



Impact of Covid-19 Pandemic on Electric Vehicle Market

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Abstract: When climate change is the primary concern, the utmost sustainability is needed in automotive industry in term of fossil fuel combustion where Electric Vehicle with shortened acronym as EV took the important alternate option. With the disclosing of the National Electric Mobility Mission Plan 2020, when manufacturers adopted electric vehicles, the sudden outburst of this Corona closes all the manufacturing plants and slows the process. Here in this paper, I have discussed the Indian and Asian EV market scenario during the Covid-19 pandemic. How this EV market it getting affected by the increasing rush of e-commerce and last mile delivery. How government initiatives were taking care of this billion dollar market.

Keywords – Sustainability, Pandemic, E-Commerce, Last Mile Delivery, Integration, E-Mobility, Subsidy, Amendment.

I. INTRODUCTION

In latest years, the unexpected growth with inside the call for e-trade has labored as a catalyzer for the surge in last-mile offerings countrywide. The wave in COVID-19 instances and boom with inside the numbers of online purchasing has affected the significance of last-mile to the vanguard of the general deliver chain procedure throughout the world. Among all of the industries, which had been tormented by the pandemic of the country, e-trade and last-mile shipping confirmed the maximum flexibility and feature recovered in no time. Now, the last-mile shipping companies have tailored to this as a 'new normal. The marketplace has added widespread changes, from the last-mile environment to the manner matters are added for the last-mile environment. The pandemic has probably speeded up those changes.

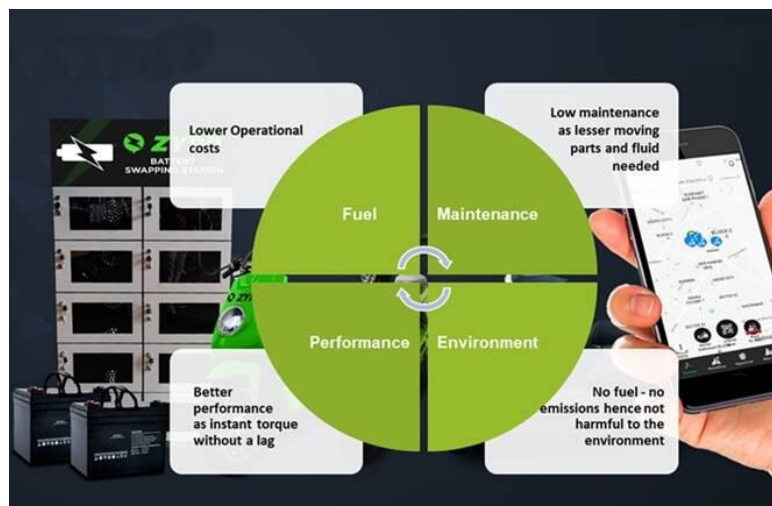
II. EFFECT OF PANDEMIC IN BOOSTING EV LAST MILE DELIVERY

Because of the Covid-19 pandemic, the closing of last-mile shipping thru Electric Vehicles has been given a push. The -wheeler and three-wheeler segments are constantly dominating the Indian electric-powered vehicle (EV) industry. Even after the Covid-19, the EV, HEV marketplace will get better swiftly. In the EV segment, the maximum promising segments for electrification are E-rickshaws, e-automobiles, and e- wheelers in India, which might be anticipated to account for over 4 million gadgets via way of means of 2025. Both Market and governments have confirmed that electric powered automobiles impact that can supply the practicality, sustainability, safety, and affordability traits anticipated. Advanced analytics, renewable energy, automation, the net of things (IoT), cloud computing, cellular net are a few regions of innovation and generation that have followed to deliver the adjustments in approaches of conventional structures of functioning particularly on this time while the complete global is laid low with the pandemic.

III. EV LAST-MILE DELIVERY MARKET DURING COVID-19 PANDEMIC

Almost two-fifths of the entire logistics fees are gotten smaller into last-mile shipping and this guarantees a gateway for the main gamers to give you more recent modern era solutions. Implementation and adoption of much current technology in last-mile shipping have speeded up at some stage in the pandemic and it's going to hold to accomplish that with inside the aftermath, growing a competitive, worthwhile gain amongst key gamers with inside the industry. The government has already got helped to undertake the EV last-mile shipping at some stage in this time and comparatively untapped marketplace potential. Electric Vehicles (EVs) are having composed and self-confident to end up a necessary part of India's last-mile shipping space. We can anticipate a gradual and constant upward push in client spending with inside the post-COVID-19 world. A growth with inside the call for the adoption of EVs for last-mile shipping has ended in operational financial savings for logistics companies and helped in lowering air pollutants as well.

Figure: 1



Source: www.financialexpress.com

There are many demanding situations to stand the adoption of last-mile shipping with EV fleets. During the pandemic and after the pandemic, constructing an EV-led last-mile shipping surrounding will face many demanding situations like excessive cost, shortage of charging stations, variety tension, and absence of semiconductor additives that want to be addressed first. Improvement with inside the infrastructure has additionally driven to witness quicker adoption and deployment of EVs for last-mile shipping in the course of this time. And the state of affairs will keep enhancing even after the pandemic world.

IV. EV INTEGRATION IN INDIA:

An enterprise professional stated that in Post Covid-19, quite a few gamers might recognition on indigenization and could begin searching at methods wherein how they can install centers with inside us to fabricate as many additives they can.

He similarly added, we can be witnessed recent generation partnerships for sensor, digital, and telematics. It is feasible that worldwide gamers may want to do a tie-up with Indian gamers and install a production base with inside us that could offer higher manipulation over their delivery chain. In this period of a generation, destiny goes to be simply electric. EV machine integration goes to CASE in which C-Connected (technologies) A-Autonomous S-Shared and E-Electric mobility.

V. SALES OF EV DURING PANDEMIC

The electric-powered two-wheelers (E2W), the most important section of the three-wheeler, have witnessed a decline of 6 percent. Electric two-wheeler volumes have been at 143,837 devices in FY21 in comparison to 152,000 offered in FY20. During FY21, a complete variety of 40,836 high-velocity and 103,000 low-velocity E2Ws have been offered. Just just like the fossil-gas-powered three-wheeler section, electric-powered three-wheelers (E3W) noticed the most effective of the pandemic. The E3W section has registered a fall of 37 percent in income to 88,378 devices, as towards 140, 683 devices offered in FY20. These statistics do now no longer consist of E3Ws which aren't registered with the delivery authority.

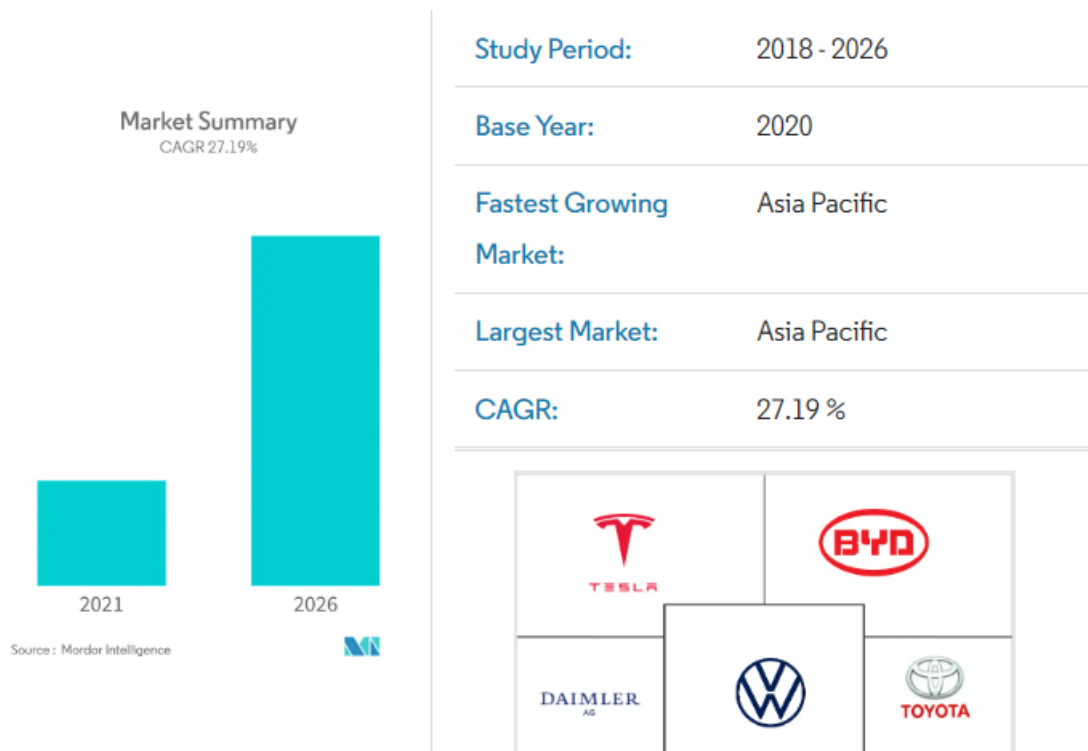
However, registering an increase with inside the electric-powered passenger automobiles beat the trend. Electric passenger automobiles income of 4,588 devices grew through fifty-four percent, at FY21, as towards 3,000 devices in FY20. The income has been broken up into the most effective simply six fashions ones are Tata NEXON EV, Tata Tigor EV, Mahindra eVerito, MG ZS EV, Hyundai Kona, and the Mercedes-Benz EQC. Tata Motors emerged as the chief with inside the electric-powered passenger automobile section with the Nexon EV, which is the best-promoting version with inside the enterprise observed through the MG ZS EV.

The authorities allowed registration of electrical automobiles without their batteries, which become a step taken to enhance the income of the battery swapping era in FY21. Only a handful of gamers, particularly engaged in electric powered two-wheelers, make automobiles with battery swapping era. Also, governments are signing MoU with key gamers for putting in place charging stations.

On June 11, 2021, the Ministry of Heavy Industry(MHI) introduced section 2 of FAME amendments to provide a lift to EV call for consumers. Under this policy, the subsidy in keeping with an electrically powered two-wheeler (Indian-made), has been expanded to INR 15,000 (US\$204.60) in keeping with Kilowatt-hour (KWh) from INR 10,000 (US\$136.forty) KWh, primarily based totally at the battery % rating. Furthermore, electric-powered two-wheeler producers can now deliver reductions of as much as forty percent, that's a full-size improvement from the preceding cap of 20 percent.

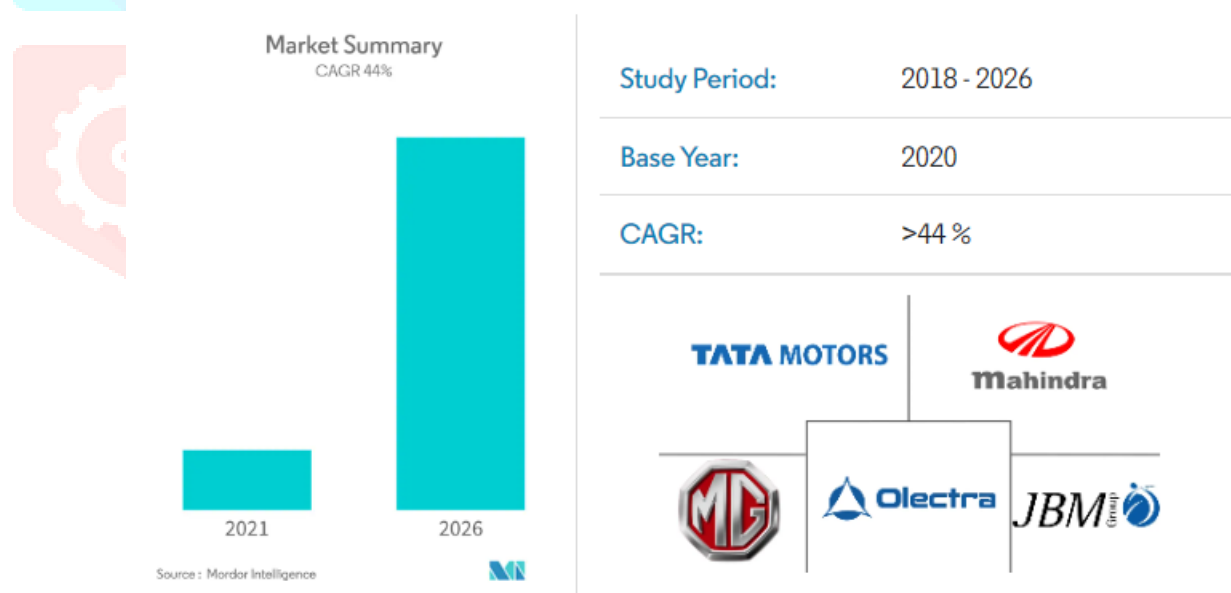
VI. MARKET OVERVIEW DURING PANDEMIC:

Figure: 2



The electric vehicle (EV) market was valued at USD 171.26 billion in 2020, which is expected to grow a value of USD 725.14 billion in 2026, registering a CAGR of around 27.19% during the forecast period (2021-2026).

Figure: 3



The Indian Electric Vehicle Market turned into worth USD five billion in 2020, which is predicted to develop through a value of USD forty-seven billion in 2026, registering a CAGR of above 44% throughout the forecast period (2021-2026).

The worldwide low-velocity car marketplace is projected to develop at a CAGR of eight.6% and could attain a marketplace length of USD 6. three billion through 2025 from 4.2 billion in 2020. The worldwide low velocity electric powered car marketplace turned into worth \$2,395.eight million in 2017 and is projected to attain worth \$7,617.three million through 2025, registering a CAGR of 15.4% from 2018 to 2025. The key elements using the worldwide low-velocity car marketplace are growing the growing fashion of the use of LSV in gated communities, hotels & resorts, business facilities, golfing courses & university campuses.

VII. CONCLUSION

In the brand new destiny of India, e-mobility might now no longer be luxurious however it might be something vital for survival. The pollutants degree is alarming, and the simplest answer is the inexperienced electricity reasserts and transmission of electricity. Hence, EVs are impossible to resist whilst it comes right down to it, so it's miles higher to plot and prepare approximately how the tendencies are going to take place as opposed to heading off the change. In this transition of ICEV to natural EV, the HEV took birth. Undoubtedly, an included coverage on the destiny of mobility is wanted with a focal point on zero-emission mobility. However, one of this coverage need to additionally construct economic fitness of the industry, sales for the government, and employment opportunities.

VIII. ACKNOWLEDGMENT

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