Institute of Management, Nirma University

Summer Internship Project Report 2020

Final Report

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Title Page

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Purpose of Report

- To understand the micro and macro level environmental factors of Two-wheeler Electric Motor Vehicle industry and based on that preparing a Market Development Plan for an Indian Two-wheeler company.

Prepared for

- Institute of Management, Nirma University

Submitted To

- Prof Himanshu Chauhan

Acknowledgement

An effective venture can never be set up by the single exertion or the individual to whom undertaking is doled out, however it likewise requests the assistance and guardianship of some familiar individual who helps in the undersigned effectively or latently in the culmination of fruitful task.

I sincerely thank Professor Himanshu Chauhan of Institute of Management, Nirma University for providing me with an opportunity to research this topic and providing me guidance all through the project. I would also like to thank my faculty mentor Professor Deepak Danak whose continuous support helped me complete my work with ease.

Executive summary

Indian Government is pushing hard to promote electric vehicles in the country and as a result many players have now entered the Indian electric vehicle market. This study analysis the two-wheeler electric vehicle industry by carrying out macro and micro level market analysis of the two-wheeler electric vehicle industry. Based on the analysis a market development plan is prepared for Tata Group.

For macro level analysis PESTEL analysis has been done with the mention of few other factors like Demographic factors, global trend, covid-19 effect, electricity availability in India etc. and micro level analysis of Tata Group is done with factors like Customers, Suppliers, Competitors, Employees, Company, The public and Media.

To better understand the consumer preference other than secondary sources a primary survey was also done with total 71 respondents whose insights were used while making the marketing strategy.

Introduction

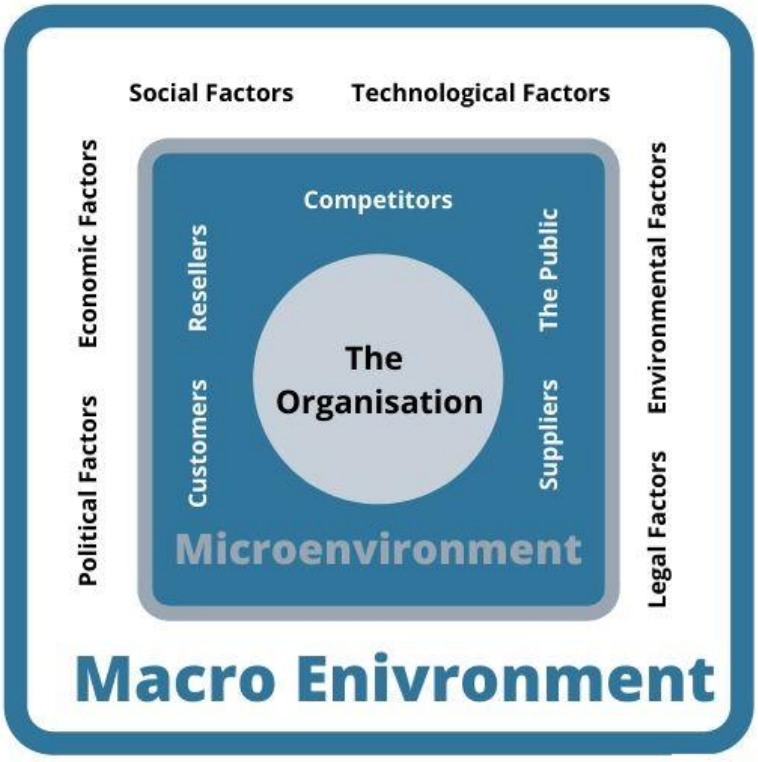
The electric two-wheeler market in India is emerging on account of increased government policies supporting battery-powered vehicles, the growing awareness toward the environment, increasing petrol prices, and stringent emission norms. The Government of India has taken several initiatives to boost the sale of electric vehicles (EV), including two-wheelers. In 2013, with the launch of the National Electric Mobility Mission Plan 2020, which aims to increase the adoption and manufacturing of EV in India (FAME India)

Because of such initiatives by the government and huge growing potential in the EV market a lot of start-ups have come up in the past years and many large players in the automobile market have also invested in Ev companies and many have themselves started working on developing their own vehicle. The Indian market is dominated by the sales of two-wheelers that is why it becomes critical for the success of Ev's in India that good electric two-wheelers are there in the market.

The objective of the study is to do a detail analyses of the industry and develop a market development plan for an Indian company

Methodology: Apart from secondary sources a primary consumer was also done on 71 respondents to better understand the consumer preferences towards the two-wheelers and electric ecosystem of the country.

Macro and Micro Level Environment Factors



Macroenvironment is the remote environment which is external to the company and cannot be controlled but still affects the companies Decision making, performance and strategies.

The PESTEL analysis takes into consideration the changes in macro environment of the market and keeps the companies on track with them and is very useful when a new product/service is started. It will assist the electric vehicles being a new technology for their rapid adaptation on the automotive market. In this case it is a product which is electric two-wheeler looking at its market (Indian Automotive market). The following are the factors which can influence the introduction and performance of the electric two-wheeler in the Indian cities:

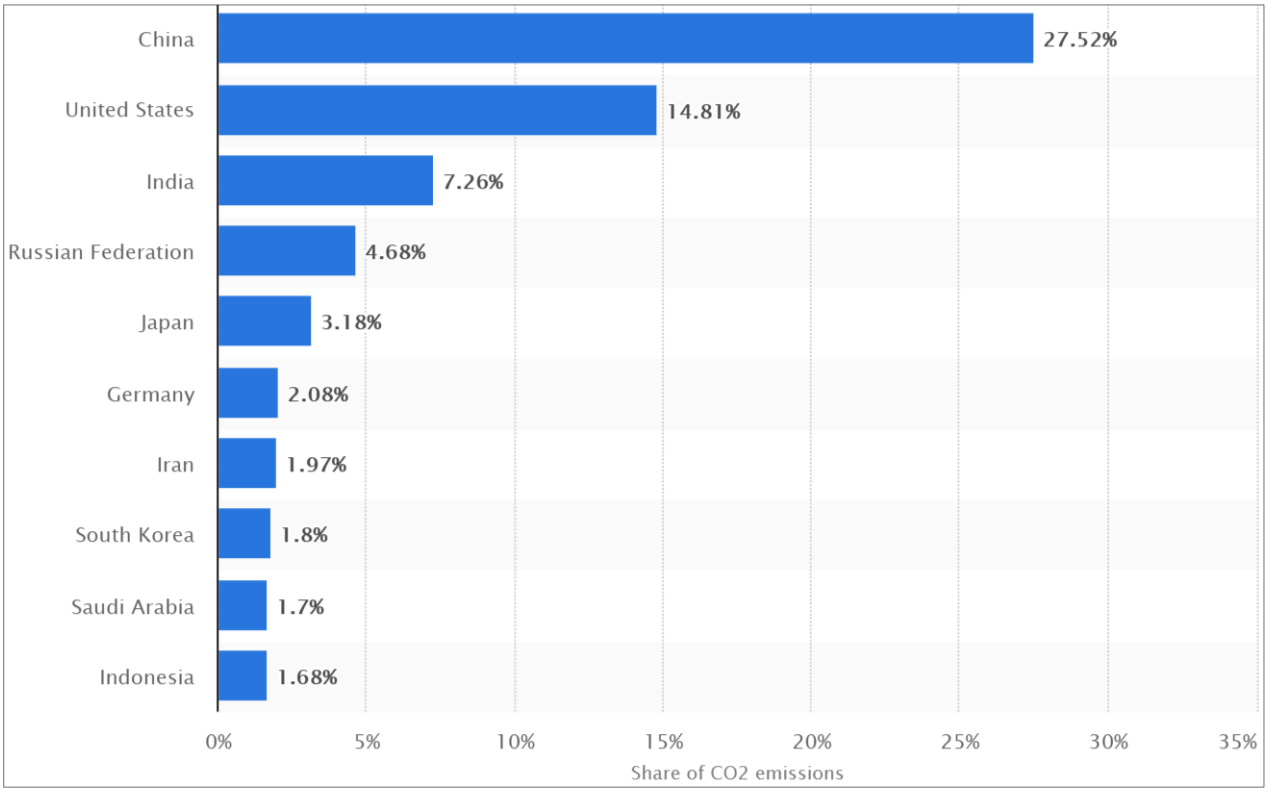
- **Environmental**
- **Economic**
- **Social**
- **Technological**
- **Political**
- **Legal**

Environmental- More than 1.2 million people in India die due to air pollution causes every year, according to a Greenpeace report. India is witnessing a rise in environment consciousness and even a common person is getting more and more aware about the need to save the environment which will also help in the fast growth and adoption of electric vehicle in the country. The electric vehicles have the potential to decrease the air pollution. Since the air pollution can be global, regional and local, attention should be paid to the local pollution more on individual level as being a result of activities of people in an area. One of the USP of the electric vehicle that is constantly being marketed is its 0-carbon emission which really appeals to environmentalists so the electric vehicles can decrease the levels of harmful gas emissions on a local level.

From where the electricity is coming from is also a concern for many people and an argument is often put forward that in India the majority of the electricity production is done with the help of fossil fuels in that also mostly coal is burned. Still in a comparison between the electric based vehicles and gasoline vehicles the electric vehicles are still a smart choice to prevent the environment because even if the electricity is drown from coal or natural gas or directly from oil as the stationary power plants are so much more efficient than small gasoline engines in vehicles to produce the energy to move the vehicles and the electric vehicle can go for much longer distance than a gasoline based vehicle after releasing the same amount of carbon in other words CO2 per mile is less in electric vehicle compared to gasoline vehicles even if the electricity is coming from fossil fuels also as vehicles EVs have fewer lifecycle emission by less than 60% which means even when taken into account raw material extraction, battery manufacturing, vehicle manufacturing and shipping they emit 60% fewer climate change emissions is there but still the need to adopt to sustainable ways of generating energy is there like hydro, geothermal, wind, solar etc.

Electric vehicles will also contribute towards reducing noise pollution which is also a major problem in India. Rapid urbanisation has exposed people to very high noise levels in everyday life specially on roads and a report by World Health Organisation (WHO) showed that increasing decibel levels are among the major environmental risks to human health. A study by Indian Journal of Community Health on 150 traffic police officers in Jammu showed that officers who were regularly on roads for at least 3 years had about 6 times more hearing loss as compared to officers who were on the roads for lesser time.

Figure 1: Largest CO2 emitters in 2018



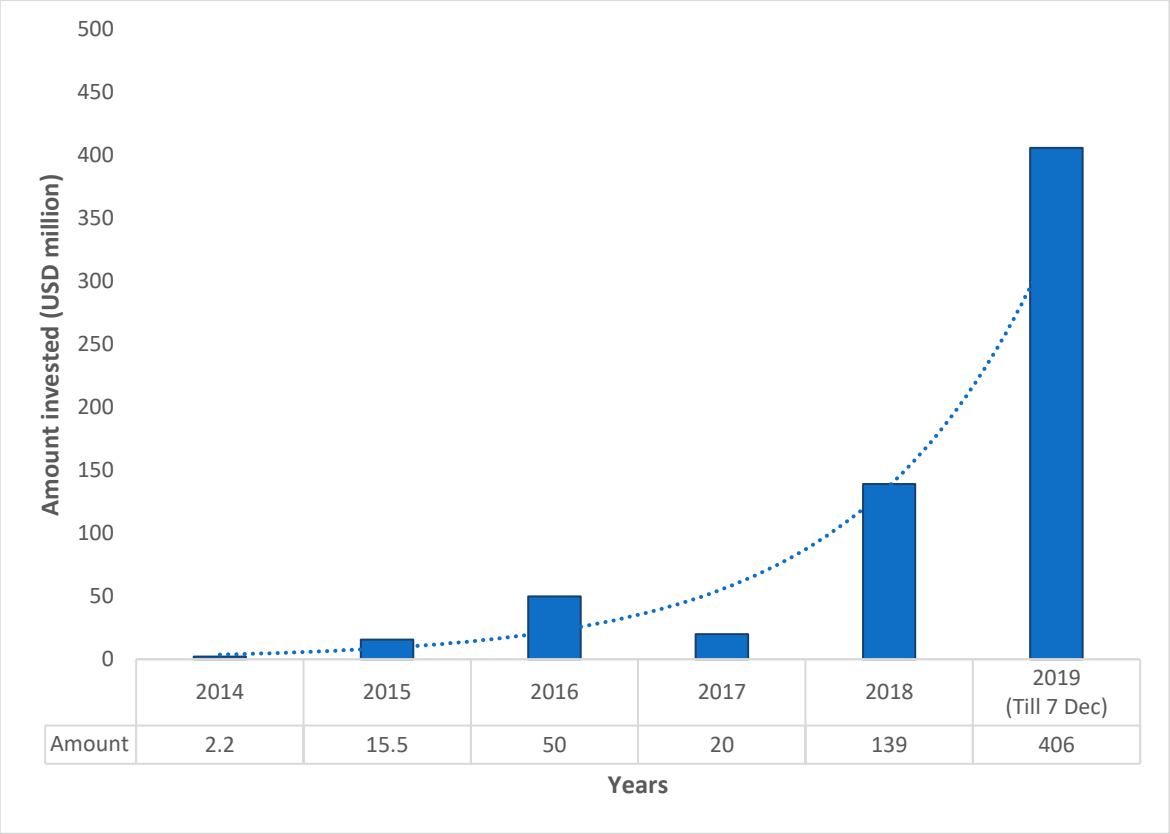
Source: Global carbon project 2018

The environmental factors concern the level of pollution created by the electric vehicles and the attitudes to the environment from the consumers and the governments. However, renewable energy sources should be used for the production of the electricity for the electric vehicles. Otherwise, the energy plants from which the electric vehicles obtain electricity will create pollution, which will influence the environment despite the reduction of local air pollution in the cities. The climate changes in the future will influence the environment and the society in a way, which could lead to making electric vehicles the preferable option in an urban environment and perhaps at one point the only alternative

Economic- the overall economy of the company highly affects how a company is going to perform as irrespective of the operations of the company as the demand of the products very much depends on the stage at which the economy is operating like recession phase and recovery stage. Economic factors include economic growth, the alternative energy industries and an increase in the cost of utilizing these cars mainly because of the rise in fuel prices in the short period of time. Therefore, the demand for more-efficient cars is higher than before.

There are many start-ups emerging in the EV market and Investors are also showing interest in these start-ups recognising the future opportunities in this market. From $20 million in 2017 the investments in EV start-ups soared to $406 million in 2019 with Ola Electric mobility emerging as the biggest beneficiary of this investment spree with a funding of $300 million. Some of the other start-ups are Zypp, Twenty-Two Motors, Lithium Cabs, Ather energy, SmartE and Yulu.

Figure 2: Investment in Indian EV industry



Source: TracXn

The need to import crude oil from foreign countries will decrease with increased use of electric vehicles.

The investors will also be more careful now after the pandemic has sent the Indian economy in recession so instead of pouring out money, they will be more focused on profitability. Many companies will also face cash crunch as the demand for the vehicles will be down for a long period of time and in situations like this funding from investors comes in handy.

Economy of the country was also not doing really well for past some years and vehicle industry was one of the hardest hits.

Social- changing the perception of what an electric vehicle can be is the key in the Indian market cause as far now the average Indian consumer doesn't have a very attractive image of electric vehicle which is mostly because there are not just enough good products to look up to, like in the western countries people have tesla to look up to and they buy into their vision.

Showing electric vehicle better than gasoline vehicles is also important to persuade consumers to switch from traditional gasoline vehicles to new technology of electric vehicles.

Electric vehicles can be charged at home or at work only and does not require to go to a petrol pump, wait in the line so charging comfort is also there

Pollution free driving makes the driver feel that she has done something for the conservation of environment and it also helps them be seen as a responsible citizen who cares about the nature.

People in India also generally prefer to travel by two-wheeler in the cities because of the congested roads and traffic that is the reason why 79% of all vehicles in India are two wheelers, this is the reason why many believes that electric vehicle market in India will be two-wheeler driven in upcoming years. One more reason Indians buy so many two-wheelers is their economic status as India being a developing country with a lot of poverty still existing buying a car is sill like a dream for many and the economic Indian prefers two-wheelers with high mileage which is easy to maintain. These are the factors that the electric manufacturing companies needs to keep in mind while developing their product for the masses.

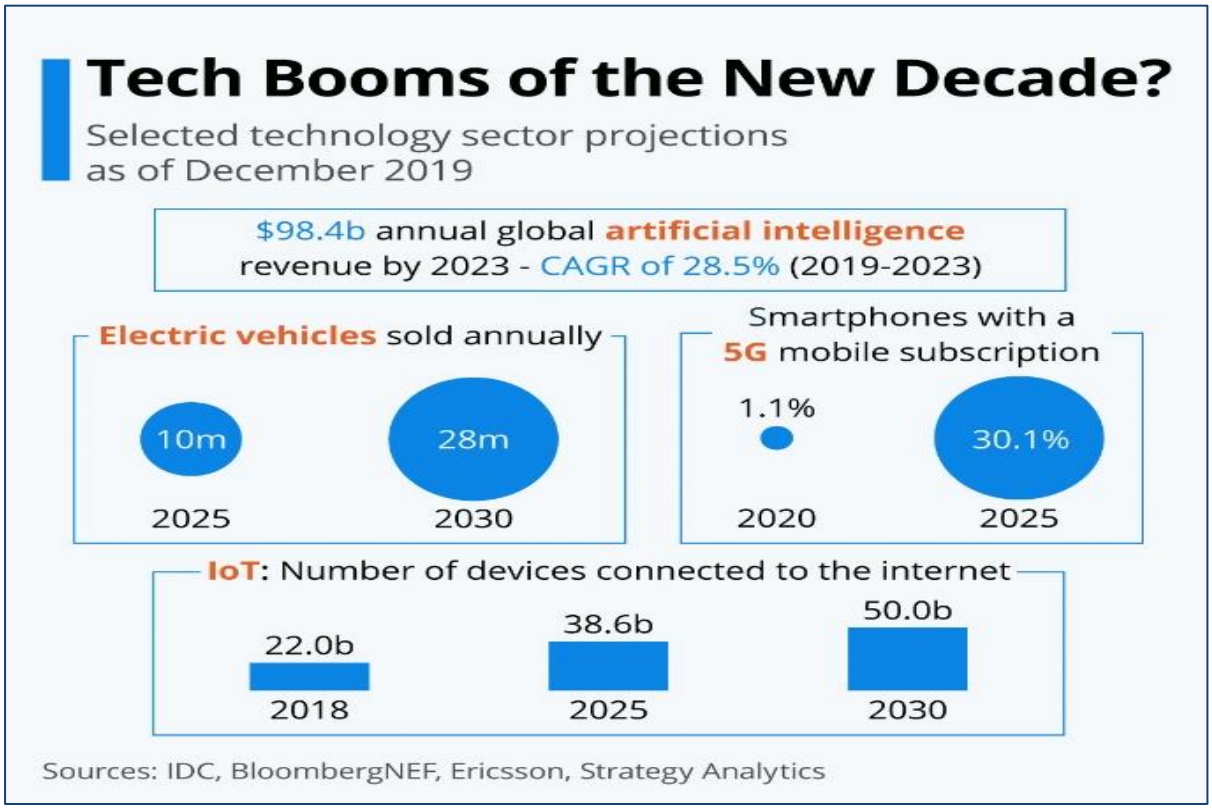
Shared mobility is also something that the people are considering more now as because of covid-19 pandemic people are not comfortable to use public transportations so the companies are coming up with rental schemes where consumers will share vehicles and not own it with the option of keeping the vehicle on rent for few days to months.

Social factors are related to increase environmental concerns, attitudes and emphasis on products, which are "eco" friendly. Society judges people based on the type of the car they own

Technological- The technological factors consist of the relevant current and future technological innovations. The main challenges that the electric vehicles face are the limitations within their range (the distance they can go with one charge). The distance, which an electric vehicle can pass with one charge, is on average around 100-120 km, while an average sized conventional car can pass more than 600 km. Another challenge is the establishment of effective charging infrastructure. The number of charging stations is expected

to increase. The battery is another obstacle because it increases the price of the vehicle, but still needs to be technologically suitable. However, the technological development and market deployment of the electric vehicles will cope with both problems.

Figure 3: Technological advancement projections



The 90% of electric scooters sold in India had the maximum speed of 25kmph which is because of limited options that the Indian public has and this is among the big factor why Indian consumers are not yet able to fully embrace the idea of electric vehicle. Indian market needs better products with advanced technologies that can make the electric two-wheelers more attractive to a normal consumer also.

Around 20% of the electricity generated in India goes into transmission and distribution losses which is a great waste of resources and to prevent this from happening better infrastructure needs to build and at the same time new ways of energy transmission needed to be innovated.

By using advanced technologies, a whole new experience can be given to users of electric vehicles as integrating technology with an electric vehicle is much easier and cost efficient than gasoline-based vehicles. The technology to power electric vehicles with solar power is already

there and the investment in solar panels pays off quicker when the solar power is not only replacing grid electricity but also the expensive fuel that goes into gasoline-based vehicles.

There are many new opportunities of integrating technology with the vehicle and trying new things for that making the vehicle data driven using digital tools becomes important to give more information about the vehicle to the rider like showing accurate battery level to rider as there are not many public charging stations in the country and the rider has to be absolutely sure about the reach of the vehicle at a particular battery level.

Also, using digital tools and tech creates an ecosystem in the vehicle to integrate newer tech like GPS which will cost a lot more in a normal two-wheeler. The customer experience can really be enhanced by an interactive touchscreen on the vehicle and allowing the rider to make adjustment to the vehicle according to their own needs. For maintaining an edge over the competitors in the long run initial investment in the software for the dashboard also becomes important and there is always an option to build in-house tech to reduce the cost and making the vehicle cheaper.

Many innovative ideas have also come up to charge EV's and one of them is charging the vehicle while driving by making coils transmit electricity through roads which will end the need to search a charging station during long rides and end the range anxiety of the rider.

Political- One of the main reasons of emerging electric two-wheeler market in India is government support to this industry and increased government policies supporting battery-powered vehicles.

One of the early initiatives by the Indian government was National Electric Mobility Mission Plan 2020 launched in the 2013 which has the aim of increasing adoption and manufacturing of Electric Vehicles in India and battery powered two wheelers accounted for 90% of the vehicles that availed the incentives of that initiative.

The government of India is emphasising on the need to scale up electric vehicle manufacturing in the country. The country needs 10GWh of cells by 2022 and about 50GWh by 2025 minimum according to a NITI Aayog report. NITI Aayog also proposed that after march 2025 all the two wheelers sold below 150cc should be electric only.

Figure 4: Govt. support to E-vehicles

Electric Vehicle segment	No. of vehicles to be supported	Size of battery in kW	Total subsidy per vehicle, INR	Ceiling price to avail incentive, INR	Total fund support from DHI, INR million
Two-Wheelers	1,000,000	2	20,000	150,000	20,000
Three-Wheelers	500,000	5	50,000	500,000	25,000
Four-Wheelers	35,000	15	150,000	1,500,000	5,250
4W hybrid vehicles	20,000	13	13,000	1,5000,000	260
Buses	7,090	250	5,000,000	20,000,000	35,450
Total	**1,562,090**				**85,960**

Source: Ministry of Heavy Industries & Public Enterprise, Government of India

Government is providing incentives to consumers to promote electric vehicles in the country for e.g. 2-wheeler consumers get incentive of 10000 for every 1kwh battery pack and max 30000 for 3kwh battery pack. Vehicles with at least 50% indigenous production will also be provided some subsidies by the government.

Tax deduction of 1.5L on the interest paid on the loan taken for the purchase of EVs

The Indian governments make in India initiative wants to develop India as the manufacturing hub of the world and the government has the vision of making India a leader in electric vehicle manufacturing that's why there are so many policies being derived to assist the electric vehicle industry.

The initiatives are being taken by state governments also to promote electric vehicles, as many as 11 state governments have come up with comprehensive policies for Electric Vehicle segment. Tamil Nadu governments Electric Vehicle policy set out investment of Rs.50,000 Cr in the manufacturing and development of a comprehensive ecosystem of Electric Vehicles in the state which is expected to create around 1.5 lakh employment opportunities.

The Uttar Pradesh govern ment is encouraging the use of hybrid and plug-in electric vehicles. The Uttar Pradesh government wants to set up a network of 2,00,000 charging points (slow, fast and swapping) across the state by the year 2024. One more ambitious plan of Uttar Pradesh government is to replace the 70% of the public transport vehicle in the state with electric

vehicles and taking the total number of electric vehicles on the roads of the state to over 1 million across categories by 2030.

Uttarakhand government also came up with a scheme to promote electric vehicles in the state. The scheme will provide loans to companies ranging from Rs.10-50 crores to build electric vehicles and charging infrastructure. Also, first 1 lakh customers of electric vehicles will be exempted from charging of motor tax for five years after the purchase of the vehicle.

The government policies aim at making India a global manufacturing hub for electric vehicles

Legal- Electric scooters are legal to drive in India for a long time now and in fact the government is aggressively trying to persuade people to adopt electric vehicles in that line only the GST rates for the electric vehicle has also been declined from 12 per cent to 5 per cent by the finance ministry.

Battery-operated 2 wheelers with an electric motor in them having power below 250W or and electric 2-wheeler with a maximum speed of 25kmph can be sold and driven on the roads without the need for a formal registration and the driver does not even need to have a license.

Changes have also been made to Electricity Act 2003 which only allowed licensed power distribution to sell electricity which would have been a great hurdle for setting up charging stations so the Ministry of Power decided to make charging of electric vehicles a service and not sale of electricity which paved the way for companies to set up charging infrastructure around the country for battery powered transport.

Green Number Plate for EV's – Green number plates are mandatory in India for all the electric vehicles so that electric vehicles can be easily distinguished from other vehicles so that the vehicles owners can redeem special schemes and perks for electric vehicles. The private vehicles are to get white letters on the green color background on the plate and commercial electric vehicles will have yellow letters on the green color background.

Some of the proposed benefits for the electric vehicles are preferential treatment in parking areas, toll concession up to 50% while travelling, separate lanes for electric vehicles etc. the ministry of Road Transport and Highway has also requested finance ministry to set the depreciation rate on e-vehicles at 50% whereas the depreciation rate for a gasoline based vehicle is 15%.

The policy makers are also considering exemption from permits for commercial electrical vehicles to encourage people to buy more e-rikshaws, e-taxis, e-busses, e-autos etc. for promoting the e-vehicles in young population government has also proposed to allow people falling in the age bracket of 16-18 years to ride a gearless electric two wheeler even without a licence. The Indian government has also declared that public charging stations and Electric vehicle charging businesses will come under de-licensed activities.

IMPORTANT FACTORS OTHER THAN PESTEL

Demographic factors- It is been seen that most of the electric vehicle start-ups are coming from south Indian states and the sales of the electric vehicles are also happening mostly in North and South India. India being the second largest most populated country in the world will soon become the most populated and with most of the population being bellow 35 years of age the Indian market for EV could really boom just like India's neighbour in the north China which have already embraced the electric vehicles and they sell the greatest number of two-wheelers in the world.

The younger population is more concern about the environment change than older generation which is why they are more likely to adopt new and innovative ways to save the environment. Also, they will find the tech that is coming with many electric vehicles easy to understand than older people. Electric vehicles are lighter in weight when compared with traditional gasoline-based vehicles so electric two wheelers can be comfortably used by women also. Also, the working population of the country is expected to increase dramatically in the coming years with more and more people getting access to educations and there is also migration of people from rural India to Urban areas going on at a rapid pace leaving the traditional agriculture activities. All these can be factors can serve as catalyst for the Electric vehicle industry.

Global trend- Tesla is clearly the world leader in the electric vehicle market. The kind of revolution that company has created in the automobile market is unprecedented which has also forced other companies which were reluctant in the beginning to adopt electronic vehicles into their portfolio.

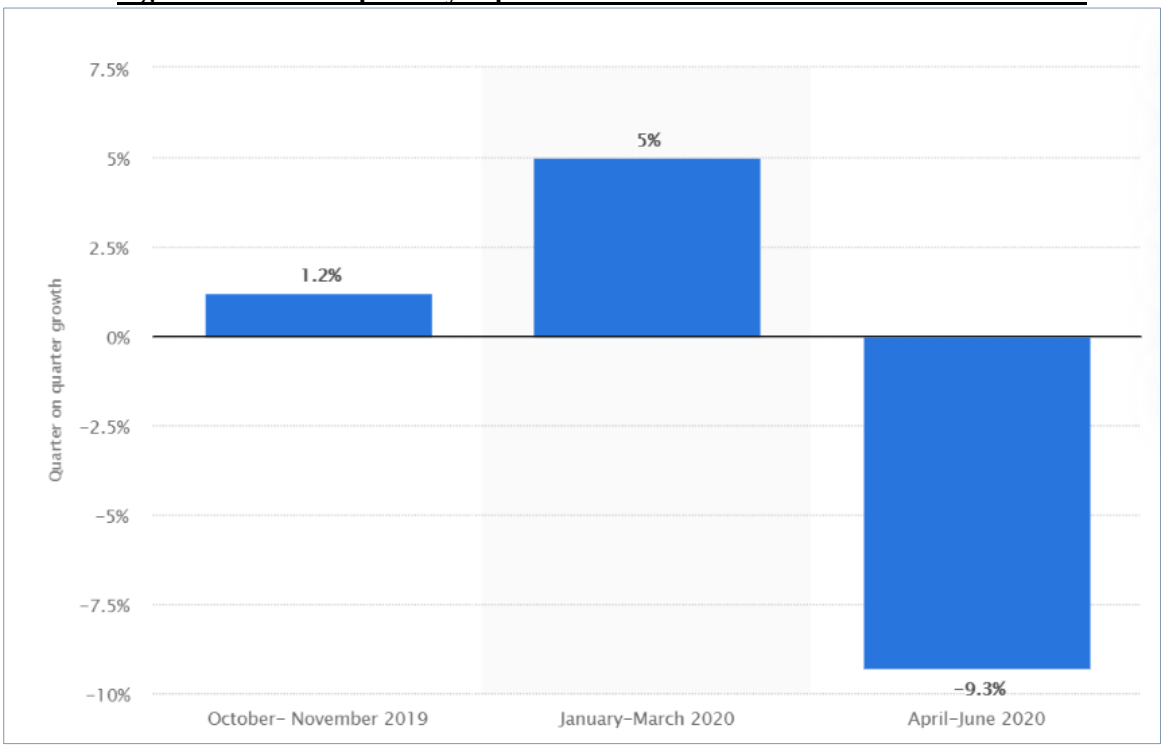
China is also adapting rapidly electric vehicles and has the greatest number of electric two wheelers in the world. The government there is promoting e-vehicles now after air pollution

has become a severe problem there. European countries have always been progressive related to environment initiatives and they also are embracing the new era of electric vehicles. Germany have recently made it compulsory for all gas stations to provide EV charging.

International Council on Clean Transportation (ICCT) released a report which shows that worlds 50% sales of electric vehicles happen only in 25 cities of the world which are popularly referred as EV capitals of the world.

Covid-19 effect- the global economy is expected to suffer from covid-19 pandemic and vehicle industry will be no exception. With a large part of the population being left unemployed the demand for products and services will take a huge hit in the upcoming months. In the short term the sales of electric vehicles will take a hit too but the gasoline-based vehicles will be hit harder as the penetration electric vehicle was limited by now and the gasoline-based vehicles were facing a demand crisis even before the pandemic. In the long term the electric vehicles have an opportunity to come up as a winner in the post corona world if necessary, steps are taken.

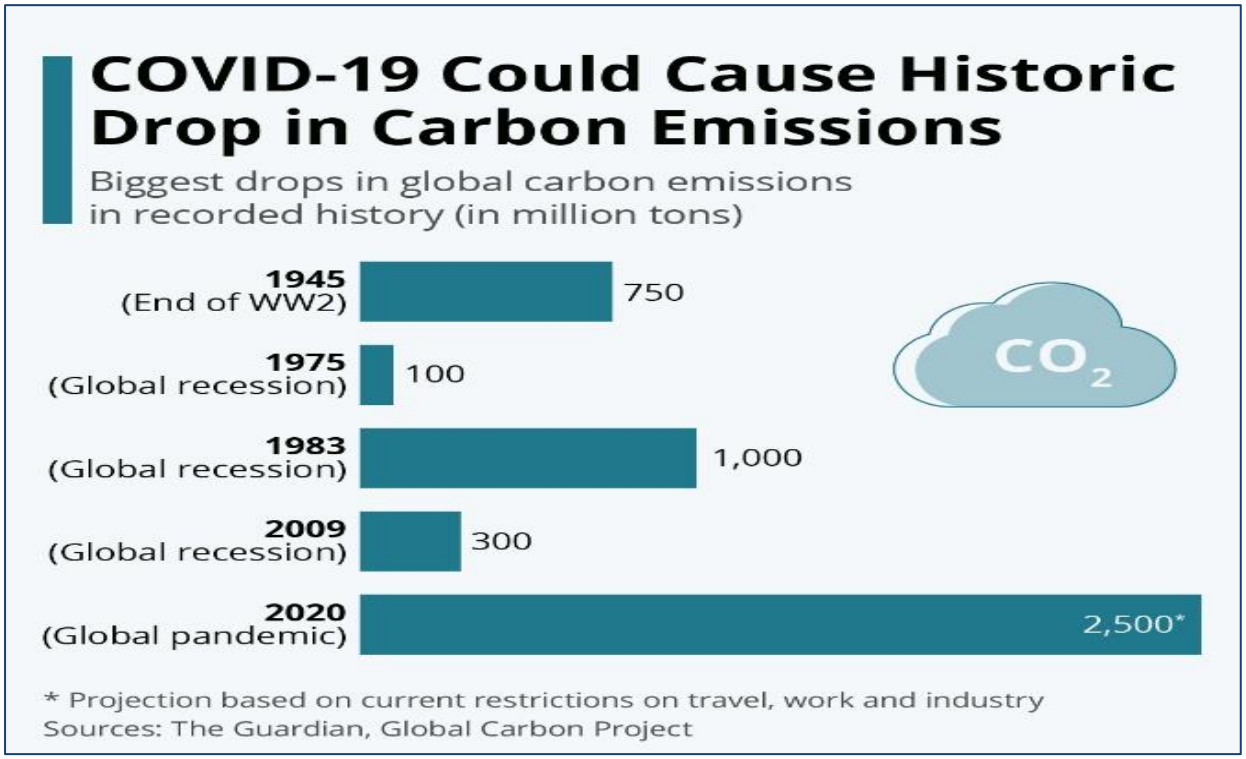
Figure 5: Estimated quarterly impact from Covid-19 on India's GDP Growth in 2020



Source: Statista

On the other hand this pandemic has been very beneficial for our environment as the people are forced to stay inside their homes and there is very less traffic as compared to normal days the air pollution has decreased drastically and people can actually feel the difference in their day to day life. They have started appreciating the environment more and have also realised that we share this planet with other species also who have been suffering for so long because of human activities. This pandemic is expected to create behavioural changes in many people which could be good news for electric vehicle companies as this could be proved as the necessary push needed to force people adopt cleaner ways of transportation.

Figure 6: Covid-19 effect on Global CO2 emissions



Electricity availability in India- India being a developing country is still struggling to provide basic facilities at every part of the country and electricity is one of them. Though in the past few decades huge developments are being made in energy sector still a large population of the country does not have access to electricity and many more people than that don't have constant supply of electricity with daily power cuts. This could be a great setback for the Indian vision of transferring to e-mobility ecosystem and leading the world in electric vehicle manufacturing.

For most of the population of the country 24/7 electricity supply is still a dream and only few large cities have this luxury. Also, electricity rates also vary from state to state which could result in uneven e-vehicle penetration in the country.

There is fast development being made in solar energy front but still they are unaffordable for most of the Indians and until the cost of the solar cells are dramatically decreased the large section of Indian society will not accept it. The charging infrastructure for setting up of charging points will also require land and in the already congested country like India finding land in prime locations of the cities will be really hard.

Unique India advantage- the Indian market is really different from west as most of the annual vehicle sales here are of two wheelers and not cars so the switching cost from gasoline-based vehicle to electric vehicle in India is comparatively less than western countries. Two wheelers constitute to around 70% vehicle market in India which also makes it the largest two-wheeler market in the world. With government providing incentives such as incentives, tax breaks and special facilities to electric vehicle owners and so many start-ups coming up in the EV industry a revolution in the automotive sector can be expected in the comic years which would be driven by two and three wheelers if behavioural changes in the Indian consumer can be made by campaigning for E-vehicles.

Because of the social distancing norms also people will be travelling less from public transport now and will prefer more to travel alone. This can result in increased sale of private vehicle and expectedly large portion of that will be two-wheelers which is where opportunity lies for the two-wheeler electronic vehicle. Another way this could go is people will prefer shared mobility where they won’t own the vehicle but rent the vehicle for a day or month according to their need. This model is also being explored by many companies and huge potential is there in this business model too.

Micro environment

Micro environment of an organisation is also known as operating environment because it has direct and immediate impact on the functioning of a company. In comparison to macro environment factors they are more interlinked with the organisation.

Some of the most important micro environment factors are:

- Customers
- Suppliers
- Competitors
- Employees
- Company
- The public
- Media

Customers- The electric vehicles are low maintenance and almost 1/3 as compared to vehicles with traditional vehicles as they don't have fuel tanks to change engine oil, less moving parts and various other parts that requires constant maintenance. There is also a growing sentiment in the country of shifting towards made in India and when it comes to companies Tata group is one of the most respectable in the eyes of Indian which will be a huge plus point.

It is important that the customers are not just sold the vehicle but the idea behind it and make them realise the importance of going green. The fossil fuels have already caused a lot of damage to our environment and specially during this lockdown people have realised the importance of clean environment and what it feels like to take a breath in fresh air to they already are inclining towards changing their old habits that have caused damage to the environment and adopting electric vehicles can be presented to them as an alternative and need of time to save the environment.

One of the main worries with adaptation of electric vehicle is the perception of the e-scoters in the minds of customers that they are slow and not practical for day to day use which needs to be changed just like tesla did in the us market and forced everyone to acknowledge the power of electric vehicle. One another issue is of infrastructure that is not yet fully developed in the country for charging the electric vehicles on long rides which gives riders range anxiety all the time which also needs to be dealt with by using innovative ways.

It is inevitable that a general customer will compare the electric vehicle with the existing gasoline-based vehicle in the market and the factor on which an Indian customer focussed most is price. The price of electric vehicles that are at par with existing top quality gasoline vehicles are generally 20-30 per cent higher which could be a real set back in a piece sensitive market like India but the customers are needed to be realised that both the vehicles are very different from each other and in the long run e-vehicles will prove a lot economical as the main cost of an e-vehicle is its battery only other than that the maintenance and service cost of electric vehicle is way less than a gasoline based vehicle and the cost of fuel per kilometre is way higher than the cost of electricity per kilometre.

Suppliers- The problem with introducing a new product to the market is there is no existing supply chain for the product and same is the case with two-wheeler electric vehicle. There are a lot of parts in an electric vehicle that no one sourced before. The advantage of economy of scale can also be not taken as the electric vehicle industry is very new and not many people are yet buying the vehicles. As the supply chain in the country is not robust manufacturers needs to rely on importing components from outside the country. The covid-19 pandemic has also created a demand supply shock to the industry which needs to be taken care of urgently.

Tata motors is collaborating with Tata Chemicals for the development of component supplier ecosystem so that in-house lithium-ion battery cells can be manufactured and the reliance on imports won't be there which will help in saving a lot of cost and eventually making the price of the electric vehicle less. Other than these active chemical manufacturing and battery recycling solutions are also being explored.

For the purpose of localising the assembly process of battery packs and motors Tata motor is working closely with Tata Autocomp which can again solve one more supply chain hurdle and decrease the dependence of the company on outside suppliers.

Competitors- The electric two-wheeler market has lately become very competitive with constant entries of start-ups and now big players also entering the market. There are both regional and local players in the market right now trying to capture the market share. Currently the majority share of the market is held by Hero Electric (Ather Energy), Okinawa and Ampere. Companies are giving more importance to development of innovative products and increasing the variety of products by making investments in Research and Development for the purpose of maintaining a competitive edge in the market.

Being a very new market and still at its initial stage there is huge opportunities of growth for new regional and local players. When looking at the country there is more competition in the southern and northern parts because of growing technology and infrastructure projects with the help of state governments and these are the two regions which mostly contribute to the electric vehicle segment.

Hero Electric- Hero electric is the leading electric two-wheeler compony in India, a part of Hero group, has launched more than a dozen electric vehicles in the country by now. The company was founded in 1993 Mr. Naveen Munjal and after researching for years they launched their first e-scooter in the year 2007.

In the year 2008 Hero Electric started Society of Manufacturing Electric Vehicles (SMEV) to spread awareness of electric vehicles and providing support to EV industry and Govt. of India to develop better electric vehicle ecosystem in India.

The company has wide range of products in this segment like Flash, Proton, Optima etc. and the USP for the company is the wide range of product cater to different sections of the country wide prices ranging from around Rs.40,000 to Rs.70,000.

The company being part of Hero group has many pre-existing suppliers for traditional two-wheeler parts which is an added advantage and they have set up multiple touch points of dealership outlets across the country for sale of their scooters.

Ather Energy- the company was founded in 2013 by Tarun Mehta and Swapnil Jain. The two started this smart startup with the help of IIT Madras where they build their prototypes and also received Rs.4.5 million.

Ather grid are the charging points set up by the company which provide fast charging. The company's is very technology focused and has installed many features in their two-wheelers which will be new to Indian customers to see in a two-wheeler. The targeted market segment for the country right now is urban big cities and until last year they were doing business in Chennai and Bangalore only but from this year they will be selling in total of 10 cities.

The pricing model of the company is very unique as they are launching subscription-based pricing model in the industry with giving different user experience in the same vehicle through technology and one more thing that they came up to maintain the performance of the vehicle is battery lifetime warranty. So, the basic price of the vehicle is around 1Lakh and in addition to that the customers will have options to choose monthly subscription for their vehicles which are easily changeable on month to month basis with click of a button. The customer has an option to choose the subscription-based model which will cost her around additional Rs2000/month or the traditional one-time payment can be made which will cost 450X plus at around Rs.1,50,000 and 450Xpro around Rs.1,60,000.

The company in December of 2019 signed a MoU with Tamil Nadu government to set up a manufacturing plant in Hosur for manufacturing electric vehicles and got the investment of Rs.635 crore. The plant will be able to manufacture 1,00,000 electric scooters and 1.2 million packs. The company aims at selling a million electric two wheelers in the next five-year period.

Okinawa- the company was founded in the year 2015 by Jeetender Sharma and Rupali Sharma to manufacture affordable electric scooters with low maintenance cost. The company is based in Gurugram and its manufacturing facility is located in Bhiwadi, Rajasthan.

Till now the company claims to sell 60,000 units of electric scooters and has over 350 dealerships across the country. The company offers 6 models in the Indian market with price range of around Rs.40,000 to Rs.1.17 lakh.

The company plans to increase its current dealership number to 600 and is targeting to sell around 75,000 vehicles in the fiscal 2020-2021.

Bajaj- The Indian veteran reimagined its iconic chetak scooter into a new electric avatar with the launch of its first electric scooter of the same name in the year 2019. It is available in two variants Urbane and Premium and the price range for the vehicle is between Rs. 1.00- 1.15 lakh. This price range is targeted to target urban India with a desire for premium quality which could be a negative as the chetak brand was associated with economical section of the country and the fast charging infrastructure for the company also does not exist.

With the already existing large dealership network and the trust of people in the name of Bajaj chetak will surely provide an advantage to the vehicle and make people more comfortable with the concept of electric vehicles. The company claims the vehicle could cover 95km/charge and cost per km of petrol scooter is around Rs.1.48 and electric scooter around 6p which would really appeal to economic Indians.

Employees- The coronavirus pandemic will help employees become more integrated, focused and cohesive. The entire working system of the organisation has changed and everyone was forced to adapt to these changes and this change is here to stay even after the pandemic is deal with. In the post Covid-19 world the working culture in the organisation will be very different as people will appreciate their work and workspace a lot more now. The lines of status, responsibilities and roles have been blurred during this crisis and in a way this pandemic has been proven to be a great equalizer.

The tata group is known for its ethics and work culture which also reflects in the working of its employees and they are very loyal to the company. Diversity in the employees of the tata can also be seen with employees from each part of the company there. The draining and development department of the company is also very efficient that provides all the necessary trainings to new employees before actually joining the job with the help of experienced mentors that have worked in the industry for many decades.

To work with tata group is like a dream job for many and from time to time the company also keeps launching programs which offers chance to get a job with the organisation and at the same time these competitions are affective marketing tools also which all contributes at attracting great talent from all around the country and even world to work for tata group.

Company-The company wants to make its mark in the fast growing EV segment in the country and is working closely with the electric vehicle industry to assist country's large scale migration to clean ways of transporting across all the transportation segments including 2-wheelers and 3-wheelers.Tata group have synchronised the efforts of their companies to develop a holistic e-mobility ecosystem to accelerate adoption of electric vehicles in the Indian market and they have named this ecosystem **Tata uniEVerse.** This ecosystem will provide consumers access to wide range of e-mobility offerings like fast charging stations, financial assistance, retail experience etc.

Developing a charging infrastructure in the country is one of the priorities of the company right now and for that Tata motors and Tata power have joined hands to provide end-to-end charging solutions all around the country by setting up fast charging stations known as Tata Power EZ charge which are already 170 in number with a plan to expand this number to 700 by 2021 in places like malls, theatres, metro stations, highways etc. and at the same time providing smart charging solutions at home also.

As apart developing e-mobility infrastructure in the company Tata group will be investing substantially in this sector like recently Ratan tata invested in a Pune based electric vehicle start-up called Tork electrics.

To improve business performance and attain high level of productivity and efficiency a separate division is there in Tata group known as TQMS (Tata Quality Management Services) with the primary object of institutionalize the Tata Business Excellence Model (TBEM) in every tata

business. The seven main areas of Focus in this model are strategic planning, leadership, human resource focus, customer and market focus, process management, measurement, analysis and knowledge management and business result.

The Public- company is a part of the community it operates in and the people of the community have direct impact on the working of the company too. During the manufacturing of Tata nano, the company have seen backlash from the local public which had adverse effect on the working of the company. That's why it is important that the company understand its social responsibility also and keep the overall interest of the society in mind. The company should prohibit from activities that may cause harm to the environment and the people in general just for profit maximisation. Tata group have been actively spending a lot of money in Company Social Responsibility activities. activities with helps the company to maintain a positive image in the community and people also accepts the company as a part of the community.

Tata group have very smartly used CSR activities as a vital tool for improving their competitive edge over their opponents. From the time of Jamshedji Tata who used to grant scholarship to students for higher studies in foreign country in 1892 and supported Gandhiji's campaigns to now giving country its first science centre and atomic research centre. The company has also announced that it will not do business with the companies that are not at par with tata groups social responsibility standards.

The corporate policy of the company emphasis on sustainable development keeping the interest of all stakeholders in mind and showing sensitivity and responsibility towards biodiversity and environment.

Media- maintaining a clean image in the eyes of the media is really important as they have the power to influence the general public and negative news can have a really bad impact on the business. For this reason, only now most of the large organisation hire Public Relations managers to help the organisation use the media in a positive way and in this parameter Tata group has always been efficient. The media perceives the company as one of the most ethical companies in the country, the tata trust have always come up with great social initiatives even now during the pandemic Tata trust is building Covid-19 treatment facilities and supporting senior citizens also. News like these helps create a positive brand image in the mind of the

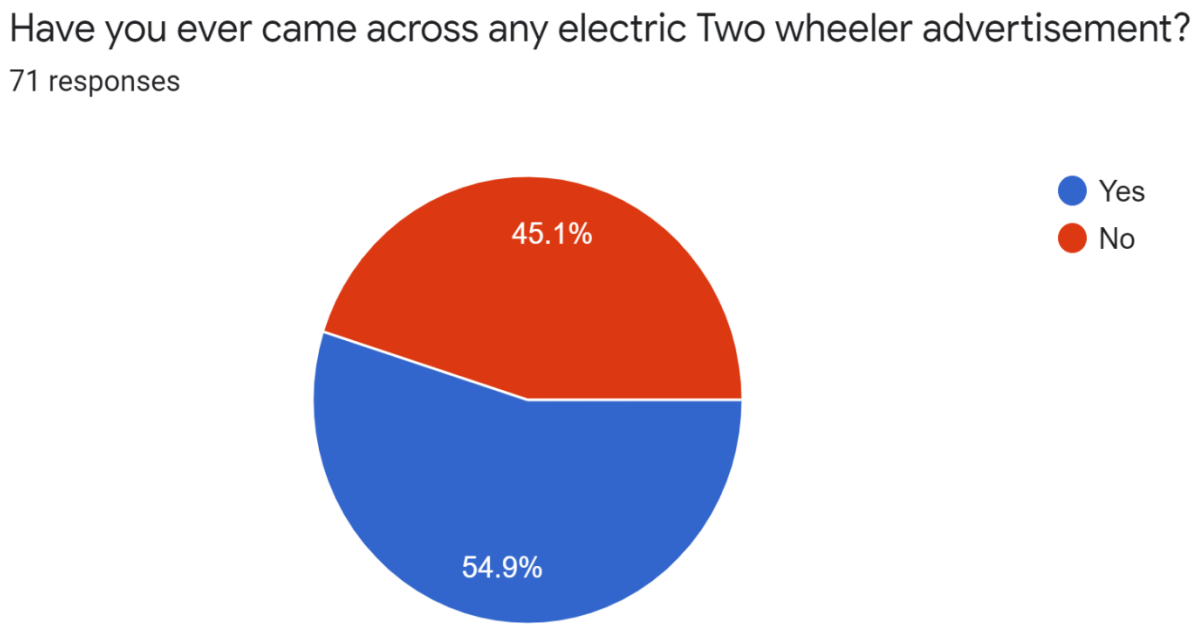
people and makes them see the company in a positive light. Giving regular interviews to media outlets by top officials of the company regarding the progress of the company and new plans, releasing press releases from time, dealing with any controversy in the rightful way has all been done professionally by the Tata group through the years.

In this new age of Internet having a presence on the social media is also very important for regular interactions with stakeholders of the company. Tata group is present on mostly all large social media networks like Facebook, Twitter, YouTube etc. and using these platforms the company had maintained a positive brand image.

Market Development Plan

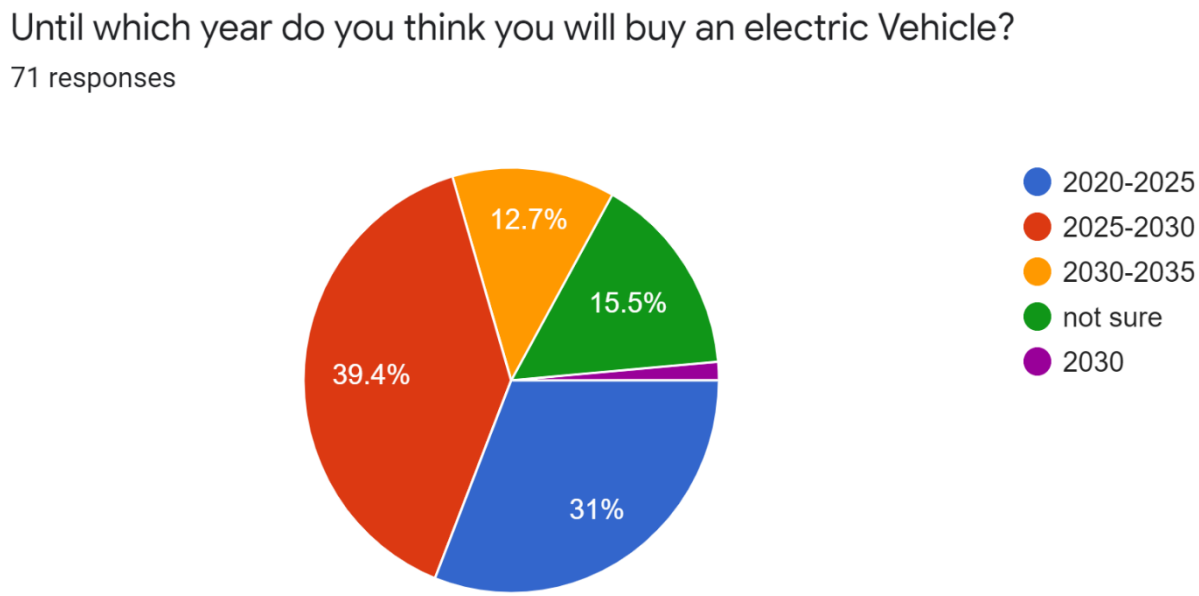
About Tata group- The Tata Group has announced plans to make electric cars and batteries, set up charging stations and build a battery recycling plant. Four Tata group companies – Tata Motors, Tata Chemicals, Tata Power and Tata Croma – have joined hands to build an electric vehicle ecosystem. The company is investing in various electric vehicle start-ups to capitalize on the growing opportunities in the growing electric vehicle market of India which is having government support also.

Situation analysis- The value chain of EV in India is expected to reach $4.8 Bn which makes this market very exciting for the companies. A very large section of the Potential customer base has not even come across any electric two-wheeler advertising yet, this creates an opportunity for the company to launch a big marketing campaign and introduce the people to the idea of electric two-wheelers.



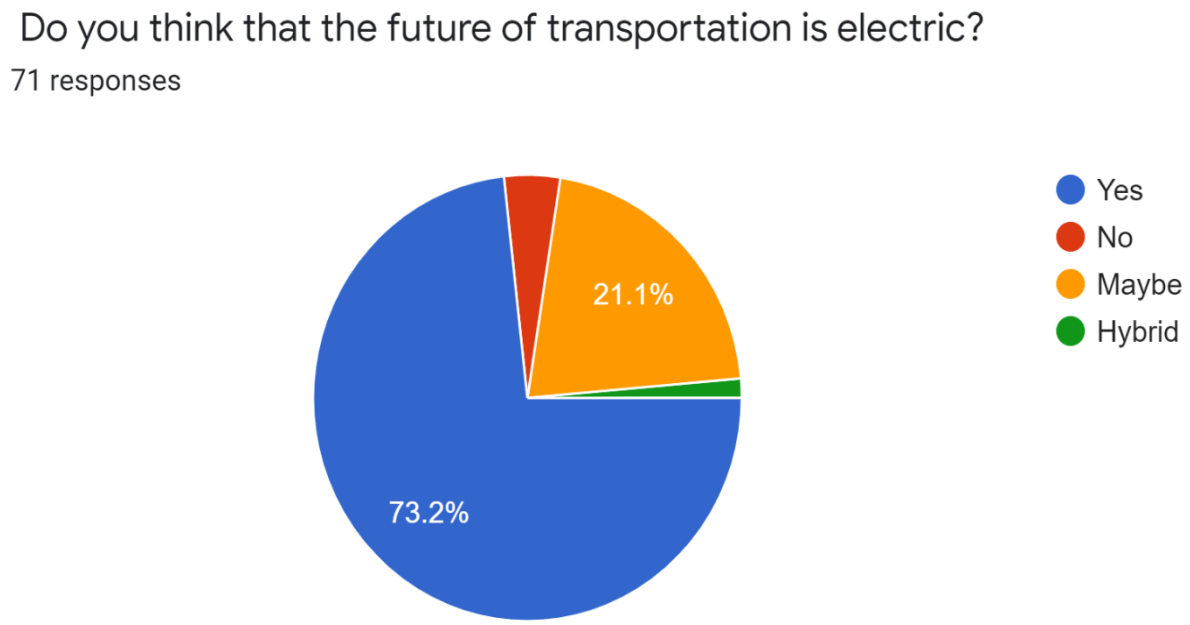
Most of the people now believe that the future of the transportation is going to be electric and they have become more considerate about the nature and how importance it is to reduce global warming for the betterment of all. The continuously rising prices of Petrol and Diesel is also a major factor why people have started to look for alternatives and this could be the right time for electric vehicles to become that alternate.

The penetration of electric charging station is really less in the country which is a major draw back when trying to convince people to switch from gasoline-based vehicles to electric vehicle as they are used to finding petrol pumps regularly while driving and the lack of electric charging infrastructure creates range anxiety. In the survey also this was the concern that most people had about inadequate charging infrastructure in the country.

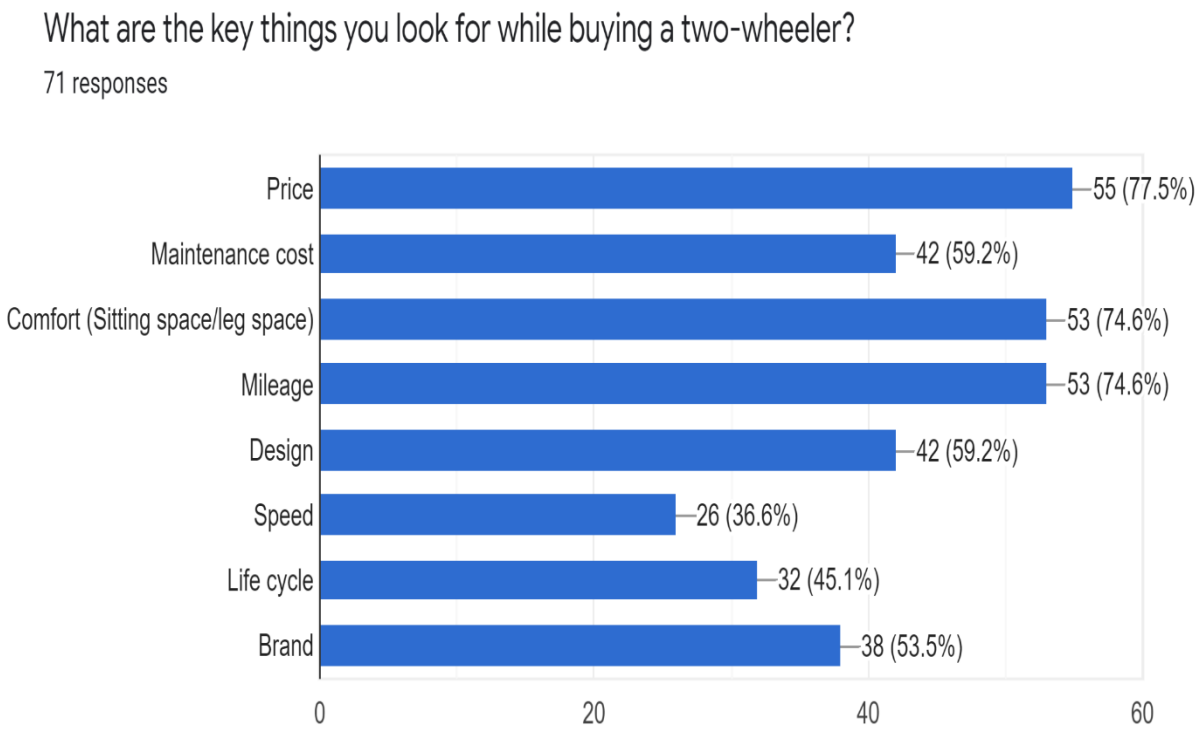


Some of the other concerns that people had were comparatively higher cost of electric vehicles, cost of charging the vehicle, Durability of the vehicle, the time it will take to charge up the vehicle, battery life of the vehicle, cost of a new battery, load carrying power of the vehicle, speed and acceleration issues, maintenance cost of the vehicle

Mission statement- To create a comprehensive EV charging infrastructure that caters to the EV owners charging needs across different formats, standards and location, including installing home chargers in residential venues and to provide clean and sustainable vehicles.



Product- The product that the company is going to launch will be full of new technologies and stylish design to attract the youth towards it as they are more likely to be the early adapters for the product. The vehicle will be fully electric and will come in three colors metal black, grey and navy blue. The top speed of the vehicle will be 85Km per hour and once fully charged the vehicle will be able to go 100Km without the need to be charged. There will be touchscreen dash board in the vehicle to give it a modern feel and 5 year battery life warranty will be given.



Segmentation- The competitive intensity is higher in the Northern and Southern regions of India due to growing technology and infrastructure projects in the electric two-wheeler market. Northern and Southern India states mostly make up the electric vehicle segment. The charging infrastructure is also easier to build in big cities initially so the company needs to focus in the cities like Bangalore, Chennai, New Delhi, Gurugram and Mumbai. The people in such big cities will be more open to switch from their traditional vehicles to new electric vehicle. It is already been observed that most of the electric two-wheeler business comes from these regions only. In the longer run though the company needs to focus on untapped markets like tier-2 cities which are growing fast with a good customer base.

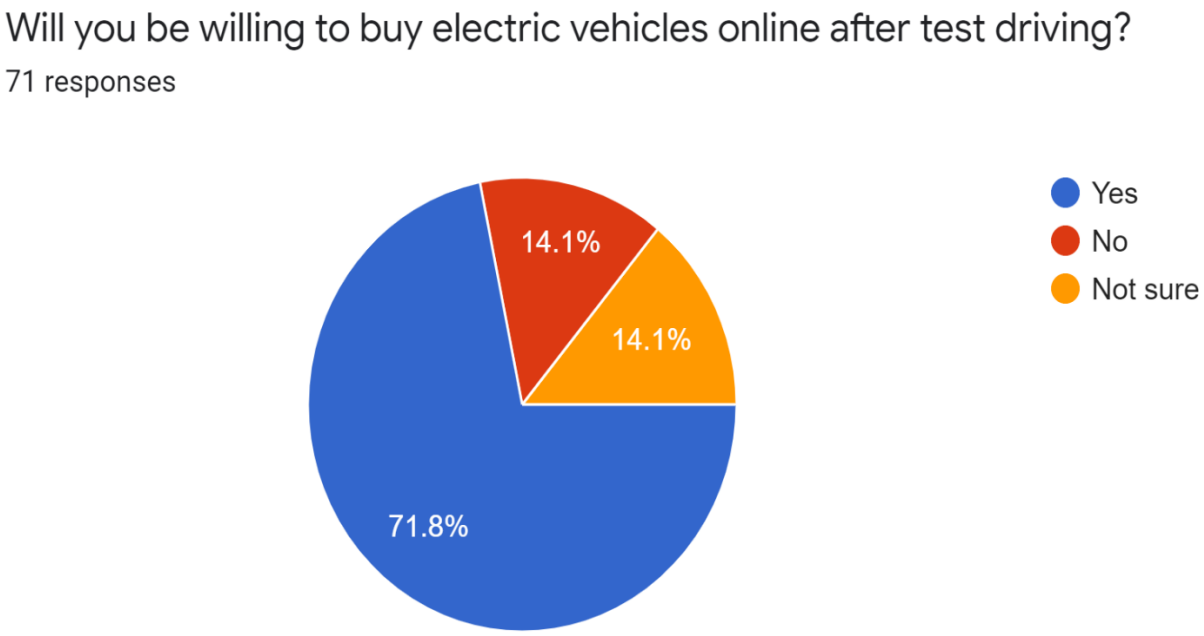
Targeting- the market segment that should be targeted is males and females aged between 16-40 as the younger population is more concerned about the environment and more likely to adopt new technologies. Electric vehicles being light weight is likely to be preferred by women who are students or working women. The vehicle will be targeted to people who have to commute within the city and have a household income around Rs.8,00,000 or more. The family composition of the target customers will be small as nuclear families are in the big Indian cities now days. College and school going youth will also be targeted as the vehicle will be full of new technologies which have not yet been seen in the two-wheelers.

Positioning- During the period 2019-2025 the electric two-wheeler market is expected to grow at a CAGR of over 44%. This growth rate is very exiting and will invite a lot of new players in the market, that is why it becomes really important for the company to position itself properly in the market. The company need to establish its vehicle as one of the premium and high-quality product in the country, the made in India factor can also be used to connect well with the Indian public. The vehicle needs to look apart from existing competition which can be achieved through putting a lot of funds in research and development and launching big marketing campaigns, which is possible for Tata group as they have deep pockets and will be proven as an added advantage.

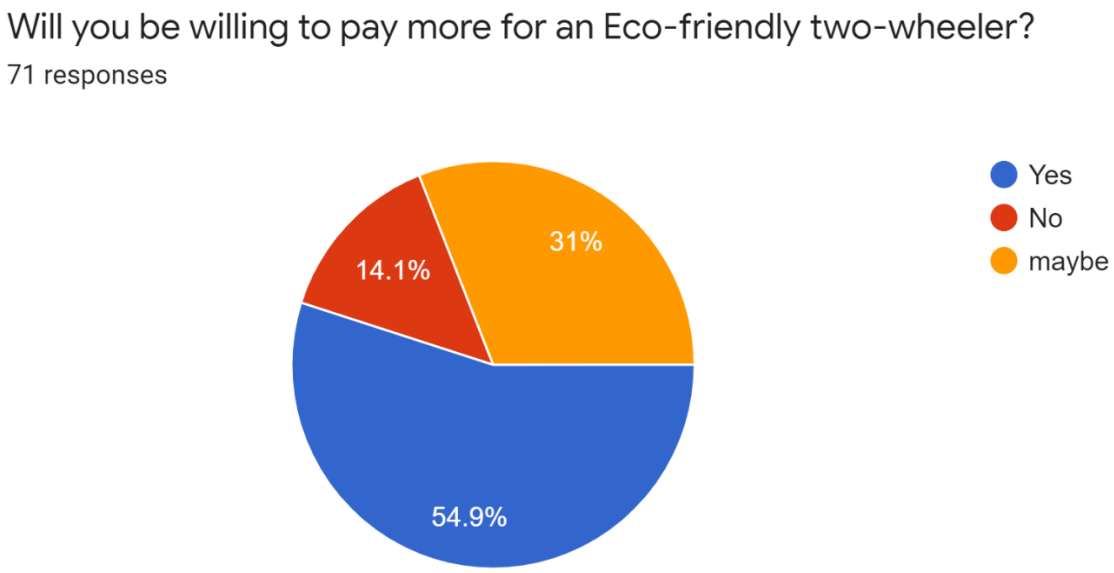
Distribution- electric vehicle being new to Indian market are harder to sell at dealership level because it's a lot different from a traditional vehicle and requires special knowledge about the product. The dealers are also unaware about what kind of questions the customer may ask about the vehicle as there is no prior experience of selling such complex product which is basically a tech gadget so all this new tech can be confusing for them to explain. Then there is the fact that electric vehicles are more expensive than a traditional gasoline vehicle which could be a make or break moment for the deal as justifying this price to the consumer is the key.

Tata group has number of retail outlets all around the country named croma are being used to provide a digital retail experience to its customers and these can be transformed into experience centre also where the important details about the vehicle and its specifications will be shared and a whole experience can be created there to attract the customers toward adopting e-vehicles.

Once the interest in e-vehicle is created in the minds of customers and required information is given to them in the beginning phase online orders can be taken.

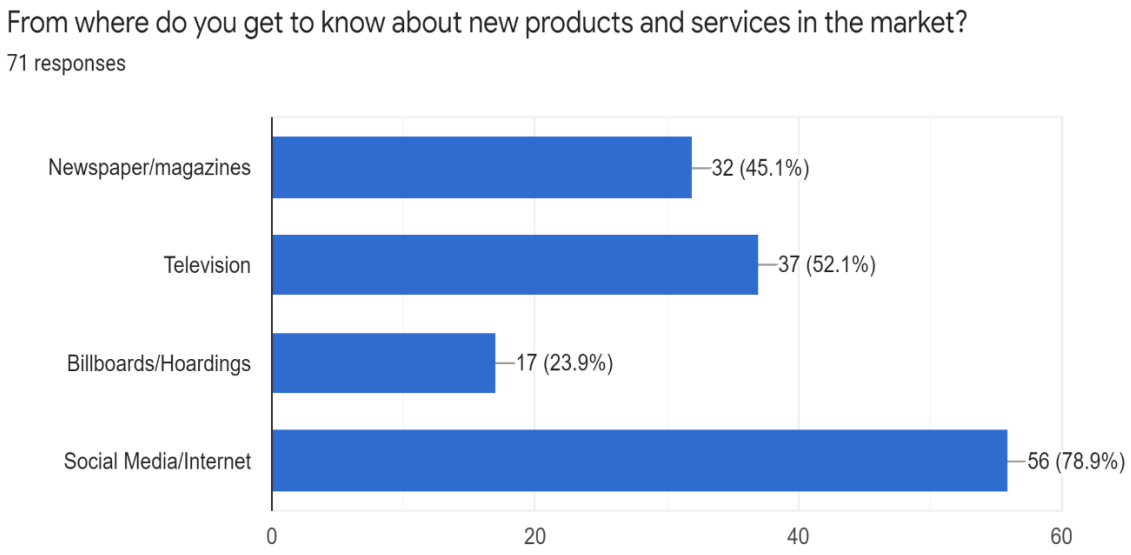


Pricing- until recently people were hesitant towards considering electric vehicles as a viable option because of high prices of electric vehicles but post covid world will be different as people are now appreciating the renewable and eco-friendly mobility more. As the survey also suggest that majority of the people were ready to pay more for eco-friendly two-wheeler and the amount, they were ready to pay more ranged from 5000 to 30000. So, the price of the product can be on a higher end if we are able to show people that paying that sum of money is actually worth it. Somewhere around Rs.1,20,000 would be a suitable price for the vehicle as it will be a very advance vehicle including latest technology and comes with a whole ecosystem.



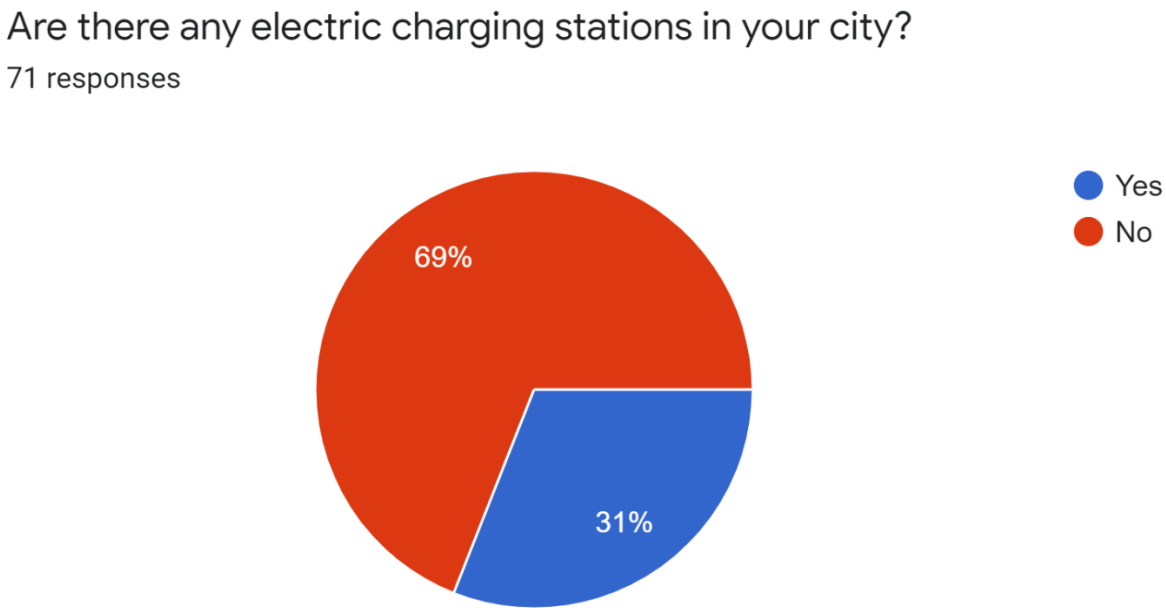
Promotion- Evangelism marketing will also be an important aspect here where company customers where products story will be advertised focusing on the new dawn of electric vehicles in the Indian market. The product will be promoted as personal vehicle for individual and not for whole family. In the initial phase the product will be focusing on innovation loving early adopters but in the later stages the promotion strategy will move towards masses. The public sentiment towards made in India products is also highly positive in the country which could be capitalized by utilizing the Tata groups legacy.

With each passing day the influence of social media is increasing and this trend is expected to continue so the advertising needs to keep social media marketing on the fore front of the promotion campaign.



Ecosystem- The company focus will not be on launching a product but a whole ecosystem. The success of electric vehicles will largely depend on an efficient charging infrastructure spread across the country so the EV users have seamless charging experience wherever they need to charge. In addition, it will also be necessary for EV charging ecosystem to go fully green by having green power to feed EV charger. As penetration of EV increases increase there will also be a need to manage power supply system to suit user habits and patterns, this is where tata powers capability of 100 years as a power utility with extensive experience in both renewal generation and distribution will play a key part.

The company intends to provide one stop, hassle free, end to end EV charging solution for personal, fleet and corporate EV owners. One a customer buys the scooter the company will take care of the end to end charging stations. The company plans to install around 700 EV charging stations across all major cities and key highway. With their end to end capabilities in power sector



Learnings

The project helped me understand the importance of various external and internal factors over the performance of a company and how big policy decitions taken by the governments can motivate large players to enter new businesses. The research worked helped me expand my knowlegdge about the consumer behaviour and while making the survey deciding the questions that needed to be there for the people to answer was a great learning experience as it was very important that the right questions were asked. The making of the market devlopment plan for the launch of electric two wheeler was a very intresting process and during the rearsch on the electric vehicle industry a lot of new insights were gained by me and this also made me appreciate the need of electric vehices for the betterment of the overall environment of thr planet.Various market concepts that were learned during the first year of studies were put in good use during the making of this report.

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