

Q4

2020

EV update

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# 1. Executive Summary

EV segment is growing at an enormous pace in India with rising sales and new product variants introduced across various categories. In last quarter i.e. Q4 2020, key updates across EV sector include:

- Launch of 4 electric two-wheeler models, 7 electric three-wheeler models, 1 luxury electric four-wheeler and one electric tractor
- Telangana released its 'Electric Vehicles and Energy Storage Systems Policy 2020-2030.
- More than INR 282 Crore (USD 39 million) of funding raised across various segments. Biggest funding was raised by Ather Energy of Rs 260 crore from Sachin Bansal, Hero MotoCorp.
- The Q4 2020 sales of registered EVs have surged by 47% from previous quarter's sales to reach 38,734 units. The cumulative sales of registered EVs from Jan-Dec 2020 was about 1,19,637 units.
- Globally, sales of battery electric vehicles (BEVs) rose by 40% worldwide from 1,396,000 units in 2019 to 1,975,600 in 2020.

# 2. New Product Launches

## 2.1 Electric Two Wheeler (E2W)

During the Oct-Nov 2020 period, four new E2Ws were launched – Atreo and Ahava by Eeve, tbike flex by Tronx Motors owned-Smartron, and Nyx HX by Hero Electric. While rest of the three models are scooters, Smartron tbike flex is an e-bike. In addition, Nyx-HX was a refreshed line-up of the already existing Nyx models of Hero Electric.

In terms of speed, out of the 4 models launched during the analysis period, only Hero Electric Nyx-HX has the top speed of 42km/h, rest all have the top speed of 25km/h.

In terms of use on the other hand, Smartron t-bike flex and Hero Electric Nyx HX are targeted at B2B segment with a focus on last mile deliveries and other commercial uses while Eeve’s models have been launched for personal commute.

**Figure 2.1: Electric Two-Wheeler Product Launches in Q4 2020**



Source: JMK Research

The overall analysis of the said period indicates that though the market has witnessed movement from two battery packs to three battery packs (in Hero Electric Nyx-HX) and improvement in range, the top speed is still stuck at 25km/h. Some of the reasons attributed to this:

- These are customer-centric models that are economical, do not require registration, and do not require a two-wheeler license and helmets by riders.
- Further, the preconditions and qualification criteria of FAMEII made the high-speed bikes unaffordable to the mass market customer despite the subsidy.
  - The player-driven reason seems to be the stringent requirements (75% localization, li-ion battery requirement etc.) under the FAMEII scheme for receiving the incentives.
  - As per some OEMs, the industry would rather launch low-to-mid speed vehicles and sell them at heavy discounts than launching high-speed vehicles as per the strict FAME II requirements and incur high upfront manufacturing costs.

## 2.2 Electric Three Wheeler (E3W)

3W in India is a commercial vehicle. The E3W models for commercial use can be e-rickshaws or e-autos suitable for passenger (P) or logistics/cargo/goods (G) transport. 5 out of the total 7 E3Ws launched in the quarter were Cargo, strengthening the case for B-2-B as target market for E3Ws in India.

There are quite a few key OEMs that have entered the cargo E3W segment aiming leadership in this highly disruptive segment. Recent announcements by E-commerce companies and third-party logistics players to include EVs (both 3Ws and 4Ws) in their fleet as a part of their sustainability initiatives has fuelled this entry. Case in point is:

- Amazon India's announcement to include 10,000 EVs (both 3Ws and 4Ws) in its fleet of delivery vehicles by 2025.
- Flipkart has committed to replace 40% of its delivery fleet with EVs.
- DOT, a Gurugram headquartered logistics company, claims to be the first in the country to use L5 electric 3Ws to make deliveries.

One of the reasons for this paradigm shift is state level EV policies proposing incentives for E3W in the cargo space.

Delhi EV Policy 2019 document, for instance, exempts the e-carriers from its prohibition on plying and idle parking of light goods vehicles on identified roads of NCT during specified timings.

The possibility of customization into special purpose vehicles such as garbage vans, fruit/vegetable carts alongside making regular package deliveries or even refrigerated trucks further drives their adoption by users and hence manufacture by OEMs.

Further, the cargo E3Ws are more convenient and economical to run on feeder routes.

**Figure 2.2: Electric Three-Wheeler Product Launches in Q4 2020**

Model	Speed	Other Specifications	Price
<b>Omega Seiki Sun Ri, Ride, and Stream</b>	50 km/h	<ul style="list-style-type: none"> <li>Range – upto 100 km in a single full charge</li> <li>Battery – Li-Ion battery with a swappable option</li> <li>Charging time – 3-4 hrs</li> <li>Loading capacity – 750-960 GVW</li> </ul>	Not Available
<b>Kinetic Green Safar Jumbo</b>	55 km/h	<ul style="list-style-type: none"> <li>Range – 120 km</li> <li>Battery – Li-Ion battery with a swappable option</li> <li>Charging time – 3-4 hrs</li> <li>Payload Capacity – 500 kg</li> </ul>	INR 2,50,000 (inclusive of Rs. 60,000 FAME II subsidy)
<b>M&amp;M Treo Zor</b>	50 km/h	<ul style="list-style-type: none"> <li>Range – 125 km</li> <li>Battery – 7.37 kWh (Li-ion)</li> <li>Charging time – 3 hr 50 mins</li> <li>Payload Capacity – 550 kg</li> <li>Motor – 8 kW (peak)</li> </ul>	INR 2,73,000 (ex-showroom Delhi, net of FAME 2 and state subsidies)
<b>Etrio Touro - Mini</b>	25 km/h	<ul style="list-style-type: none"> <li>Battery – 4kWh Li-ion</li> <li>Motor – 2.5kW</li> <li>Payload – 400 kg</li> </ul>	Starting Price of INR 1,70,000
<b>Etrio Touro - Max</b>	45 km/h	<ul style="list-style-type: none"> <li>Battery – 8kWh Li-ion</li> <li>Motor – 8kW</li> <li>Payload – 550 kg</li> </ul>	Starting Price of INR 1,70,000

## 2.3 Electric Four Wheeler (E4W)

The last quarter witnessed the launch of India's first all-electric luxury car, Mercedes-Benz EQC. The premium electric SUV was launched on October 8, 2020 at an introductory price of INR 99.30 lakh. The Company has already sold out the initial allocations for EQC, restricted to 50 units for India, and has now started the bookings for the next allocations, which was likely to be available by March 2021.

The launch of this premium electric SUV in the still nascent Indian EV market indicates that the top of the pyramid clients are ready to be the first-movers and early adopters as they know the merits of going electric.

Further, range anxiety is unlikely to affect their decision of buying an electric car as they primarily own more than one car. Models like EQC are not volume models but are for early-adopters who want to own a luxury EV and so Mercedes-Benz is soon going to be joined in this race by its peers in the segment with various launches lined up for 2021.

Plans were already announced in 2020 by:

- Jaguar I-Pace is set to be launched on March 23, 2021, the bookings for which already started in November, 2020
- Audi for bringing its e-tron later in 2021, and
- Volvo for launching XC40 Recharge post June 2021
- In addition, Tesla, which entered the arena quite late, has already incorporated its Indian entity in Bengaluru in January, 2021. Tesla is expected to introduce its best-selling model in the Indian market at a price of about INR 55 lakh-INR 60 lakh, way less than that of EQC.

Company Name	Speed	Other Specifications	Price
<b>Mercedes-Benz SUV EQC</b>	180 km/h	<ul style="list-style-type: none"> <li>• Range – 445-471 km</li> <li>• Battery – 80 kWh (Li-ion)</li> <li>• Motor – 300 kW</li> <li>• Charging time – 10 hrs with a wall-box charger at 7.5kW; 21 hrs with a regular 15A plug at 3.4kW; 1.5 hrs with DC fast charger</li> </ul>	INR 9,930,000 (ex-showroom)

Source: JMK Research

However, the enthusiasm of these carmakers is being hampered owing to a price barrier due to high import duties. Mercedes Benz, for instance, when initially imported completely built unit (CBU), it attracted an overall tax of 105% at the ex-showroom level taking its price beyond INR 1 crore. This is huge in comparison to the introductory price of the same model in Germany at EUR 71,281 (approx. INR 63 lakh).

At present, automobiles are taxed at 28% GST with additional cess of 22% on luxury cars. Cars imported as CBU attract customs duty ranging between 60% and 100% depending on engine size and cost, insurance and freight (CIF) value being less or above USD 40,000.

Add to this, there may be a hike in import duties by 5%-10% on more than 50 items including EVs and furniture. In such a case even with such an impressive line-up of launches through 2021, the carmakers may not be able to generate much volumes in the long run.

## E-Tractor

The quarter witnessed yet another interesting development – that of the launch of India’s first electric tractor, Tiger Electric by Sonalika. Back In 2017, another Company, Escorts Ltd. had unveiled its in-house developed electric tractor. However, it only exported the tractor to a few developed markets starting 2019 but did not launch it in India. The Company is however soon going to launch its electric tractor commercially in India. These developments offer an avenue for a new market in India and its adoption in the Indian villages which so far have largely been untouched by the advent of EVs in India.

Brand	Speed	Other Specifications	Price	Other Useful Info
<b>Sonalika Group Tiger Electric Tractor</b>	24.93 km/h	<ul style="list-style-type: none"> <li>• Range – 120 km</li> <li>• Li-ion battery – 25.5 kWh</li> <li>• Motor – 11 kW</li> <li>• Charging time – 10 hrs (home charger); 4 hrs (fast charging system)</li> </ul>	INR 599,000 (ex-showroom)	It is India’s first E-tractor. Designed in Europe, it has same global technology offered to American and European farmers.

Source: JMK Research

# 3. Policies and Regulations

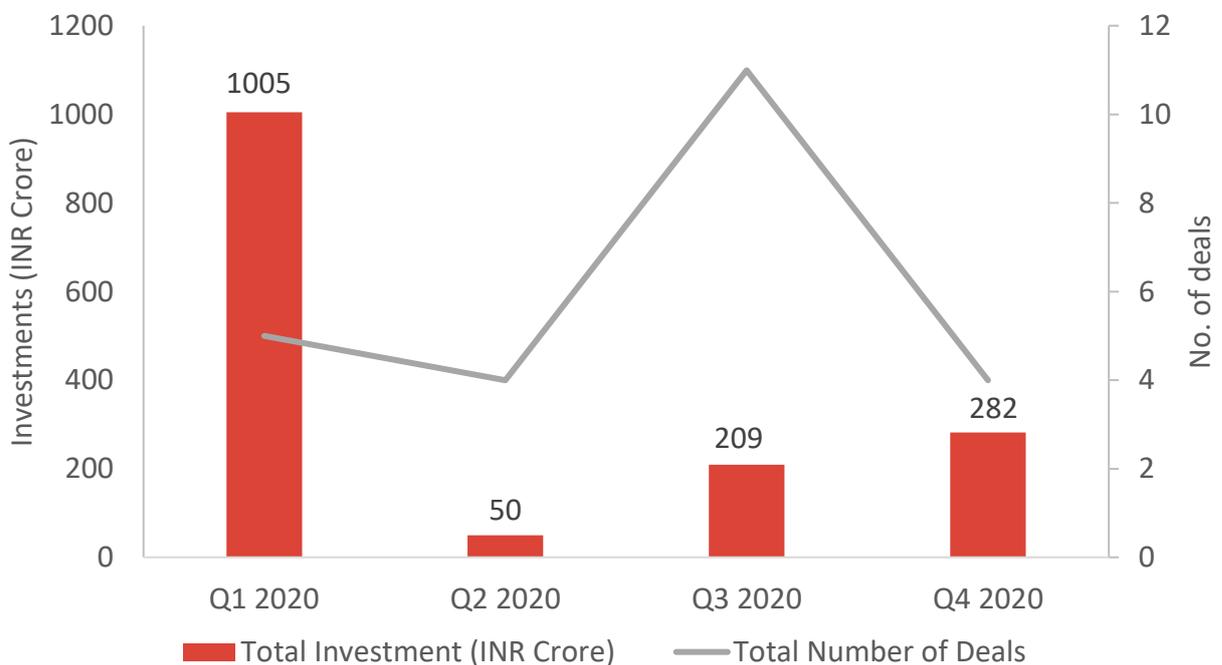
Policy Announced	Key takeaways
<a href="#">Telangana releases the 'Electric Vehicles and Energy Storage Systems Policy 2020-2030' document</a>	<ul style="list-style-type: none"> <li>• Applicable for 10 years</li> <li>• Promoting manufacture of Charging Infrastructure, EV &amp; ESS Components</li> </ul>
<a href="#">Karnataka proposes to offer 20% subsidy on installation of EV charging stations</a>	<ul style="list-style-type: none"> <li>• Proposal for subsidy of 20% or Rs. 1 Million (whichever is higher) to individuals willing to set up public charging stations for EVs</li> </ul>
<a href="#">Exemption of registration fee on Electric Vehicle</a>	<ul style="list-style-type: none"> <li>• Delhi government exempted all battery-operated vehicles (BOV) as defined in Central Motor Vehicles Rules, 1989 from registration fee</li> </ul>
<a href="#">Delhi govt approves over 100 models for subsidy under new electric vehicles policy: Gahlot</a>	<ul style="list-style-type: none"> <li>• Approved more than 100 models including 45 makes of e-rickshaw, 14 of E2W, and 12 of E4W, for subsidy under the new EV policy</li> <li>▪ Purchase incentive and exemption of road tax and registration fee for EVs priced upto INR 15 lakh</li> <li>▪ Road tax and registration fee exemptions for EVs priced &gt;INR 15 lakh</li> </ul>
<a href="#">Chandigarh: Centre to grant city subsidy of Rs 50 lakh for each electric bus</a>	<ul style="list-style-type: none"> <li>• Central government to grant subsidy of INR 50 lakh for each electric bus of the 80 sanctioned</li> <li>• Tender for purchase of e-buses to be floated soon</li> </ul>
<a href="#">Tamil Nadu Government grants 100% tax exemption for all electric vehicles</a>	<ul style="list-style-type: none"> <li>• Exempted of all EVs from payment of motor vehicles tax for the period commencing on and from 3<sup>rd</sup> November 2020 to 31<sup>st</sup> December 2022</li> </ul>
<a href="#">Karnataka approves EV manufacturing projects of nearly ₹23,000 cr</a>	<ul style="list-style-type: none"> <li>• Karnataka government approved investments of INR 22,419 crore of three different proposals involving EV and lithium-ion battery manufacturing</li> <li>• Two proposals of Elest Private Limited of INR 14,255 crore and INR 6,339 crore</li> <li>• One proposal of INR 1,825 crore by Hyunet Private Limited</li> </ul>
<a href="#">AP lays out plan to introduce 10 lakh EVs by 2024</a>	<ul style="list-style-type: none"> <li>• Andhra Pradesh government laid out plan for the introduction 10 lakh EVs by 2024 attracting an investment of INR 30,000 Crore</li> <li>• All government vehicles in the state will be converted to EVs by 2024</li> <li>• Installation of 10 lakh EV charging stations by 2024</li> </ul>
<a href="#">RERC fixes Rs 6/unit power tariff for EV charging stations</a>	<ul style="list-style-type: none"> <li>• Rajasthan Electricity Regulatory Commission (RERC) fixed the tariff for charging stations at INR 6 per unit</li> <li>• Relaxation in permanent fee from INR 135 to INR 40 per month for these stations</li> </ul>

# 4. Investments

The ongoing pandemic in India and elsewhere has made it challenging for funding in EV space in the short term. However, M&A and fundraising activities are likely to pick up in the medium and long term considering the role of startups for developing the EV sector in India and the encouragement by government and its conducive policies.

Even in an economy affected by COVID, 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 segments which have witnessed immediate interest in the post-Covid era are two-wheelers, three-wheelers, and battery swapping as well as public charging.

**Figure 4.1: Investments in EV Space in 2020**



Source: JMK Research

### Investments in Q4 2020 in EV space in India

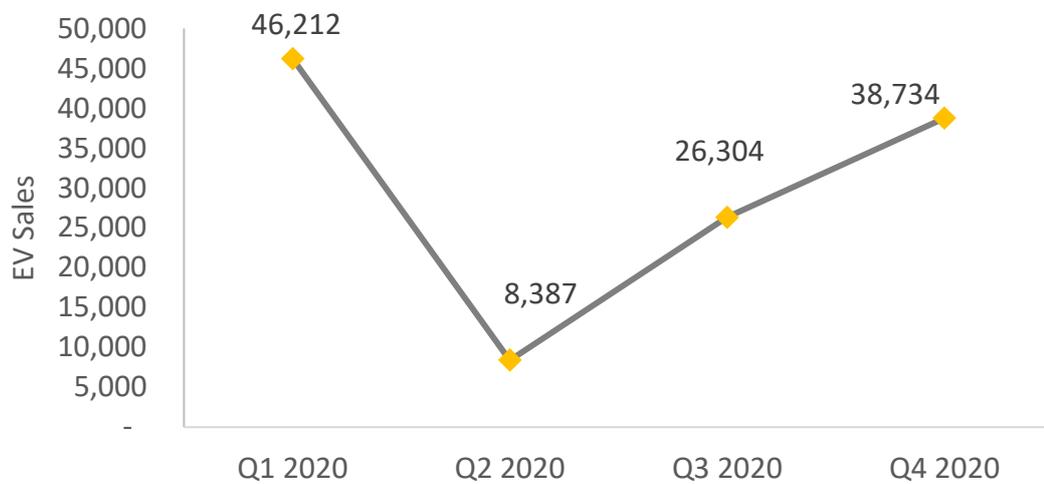
Date	Company name	Company type	Deal type	Investor(s)	Deal value (in INR Crore)	Details
Oct-20	Ultraviolette Automotive	E2W OEM	Equity	GoFrugal Technologies	Undisclosed	<a href="#">Ultraviolette Automotive raises capital from GoFrugal Technologies in Series B funding</a>
Nov-20	Ather Energy	E2W OEM	Equity	Sachin Bansal, Hero MotoCorp	260	<a href="#">Ather Energy raises Rs 260 crore in fresh funding</a>
Nov-20	Charge+Zone	EV Charging Startup	Equity	Venture Catalysts, Mumbai Angels, Keiretsu Forum and Ramakrishnan Family Office	22	<a href="#">EV services startup CHARGE+ZONE raises \$3M in pre-Series A round led by Venture Catalysts</a>
Dec-20	The ePlane Company	Electric Plane OEM	Equity	Speciale Invest, CIIE.CO, FirstCheque, Java Capital, and ShareChat co-founder Farid Ahsan	Undisclosed	<a href="#">Aerial mobility startup ePlane gets seed funding from VC firms, ShareChat exec</a>

Source: Industry news articles, JMK Research

# 5. Sales Trends- India

The Q4 2020 sales of EVs have surged by 47% from previous quarter's sales to register 38,734 units. The cumulative sales of registered EVs from Jan-Dec 2020 is about 1,19,637 units.

**Figure 5.1: Registered EV sales in India: Trend (Q1 – Q4 2020)**

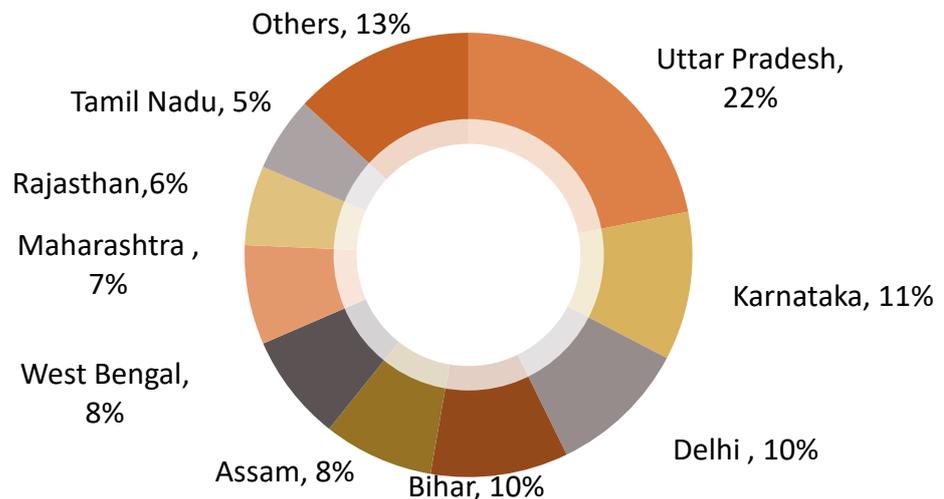


Source: Vahan Dashboard, JMK Research

Note: Sales figure represent EVs registered across 1,268 RTOs in 33 states/ UTs

In the region-wise category, Uttar Pradesh has the maximum registered EV sales (22%) in India among all the states/ UTs.

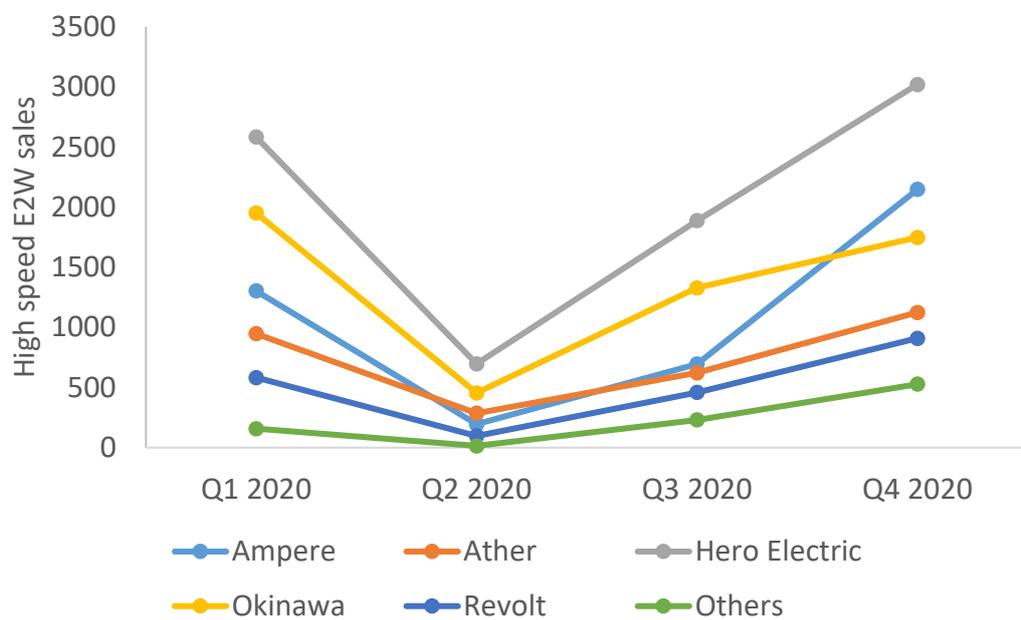
**Figure 5.2: Region wise registered EV sales in India in Q4 2020**



## 5.1 Electric Two Wheeler (E2W) sales trends

In the high-speed (HS) E2W segment, the cumulative sales of Ampere, Ather, Hero Electric, Okinawa and Revolt in Q4 2020 is 8,948 units, increasing 79% from the corresponding quarter sales mark. With respect to Q4 sales, Hero Electric has taken the lead, followed by Ampere and Okinawa in the HS-E2W segment.

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



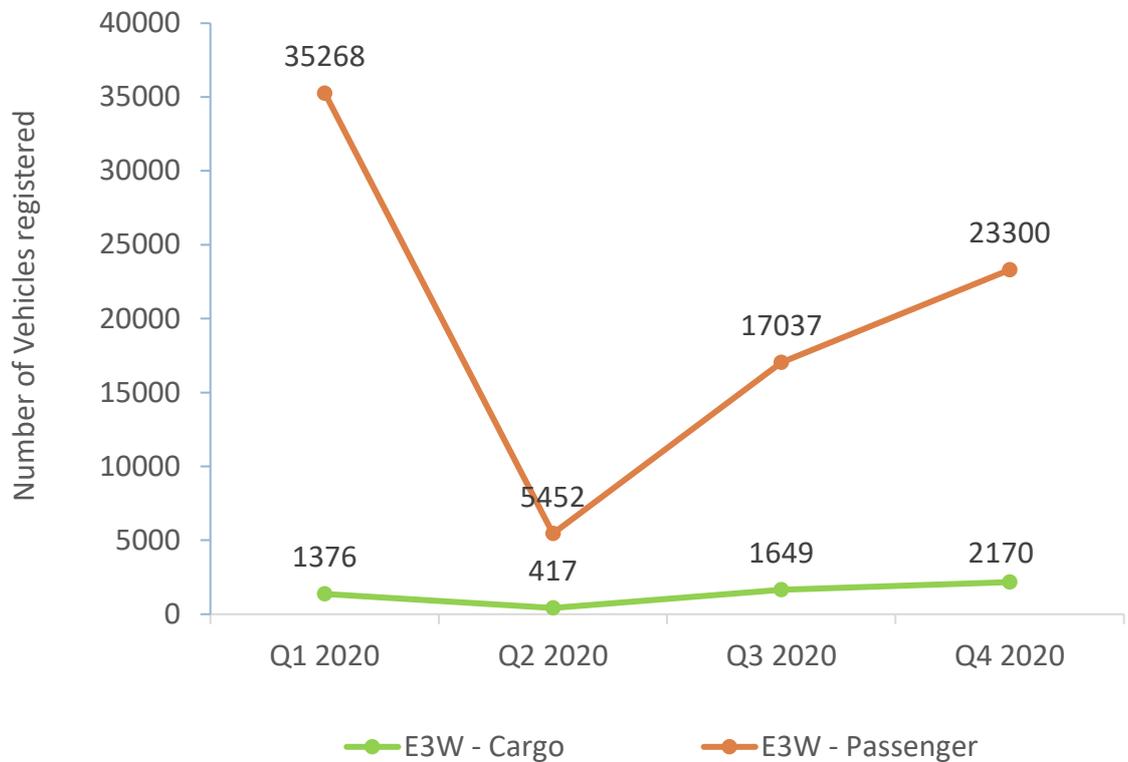
Source: Vahan Dashboard, JMK Research

Note: Sales figure are for only high range E2W models with speed higher than 25 kmph. Sales figure represent E2Ws registered across 1,268 RTOs in 33 states/ UTs.

## 5.2 Electric Three Wheeler (E3W) sales trends

The combined sales of both passenger and goods-type (registered) E3Ws in Q4 have grown by about 36% over Q3 sales to reach 25,470 units. The passenger-type E3W accounted for 91.5% of the total E3W sales for Q4. The cumulative sales of cargo and passenger (registered) E3Ws during Jan-Dec 2020 is 86,669 units.

**Figure 5.4: Sales trend of cargo E3W and passenger E3W**



Source: Vahan Dashboard, JMK Research

Note: Sales figure are for only high range E3W models with speed higher than 25 kmph. Sales figure represent E3Ws registered across 1,268 RTOs in 33 states/ UTs.

### 5.3 Electric Four Wheeler (E4W) sales trends

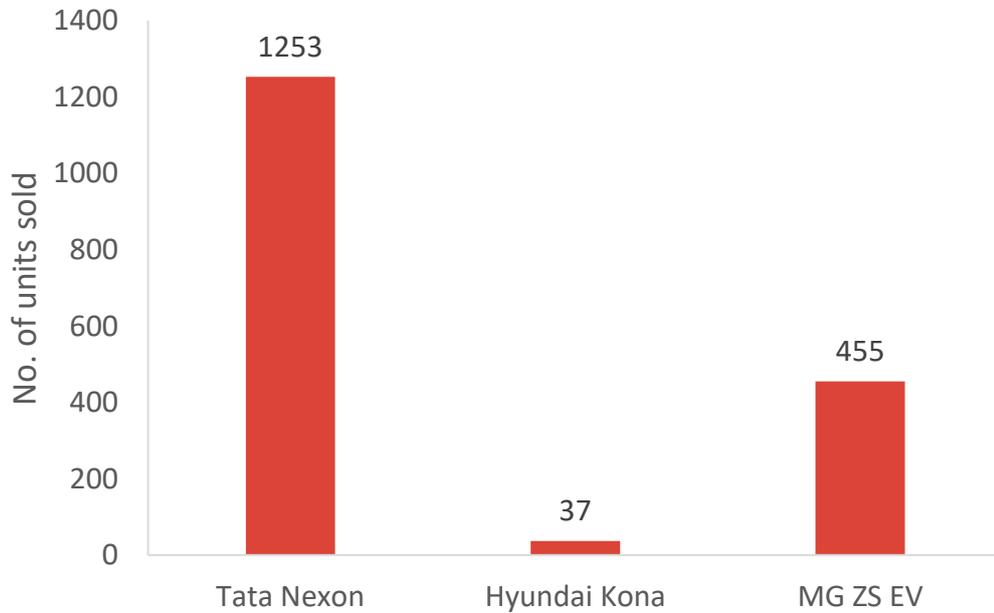
Tata Nexon EV, which was launched on January 28, 2020 as India’s first homegrown electric SUV, has been the top selling EV model in India in 2020 overall as well as in Q4 2020.

Q4 2020 was the best quarter for Nexon with 1,253 units – more than half the total units during the whole year – delivered during the period and December was Nexon’s best month in sales performance as 418 units of the total 2,602 were delivered that month. Nexon is over 60,000 cheaper than Hyundai Kona and MG ZS, two other electric SUVs that are similar in size to the Nexon. This makes Nexon the most affordable electric SUV in the Indian market and this price advantage is one of the major reasons for family car buyers opting for Nexon.

The announcement of Nexon EV subscription plans in August followed by the reductions of monthly subscription prices in September and December makes the car appealing to a new class of customers.

In comparison to this, lower sales of Hyundai Kona Electric can be attributed to its high price and the model being ridden with issues like fire risk and breakdowns. The low sales of just 100 units of Tata Tigor in 2020 with no units being sold in Q4 is an outcome of the slump in the shared mobility segment which was the major driver of Tigor’s sales in India.

**Figure 5.5: Top E4W Players in Q4 2020**



Source: JMK Research

# 6. Global Sales Trends

While the global auto market as a whole experienced a significant decline in sales in 2020, the EV market recorded outstanding annual growth across regions.

**Sales of battery electric vehicles (BEVs) rose by 40% worldwide over the year from 1,396,000 units in 2019 to 1,975,600 in 2020.** While China remains the largest BEV market in absolute terms, Europe has emerged as a key EV market driving shares of major European markets. BEV sales in Europe more than doubled in 2020.

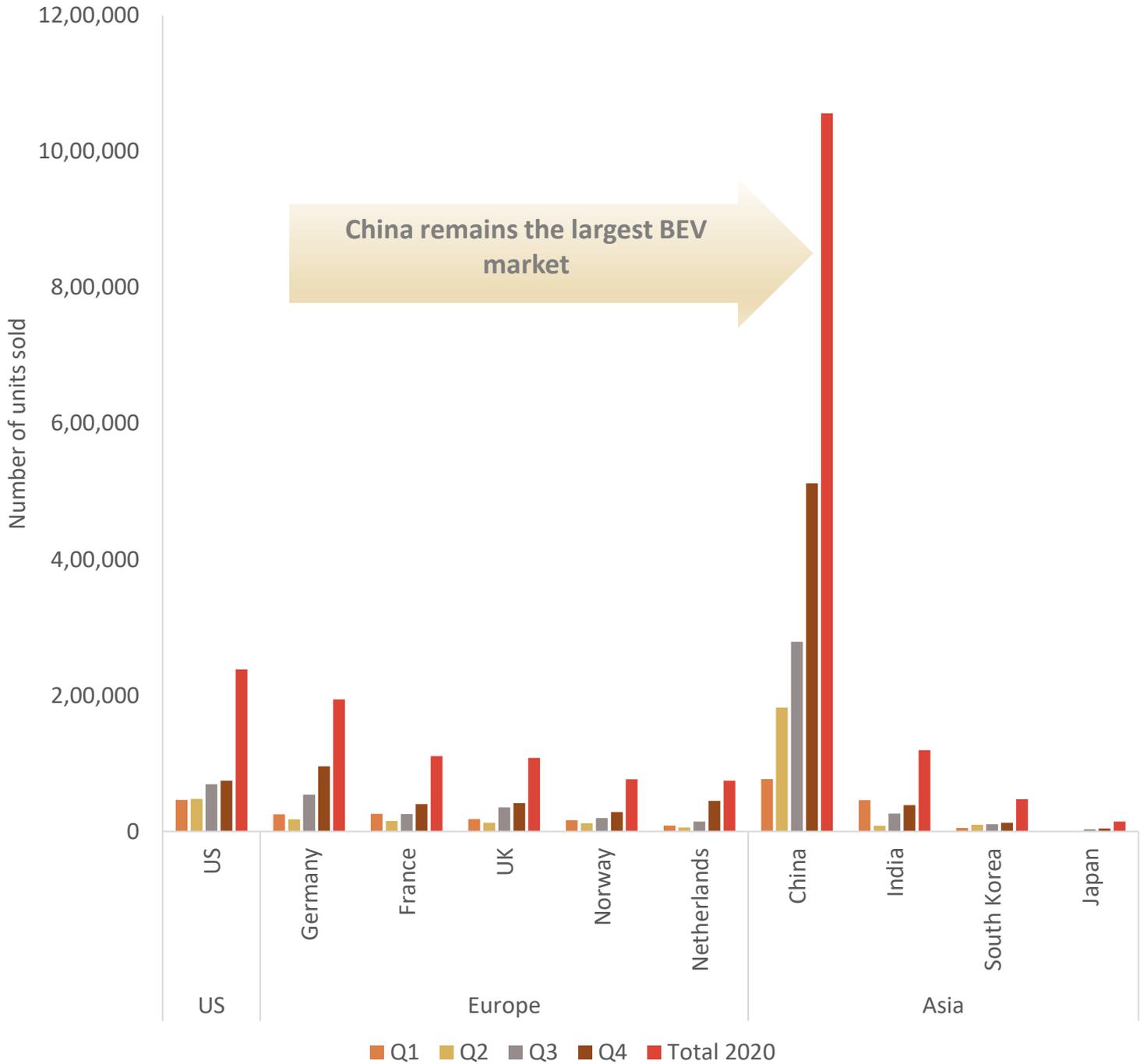
On the other hand, sales of BEVs in the United States fell in 2020 due to a lack of new product launches.

In terms of market share of EV registrations out of the total vehicle registrations in 2020, **Norway witnessed the highest growth at 54%.** Norway exempts BEVs from taxes that are imposed on those relying on fossil fuels. This policy has turned the country's car market into a laboratory for automakers that seek a future without internal combustion engines.

The accelerating dynamism of the European EV market was particularly apparent in December 2020 with countries like **France and UK witnessing a rise of more than 100% in EV registrations** and Netherlands alone witnessing a sharp increase of ~277% from November 2020.

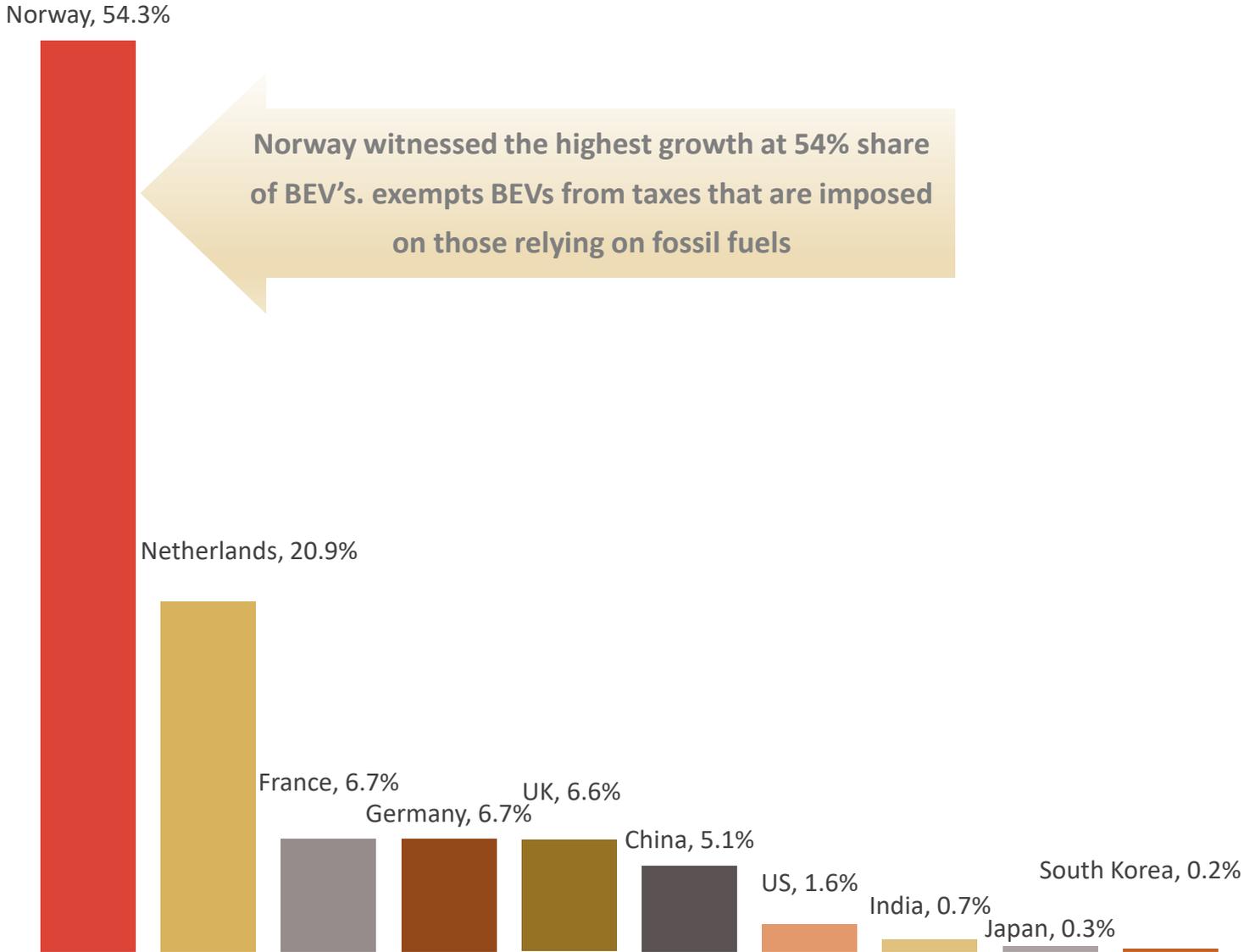
As per JMK Research analysis, the increase in EV registrations for Q4 2020 over Q3 2020 in China and top 5 EV focused countries of Europe was 78% and 68% respectively.

Figure 6.1: Region wise registered Battery Electric Vehicles (BEV) Sales in Q4 2020



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 as percentage of Total Vehicle Registrations in 2020**



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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