100% electric vehicle mobility by 2030: Is India really prepared for it?

With only 206 community charging stations across India, there is a significant chance of an EV owner getting stranded in the absence of a nearby charging station.

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A staff member poses with a charging plug for an electric car. Reuters

By Epica Mandal Sarkar and Ashish Nigam

The government aspires for a nation with 100 per cent electric vehicles (EVs) by 2030. In this regard, in an interview with Economic Times, Union Minister Piyush Goyal said, “To achieve this ambitious target, the government is formulating schemes, which will allow citizens to purchase EVs on zero down payment, allowing them to pay out of their savings on expensive fossil fuels.”

Though this feat may seem achievable on paper, it would be interesting to see how this mission is executed. Some significant strides have been taken towards this aspiration in the past through the launch of NEMMP (National Electric Mobility Mission Plan, 2013) and FAME (Faster Adoption and Manufacturing of Hybrid & Electric Vehicles, 2015). Under NEMMP, 6–7 million EVs/hybrid vehicles have been envisioned to be deployed on Indian roads by the year 2020, while under FAME, the government has been setting aside money to subsidise EV purchases on an annual basis. For the year 2017-18, Rs 175 crore has been allotted.

So far, the government has allotted a meagre sums of Rs 10 crore (2015-16) and Rs 20 crore (2016-17) towards installing dedicated charging infrastructure for public buses. While the allotted money may be adequate for creating charging infrastructure for government-owned electric buses at bus depots, it would be encouraging to see the central government roll out concrete plans to fund charging infrastructure at public places (areas that accommodate large volumes of vehicles) as well.

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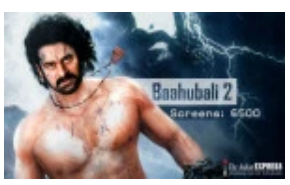

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fiscal stood at 22,000 units as compared to 16,000 for FY 2014-15. Although the sales of EVs have been on the rise, achieving the targets mandated under NEMMP, i.e., 6-7 million vehicles by 2020, seems to be difficult in the absence of various aspects, especially an ecosystem that provides ample charging station options and a robust grid that can accommodate the unpredictable load requirements of EVs.

Range anxiety – the biggest deterrent of EVs

According to a study conducted by CSTEP, electric cars (Mahindra e2o) and buses (Ashok Leyland e-buses) can go up to 120 km, while the 2 and 3-wheelers (Hero EVs) can go from 70 km to 90 km. As EVs today provide lesser mileage compared to their counterparts that run on conventional sources of energy, range anxiety is a major concern among vehicle owners.

With only 206 community charging stations across India, there is a significant chance of an EV owner getting stranded in the absence of a nearby charging station. This uncertainty forces existing EV owners to commute only within cities. Quite evidently, if India is to become a 100 per cent EV nation by 2030, all concerned infrastructure developers and policy makers will have to plan for the installation of sufficient public EV charging infrastructure to facilitate hassle-free commuting.

Workplace, public transport parking lots, multiplexes and residential townships – low hanging fruits

Large private work places and cooperative housing societies (large private establishments), which are regularly maintained, could be targeted first for installing charging stations. Simultaneously, public transport parking yards could be retrofitted with charging stations.

Charging stations available today can be categorised intro three types based on speed of charging. Level 1 charging (provides 120 V AC) requires 8 hours to completely charge an electric car, whereas level 2 charging (provides 240 V AC) requires 3–4 hours and level 3 charging (DC fast charging) requires approximately 37 minutes for the same purpose.

Some establishments, which could immediately adopt a combination of Level 1, 2 and 3 charging stations are as follows:

* Work places in tech parks employ thousands of people who regularly drive to work; their cars are generally parked for at least 8 hours a day. Installing level 1 charging stations in such work places could be a great incentive.

* Public buses in depots remain unused for about 8 hours during the night and a few hours in the day. A combination of level 1, 2 and 3 charging stations in public transport utilities could expedite the adoption of electric buses.
Residential townships, where cars are parked for long hours, could also be considered for installation of level 1 charging stations.

* Multiplexes, which are visited by people for a significant number of hours, could install level 2 charging stations.

Schedule 7 of the Companies Act 2013 allows corporates to invest in activities that promote sustainability. Corporates could take advantage of this opportunity to justify the costs arising from installing charging stations as investments towards Corporate Social Responsibility compliances.


the key features


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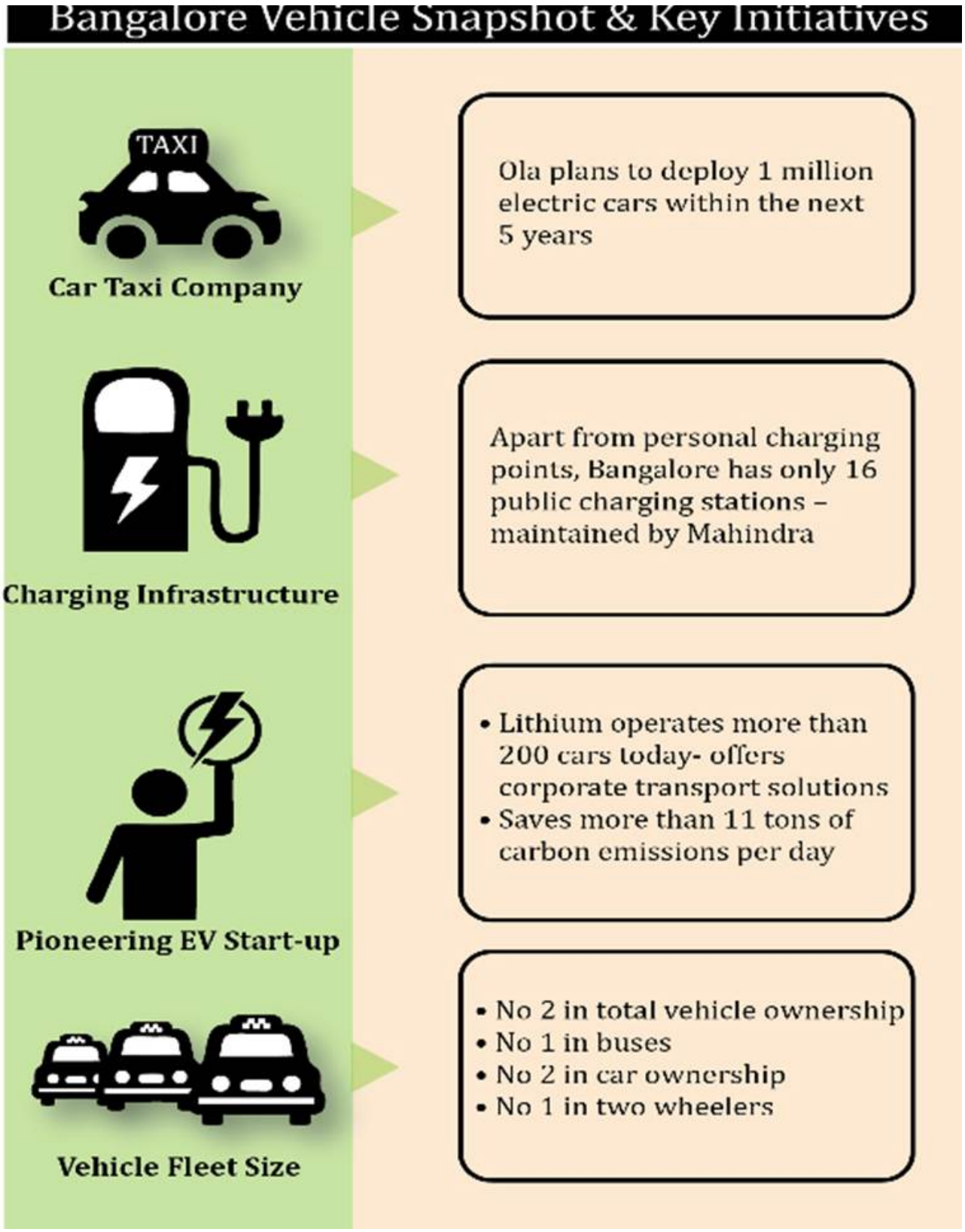

Source: MapsofIndia, Indiastat and other media sources

New and ongoing initiatives in Bangalore (mentioned in the image above) highlight some of the pioneering steps being taken by the private sector in the EV sector. It would be heartening to see parallel infrastructure development efforts from the central and state governments towards EVs in the near future.

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