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Will an all-EV strategy for India be suitable enough?

Tune of preparedness in terms of electricity demand auguring from an all-EV strategy quintessential for India. Do we have apt preparedness?



ON-POINT



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ON – POINT QUERY: Tune of preparedness in terms of electricity demand auguring from an all-EV strategy quintessential for India. Do we have apt preparedness?

The government ambitious plans for shift to electric vehicle by 2030 has caught the eyeballs of industry players and the policy makers. The government in India is firmly disposed towards bringing in a low/ reduced carbon footprint in India's mobility scenario by 2030 and EVs is pivotal to government plans. Hence, the country aims big as government of India approved the FAME-II scheme with a fund requirement of INR 10,000 crore (USD 1.39 billion) for FY'2020–22 giving an initial push towards increasing electric vehicle fleet in India. However, the pace of electric vehicle market growth has been on slower side owing to the lack of policy support and infrastructure challenges. As per the estimates, EV sales is less than 1% of total passenger vehicle sales in India as on FY 2020. Moreover, the onset of Covid-19 has also mandated the government to rework at the strategies for quick rollout of the electric vehicle on the roads.

While the transformative push for electric vehicles has ushered investment opportunities for Indian and global players, it also presents challenges along with opportunities. Ever wondered what impact electric vehicles will have on the demand for electricity in India? As per the estimates of Niti aayog, India can reduce 156 Mtoe in diesel and petrol consumption for year 2030 by pursuing shared, electric, and connected mobility future. Considering 156 Mtoe being replaced by electric vehicles, the estimated power demand should logically and arguably match the replaced MToEs. By arithmetic, 156 MToE is equal to 11.62 TWh. This shows that the EV adaptation shall lead to a surge in demand by overall replaced MToEs i.e., 156 MToE for the year 2030. Consequently, when the said MToEs are transformed into TWh with the above-mentioned conversion matrix, India might need nearly 1800 TWh surge in electricity demand. In terms of GW, this stands close to 200 GW additional demand by 2030 originating from usage of EVs.. This looks unreal and unpragmatic. Even considering 25-30% of this demand translated into a reality we still would need good 50-60 GW of electricity demand prospering from EV penetration. Therefore, ideally while the push for EVs are the welcome move, but the planning must encompass holistic viewpoint covering key enablers such as charging infrastructure, battery production and market development and last but not the least the surge in electricity demand.

Moreover, as the EV market is at the nascent stage, country lacks the EV charging infrastructure. An effective charging infrastructure shall be required in order to create the ecosystem for EV to operate smoothly. The challenge is that AC charger takes around six hours to charge an EV, DC chargers are faster and take around 40 minutes to one hour to fully charge a vehicle. Hence, in order to cater to the demand of EV charging, multiple charging stations shall be required. For example, typically, one petrol pump is required in every 5 sq km area. So, to reduce the waiting time of the consumer, 2-3 charging stations shall be required with the mix of slow and fast charging stations within the same area that require the investment tune of nearly INR 2-5 crores. Moreover, the lack of manufacturing base in India has made cost of battery expensive that make EV a costlier proposition to buy even when there is a lack of awareness around the operability.

Hence, the uptake of EVs have been the concerns of reliability and affordability due to the higher upfront pricing and lack of charging stations. The government needs to focus on the availability of power to bring it in par with the actual load requirement. Moreover, the authorities should also keep the cost in check in terms of infra setup, considering that infrastructure plays a pivotal role in pushing electric vehicle adoption in the country. Currently, the EV sector is trapped in a cycle—manufacturing and charging stations remain limited due to a lack of demand, and the demand is poor because of a lack of economies of scale, keeping prices up and limiting the availability of charging stations. So, unless the government take care of consumer and industry player interest, the demand of EV shall remain poor.

To learn about 2 & 3 Wheeler Electric Vehicle Market in India & Future Outlook - 2025, please visit:

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The life of a man consists not in seeing visions and in dreaming dreams, but in active charity and in willing service

- Henry Wadsworth Longfellow

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