













Acupuncture test





Thermal shock test

Drop test

Temperature cycling test

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1• NEW PRODUCT LAUNCHES

Table 1.1: New Product Launches in February 2021

Product	Vehicle Type	Battery Specs	Other Specs	Price
Kabira Mobility KM 3000	E-bike	 Range – 120 km (Max.) Charging time – 2 hrs Battery – 4kW 	 Top speed – 100 km/h Motor – 6000 W (peak) 	Rs. 1,26,990 (Ex-Showroom Goa)
Kabira Mobility KM 4000	E-bike	 Range – 150 km (Max.) Charging time – 2 hrs Battery – 4.4kW 	 Top speed – 120 km/h Motor – 8000 W (peak) 	Rs. 1,36,990 (Ex-Showroom Goa)
Earth Energy EV Glyde+	E-scooter	 Range – 100 km Charging time – 2.5 hrs Battery – 2.4kW 	 Top speed – 60 km/h Motor – 2200 W 	Rs. 92,000
Earth Energy EV EvolveZ	E-bike	 Range – 100 km Charging time – 40 mins Battery – 6.6kW 	• Motor – 5300 W	Rs. 1,30,000
Earth Energy EV EvolveR	E-bike	 Range – 100 km Charging time – 40 mins Battery – 8.2kW 	• Motor – 12,000 W	Rs. 1,42,000
Piaggio Ape E-Xtra FX	E-cargo 3-wheeler	• Battery – 8kWh	• Motor – 9550W	Rs. 3,12,000
MG ZS EV 2021	E-car	 Range - 419 km Charging time - 6-8 hrs (AC Fast) Up to 80% within 50 mins (DC super fast) Battery - 44.5kWh 	• 0-100 km/h – 8.5 sec	Rs. 20,99,800

Omega Seiki introduces electric three-wheeler with refrigeration for COVID-19 vaccine delivery

Omega Seiki Mobility recently unveiled Rage+ Frost, an electric three with a refrigerated carriage purposely designed for pharmaceuticals and food delivery. The company also aims to assist in the COVID-19 vaccine drive by providing vehicles for last-mile delivery. The battery-powered vehicle can store vaccines for 72 hours in a stationary state at a temperature as low as -20 degrees Celsius. The EV runs on a zero-maintenance Li-ion battery with a swappable option in the respective product.

Omega claims that the vehicle offers a low cost of running at Rs 0.5/km and also features a regenerative braking system. The vehicle offers a top



speed of 50 km/h and a loading capacity of 960 GW. The refrigerated carriage ensures a 1340 watt cooling capacity at 0 degree Celsius.

Upcoming Launches

Jaguar I-PACE electric SUV to launch in India on March 9

Tata Motors-owned Jaguar Land Rover (JLR) on Monday announced that the firm will launch its maiden all-electric SUV I-PACE in India on March 9, 2021. JLR has already started accepting booking orders for the car in the country.

Jaguar I-PACE will be equipped with a 90 kWh lithium-ion battery which is capable of producing 294 kW and 696 Nm of peak torque. The EV's battery will take around 45 minutes to charge from 0-80 per cent. The Jaguar I-PACE is capable of accelerating from 0 to 100 kmph within just 4.8 seconds. The all-electric vehicle will be available in three trims - S, SE and HSE.

Mercedes-Benz EQA pre-launch bookings commence

Mercedes-Benz had announced the commencement of the all-new Mercedes-Benz EQA. The EQA is the second car to be manufactured by the German automaker's dedicated electric sub-brand, EQ. The Mercedes-Benz is now the entry-level EV from the EQ range and is priced at €47,450.50 (Rs 41.53 lakh approx.) in Germany and the German customers can further avail an environmental bonus of €9000. The Mercedes-Benz EQA is aiming for a launch any time after March 2021.

The EQA packs a 66.5 kWh battery pack and offers a range of 486 km (NEDC). The SUV is powered by a 192 PS motor that lets it achieve a top speed of 160 kmph. The EQA boasts a front-wheel-drive powertrain and can clock 0-100 kmph in 8.9 seconds.

IIT Hyderabad-incubated startup Pure EV set to roll out first ebike

IIT Hyderabad-incubated startup Pure EV will be deploying 50 demo vehicles of its flagship electric motorcycle - ETRYST 350 - by end of March 2021 across the country to make them available for test drives at specific outlets. As per the startup, ETRYST 350 has been designed, developed and manufactured in India and will be hitting the roads on August 15, 2021, in Bengaluru, Hyderabad and Pune.





Table 2.2: Tenders in February 2021

Tender name	Tender Authority	Bid submission End date
Selection of Service Provider for Procurement, Op-eration and Maintenance of 300 Non AC Electric Bus on Gross Cost Contract (GCC) Model under FAME-II Scheme of Govt of India	Chief Mechanical Engineer, BMTC, Central Offices, Bangalore	01-Mar-2021
Selection of Service Provider for Procurement, Operation and Maintenance of Intra-city AC and Non-AC Electric Bus on Gross Cost Contract (GCC) Model under FAME-II Scheme of Govt. Of India	Chief Mechanical Engineer (P), KSRTC, Central Offices, Bangalore	09-Mar-2021
Establishing/setting-up of EV charging & battery swapping stations at various Locations under Package – A to J across NCT of Delhi.	DGM (T) M&S Delhi Transco Limited Ist floor, Pre-fabricated building Rajghat Power House, New Delhi-110002	17-Mar-2021





The registered EV sales in February 2021 is at 18,768 units, registering rise of 18% m-o-m and 16.2% y-o-y. The Feb-2021 sales has markedly surpassed the highest monthly sales figure of 2020 (Jan-2020 sales).



Source: Vahan Dashboard, JMK Research

Note: Sales figure represent EVs registered across 1274 RTOs in 33 states/ UTs.

Among all the states and UTs, Uttar Pradesh continues to maintain its lead in the monthly registered EV sales with 24% share in Feb-2021. Tamil Nadu took the second position with 15% which is followed by Delhi and Bihar at 8% each.





High-Speed Electric Two Wheeler (E2W)

The cumulative sales of Ampere, Ather, Hero Electric, Okinawa and Revolt in February 2021 for the HS-E2W category is ~4600 units, gaining 18% m-o-m growth. The overall rise of sales in this segment for the month can be majorly attributed to Hero Electric, Okinawa and Pure EV.

Fig 3.3: Player-wise high-speed E2W sales trend



Source: Vahan Dashboard, JMK Research

Note: Sales figure are for only high range E2W models with speed higher than 25kmph. Sales figure represent E2Ws registered across 1274 RTOs in 33 states/ UTs.



The sales of registered E3Ws (both passenger and cargo-type) in Feb-2021 climbed to 11,962 units, rising by 14.7% over Jan-2021 sales. The share of cargo-type E3W in the combined E3w sales for Feb-2021 grew substantially to 18.1% to touch 2168 unit sales.



Fig 3.4: Sales trend of cargo E3W and passenger E3W

Electric

Wheelers

Three

(E₃W)

Source: Vahan Dashboard, JMK Research

Note: Sales figure represent E3Ws registered across 1274 RTOs in 33 states/ UTs.



4. POLICIES AND REGULATIONS

Meghalaya releases its Electric Vehicle policy

The Meghalaya Electric Vehicle Policy 2021, released in late February, is set to come into effect from 1st April 2021 and will remain in operation and valid for a period of five years since then. The state targets at least 15% penetration of EVs by 2025. The total incentive allocated for the next 5 years is Rs. 25.42 crores.

CSC launches campaign to promote the use of electric vehicles in rural areas

The government's Common Services Centre (CSC) scheme has launched a rural e-mobility campaign urging people to switch to electric vehicles and preserve the environment by reducing carbon footprint. The CSC scheme is a special purpose vehicle under the Ministry of Electronics and IT. It aims to set up more than one lakh IT-enabled access points under a public-private partnership model. The programme at 100 CSCs will enable people to acquire e-scooters and e-rickshaws in rural and semi-urban areas.

Soon, subsidy to exchange old petrol bike for electric one in Goa

Minister for environment and new and renewable energy Nilesh Cabral said that citizens buying electric vehicles (EVs) will be offered a slew of incentives. There will be a cash incentive in the form of a buy-back programme, where they will be able to exchange their petrol consuming two-wheelers for electric bikes. It is proposed to waive the registration fees to bring down the cost of the EV by 5%, besides a subsidy will also make the electric vehicles affordable and accessible.

The government is installing public charging stations in the state. There are currently three high-capacity combo EV chargers 122-150kW, type 2 AC standards installed in Goa, which can charge long-range EVs, including Hyundai Kona, Tata Nexon and Morris Garage.

Delhi govt to switch its fleet of cars for electric vehicles within 6 months: Manish Sisodia

All departments of the Delhi government will now use only electric vehicles, Deputy Chief Minister Manish Sisodia announced recently. The transition to EVs will be done within the next six months. The government, which has over 2,000 cars in its fleet, hopes its decision will inspire other cities in the country and the world to tackle the issues of pollution and



climate change with the urgency they deserve.

Half of government vehicles will be replaced with electric vehicles in 2-3 years

The State government, in a bid to encourage e-mobility, is aiming to replace 50% of all government vehicles with electric vehicles in the next two to three years, Deputy Chief Minister C.N. Ashwath Narayan. Regulatory measures will be taken up for setting up charging infrastructure at high-rise buildings, metro stations, malls, IT parks, and apartment complexes.

5. CHARGING INFRASTRUCTURE

EV charging stations will be set up at every 3 km distance in Delhi

Transport Minister Kailash Gahlot had detailed the electric vehicle (EV) policy at a global summit and said that the Delhi government has aimed to set up charging stations within every 3 kms distance in the city. In a virtual address at the global event organised by World Bank and WRI Ross Center, Gahlot said the Delhi government has set a very ambitious target for the next five years - to have 25 percent electric vehicles in total vehicle registrations in the city.

Centre to support Andhra Pradesh set up EV charging infrastructure

As part of its national policy, the Union government will support Andhra Pradesh in developing infrastructure for electric vehicle (EV) charging. Andhra Pradesh will set up 400 charging stations in 73 locations across the state. Vijayawada, Visakhapatnam, and Tirupati will be declared model electric mobility cities with phase-wise goals to adopt electric vehicles, charging infrastructure, and new EV enabling building codes. Energy Efficiency Services Ltd (EESL) executive vice-chairman Saurabh Kumar said the EESL will extend its full support to develop EV charging infrastructure in Andhra Pradesh.



6. PARTNERSHIPS & JVS

American electric car maker Triton inks pact with BEL to make batteries in India

The New Jersey-based electric car maker Triton has roped in India's stateowned Bharat Electronics Limited (BEL) to make batteries. The muchawaited memorandum of understanding (MoU) has been signed where Triton will provide the know-how and BEL will make them.

The carmaker has recently launched its Triton N4 sedan model as it gears up to enter Indian market this year. Triton is looking to invest around \$650 million to \$1 billion in setting up a manufacturing facility in India. The company currently has its research and development unit set up in Pune, and it is also in talks with different state authorities to set up its facility in India.

Sterling and Wilson forms JV with Enel X to enter electric mobility segment in India

SWPL has signed a 50-50 joint venture with Enel X to launch and create world-class electric vehicle charging infrastructure in the Indian sub-continent and provide products and software platforms. Sterling Generators Pvt Ltd CEO Sanjay Jadhav said the joint venture with Enel X will provide end-to-end services for electric vehicle charging stations across India. The joint venture between Sterling and Wilson and Enel X will be incorporated on April 1, 2021 and will start operating from the second quarter of 2021.

Through the partnership, SWPL will introduce Enel X's Juice family of hightech, digital, and smart DC as well as fast AC electrical vehicle chargers that already have worldwide recognition, adjusted to the needs of the Indian consumer.

CredR partners Techo Electra Motors for exchange of petrol 2-wheelers

CredR, omni-channel platform for buying and selling used two-wheelers, has partnered with Pune-based electric two-wheeler maker Techo Electra Motors for exchange of any petrol-based two-wheeler with the latter's electric bike. Under the collaboration, while exchanging the old two-wheeler, CredR will offer instant quotes for old petrol scooters thus reducing the upfront cost of Techo Electra e-bikes, the company said in a statement.



7. INVESTMENTS

Table 7.1: Investments in February 2021

Company name	Company type	Deal type	Investor(s)	Deal value (in US\$ Mn)	Details
eBikeGo	EV-based logistics startup	Equity	 Bollywood singer Sukhbir Singh, Quess Corp Ltd CEO Vijay Sivaram, Asian Institute of Technology's Brahmanand Mohanty, and Mungo Befestigungstechnik AG chairman Alparslan Kutukcuoglu 	1.5	Logistics firm eBikeGo raises pre-Series A funding
Vogo	Self-ride two- wheeler rental service	Equity	 Lightrock, Kalaari, Matrix Partners and Stellaris Venture Partners 	11.5	Self-Drive two-wheeler rental company Vogo raises USD11.5 million for EV expansion

Omega Seiki to invest Rs 100 crore to set up production base in Bangladesh

Electric vehicle maker Omega Seiki plans to invest Rs 100 crore to set up a manufacturing plant near Dhaka, Bangladesh. The set up would be known as OSM-Bangladesh, the company, which is a part of the Anglian Omega Group. Currently, Omega Seiki has two manufacturing plants in India, located at IMT Faridabad and IMT Manesar, Haryana.

GreenCell says investing Rs 400 cr in PMI Electro consortium to deploy 350 e-buses in UP

EverSource Capital-promoted GreenCell Mobility Pvt Ltd is investing Rs 400 crore in a consortium of PMI Electro, including acquisition of 49 per cent stake, for deploying 350 electric buses across Uttar Pradesh. GreenCell Mobility, an electric mobility-as-a-service (eMaaS) platform, has acquired stakes in two special purpose vehicle (SPVs) companies incorporated by PMI Electro Mobility Solutions Pvt Ltd.



Ather Energy to invest Rs 635 cr in next five years at TN facility

Hero MotoCorp-backed electric two-wheeler maker Ather Energy on Friday said it would invest Rs 635 crore in the next five years at its manufacturing facility in Tamil Nadu to scale up production. The plant has an annual capacity of 1.1 lakh scooters and 1.2 lakh battery packs. Apart from the EV manufacturing, the facility will also focus on lithium-ion battery manufacturing, which is a crucial area of focus for Ather Energy going ahead. As a part of this initiative, more than 4,000 employees will be trained in requisite skills in the EV sector over the next five years.

Electric vehicle manufacturer Ampere to invest in Ranipet

Electric vehicle manufacturer Ampere Electric will set up an e-mobility manufacturing facility at Ranipet. Ampere Electric, which was acquired by Greaves Cotton two years ago, has signed a Memorandum of Understanding (MoU) in this regard with the Tamil Nadu government. The company proposes to invest ₹700 crore over 10 years at the facility. Ampere Electric's Ranipet plant will have the capacity to manufacture one lakh units in its first year of operation and the potential to scale up to one million units in a year. This facility is expected to be operational in 2021.



8. OTHER INTERESTING READS

212 cr released for procurement of e-buses under FAME-India Scheme

About Rs 212.31 crore has been released for the procurement of electric buses as of January 31 this year under the second phase of FAME-India Scheme. With an aim to promote eco-friendly vehicles, the government had launched the FAME (Faster Adoption and Manufacturing of Hybrid and Electric) India scheme in 2015.

Heavy Industries and Public Enterprises Minister Prakash Javadekar said that the Department of Heavy Industry had invited the Expression of Interest (EoI) from million-plus cities, smart cities, state/UT capitals and cities from special category states for submission of proposal for deployment of electric buses on operational cost basis. After that, 86 proposals from 26 states/UTs for the deployment of about 15,000 e-buses were received.

Ather Energy begins production at its new facility in Hosur

Entering an aggressive expansion phase, Ather Energy has started manufacturing electric scooters at its new plant in Hosur, Tamil Nadu. Since December last year, the company had stopped production of Ather scooters at its Whitefield plant in Bengaluru.

The new facility will manufacture electric vehicles and lithium-ion batteries, a focus area for Ather Energy going forward. Ather Energy is looking at a monthly production of around 3,000 units initially from this new plant, which is planned to be expanded to 8,000 units by early 2022.

Tesla to set up electric car manufacturing plant in Karnataka

Tesla Inc will set up an electric car manufacturing unit in Karnataka, said chief minister BS Yediyurappa. The statement was a part of release listing benefits for the southern state under the Union Budget 2021. The move comes as Prime Minister Narendra Modi is promoting the production and use of electric vehicles to reduce the country's oil dependence and cut down on pollution. The state had earlier said Tesla would open a research and development (R&D) centre in Bengaluru.



Delhi government to soon start facilitating registration of e-autos

The Delhi government will soon start facilitating registration of e-autos that can save up to ₹29,000 as compared to their CNG equivalents. Under its 'Switch Delhi' campaign, the Delhi government will now focus on adoption of electric three-wheelers, including e-autos, e-rickshaws, and e-carts. Under Delhi's electric vehicle policy, 177 three-wheeler models are available and eligible for purchase and scrapping incentives.

Tamil Nadu to buy 12,000 buses including 2,000 electric

Moving towards clean and green fuel, Tamil Nadu will buy 12,000 new buses out of which 2,000 will be electric ones, Deputy Chief Minister O. Panneerselvam said. Tamil Nadu is the first state in India to sign the Global C40 Clean Bus Declaration indicating its strong commitment to migrate to clean and green fuel.

Amazon partners with Mahindra Electric to deploy EVs in its delivery fleet

Amazon India had announced its partnership with Mahindra Electric to deploy the auto company's electric three-wheelers in its fleet of delivery vehicles. The e-commerce firm has inducted the Mahindra Treo Zor vehicles in seven cities so far, including Bengaluru, New Delhi and Hyderabad. Last year, Amazon India had announced that its fleet of delivery vehicles will include 10,000 electric vehicles by 2025.

Flipkart to add 25,000 EVs to its delivery fleet by 2030

A day after e-tailer Amazon tied up with Mahindra Electric to deploy 10,000 electric vehicles in its delivery fleet for India by 2025, its arch-rival Flipkart said it would introduce more than 25,000 EVs in its supply chain to achieve 100% transition to e-mobility by 2030. Flipkart's last-mile delivery electric fleet would include 2-wheeler, 3-wheeler, and 4-wheeler vehicles designed and assembled in India. As a precursor to this green move, the company has partnered with electric vehicle manufacturers such as Hero Electric, Mahindra Electric and Piaggio.



9. GLOBAL MARKET UPDATES

General Motors sets goal of going largely electric by 2035

General Motors (GM) has set a goal of making the vast majority of the vehicles, including all new light-duty vehicles, it produces electric by 2035, and the entire company carbon neutral, including operations, by 2040. The Company will source 100% renewable energy to power its U.S. sites by 2030 and global sites by 2035.

EU electric and plug-in hybrid car sales jump to over 1 million in 2020

Sales of electric and plug-in hybrid cars in the European Union almost trebled to over 1 million vehicles last year, accounting for more than 10% of overall sales. The jump in sales shows electrified vehicles are becoming more mainstream products after years of being a niche market and it came at a time when overall EU car sales plunged nearly 24% to 9.9 million because of COVID-19 lockdowns.

The data released by the European Automobile Manufacturers Association (ACEA) showed sales of fully-electric and plug-in hybrids surged to 1.046 million vehicles from 387,808 in 2019.

Daimler to spin off trucks in shift to electric, self-driving vehicles

German carmaker Daimler plans to spin-off Daimler Truck, the world's largest truck and bus maker, to allow it to focus on zero-emission vehicles and self-driving technologies. As traditional rivals like Sweden's AB Volvo, Volkswagen AG unit Traton and Paccar Inc, Daimler has been racing to bring to market fully-electric heavy-duty trucks to compete against Tesla Inc's long-awaited Semi truck model.

Amazon eyes global ride aboard Mahindra Electric's Treo Zor EV

Amazon.com Inc., through its logistic partners is reportedly in talks with Mahindra Electric to source electric three-wheelers for some of its global operations. Mahindra Electric has delivered a few test mules of its Treo Zor electric three-wheeler to the e-commerce behemoth's logistics partners in Japan and Vietnam



Foxconn Taiwan Auto JV Aims To Roll Out EV Bus In October

A joint venture between Apple Inc assembler Foxconn and Taiwanese car maker Yulon Motor Co Ltd aims to roll out its first electric vehicle (EV) bus this October. The EV bus that would be rolled out in October would be a prototype. Foxconn has ramped up its interest in EVs over the past year or so, announcing deals with Chinese EV maker Byton and Chinese automaker Zhejiang Geely Holding Group. It aims to provide components or services to 10% of the world's EVs by between 2025 and 2027, and has been in talks with multiple car manufacturers for future cooperation.

Statkraft takes over majority of Bee Charging shares

Statkraft makes another acquisition in the field of charging infrastructure: The Norwegian state-owned energy company announces the takeover of 51 per cent of the shares of the Swedish provider Bee Charging Solutions. The transaction is expected to close in the second quarter of 2021. Together with Statkraft's Swedish charging company Grön Kontakt, Bee Charging Solutions will be merged into one of the largest operators in Sweden called Mer Sweden. Bee Charging Solutions operates more than 2,000 public charging stations in Sweden and has an estimated market share of 15 to 20 per cent.

Audi premiers e-Tron GT; to be launched in Europe this month

German luxury carmaker Audi had unveiled its new electric spearhead Audi e-tron GT through a virtual show. The fully-electric Gran Turismo is built on technology developed for Porsche's first EV, the Taycan. It will go on sale in Europe this month. Audi e-tron GT Quattro will be on sale at a base price of EUR 99,800 (INR 88 lakh) and RS e-tron Quattro from EUR 138,200 (INR 1.22 crore).

GM's Chevy Bolt SUV joins parade of new US electric vehicles

General Motors had unveiled Chevrolet Bolt compact SUV which comes with an estimated range per charge of 250 miles (400 kilometers) and a \$33,995 starting price tag. The Bolt Electric Utility Vehicle will go on sale early this summer as a 2022 model. Sales will start with a small number of early versions priced at \$43,495.

Startup Italvolt plans \$4.9B Italian EV battery plant

Electric vehicle battery startup Italvolt plans to invest 4 billion euros (\$4.9 billion) to build a factory in Italy to meet growing demand for lithium ion batteries from Europe's automotive industry. The European Union is pushing to boost battery production on the continent to compete with



China, currently home to around 80 percent of the world's lithium ion cell manufacturing capacity, with the aim of being self-sufficient by 2025.

Japanese refiner Idemitsu enters car market with plans to launch electric vehicle next year

Japanese oil refiner Idemitsu Kosan Co Ltd is to move into the car market with plans to launch an electric vehicle next year at its 6,400 petrol stations via a joint venture with unlisted automaker Tajima Motor Corp. Idemitsu and Tajima will form a new company, called Idemitsu Tajima EV, in April, and aim to unveil their first vehicle in October this year and start selling the product next year, with a price tag of between 1-1.5 million yen (\$9,491-\$14,237).

Hyundai unveils first model based on own EV platform

South Korean auto giant Hyundai Motor had unveiled the IONIQ 5, the first model embedded with its own electric vehicle (EV) platform, as it strives to morph into a future mobility solutions provider. The IONIQ 5 midsize crossover utility vehicle is the first model equipped with Hyundai Motor Group's own EV-only electric-global modular platform (E-GMP). Hyundai said that it will launch the IONIQ 5 in Europe next month, in Korea in the second quarter and in the US and other markets later this year.

Tesla rivaling luxury electric vehicle maker Lucid Motors to go public

Lucid Motor, luxury electric vehicle maker and a rival to Tesla had recently announced that it has agreed to go public by merging with blank-check firm Churchill Capital IV Corp. The deal with the blank-check firm valued the combined company at \$11.75 billion. Lucid announced that it is planning to start production and deliveries of Lucid Air (its first luxury sedan) in North America in the second half of 2021. The plans have been delayed by some time as the EV maker has previously announced plans to start deliveries in the spring of 2021.

Apple supplier Foxconn teams up with Fisker to make electric vehicles

Electric-car maker Fisker Inc said it will work with Apple supplier Foxconn to produce more than 250,000 vehicles a year from late 2023. The deal, codenamed "Project PEAR" (Personal Electric Automotive Revolution), is looking at markets globally including North America, Europe, China and India.





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