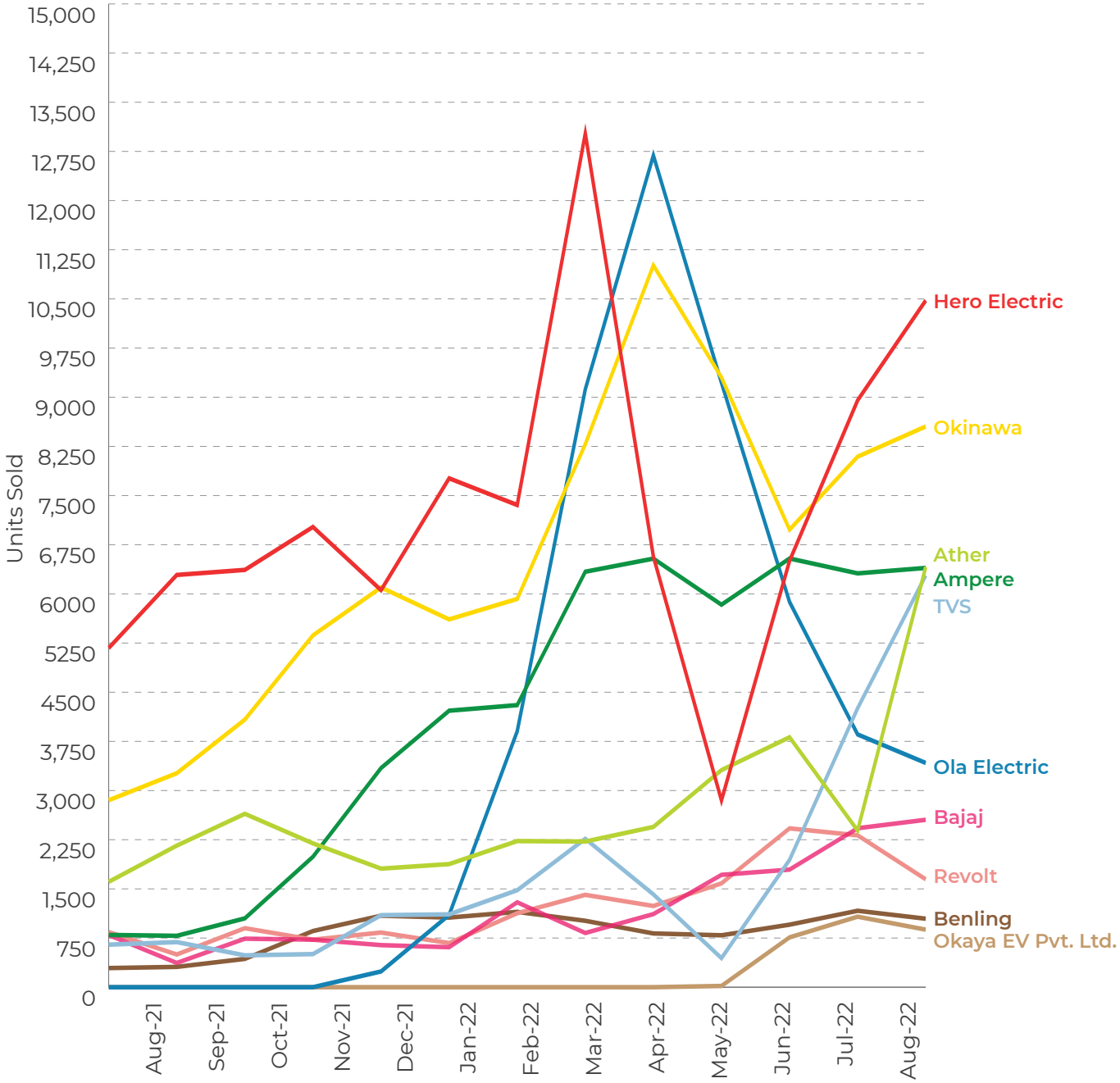
Fig 2.4: High-Speed E2W Sales Trend



Source: Vahan Dashboard, JMK Research
Note: Sales figures represent only high-range E2W (Top speed > 25 kmph) registered across 1,335 RTOs in 34 states/ UTs.

Hero Electric and Okinawa retained their number one and number two positions respectively. Ather grabbed number 3 position this month (registering more than 150% m-o-m increase in sales), pushing Ampere Vehicles to the fourth position. The ramping up of the supply chain by Ather which has led to growth in production numbers, is the primary reason for this increase in sales. On the other hand, TVS and Ola Electric retained their number five and six positions respectively. Positions of rest of the 4 players remained the same as that in the last month. One of the trends to be noticed here is that Ola Electric, Jitendra EV Tech, and Pure EV that have witnessed decline in sales this month are also the same companies whose electric scooters caught fire in the recent past.

Fig 2.5: Top High-Speed E2W Players in August 2022

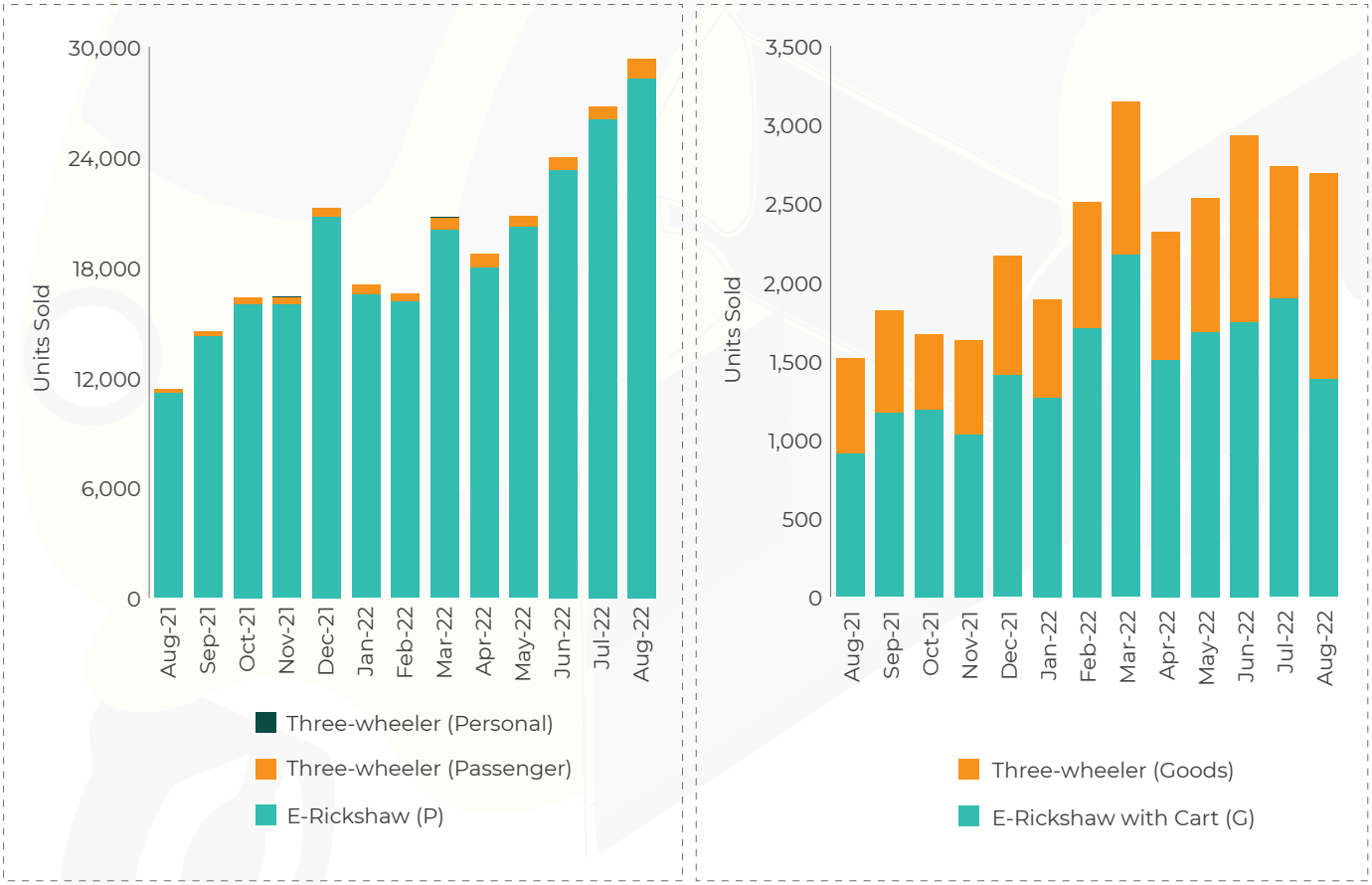


Source: Vahan Dashboard, Company Filings, JMK Research
Note: Sales figures represent only high-range E2W (Top speed > 25 kmph) registered across 1,335 RTOs in 34 states/ UTs. Others include Jitendra EV Tech, Pure EV, Lectrix, GoGreen E-mobility Private Limited, MEW Electricals Ltd (BGauss), KLB KOMAKI, and 45 other players.

Electric Three-Wheeler (E3W)

The sales of registered E3Ws passenger and cargo-type in August 2022 stood at 29,331 units and 2,694 units respectively, signifying a m-o-m rise of 9.72% for E3W - Passenger and decline of 1.54% for E3W - Cargo. The decline in sales of E3W - Cargo was primarily on account of reduced sales of e-rickshaw with cart for cargo purposes. However, this decline in sales of E3W – Cargo was less in comparison to last month's decline in sales which was ~6.6%.

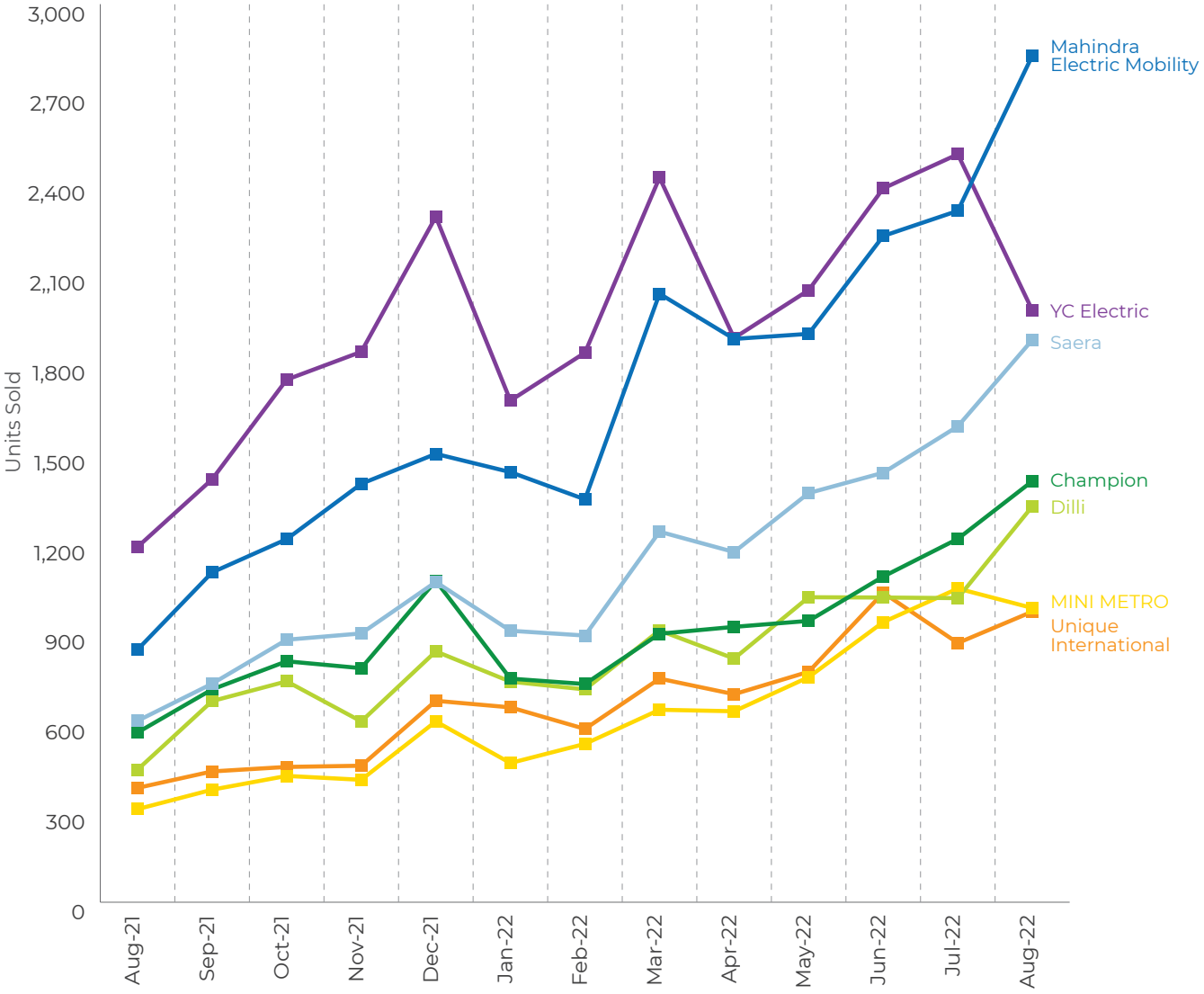
Fig 2.6: Sales Trend of E3W – Passenger (Left) and E3W - Cargo (Right)



Source: Vahan Dashboard, JMK Research
Note: Sales figures represent E3Ws registered across 1,335 RTOs in 34 states/ UTs; E3W (Passenger and Cargo) sales shown in the figure takes into account both e-rickshaw and three-wheeler classes as categorized in the Vahan dashboard.

The cumulative sales of top 7 electric 3-wheeler players across passenger and cargo segments in August 2022 accounted for 35.50% share of the entire E3W market. For the first time, the E3W market share of 8.83% made Mahindra the leader in E3W sales pushing YC Electric Vehicle to the second position with 6.17% share of the entire E3W market, which was followed by Saera Electric Auto (5.87%), Champion Poly Plast (4.39%), Dilli Electric (4.13%), MINI METRO EV L.L.P (3.07%), and Unique International (3.03%).

Top E3W Players in August 2022

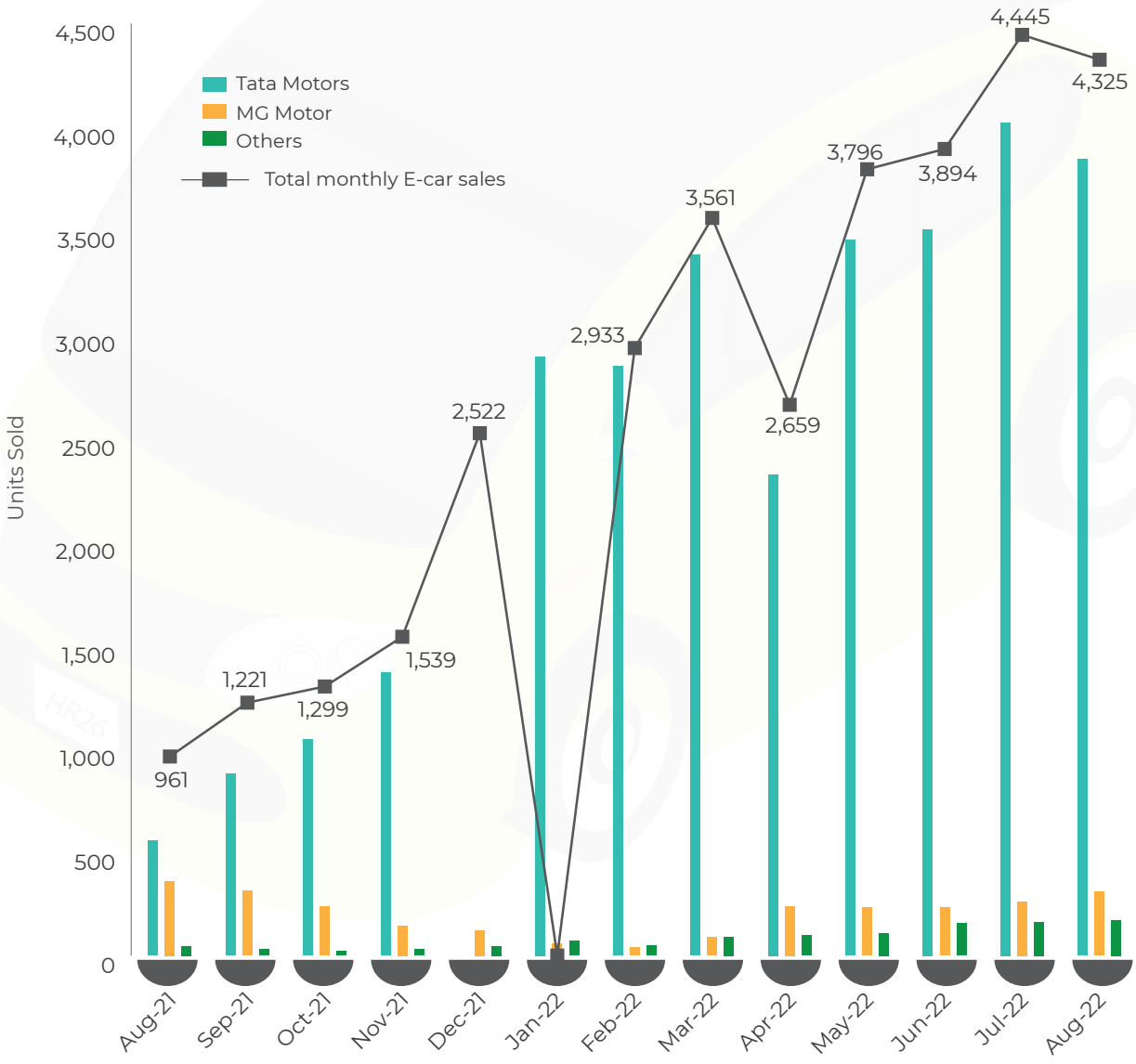


Source: Vahan Dashboard, JMK Research
Note: Others made up 64.50% of the E3W market in August 2022; sales figures for players are inclusive of both cargo and passenger offerings; Sales figures represent E3Ws registered across 1,335 RTOs in 34 states/ UTs; E3W (Passenger and Cargo) sales shown in the figure takes into account both e-rickshaw and three-wheeler classes as categorized in the Vahan dashboard.

Electric cars (E-cars)

The cumulative sales of E-cars in August 2022 stood at 4,325 units, witnessing a m-o-m decline of 2.7% however a y-o-y surge of more than 3.5 times in registrations. Tata Motors has been driving the E-car sales this month as well. This month too, the Company accounted for 88.9% share of the total E-car registrations. However, the company's EV sales declined by 4.4% on a m-o-m basis. Other than Nissan, Tata Motors, and Mahindra & Mahindra, rest all E-Car OEMs witnessed a slight increase in sales this month.

Fig 2.8: Player-wise E-car sales trend



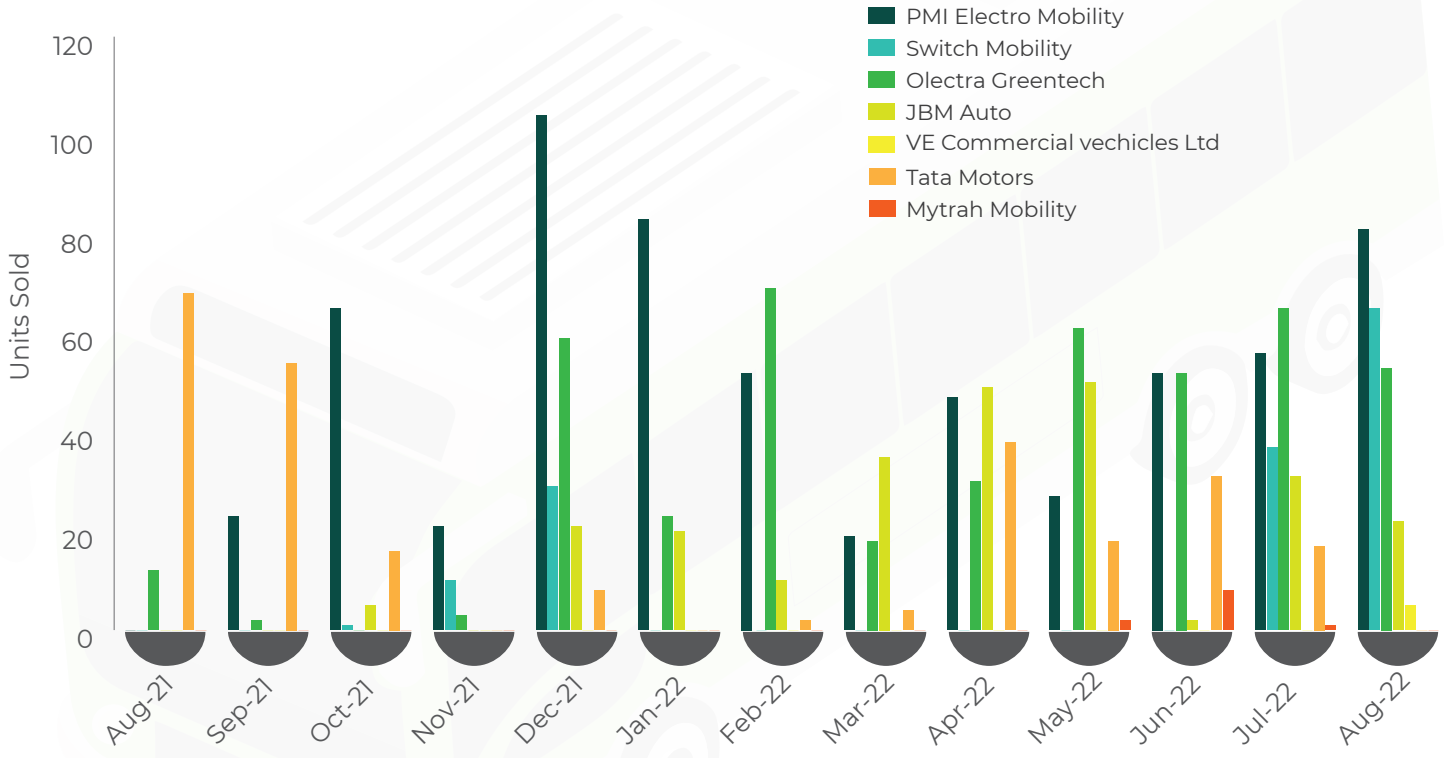
Source: Vahan Dashboard, Company Press Release, JMK Research
Note: Sales figures represent E-cars registered across 1,335 RTOs in 34 states/ UTs; Others include Hyundai, BYD, Audi, Mahindra & Mahindra, Mercedes-Benz, BMW, Nissan, and Porsche.

16

Electric buses (E-buses)

The cumulative sales of E-buses in August 2022 stood at 226 units, with a m-o-m increase of just 9.18% and a y-o-y surge of more than 180%. This month's sales were driven by PMI Electro Mobility (35.84%) followed by Switch Mobility (28.76%), Olectra Greentech (23.45%) and JBM Auto (9.73%). VE Commercial Vehicles Ltd. entered the market after long with sales of 5 E-buses. Tata Motors and Mytrah Mobility didn't witness sales of any E-bus.

Fig 2.9: Player-wise E-bus sales trend



Source: Vahan Dashboard, JMK Research
Note: Sales figures represent E-buses registered across 1,355 RTOs in 34 states/ UTs.

3 POLICIES AND REGULATIONS

Rajasthan EV policy gives boost to electric vehicle adoption through various incentives

In its new EV policy, which came into effect on September 1, 2022, the Rajasthan government has sanctioned a fund of INR40 crore for contribution on the purchase of electric vehicles. The policy will be valid for a period of five years. Upfront incentives include 100% SGST reimbursement for all the eligible electric vehicles. These also include incentives as per battery capacity for vehicles equipped with both fixed and swappable batteries, ranging from INR 2,000 to INR 10,000 for a maximum of 1 lakh E2Ws; from INR 4,000 to INR 20,000 for a maximum of 50,000 E3Ws; from INR 30,000 to INR 50,000 for a maximum of 4,000 E4Ws under various categories; and from INR 1,00,000 to INR 5,00,000 for a maximum of 500 E-Buses. Incentives have also been declared for creation of public charging and swapping infrastructure. Land will be allotted at 50% concessional rate for first 500 renewable energy-based EV charging stations installed within five years of policy commencement. In addition, tariff rebate will be provided for public charging stations at a rate of 15% on energy charges (INR6 per unit) from 11PM to 6AM.

Ladakh rolls out 'Electric Vehicle and Allied Infrastructure Policy, 2022'

The Union Territory of Ladakh notified the new policy on August 17, 2022, aiming for rapid adoption of EVs across passenger and commercial vehicle segments. The policy will be valid for a period of 5 years from the date of notification. One of the key incentives includes provision of capital subsidy of 10% on purchase of electric two-, three- and four-wheelers and 25% for e-buses. Moreover, the capital subsidy will be doubled for early birds i.e., if the electric vehicles are purchased within one year from the date of policy notification. Further, each commercial public EV charging station for two-wheelers, cars, and buses will be eligible for capital subsidy of 25% on the equipment/machinery or INR 5,00,000 (whichever is less). This incentive will be applicable only for the first 15 charging stations.

India has an EV super app coming: Govt working on one-stop shop for all key info

To accelerate adoption of electric vehicles and ease range anxiety of end users, the government is working on launching a master app to act as a one-stop shop that will provide information on

location and availability of vehicle charging stations. State-run Convergence Energy Services Limited (CESL) is in the process of collating information from the private sector for the super app, which is scheduled to go live in the next 4-6 weeks. The app will detail availability, charger types, and charging tariffs, allowing users to make and change reservations at nearby stations.

Centre notifies new battery waste management rules

Ministry of Environment, Forest and Climate Change under the Government of India published the Battery Waste Management Rules, 2022 on August 24, 2022 to ensure environmentally sound management of waste batteries. New rule will replace Batteries (Management and Handling) Rules, 2001. The rules cover all types of batteries, viz. electric vehicle batteries, portable batteries, automotive batteries, and industrial batteries. The rules will promote setting up of new industries and entrepreneurship in collection and recycling/ refurbishment of waste batteries.

The rules function based on the concept of Extended Producer Responsibility (EPR) where the producers (including importers) of batteries are responsible for collection and recycling/refurbishment of waste batteries and use of recovered materials from waste in new batteries. It prohibits disposal in landfills and incineration. On the principle of Polluter Pays Principle, environmental compensation will be imposed for non-fulfilment of EPR targets, responsibilities, and obligations set out in the rules. The funds collected under environmental compensation shall be utilised in collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

Mandatory standards for EV batteries in 2-3 months

The new mandatory standards for battery components and their testing, including cells, of electric vehicles will come into force in two-three months. The standards and testing protocols will be notified simultaneously for both two- and four-wheeler EVs. The government will also make it mandatory for vehicle manufacturers to sell EVs with only standard-compliant batteries.

Delhi govt's electric vehicle retrofitting services to soon become faceless

The Delhi government's electric vehicle retrofitting services will soon become faceless, claiming that the national capital will be the first

in the country to do so. The move will also benefit a large number of diesel vehicle users who would want to convert their vehicles. In order to give a big push to electric mobility in the city, the Delhi government will now bring this faceless service through which one will be able to get diesel vehicles retrofitted with an electric vehicle kit at their homes from an authorised dealer.

Nearly Rs 100 cr incentive offered on EVs to boost sales: Delhi govt

The Delhi government has offered an incentive of nearly INR 100 crore on electric vehicles under its ambitious Electric Vehicle Policy launched in 2020, the highest by any state. According to official figures, 62,483 electric vehicles have been sold since the launch of the Delhi EV Policy on August 7, 2020. The policy's mission is to drive rapid adoption of EVs to ensure they contribute 25% of all new vehicle registrations by 2024. The capital is already at the halfway mark, with EV sales recording 12.5% share up to March this yea**r.**

e-Mobility push: Delhi proposes incentives one charging point for every 15 EVs by 2024 under new EV policy

In a major e-mobility push, the Delhi government has proposed incentives for battery swapping facility operators and one public charging point for 15 EVs by 2024 in the new EV policy document. The government will soon onboard power distribution companies or the discoms to study the impact of EV charging on the grid. Titled Charging/Swapping Infrastructure Action Plan for 2022-2025, the national capital will operationalise the incentive provided to battery swapping facility operators in the Delhi EV policy.

Delhi govt issues draft policy paper for launching 'Uber of buses' in capital

The Delhi government released a draft policy paper on privatising intra-city bus transportation and having private companies to run air-conditioned electric and CNG buses in the National Capital Region. The objective is to encourage a modal shift in public transport by promoting efficient premium bus services. The draft paper comes at a time when multiple technology companies have shown interest in starting bus services. Uber, for instance, has been piloting a bus service in the Delhi National Capital Region and Egypt's capital of Cairo.

Kerala CM launches state govt's own e-taxi service app

Kerala Chief Minister Pinarayi Vijayan launched an e-taxi service app - named 'Kerala Savari' - which is considered to be the first such initiative by any state in the country. Under the new initiative, the objective is to link the existing autorickshaw-taxi networks in Kerala with an aim to ensure safe and dispute-free travel for the public at affordable rates. It is also envisaged as a helping hand to the autorickshaw-taxi labour sector, which is facing several challenges.

Punjab gives nod to draft EV policy

In a step aimed at checking environmental pollution in the state, Punjab Chief Minister Bhagwant Mann gave the nod to the draft electric vehicle policy, which envisages registration of 25 per cent more electric vehicles than last year. The draft policy is aimed at reducing environmental pollution by checking carbon emissions from vehicles through the promotion of electric vehicles. According to the draft policy, the major thrust would be on cities such as Ludhiana, Jalandhar, Amritsar, Patiala, and Bathinda that accounted for over 50% vehicles in the state.

4 CHARGING INFRASTRUCTURE & BATTERY SWAPPING

Stakeholder(s)/ Player(s)	Description
Kia India	• Kia India has inaugurated India's fastest 240kWh charger for EV passenger vehicles. This DC fast charger is installed at Incheon Kia, Kochi. Customers can avail this charging facility at the Kochi dealership by paying per usage. • The Company will also accommodate the changing needs of EVs from other OEMs through these charging stations. The automaker earlier launched a 150kWh charger for passenger cars in Gurgaon in July 2022.
Nagpur Municipal Corporation	• The Nagpur Municipal Corporation (NMC) has started the process to set up charging stations for electric vehicles, whether bus or four-wheelers, across the city considering rise in these eco-friendly vehicles. • In order to give a boost to its plan, the civic body has signed a memorandum of understanding (MoU) with the state government's Mahatma Phule Renewable Energy and Infrastructure Technology Limited (MAHAPREIT), which will fund and execute projects like establishment of EV charging stations.
Tamil Nadu Generation and distribution company (Tangedco)	• Tangedco is to float a tender for electric vehicle charging units in the state. 100 locations across highways have been identified for establishing EV charging stations. • The Central power ministry has accorded sanctions for 256 charging stations across Tamil Nadu and 151 charging stations are already functional. This includes stations of private sector entities and public sectors like the Chennai corporation.
Bharat Petroleum Corporation (BPCL)	• BPCL plans to put up fast charging facilities at 200 major highway corridors across the country by the end of current financial year (FY23). • A senior executive has informed that a capex of about INR 200 crore has been allocated for the purpose which will be utilised to fund 2,000 EV charging stations.
Delhi Development Authority (DDA)	• The DDA approved a proposal on the installation of electric vehicle charging facility at petrol or diesel pumps and CNG stations at a lesser license fee to curb air pollution in the city. • As for a petrol and CNG pump with an EV facility site, the annual licence fee will be INR 45,05,404; INR 50,35,451 for a petrol pump with an EV facility site; and for a gas go-down, it will be INR
Tata Power	• Tata Power announced setting up electric vehicle charging infrastructure across Maharashtra with a focus on highways and expressways linking Mumbai to Pune, Nashik, Goa and other places. • The power firm has planned installation of at least 1,500 stations with up to 80% of them on major highways and expressways.

Stakeholder(s)/ Player(s)	Description
Honda Power Pack Energy India Private Limited (HEID)	• Honda Power Pack Energy India Private Limited (HEID), a subsidiary of Honda Motor Company, and Hindustan Petroleum Corporation Limited (HPCL), has started the operation of Honda e: swap services for e-rickshaws at the HPCL petrol stations in Bengaluru. • The Japanese auto major set up its subsidiary HEID in November 2021 to begin battery swap service in India, starting with electric auto rickshaws.
Tirex and HPCL	• Gujarat-based Tirex Transmission has bagged a contract for more than 60 EV chargers from Hindustan Petroleum Corporation Limited (HPCL) for their franchise outlets in Gujarat and Rajasthan region. • The company will supply two types of DC fast chargers for this project. One rated between 25kW and 30 kW with a single connector option of CCS2. The other type is rated between 50kW and 60 kW with combinations of connectors as per the requirement.

Source: Industry news articles, JMK Research

5 E-BUS UPDATES

Bengaluru to soon have 1200 modern EV buses, says CM after flagging off first 75 buses

Bengaluru city will soon have 1,222 modern E-Buses in its public transport system, Chief Minister Basavaraj Bommai said while flagging off the first batch of 75 Switch EiV 12 buses. The buses that were flagged off have been supplied by Switch Mobility, an electric bus and light commercial vehicle company, which is a part of Ashok Leyland. The new technologically advanced E-buses are a part of the 300 E-Bus order by Bengaluru Metropolitan Transport Corporation (BMTC) for Bengaluru. Switch Mobility will supply, operate and maintain the 300 Switch EiV 12 standard E-Buses.

Tata Motors bags 921 electric buses contract from BMTC

Tata Motors has won an order of 921 electric buses from Bengaluru Metropolitan Transport Corporation (BMTC). Under the larger tender by Convergence Energy Services Limited (CESL), Tata Motors will supply, operate, and maintain 12-metre electric buses for 12 years, as per the contract.

PMI Electro Mobility sets up Rajkot's first electric bus depot

PMI Electro Mobility, India's leading electric commercial vehicle manufacturer, has set up Rajkot's first E-Bus depot. Spread over 17,000 sq.m., the E-Bus depot has been developed by PMI and has a capacity to support 80 E-Buses at a time. The depot is equipped with 14 DC Fast Chargers that can charge an E-Bus's battery from 20% to 100% in 55 minutes. PMI also delivered 23 new E-Buses to the Rajkot Municipal Corporation as part of a Letter of Award (LoA) awarded to the company in 2019.

Delhi flags off 97 new e-buses

Delhi has increased its electric bus (e-bus) fleet to 249 as the national capital saw flag-off ceremony of 97 more clean fuel public transport vehicles from Tata Motors inducted under Delhi Transport Corporation (DTC). With the flagging-off of these e-buses, the overall number of buses in Delhi's fleet has increased to 7,300. The all-electric low-floor e-buses from Tata Motors come with a length of twelve metres. These e-buses offers space for 35 passengers. Further,

they are equipped with an electric motor which can generate an output of 245 kW.

Ceat launches WINENERGY X3-R tyres for e-buses

Tyres maker Ceat launched new WINENERGY X3-R tyres for E-Buses. These tyres have features which have been tested for ride and handling and are specific to the requirements of E-Buses for use on urban roads. The performance of WINENERGY X3-R tyres is already proven in EV fleets across the country.

Yogi flags off 42 electric buses for Lucknow, Kanpur

42 E-Buses have been flagged off for the cities of Lucknow and Kanpur. Of the 42 buses, 34 buses will be deployed in Lucknow while 8 in Kanpur. The deployment of E-Buses will improve connectivity in the stat

6 OTHER MARKET UPDATES

EV firm Komaki launches fire-resistant batteries in India

As fires in electric two-wheelers bring sales down for several players amid government probes, EV company Komaki has launched fireproof batteries in India that will be available in all company vehicles from next month. The company has introduced lithium-ion ferro phosphate (LiFePO4) batteries in the market, which are more fire-resistant.

Amalgamations Group to venture into EV powertrain parts with new partners

Amalgamations Group, a tea to tractor producing US$2 billion Group is planning to add key electric vehicle powertrain components to its portfolio. IP Rings, an Amalgamations Group company, is already supplying gears and other mechanical components for EV application. Battery pack, motors, and controllers are among the components that the Group is looking at manufacturing through one or more of its companies.

ALT Mobility launches debt aggregation platform

IIT Delhi-based Alt Mobility, a commercial fleet leasing platform, has launched 'Elektrowagen', a structured finance solution, to mobilize low-cost debt finance from domestic and international financing institutions for the electrification of commercial fleets in India. Under this arrangement, the company has signed MoUs with two non-banking financial institutions (NBFCs) focused on electric vehicle financing for a commitment of US$25 million over the next 12 months.

WardWizard looks to begin production of passenger electric three-wheeler in this quarter

Electric two-wheeler maker WardWizard Innovations and Mobility looks to begin the production of a passenger three-wheeler model within this quarter (July-Sep 2022) as part of the company's plans to expand the product range. The Vadodara-based company is also focusing on strengthening its EV ancillary with the right partners for the availability of essential raw material for the Li-ion advanced cell manufacturing unit.

Kinetic Engineering sets up subsidiary for EV parts and assemblies

Pune-headquartered Kinetic Engineering (KEL), which develops components for electric two- and three-wheelers has formed a new subsidiary company targeted towards new opportunities in the electric vehicles and assembly market. The new subsidiary is set up with an initial capital outlay of INR25 crore with 51% stake held by Kinetic Engineering.

Buoyed by EV demand, HMSI looks to enter electric scooter market by next year

Witnessing robust demand for electric scooters in the country, Honda Motorcycle & Scooter India (HMSI) is ready to foray into this segment by early 2023. The country's second largest two-wheeler maker did not reveal the name of the first product that will hit the Indian market under this umbrella, but is certain to launch its highest selling scooter Activa in the electric avatar.

Ola to expand Tamil Nadu future factory into EV hub

Ola Electric has announced mega plans to scale up its business with a foray into electric cars, introducing new e-two-wheeler models and scaling up lithium-ion cell manufacturing. The company has announced its target to introduce the new electric car in the summer of 2024 and hit one million units of e-car sales by 2026-27. The e-car is part of the company's scaled up target to expand its Tamil Nadu manufacturing facility into an EV hub.

HDFC ERGO launches 'All Things EV' platform for present and future EV customers

HDFC ERGO General Insurance Company, a private sector general insurance company, has launched All Things EV, a one-stop-solution portal for electric vehicles. In line with the Government of India's push for electric mobility, this initiative caters to the needs of existing and potential EV users. As a part of this initiative, the company has unveiled a dedicated platform for the existing and prospective EV ecosystem users, which hosts end-to-end information on this emerging sector.

Gensol to make affordable personal mobility and cargo electric vehicles

Gensol Engineering Ltd, an Ahmedabad-headquartered renewable

energy solution provider, is entering the electric vehicle market with personal mobility and cargo electric vehicles. The company plans to establish its EV manufacturing facility in Chakan, Pune, one of India's largest auto manufacturing clusters. The company expects the plant to start production from October 2022 and take deliveries from January 2023. The plant will have a production capacity of 1,200 units per month.

Suzuki's 2nd battery plant to come up in Hansalpur

Maruti Suzuki India Limited (MSIL), a subsidiary of Japanese Auto major Suzuki Motor Corp (SMC), is gearing up to commemorate 40 years of its presence in India. The foundation stone of its battery plant in Hansalpur, Gujarat is soon going to be laid down. This will be the second battery plant to come up at Hansalpur in Gujarat in the land parcel adjacent to the passenger vehicle manufacturing plant of SMC. The plant will attract an investment of INR 7,300 crore here from the Japanese automobile giant. It will be commissioned by 2026.

Ather Energy plans to open 150 Experience Centres by March 2023

Electric scooter manufacturer Ather Energy has inaugurated its third experience centre in Chennai as it aims to strengthen its presence in the country. Ather Energy has 49 retail outlets in 38 cities. The company plans to expand to 100 cities with 150 Experience Centres by March 2023.

Hero Electric sets up R&D centre for product development

Hero Electric, the leading electric two-wheeler company, is establishing a new R&D centre to redefine standards for features, quality, safety, and technological innovations for its products. The new R&D setup will be the nerve centre for future product development, incorporating the latest and the best technologies in electric two-wheelers.

Volkswagen Group is testing Electric Vehicles under Škoda Brand for India

German car major Volkswagen has started testing some of Škoda's electric vehicles in India as it evaluates products to be brought into the country for mass segment-oriented electric mobility. The Group is already selling the all-electric Porsche Taycan and the Audi e-Tron electric cars in India.

7 DEALS & INVESTMENTS

Company name	Company type	Deal type	Investor(s)	Deal value (US$ Mn)	Details
River	E2W Startup	Equity	Lowercarbon Capital, Toyota Ventures and other investors	11	Indian EV startup River gets $11 million from Chris Sacca's Lowercarbon Capital, Toyota Ventures
Exponent Energy	EV Battery and Charging station provider	Equity	Lightspeed (Lead) and YourNest VC, 3one4 Capital and AdvantEdge VC	13	Exponent Energy raises series A round of USD 13 m led by Lightspeed
Ultraviolette Automotive	E2W Manufacturer	Equity	Exor Capital	N/A	Ultraviolette Automotive raises undisclosed amount in funding
Cygni Energy	Battery Manufacturer	Equity and Debt	" Meridian Global Ventures (Equity) Indian Overseas Bank (Debt)"	12.5	Cygni Energy raises Rs 100 crore to power expansion
Orxa Energies	E2W and Battery Manufacturer	Equity	Lectrix E-vehicles	N/A	Orxa Energies secures pre-series A funding round from SAR Group's e-mobility arm

Source: Industry news articles, JMK Research

Sundram Fasteners lines up INR 350 crore capex plan to make power train sub-assemblies for EVs

Sundram Fasteners, engaged in the manufacture of auto components, has lined up INR350 crore capital expenditure plans spread over the next five years for manufacturing advanced automotive technology components like power train sub-assemblies for electric vehicles and select internal combustion engine vehicles. Besides the proposed investment plan, the company would make investments of INR 300 crore over the next two years in the wind energy segment

Hindalco earmarks about US$8 bn in capex over 5 years

Hindalco Industries has earmarked a total capital expenditure of about US$8 billion over the next five years in its arm Novelis and India. Novelis has found potential investment opportunities of US$4.5 billion. Hindalco has identified potential investment opportunities of almost US$3 billion in India. 70% of the company's consolidated cash flows will be allocated towards high-growth downstream segments including EVs, mobility, batteries and consumer durables.

Tata Motors EV arm acquires Ford Plant in Gujarat for INR 725 crore

Tata Passenger Electric Mobility Limited (TPEML), a subsidiary of Tata Motors Ltd, and Ford India Private Limited (FIPL) signed a Unit Transfer Agreement (UTA) for the acquisition of FIPL's manufacturing plant situated at Sanand, Gujarat. Under the agreement, TPEML will pay over INR725 crore for the acquisition that includes entire land & buildings and the Vehicle Manufacturing Plant along with machinery and equipment situated therein and transfer of all eligible employees of FIPL's vehicle manufacturing operations at Sanand.

8 JVs & PARTNERSHIPS

Companies involved	Purpose of Partnership
Battery Smart and Park+	• Battery swapping network providing company Battery Smart entered into a partnership with Park+, a super app for car owners, to further strengthen the battery swapping infrastructure in India. • Through this partnership, Battery Smart's users will have access to its Swap Stations set up across Park+ powered real estate in 25 cities by the end of 2025.
Altigreen and Exponent	• Exponent Energy, a start-up simplifying energy for EVs, entered into partnership with Altigreen Propulsion Labs, an electric commercial vehicle manufacturer, to offer rapid charging for eCVs on Indian roads. • They unveiled the fastest charging electric 3-wheeler that rapid charges from 0-100% battery capacity within 15 minutes.
Jitendra New EV Tech and FAE Bikes	• Nasik-based EV maker Jitendra New EV will supply 12,000 units of its JMT 1000-3K electric scooters worth INR120 crore to logistics company FAE Bikes under a deal. FAE Bikes will offer these scooters on rent to EV customers, who want to take a trial run prior to buying one as well as to those who want to have it without acquiring it across Bengaluru, Delhi-NCR and Hyderabad. • Equipped with a 1,000-W motor powered by a 3.12kWh battery, JMT 1000-3K claims to run up to 126 kilometres on single charge with a top speed of up to 52 kilometres per hour.
OSM and Agri Junction	• Omega Seiki Mobility (OSM), an Anglian Omega Group Company, and Agri Junction, a digital marketplace for agricultural products, entered into a strategic partnership to deploy more than 10,000 electric two and three-wheelers in rural markets in FY 23. • In the first phase, Agri Junction and OSM will be introducing their electric vehicle in Tier II and III markets of UP and Maharashtra which have the maximum share of electric vehicle sales in India
Alt Mobility and Zypp Electric	• EV leasing platform Alt Mobility entered into partnership with e-logistics provider Zypp Electric to lease 15,000 electric two-wheelers to facilitate last-mile deliveries. • Alt is expected to expand its fleet size to 50,000 electric two and three-wheelers, mobilizing US$100 million in capital over the next 12 months.
Tata Power and JP Infra	• Tata Power has partnered with real estate developer JP Infra Mumbai to provide electric vehicle charging points across the latter's residential projects in Mumbai. • The power company will set up over 60 charging points across JP Infra's projects in Mumbai including JP North Garden City (North Euphoria, North Alexa, North Aviva, Codename Dream Home), North Barcelona, and North Imperia."

Companies involved	Purpose of Partnership
ElectricPe and JSW Group	• JSW Group has chosen ElectricPe as its charging partner. This partnership has come into effect following the recent green policy introduced by JSW to provide incentives for employees to purchase EVs and provide charging infrastructure within the office and plant premises. • ElectricPe has already enabled the required charging infrastructure at the JSW Mumbai Office headquarters. The company will soon expand its services to other JSW offices.
Switch Mobility and Chalo	• Ashok Leyland's EV subsidiary Switch Mobility has entered in an agreement with Chalo, an app-based public transport operator, to supply over 5,000 electric buses over a period of three years. • This would translate into an order value of ~US$1 billion. The funding for production of these buses will be managed by Switch and Ohm Mobility's (sister company of Switch Mobility) fund raise from private equity which is likely to be closed shortly.
Hero Electric and AU Small Finance Bank	• Hero Electric, a leading electric two-wheeler company, has announced partnership with AU Small Finance Bank to provide easy financing solutions for its e2Ws. • Hero Electric aims to enhance the financing process for its customers by providing seamless and easy loan solutions along with online assistance."
Hero Electric and Jio-bp	• To boost electric vehicle adoption and mobility in India, Hero Electric has partnered with Jio-bp to strengthen mobility solutions for electric two-wheelers. • Through this tie-up, Hero Electric's customers are expected to get access to the widespread charging and swapping network of Jio-bp, which is also open to other vehicles.
Lith Pwr Mobility with Tork Motors and Honda	• Thane-based electric vehicle start-up Lith Pwr Mobility has partnered with Tork Motors and Honda Power Pack Energy India, a subsidiary of Honda Motor Company, Japan, for electric three-wheeler operations in India. • Under the partnership, electric three-wheelers powered by Tork Motors' powertrain and Honda's Battery as a Service (BaaS) swapping solution will be deployed by Lith Pwr Mobility.

Source: Industry News Articles, JMK Research

9 GLOBAL MARKET UPDATES

Cummins completes acquisition of Meritor, to deliver decarbonized solutions

Global power and technology leader, Cummins Inc. recently completed the acquisition of Meritor, Inc., a leading global supplier of drivetrain, mobility, braking, aftermarket, and electric powertrain solutions for commercial vehicle and industrial markets. The integration of Meritor's people, products and capabilities in the axle and brake technology will position Cummins as a leading provider of integrated powertrain solutions across internal combustion and electric power application.

Porsche enters eBike segment through JV

German automobile manufacturer Porsche wants to increase its activities in the eBike segment.
As a result, Porsche eBike Performance GmbH, based in Ottobrunn near Munich, will develop electric drive systems for two-wheelers. These include motors, batteries, and the necessary software architecture for connectivity solutions. Stuttgart-based P2 eBike GmbH intends to use these drive systems to launch a new generation of Porsche eBikes from the middle of this decade.

China extends EV tax break past year-end deadline

China will extend a tax incentive for electric vehicle purchases beyond the December sunset date as the government tries to expand the market for EVs, an area where domestic manufacturers hold an advantage. The tax break applies to EVs, plug-in hybrids and fuel-cell vehicles. Hybrids that cannot be recharged do not receive the tax benefit.

China's CATL to build battery plant in Hungary

China's Contemporary Amperex Technology, the world's biggest maker of batteries for electrical vehicles, plans to build a huge new factory in Hungary, its second in Europe. CATL will invest 7.34 billion euros (US$7.5 billion) in the 100GWh (gigawatt-hour) plant in Debrecen in east Hungary with construction set to begin this year once shareholders have approved it.

Indonesia says Tesla strikes US$ 5 billion deal to buy nickel products

US carmaker Tesla has signed contracts worth about US$5 billion to buy materials for its batteries from nickel processing companies in Indonesia. Indonesia has been trying to get Tesla to set up a production facility in the country, which has major nickel reserves.

U.S. grant of $1.66 bln for new buses aims to curb emissions

The U.S. Transportation Department is awarding US$1.66 billion in grants to cities and states to buy 1,800 buses in a shift to cleaner, lower-emission travel. The grants will fund 1,100 zero-emission buses, which will nearly double the existing 1,300 zero-emission transit buses. The funding for 150 bus fleets from the US$1 trillion 2021 infrastructure law will help cities and states retire old polluting buses.

China's EVE to supply BMW with large Tesla-like cylindrical batteries in Europe

China's EVE Energy Co Ltd will supply BMW with large cylindrical batteries for its electric cars in Europe as the German automaker follows Tesla Inc in adopting the new technology. EVE has signed contracts to be BMW's primary supplier of the battery cells in Europe for its new series of electric vehicles, due to hit the market from 2025.

Volkswagen, Mercedes-Benz team up with Canada in battery materials push

German carmakers Volkswagen and Mercedes-Benz have signed battery materials cooperation agreements with mineral-rich Canada, intensifying efforts to secure access to lithium, nickel, and cobalt. The move comes as automakers roll out their electric-vehicle expansion strategies globally in a bid to challenge sector leader Tesla.

New tax credit aims to expand access to EVs

A federal tax credit included in the Inflation Reduction Act aims to expand access to electric vehicles while also introducing new limitations that could make it hard to qualify for now. The IRA, signed into law last week by President Joe Biden, is poised to revamp the US energy landscape by making greener technology more affordable for lower- to middle-income consumers.

California poised to phase out sale of new gas-powered cars

California is poised to set a 2035 deadline for all new cars, trucks and SUVs sold in the state to be powered by electricity or hydrogen, an ambitious step that will reshape the US car market by speeding the transition to more climate-friendly vehicles. The California Air Resources Board voted to adopt sweeping regulations to require all new cars sold in the most populous U.S. state to be electric or plug-in hybrid by 2035.

BYD Auto becomes top-selling EV brand globally

For the first time, Chinas BYD Auto became the top-selling EV brand, surpassing Elon Musk-run Tesla. During Q2, BYD Auto shipped more than 354,000 EV units, an increase of 266 per cent YoY. Tesla's global sales grew 27 per cent YoY to over 254,000 units, falling short of expectations.

Honda Motor, LG Energy to build EV battery plant in Ohio

Japanese automaker Honda Motor Co plans to set up a new lithium-ion battery plant for electric vehicles in the United States with Korean battery supplier LG Energy Solution Ltd. Battery makers are looking to increase production in the US where a shift towards electric vehicles could increase as the country implements stricter regulation and tightens tax credit eligibility.

Mexico plans to open lithium sector to private investors

Mexico will open lithium exploitation to private investors because there are insufficient public funds to develop the recently nationalized sector. The Mexican government has already created a new state company called Litio para Mexico (Lithium for Mexico) that will be in charge of developing the sector.

EV ONLINE DASHBOARD

JMK Research & Analytics

Battery Manufacturing
Battery manufacturing landscape in India- Current status, expansion plans, new entrants, technology details,

Investments & Partnerships
Information captured basis vehicle type, deal type, and company type

Charging Infrastructure
CPO's data, Market share, Policies, investments, EV tariffs across states

Tenders
Details of tenders issued and awarded from 2019 onwards

Electric 4 wheelers
E-cars and E-buses sales data, product models, technical specifications, ex-showroom prices, etc.

Market Projections
Segment wise and year wise market projections

Electric 3 Wheelers
Sales data, product models, technical specifications, information on range, charging time, ex-showroom prices, top speed, battery type etc. Key OEMs and their Market share

Policies
All Central and State level announced/notified/drafted EV policies in consolidated form as well as for different vehicle segments, charging infrastructure, and manufacturing.

Electric 2 Wheelers
Sales data, product models, technical specifications, information on range, charging time, ex-showroom prices, top speed, battery type etc. Key OEMs and their Market share

Player profiles
Segment wise detailed player profiles- sales data, market share, product models available, investments, etc.

INCLUSIONS

- Online access for 12 months
- Weekly EV Newsletter (48 in a year)
- Monthly EV Summary (12 in a year)
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