

Q1

2021

EV update

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1. Executive Summary

EV segment continues to grow at an enormous pace in India with rising sales and new product variants introduced across various categories. For last quarter i.e. Q1 2021, key updates across EV sector include:

- **Launch of 12 electric two-wheeler models, 2 electric three-wheeler models and 2 luxury electric four-wheelers.** There has been no new product launch in the E-Tractor category, however, the company - Escorts is soon going to launch its electric tractor commercially in India, having received the Central Motor Vehicles Rules (CMVR) certificate on January 19, 2021.
- **Chandigarh and Meghalaya released its 'Electric Vehicles Policy'.** Further, the Ministry of Road Transport and Highways (MoRTH) has released Vehicle scrappage policy on January 25.
- **More than INR 236 Crore (USD 32.6 million) of fundings were raised** across various segments. Biggest funding was raised by Vogo of Rs. 84 crores from Lightrock, Kalaari, Matrix Partners and Stellaris Venture Partners.
- **The Q1 2021 sales of registered EVs has surged by 59%** from previous quarter's sales to reach 61,396 units.
- **Globally, sales of battery electric vehicles (BEVs) has declined by 17.5%** from 894,202 units in Q4 2020 to 737,722 in Q1 2021.

2.

New Product Launches

2.1 Electric Two Wheeler (E2W)

During the Jan-Mar 2021 period, **twelve new E2Ws were launched** - E2Go and E2Go Lite by Odysse, TN95, SE and M5 by Komaki, KM 3000 and KM 4000 by Kabira Mobility, Glyde+, EvolveZ, Evolve R by Earth Energy EV, Dual scooter by Okinawa and Easy plus electric moped by Detel. While rest other models are scooter and e-bikes, Detel Easy plus is a moped.

The speed of these products ranges from 25 km/h to 120 km/h. Out of the 12 models launched, only **Kabira Mobility KM 4000 has top speed of 120 km/h.**

In terms of nature of use, Detel Energy Plus is targeted at B2B segment, whereas Okinawa Dual will be available for both commercial and personal applications.

Table 2.1: Electric Two-Wheeler Product Launches in Q1 2021

Name	Speed	Specification	Price
Okinawa Dual	25 km/h	<ul style="list-style-type: none"> • Range – 130 km • Charging time – 4-5 hrs • Battery – 48W 55Ah (Li-ion) • Payload – 200 kg • Motor – 250 W 	Rs. 58,998
Odysse E2Go	25 km/h	<ul style="list-style-type: none"> • Range – 60 km • Battery – 28AH lead acid • Charging time – 3.5-4 hrs • Motor - 250 W 	Rs. 52,999
Odysse E2Go Lite	25 km/h	<ul style="list-style-type: none"> • Range – 60 km • Battery – 1.26 kWh Li-ion • Charging time – 3.5-4 hrs • Motor - 250 W 	Rs. 63,999

Name	Speed	Specification	Price
Komaki TN95	70 km/h	<ul style="list-style-type: none"> • Range – 80-100 km • Battery – Li-ion 	Rs. 98,000
Komaki SE	70 km/h	<ul style="list-style-type: none"> • Range – 100-120 km • Battery – Li-ion 	Rs. 96,000
Komaki M5	70 km/h	<ul style="list-style-type: none"> • Range – 100-120 km • Battery – Li-ion 	Rs. 99,000
Kabira Mobility KM 3000	100 km/h	<ul style="list-style-type: none"> • Range – 120 km (Max.) • Charging time – 2 hrs (Min.) • Battery – 4kW • Motor – 6000 W (peak) 	Rs. 1,26,990
Kabira Mobility KM 4000	120 km/h	<ul style="list-style-type: none"> • Range – 150 km (Max.) • Charging time – 2 hrs (Min.) • Battery – 4.4kW • Motor – 8000 W (peak) 	Rs. 1,36,990
Earth Energy EV Glyde+	60 km/h	<ul style="list-style-type: none"> • Range – 100 km • Charging time – 2.5 hrs • Battery – 2.4kW • Motor – 2200 W 	Rs. 92,000
Earth Energy EV EvolveZ	95 km/h	<ul style="list-style-type: none"> • Range – 100 km • Charging time – 40 min. (Min.) • Battery – 6.6kW • Motor – 5300 W 	Rs. 1,30,000
Earth Energy EV EvolveR	110 km/h	<ul style="list-style-type: none"> • Range – 100 km • Charging time – 40 min. (Min.) • Battery – 8.2kW • Motor – 12,000 W 	Rs. 1,42,000
Detel Easy Plus	25 km/h		Rs. 41,999

Source: JMK Research

2.2 Electric Three Wheeler (E3W)

Three-wheelers (3Ws) in India are commercial vehicles. The E3W models for commercial use can be e-rickshaws or e-autos, each designed for either passenger (P) or logistics/cargo/goods (G) transport. In this quarter (Q1 2021), **only two E3Ws were launched in the country** - Rage+ Frost by Omega Seiki Mobility and Ape E-Xtra FX by Piaggio Vehicles.

The launch of these two cargo vehicles will help in strengthening the case for E3Ws in B-2-B segment in India.

Piaggio Vehicles entered the electric cargo three-wheeler segment with the launch of Ape E-Xtra FX. Earlier, the company had introduced an e-three wheeler Ape E-City for the passenger segment with swappable battery.

The Rage+ Frost model was unveiled by Omega Seiki with refrigeration for COVID-19 vaccine delivery. The company targets 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.

Table 2.2: Electric Three-Wheeler Product Launches in Q1 2021

Company Name	Speed	Other Specifications	Price
Piaggio Ape E-Xtra FX	45 km/h	<ul style="list-style-type: none"> Battery – 8kWh Motor – 9550W 	Rs. 3,12,000
Omega Seiki (Rage+ Frost)	50 km/h	<ul style="list-style-type: none"> Battery - Li-ion battery with a swappable option Loading capacity - 960 GVW It features a regenerative braking system 	Not available

Source: JMK Research

2.3 Electric Four Wheeler (E4W)

Various global as well as Indian automakers are ready to add new E4W models to the list despite the fact that the Indian electric vehicle market is still in the infancy stage.

In Q1 2021, Jaguar Land Rover had launched the I-Pace electric SUV, which is India's second electric luxury car after Mercedes-Benz EQC. The bookings were open for Jaguar I-Pace since November 2020, with deliveries planned to commence from March 2021 onwards. Jaguar I-Pace will have a direct competition with the Mercedes-Benz EQC as they both fall in the same price range, aside from the fact that the two belong in the luxury electric SUV category.

The unexpected rise in fuel prices and the growing electric vehicle space in India have necessitated manufacturers to update their EVs in order to pitch them as compelling offerings to customers.

In line with this, MG Motor had launched an updated MG ZS EV in February 2021. The new ZS EV, although having similar looks and design as that of the previous version, features a variety of new attributes, including raised ground clearance and a new battery called HT (Hi-Tech) Battery. Price range of the new MG ZS EV is Rs. 20.99 lakh to Rs 24.18 lakh, making it more expensive by Rs. 60,000. The ZS EV, currently, does not have a direct rival in India, however, it competes with other electric crossovers including Hyundai Kona Electric and Tata Nexon EV.

With evolving customer preferences, car subscription plans are gaining popularity across the country. MG ZS EV has introduced a subscription plan, in partnership with Zoomcar and Orix, of Rs 49,999 per month for easy accessibility for their customers upto 36 months.

Plans announced in Q1 2021:

- Tata Motors planning to launch the Tigor EV in June 2021.
- For Volvo XC40 electric car, bookings will be open from June 2021 while deliveries will start from October 2021. Volvo hasn't confirmed any development but has given positive indication that the upcoming XC20 will be its next big launch.
- American company Triton has announced its plan to launch EV N4, its first product in the Indian market. Pre-booking via the company website for Triton-EV N4 sedan is currently open.
- Audi will be soon launching its fully electric SUV e-tron and crossover e-tron Sportback in India in the next two to three months.
- MG Motor has started its work to set up a battery assembly facility, in order to introduce an affordable EV in the local market in 2022.

Table 2.3: Electric Four-Wheeler Product Launches in Q1 2021

Company Name	Speed	Other Specifications	Price
MG ZS EV 2021	140 km/h	<ul style="list-style-type: none"> • Range – 419 km • Charging time – <ul style="list-style-type: none"> • 6-8 hrs (AC Fast); • Up to 80% within 50 min (DC super fast) • Battery – 44.5 kWh • 0-100 km/h – 8.5 sec 	Rs. 20,99,800
Jaguar I-Pace	200 km/h	<ul style="list-style-type: none"> • Range – 470 km • Charging time – <ul style="list-style-type: none"> • DC 100 kW – 127 km in 15 min; • 11 kW 3-phase AC on-board charger – 53 km in 1 hr. • Battery – 90 kWh • Motor – 294 kW (Peak) • 0-100 km/h – 4.8 secs 	Rs 1.05 crore – 1.12 crore (ex-showroom)

Source: JMK Research

3. Policies and Regulations

Policy/ Regulation/ Guideline Announced	Key takeaways
E-vehicles get UP CM's push, road tax may go	<ul style="list-style-type: none"> To promote EVs, CM Yogi Adityanath has proposed an exemption in road tax and registration fees.
Chandigarh all set to go green with new electric vehicle policy	<ul style="list-style-type: none"> According to the new policy, the registration fee, road tax and 50% parking charges for all electric vehicles will be waived in order to incentivise their purchase.
Green tax to be imposed on older vehicles soon, to clean up the environment by phasing out unfit and polluting vehicles	<ul style="list-style-type: none"> MoRTH on January 25 approved a proposal for Green Tax on old vehicles Under the new norms: <ul style="list-style-type: none"> Transport vehicles which are older than eight years could be taxed at the rate of 10-25 percent of road tax at the time of renewal of fitness certificate A higher green tax of 50 percent will be imposed on vehicles being registered in highly polluted cities while public transport vehicles, will be charged a lower green tax Government has exempted vehicles used for farming Vehicles like strong hybrids, electric vehicles and those using alternative fuels like CNG, ethanol and LPG will be exempted from green tax.
Meghalaya releases its Electric Vehicle policy	<ul style="list-style-type: none"> Meghalaya Electric Vehicle Policy 2021: <ul style="list-style-type: none"> It will remain in operation and valid for a period of five years since the date of implementation 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
Soon, subsidy to exchange old petrol bike for electric one in Goa	<ul style="list-style-type: none"> Citizens in Goa 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 It has been proposed to waive the registration fees to bring down the cost of the EV by 5%

Policy/ Regulation/ Guideline Announced	Key takeaways
Delhi govt to switch its fleet of cars for electric vehicles within 6 months: Manish Sisodia	<ul style="list-style-type: none"> Deputy Chief Minister Manish Sisodia announced that all departments of the Delhi government will now use only electric vehicles The transition to EVs will be done within the next six months
Half of government vehicles will be replaced with electric vehicles in 2-3 years	<ul style="list-style-type: none"> The State government is aiming to replace 50% of all government vehicles with electric vehicles in the next two to three years. Regulatory measures will be taken up for setting up charging infrastructure at high-rise buildings, metro stations, malls, IT parks, and apartment complexes.
Draft Karnataka Renewable Energy Policy 2021-2026	<ul style="list-style-type: none"> KREDL has issued the 'Draft Karnataka Renewable Energy Policy 2021-2026': <ul style="list-style-type: none"> The charging station/battery swapping station service providers may set up RE generation plants within their premises for captive use Rooftop Solar PV Power Plants within same premise can be used for supplying the power to the EV Charging stations/battery swapping stations. For such charging stations, a rebate on the applicable tariff may be evaluated with the consent of KERC. RE for charging the EV's/battery swapping stations can be with or without energy storage. Government land/space on short term lease (with option of renewal) will be allotted for the first 100 renewable energy based EV charging stations and battery swapping station under this policy.
Andhra Pradesh govt to buy 1 lakh electric two-wheelers for staff	<ul style="list-style-type: none"> The Andhra Pradesh government will help its employees to buy more than 100,000 electric two-wheelers by arranging for domestic as well as global financing at attractive rates.

4. Investments

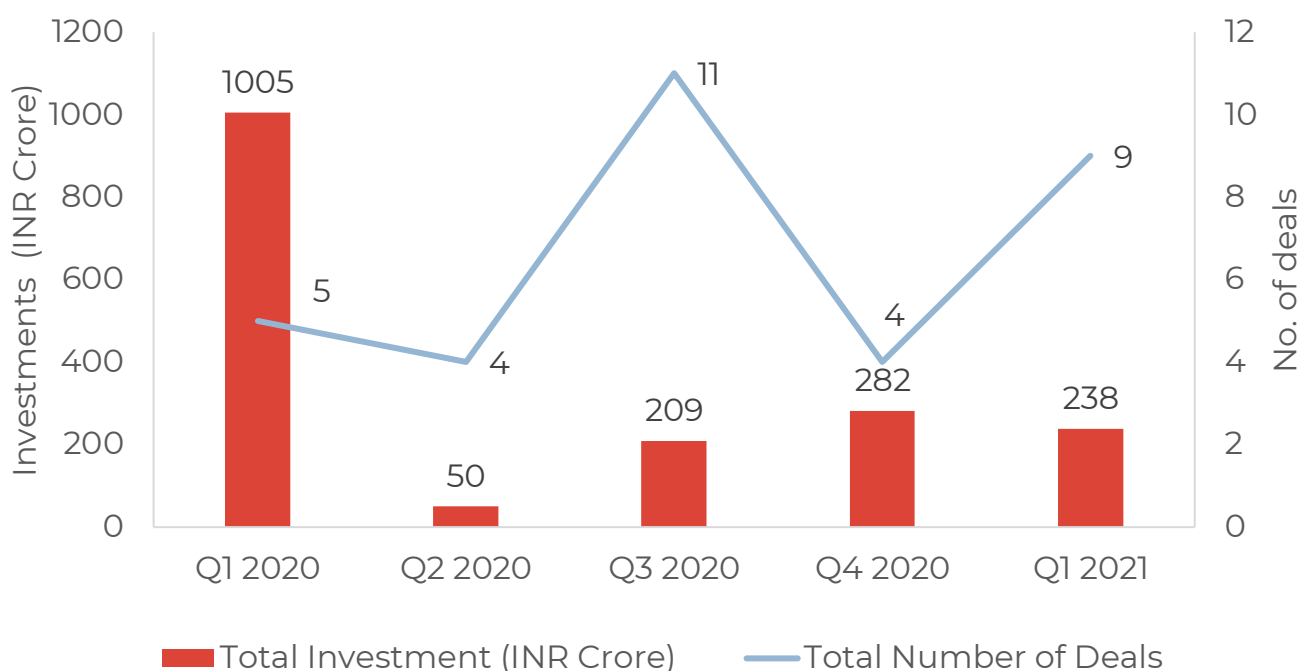
Even in a COVID-stricken economy, investors have seen potential in the EV segment. The continuity in momentum in terms of number of deals and funding amounts during the last two quarters is a testament to this fact.

The investment flow in the EV sector in Q1 2021 (INR 236 crores) was about 16% less than in the previous quarter i.e. Q4 2020 (INR 282 crore).

Key investments in Q1 2021:

- VOGO raised INR 83 crore capital as an extension of series C round, from its existing investors including Lightrock, Kalaari, Matrix Partners and Stellaris Venture Partners.
- Lohum Cleantech has managed INR 51 crores in a fresh round of funding from Baring Private Equity Partners (BPEP). These funds will help them to expand its manufacturing and recycling capabilities for EV batteries up to 700 MWh, from its current capacity of 300 MWh capacity.
- Gegadyne company has collected INR 36 crore in strategic investment from electrical appliances giant V-Guard.

Figure 4.1: Quarterly Investment Trend in EV Space



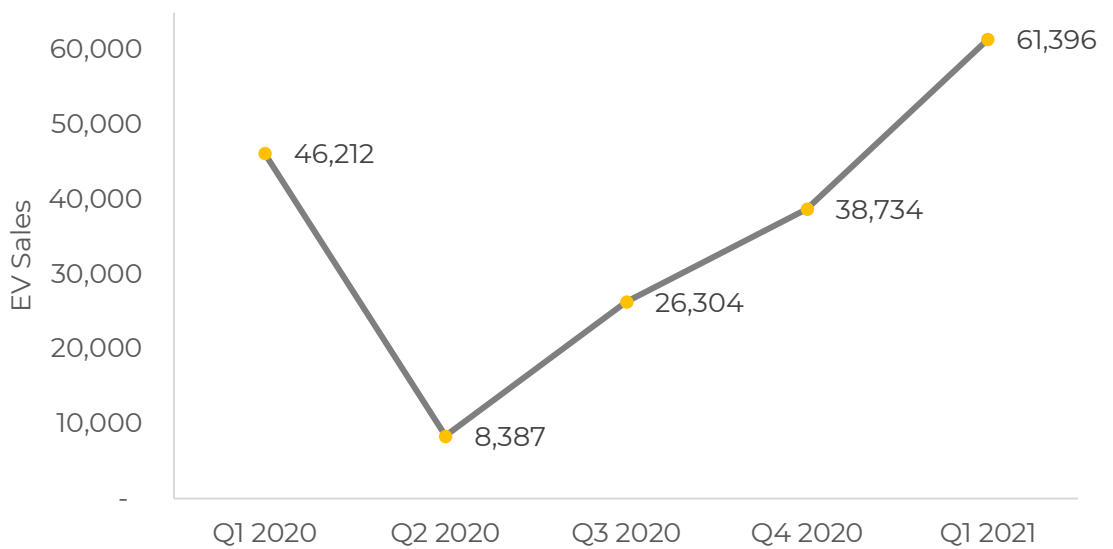
Investments in Q1 2021 in EV space in India

Date	Company name	Company type	Deal type	Investor(s)	Deal value (INR Crore)	Details
Jan-21	Simple Energy	Electric Scooter OEM	Equity	Vel Kanniappan and four other investors	Undisclosed	Simple Energy Raises Undisclosed Amount, Plans To Raise Rs 51 Crore To Rs 74 Crore In The Second Quarter Of 2021
Jan-21	Tresmoto	Electric Scooter OEM	Equity	Angel Investor and professional CEO Raaj Kumar	Undisclosed	Shell backed smart EV startup, TresMoto raises additional round of seed funds
Jan-21	Lohum Cleantech	EV Battery Manufacturer	Equity	Baring Private Equity Partners (BPEP)	51	EV Battery Startup Lohum Raises \$7 Mn From Baring Private Equity Partners
Jan-21	Gegadyne	EV Battery Manufacturer	Equity	V-Guard	36	EV Battery Startup Gegadyne Raises \$5 Mn From V-Guard
Feb-21	eBikeGo	EV-based logistics startup	Equity	Multiple Investors	11	Logistics firm eBikeGo raises pre-Series A funding
Feb-21	Vogo	Self-ride two-wheeler rental service	Equity	Lightrock, Kalaari, Matrix Partners and Stellaris Venture Partners	83	Self-Drive two-wheeler rental company Vogo raises USD11.5 million for EV expansion
Mar-21	Euler Motors	EV OEM	Equity	Inventus India Jetty Ventures Sujeet Kumar Srinivas Anumolu K Ganesh	29	Euler Motors raises additional Rs 30 Cr as part of ongoing series-A round
Mar-21	Euler Motors	EV OEM	Equity	ADB Ventures Blume Ventures	19	Euler Motors raises additional USD 2.6 million in Series A round
Mar-21	BLive	EV experience platform	Mix of Debt & Equity	Lets Venture Mumbai Angels JITO CreditWise DNA entertainment	7	EV experience platform Blive raises \$1 M in pre-Series A round

5. Sales Trends- India

The Q1 2021 sales of EVs has surged by 59% from previous quarter's sales to register 61,396 units. In the region-wise category, Uttar Pradesh has the maximum registered EV sales (23%) in India among all the states/ UTs, followed by both Tamil Nadu (13%) and Karnataka (10%).

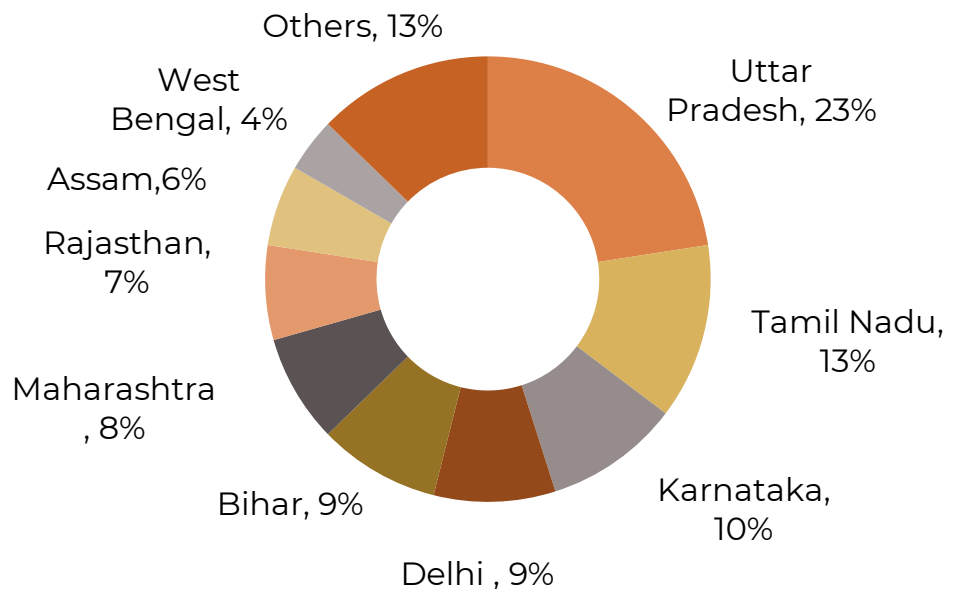
Figure 5.1: Registered EV sales in India: Trend (Q1 2020-Q1 2021)



Source: Vahan Dashboard, JMK Research

Note: Sales figures represent EVs registered across 1,293 RTOs in 33 states/ UTs

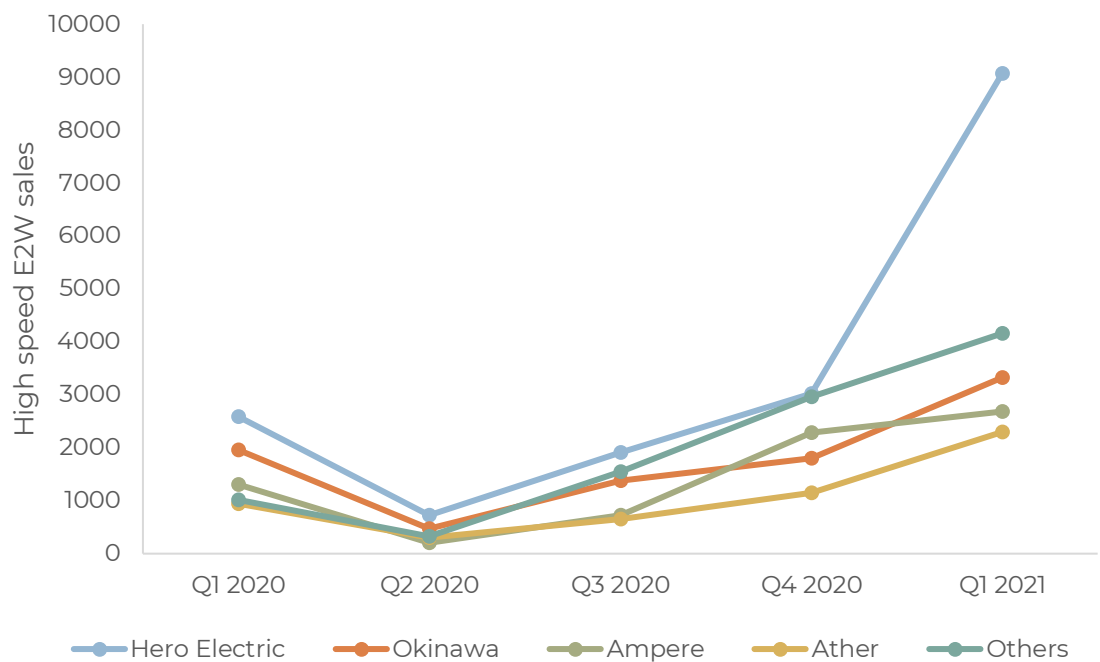
Figure 5.2: Region-wise Registered EV sales in India in Q1 2021



5.1 Electric Two Wheeler (E2W) sales trends

In the high-speed (HS) E2W segment, the cumulative sales of Ampere, Ather, Hero Electric, Okinawa in Q1 2021 represents 81% of the overall sales (21,545 units), which has increased by 92% over the previous quarter's sales. With respect to Q1 2021 sales, Hero Electric maintains the lead with 42% share, followed by Okinawa (15%) and Ampere (12%) in the HS-E2W segment.

Figure 5.3: Player-wise high-speed E2W sales trend



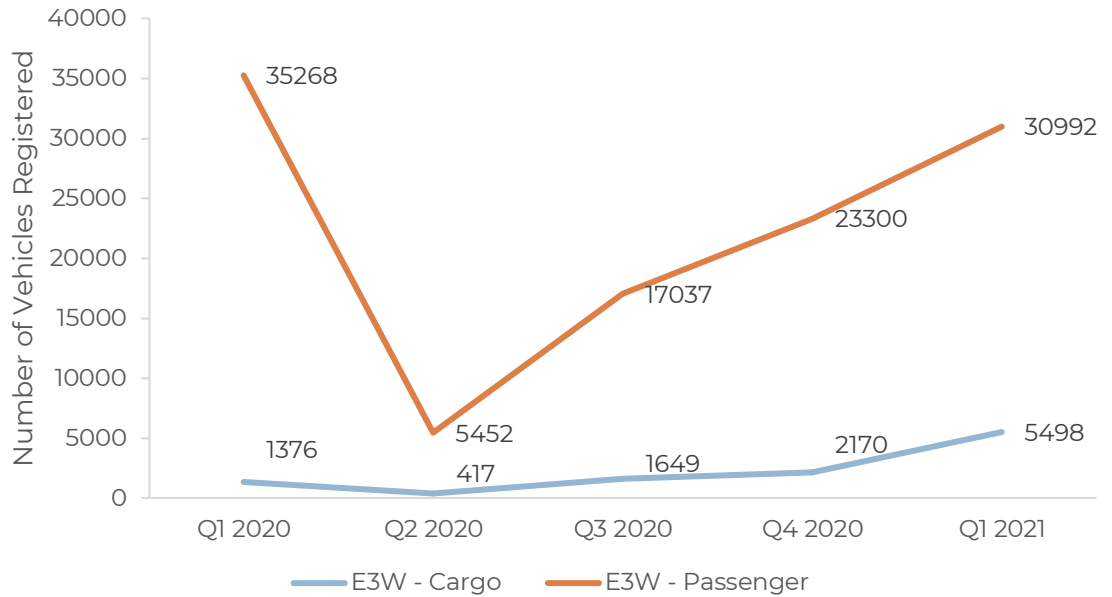
Source: Vahan Dashboard, JMK Research

Note: Sales figures represent only high-range E2W (Top speed > 25 kmph) models registered across 1,293 RTOs in 33 states/UTs.

5.2 Electric Three Wheeler (E3W) sales trends

The combined sales of both passenger and cargo (registered) E3Ws in Q1 2021 has grown by about 43% over Q4 2020 sales to reach 36,490 units. The passenger-type E3W accounted for 85% of the total E3W sales for Q1 2021. Although the sales of passenger variants came down by 12% Y-o-Y, the sales of cargo vehicles surged by 300% YoY.

Figure 5.4: Sales trend of cargo E3W and passenger E3W



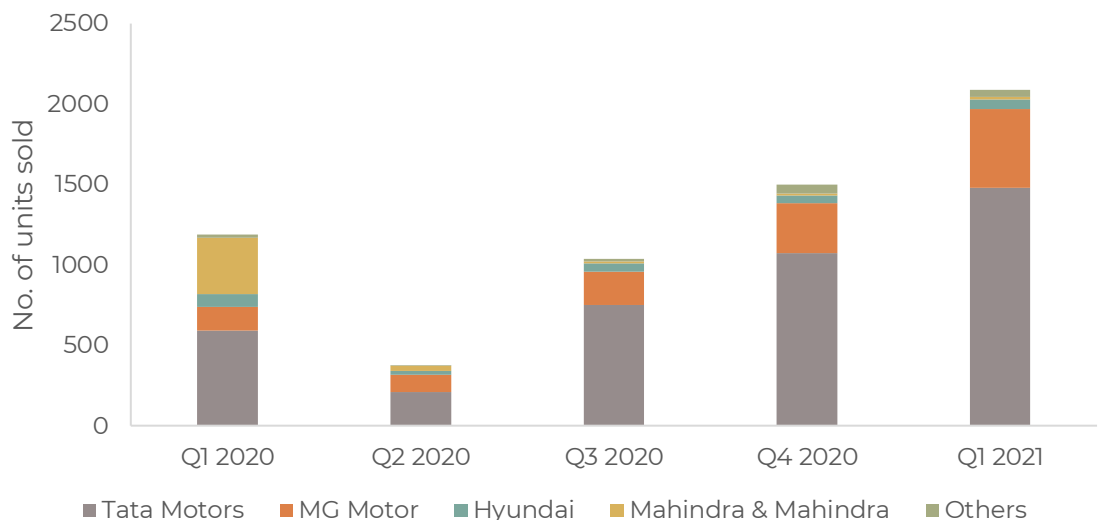
Source: Vahan Dashboard, JMK Research

Note: Sales figures represent E3Ws registered across 1,293 RTOs in 33 states/UTs.

5.3 Electric Four Wheeler (E4W) sales trends

In Q1 2021, the total sales of electric 4-wheelers rose 39% QoQ to cross 2000 units milestone for the first time ever. Q1 2021's 2087 unit sales registers a 76% YOY increase. In the respective quarterly sales, Tata Motors has the lion's share of about 71% and it is followed by MG Motor (24%) and Hyundai (3%).

Figure 5.5: E4W Players in Q1 2021



Source: JMK Research

Note: Sales figures represent E4Ws registered across 1,293 RTOs in 33 states/UTs.

6.

Global Sales Trends

The global revolution promoting electric vehicles is gaining huge momentum in the recent times. The largest European markets are playing a significant role in this transition. China has resumed its position as global market leader while a promising goal has been shown by US market.

Sales of battery electric vehicles (BEVs) has declined by 17.5% worldwide from 894,202 units in Q4 2020 to 737,722 in Q1 2021. China continues to be the largest BEV market in absolute terms. However the absolute sales of BEVs reduced in Europe to more than half in the first quarter of 2021 as compared to the previous quarter. This decline in sales is majorly because of the registrations of vehicles that were brought forward to meet sales and CO2 targets at the end of a dismal 2020 for the auto industry.

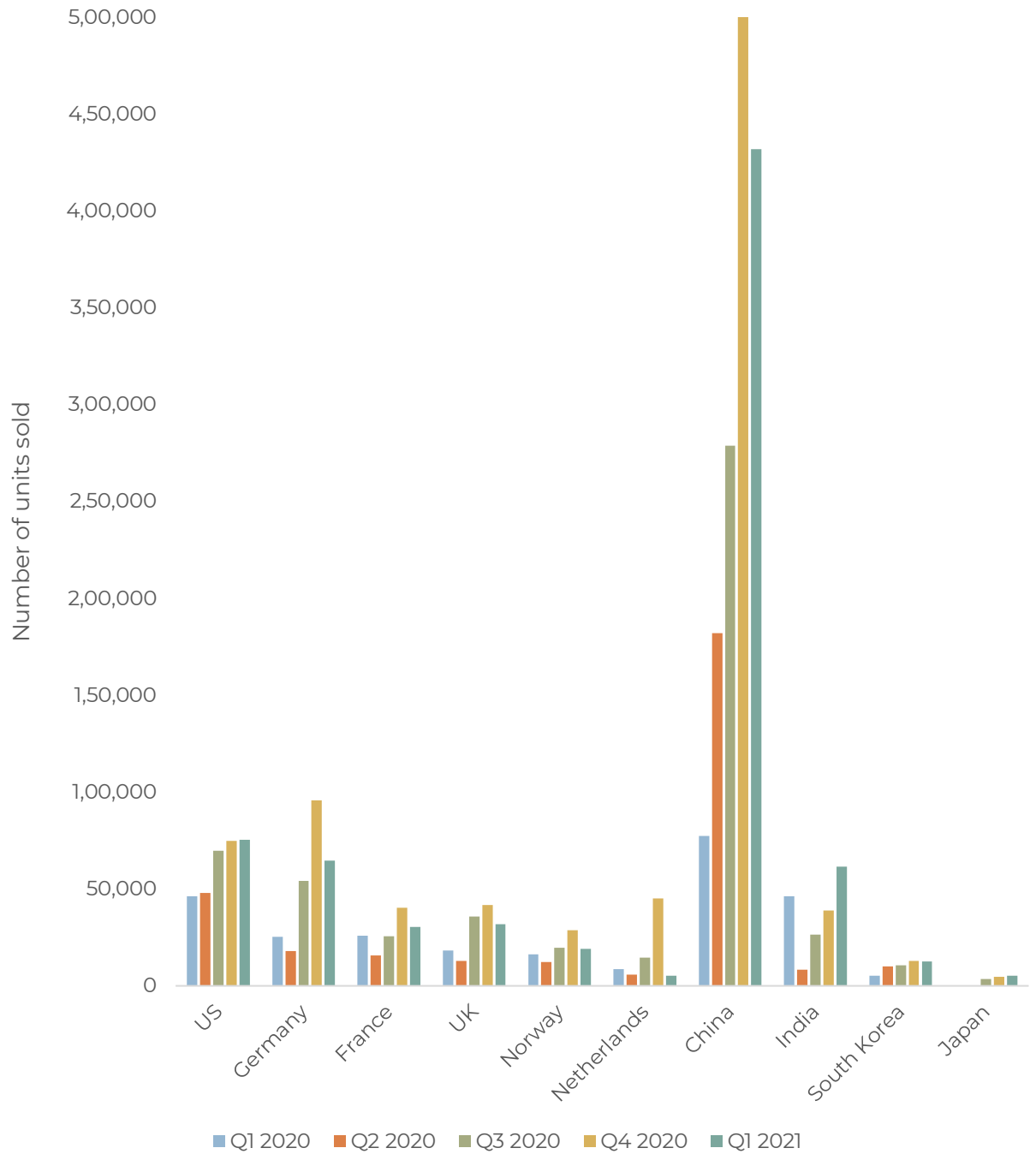
Germany, UK and France are largely driving the EV sales in Europe. In Q1 2021, Germany leads the EV sales in Europe with 43% share, followed by UK and France with 21% and 20% respectively.

In terms of market share of EV registrations, out of the total vehicle registrations in Q1 2021, **Norway continues to witness the highest growth at 52.8%.** The reason behind this growth is the exemption of BEVs from taxes that are imposed on those relying on fossil fuels.

On the other hand, sales of BEVs in the United States has seen a marginal increment of 0.9% in Q1 2021 over the previous quarter. This is because of the favourable state and city incentives policy and significant investment in public charging infrastructure as promised by the new administration.

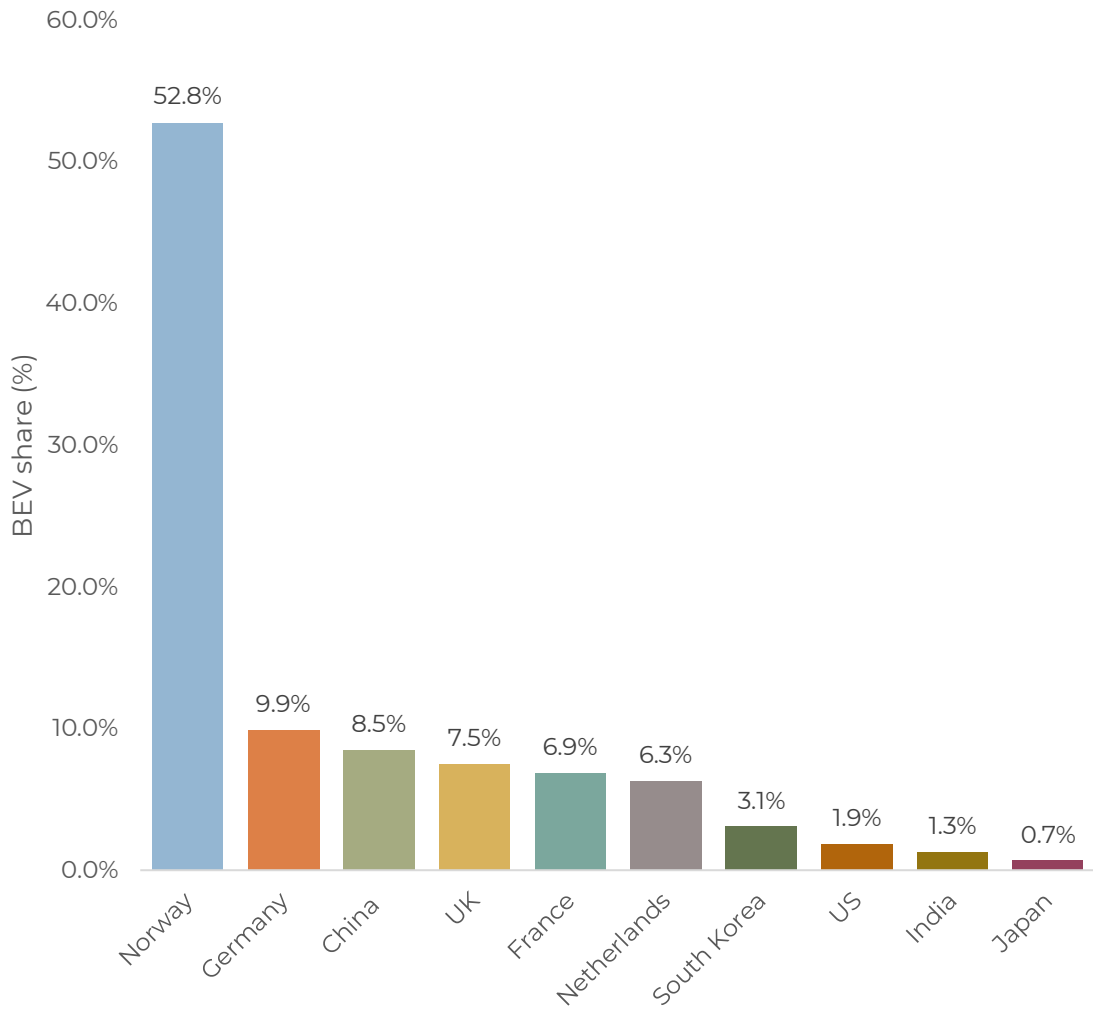
As per JMK Research analysis, the decrease in EV registrations for Q1 2021 over Q4 2020 in China and top 5 EV focused countries of Europe was 16% and 40% respectively.

Figure 6.1: Region wise registered Battery Electric Vehicles (BEV) Sales in Q1 2021



Source: The European Automobile Manufacturers' Association (ACEA), Opplysningsrådet for Veitrafikken (OFV), China Association of Automobile Manufacturers (CAAM), Vahan Dashboard, JMK Research

Figure 6.2: BEV Market Share (BEV as %age Of Total Vehicle Registrations): Q1 2021



Source: The European Automobile Manufacturers' Association (ACEA), Opplysningsrådet for Veitrafikken (OFV), China Association of Automobile Manufacturers (CAAM), Vahan Dashboard, JMK Research



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