

Study of EV policy ecosystem for green automobile industry in India

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Abstract : The acceptance of EVs in India is predicted to offer multifarious advantages for the nation, such as decreasing pollution levels, boosting energy security with better balance-of-trade levels, and achieving global climate-change obligations. The increasing adoption of EVs may lower CO₂ emissions by 37 percent. It might also help restrict India's dependency on oil imports and decrease its large import expenses. India's dependency on oil imports is severe, at roughly 85 percent (as of FY19) while the previous import bill (FY20) was at a startling US\$102 billion notwithstanding a fall in crude-oil prices in the later part of FY20. Enhanced EV implementation will also enable India to fulfil the global commitments it has made to lower carbon emissions and increase cleaner sources of energy and transportation, including the Nationally Determined Contributions (NDCs) under the United Nations Framework Convention on Climate Change.

Key words : EV, Green Automobie

Introduction :

A clear policy direction is needed to speed up the adoption of electric vehicles in the nation. The National Electric Mobility Mission Plan (NEMPP) 2020, established by the Department of Heavy Industry (DHI) in 2013 as a roadmap for the speedier production and deployment of EVs in the nation, is an example of a recent policy decision to this effect. It is hoped that six to seven million hybrid and electric cars would be sold by the end of next year under this strategy. Approximately 400,000 units have been sold as of March 2020. This excludes three-wheeler EVs (e-rickshaws), which are dominated by unorganised sector sales and serve a population of approximately 60 million people daily, according to estimates of 1.5 million. In India's electric mobility market, e-rickshaws are now leading the way, offering a more cheap, environmentally friendly, and time-saving option for the last mile of a trip. Electric three-wheelers are one of the finest strategies to improve e-mobility in India because of their cheaper initial costs and lower average energy usage per passenger and per kilometre. Additionally, e-commerce giants like Amazon are looking at electrifying their delivery fleets.

Table 1: EV Sales in India (2014–15 to 2019–20)

| Segment | FY15 | FY16 | FY17 | FY18 | FY19 | FY20 |
|--------------|--------|--------|--------|--------|---------|---------|
| e-2-wheelers | | 20,000 | 23,000 | 54,800 | 126,000 | 152,000 |
| e-4-wheelers | | 2,000 | 2,000 | 1,200 | 3,600 | 3,400 |
| Buses | | | | | | 600 |
| Total | 16,000 | 22,000 | 25,000 | 56,000 | 129,600 | 156,000 |

Sources: CarandBike, Inc42 Media, AutocarPro, Bloomberg Quint

It was announced in April 2015 as part of the NEMMP 2020 that the Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles in India (FAME India) Scheme will be implemented. FAME-I, the initial phase of the programme, was originally scheduled to run for two years, but was extended to four years, ending on March 31, 2019. Demand generation, technological platform, pilot project, and charging infrastructure were all part of this phase's emphasis. A large amount of the INR 5.29 billion set up for this programme was designated as a demand incentive (approximately INR 3.43 billion). Customers were provided a demand-incentive in the form of a decreased purchase price in order to encourage more people to use the product.

From the 1st of April 2019 through the 31st of March 2022, Phase-II of the FAME Scheme will be in effect. In contrast to the little investment for FAME-I, which was only used to 60 percent, FAME-II got a substantial expenditure of INR 100 billion. This means that FAME-II will cost about 19 times as much as FAME-I did to use. The government's view of FAME-I as a method to set the scene for greater EV mobility may be ascribed to the fact that FAME-II would thereafter attempt to promote EV adoption throughout the nation. This is a large budget increase for an ongoing programme. Also, it shows the government's commitment to the electric vehicle industry, which in turn encourages businesses and researchers to invest in the area.

While this may be the case, it is also likely that the increase in budget is arbitrary, since the predicted financial outlay lacks clarity on both expected outcomes and how to spend the monies. The announcement of the plan was met with a mixed reception from industry professionals when it was first made public. EVs with advanced chemistry batteries and those used for public transportation are eligible for FAME subsidies. In addition, there are price and speed limits that must be fulfilled in order to get rewards. FAME-requirements II's change somewhat from those of FAME-I. More than 90 percent of electric bikes are expected to lose subsidies under FAME-II, according to some analysts. EV sales are negatively impacted as a

result, and this is exacerbated by the fact that electric two-wheelers equipped with lithium-ion batteries are double the price of those equipped with the more common lead-acid battery, which is not included in FAME-II.

Electric two-wheelers and three-wheelers make up the bulk of India's EV sales, while the four-wheeler market is still relatively modest. The adoption of EVs for personal mobility and four-wheelers will continue to be delayed because of the lack of incentives for their use. This is seen as a drawback of FAME-II since it does not provide incentives for the whole mobility market, which might have an influence on India's long-term adoption of EVs. FAME-II is a well-intentioned plan, but the unexpected inclusion of rigorous requirements may lead to failure. A staggered implementation and sunset provisions for the benefit of manufacturers, investors and consumers should have been introduced.

Furthermore, even if FAME-II achieves its stated goals, backed by state-level measures, it would still be inadequate for the EV industry. An all-encompassing and more consistent approach to policymaking is needed to solve this issue and provide an enabling environment for the industry. "Demand incentives" are the primary source of government assistance, with little effort put into upgrading the infrastructure. An ecosystem of research, production, storage, and charging infrastructure is needed to stimulate the use of electric cars in India while also disincentivising the usage of traditional fuel-powered vehicles. As India transitions from COVID-19 relief to COVID-19 recovery, the government has the chance to take stock of the post-pandemic shifts in customer preferences and economic stimulus requirements to assist propel the EV industry holistically.

A strategy for moving ahead

The EV industry may benefit greatly from government support in the field of innovation. Electric vehicles (EVs) need enough assistance in the areas of manufacturing innovation, conversion kit development, and end-of-life vehicle management. Non-financial incentives, as well as a strong emphasis on creative entrepreneurs, are needed to achieve this. Electric vehicle batteries, which account for about half of the vehicle's total cost, are still mainly imported. Import dependency must be reduced if we are to have a future dominated by electric vehicles, but it must be done in stages if we are to succeed. Because of the pandemic's impact on imports, this is a good time to reevaluate import policies. Battery recycling and end-of-life (EOL) management, as well as EV retrofitting, must be funded by the government if it hopes to grow

battery manufacture in India under the National Mission on Transformative Mobility and Storage.

Personal mobility is predicted to rise because of the pandemic's dread of public transportation. A short-term incentive programme or increased subsidies for electric vehicles (EVs) might be useful in this case. Pollution levels will be reduced as a result (as a result of fewer people using personal ICE cars), and EV supply and demand will rise, leading to price parity between electric and internal combustion engine vehicles in the long term.

Because EVs cost more than twice as much as ICE cars in the same class, the former is the less popular choice. Consumers may be able to utilise the COVID-19 recovery stimulus to assist fill the gap in their income. ' In addition, the long-term advantages of electric vehicles, such as decreased pollution and pure air, may be emphasised, as was seen during the nationwide lockdown. It is possible to persuade customers to pay the higher price as a way of encouraging them to contribute to the health and well-being of their families. It's possible that FAME-advantages II's might be extended to a larger variety of electric cars in the near future by the government. Indian policymakers may gain insight from other nations' experience with EV incentives. Until China's economy began to take up, buying incentives were offered without constraints. For the first 200,000 units, the United States gives tax exemptions and credits. Norway has managed to keep the pricing of electric cars on par with conventional fuel vehicles of comparable size thanks to significant tax incentives for the EV sector. In spite of the fact that the Indian government's quality concerns are justified, they may be implemented in a gradual way and are likely to be reinforced by the market in the long term.

Skills development for electric vehicle (EV) workers is an essential opportunity. Due to a pandemic and the subsequent statewide lockdown, many informal labourers would lose their steady source of income. It is imperative that the government offer these people with the chance to gain new skills relevant to the electric vehicle industry. Because of the lockout, city residents are more aware of the dangers of traditional car exhaust emissions. Increased EV production will lead to additional employment, too, as will efforts to build "self-reliant India." In order to retrofit EVs, you'll need a distinct set of expertise, including knowledge of ICE technology. ICE technicians may take advantage of this wonderful upskilling opportunity.

The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Collaboration (BoBITEC) is a great opportunity for India to expand its EV cooperation with Asian countries (BIMSTEC). India's electric vehicle market is mostly driven by two- and three-wheelers, which are common sources of transportation across Asia. Developing reskilling courses with these nations, where unemployment is high owing to the pandemic shutdown, might be an option for India as well. In most BIMSTEC nations, electric vehicle (EV) adoption is in its infancy. The Electric Vehicle (EV) sector is still in its infancy; the government is preparing for its National Electric Vehicle (EV) Policy and for receiving foreign direct investment (FDI) (FDI). In Bangladesh, like in India, two- and three-wheelers are the most popular vehicles, but the country's charging infrastructure is severely lacking. Over 200 cab drivers in Bhutan have shown an interest in acquiring electric vehicles. In the long term, working together to build a stronger value chain and a better electric vehicle (EV) environment would be advantageous. Charging stations, EV conversion kits, and other similar essentials must be explored by India and its BIMSTEC peers for collaboration and trade.

Conclusion

A clear government policy plan is urgently required to combat the pandemic's negative consequences on the population and the economy. The time has come for the government to concentrate on areas that have lagged even before the outbreak. The electric vehicle industry offers the government a chance to help the economy recover while also benefiting from greener transportation. Investing in the EV sector's training, infrastructure, and manufacturing may help the economy get back on track. In India, the move to clean mobility will be sped up by this rebound investment in the industry.

At this point, the government should begin the long-overdue process of retraining workers in environmentally friendly fields like electric vehicles (EV). People who have lost their employment as a result of the epidemic will not only be helped, but they will also be given a more stable and secure professional path. It is also vital to concentrate the stimulus on helping small-scale firms and innovation, which will allow for a more ground-up and comprehensive approach to the promotion of electric vehicles in India. In addition, funds should be allocated to improving connections with nations throughout the world that are launching their own electric vehicle industries.

The country's electric vehicle industry must be able to expand holistically and establish a strong EV value chain. Government's goal of increasing local industry and self-sufficiency will be further supported by this. An electric vehicle (EV) transition in India may boost local

manufacturing, reduce reliance on oil and consumption, and pave the way for a worldwide sustainable transition. In order for the EV industry to reach new heights, the government must use the recovery stimulus as starting capital, making it attractive to private investors, who can then supply the operating capital for the sector.

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