Uttar Pradesh Electric Vehicle Manufacturing and Mobility Policy 2019
(English Translation)

Background

Electric Vehicles are widely gaining market across the globe. Due to high pressure and fast depletion of fossil fuels, electric mobility has become necessary to reduce impact of transportation on environment and climate change. The recent Paris Agreement enforced in November 2016 provides to limit Carbon dioxide emissions to control global warming and threats of climate change. Electrification of automotive industry aims at achieving the set objectives by decarbonising the transport system.

Indian automobile industry is one of the largest growing industry in the world, and the sector promises further growth in manufacturing sector driving country's economic growth. Since presently the automobile industry largely contributes to pollution, the government is promoting electric mobility towards this.

In 2018, the global electric car fleet exceeded 5.1 million from 2 million in the previous year and almost doubling the number of new electric car sales. With rapid expansion in electric mobility, the private and public charging infrastructure has been continuously expanding. Annual growth rate of publicly available charging infrastructure was higher than the electric car stock growth rate on global level.

The Electric Vehicle market in India is set to go enormous and is estimated to be around 80 lacs by 2020, and approximately 5 crores by 2030[1]. Prices of Lithium Batteries are rapidly going down, thereby making EVs cheaper. Electric Vehicles Storage Opportunities (in GW) in India is anticipated to grow at CAGR 44% till 2022[2].

In a recent report published by FICCI and Rocky Mountain Institute, it has been estimated that India's shift to shared, electric and connected mobility could help save up to INR 20 Lakh Cr in oil imports and nearly 1 Giga Tonnes of carbon dioxide emissions by 2030. The report further states that the sales of 4-wheel EVs is expected to exceed that of internal combustion engines (ICEs) in India by 2027[3].

In order to boost the manufacturing of hybrid and electric vehicles in India, Government of India has launched The Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME Scheme) in 2015, under National Electric Mobility Mission Plan (NEMMP) with an aim to promote eco-friendly vehicles in the country. It has set an ambitious target of 6-7 million sales of hybrid and electric vehicles year on year from 2020 onwards in India[4], thereby creating wide opportunities in EV manufacturing. Extending the Scheme, Government of India has

[1] NITI Ayog and RMI analysis, '*Enabling the transition to Electric Mobility in India*', November 2017. Refer https://www.rmi.org/wp-content/uploads/2017/11/report_electric_mobility_india_FICCI_RMI.pdf
[2] Enincon research, IESA. Refer https://enincon.com/wp-content/uploads/2017/07/Flyer-EV-Market-in-India_enincon.pdf
[3] Refer http://ficci.in/PressRelease/2938/ficci-press-nov20-smart2.pdf
[4] Press Releases: Ministry of Heavy Industries & Public Enterprises, Refer http://pib.nic.in/newsite/PrintRelease.aspx?relid=154119

come up with FAME II, and National Mission on Electric Mobility & Battery Storage has been launched.

Indian automobile industry became the 4th largest in the world by producing a total of nearly 30.92 million vehicles including passenger vehicles, commercial vehicles, three wheelers, two wheelers in April-March 2019 as against 29.09 million in April-March 2018 registering a growth of 6.26% over the same period last year. Domestic automobile production increased at 7.08 % CAGR between FY 2013-18.

India is also a prominent auto exporter where automobile exports grew 15.54% during April-March and now the country is also on course to become the third largest producer of car in the world. Transforming this large sector, Government of India is determined to curb polluting emissions from automobile industry and envisions to switch to 100% hybrid or electric vehicles by 2030.

1. Advantage Uttar Pradesh

Since Uttar Pradesh is country's largest consumer base, the Electric Vehicle market is set to boom in the State. Uttar Pradesh is country's 4th largest economy, contributing nearly 8% to country's GDP. Uttar Pradesh is amongst the top 5 manufacturing state and has highest number of MSME units with strong foothold in automobile industry.

1.1. Enabling Infrastructure

Strategically located along the Golden quadrilateral, the State is well connected to major national and international airports. 57% catchment area of the Eastern Dedicated Freight Corridor (EDFC) passes through UP and connects to the eastern part of the country. Similarly, 8.5% catchment area of Western Dedicated Freight Corridor (WDFC) falls in UP. Nonetheless, the upcoming international airport at Jewar will be country's largest international airport in North India.

Known as the State of Expressways, the existing Yamuna and Agra-Lucknow Expressway connect the NCR to the State capital. To add to this advantage, Poorvanchal Expressway, Bundelkhand Expressway, is coming up to ensure seamless connectivity to eastern and central India. The NW 1 waterways connecting Allahabad to Haldia sea port is a unique project connecting the State export hubs to the eastern ports. With an existing strong logistics infrastructure, Uttar Pradesh is coming up multi modal logistics/ transport hubs at Noida, Boraki and Varanasi.

1.2. Large Market Base

Home to nearly 16.5% of India's population, the state is a promising market for automobile industry. State ranks 3rd in number of vehicles registered in India, sharing

10.3% of total vehicles registered in India (2012). Almost 81% increase in vehicle registration was accounted in the state between 2010 and 2015[5].

Demand of the motor vehicle can easily be gauged by the no. of registrations for authorised driver in the state. No. of authorised driving licenses issued by the Transport department in the state was nearly 1.39 million in year 2015[6], which makes it one of the largest consumer base in the country.

With a growing middle class the automobile industry in India is all set to become the largest sector in Indian economy. With 34% of Indians living in urban areas, India is rapidly urbanizing. The decadal growth rate in urban population is nearly 31% (2001-11). With 44.4 million urban populations, Uttar Pradesh constitutes nearly 12% of total Indian urban population. Uttar Pradesh has a high percentage of urban population to total population in the State at 22.27% (Census 2011) and is continuously rising.

As the cost of running the EVs is as low as INR 1 per km and that of petrol vehicles is about INR 5.5 per km, it shows a great running economics for the owners of EVs. Given to the transition process to boost electric vehicle mobility, Uttar Pradesh has been the 3rd largest beneficiary under the FAME scheme (2019)[7], and has the highest registered EVs amounting to 1.39 Lakh[8].

The State's capital - Lucknow is one of the 10-cities identified for pilot project of Multi-Modal Electric Public Transport under FAME India Scheme of Government of India[9]. The e-rickshaw market is already booming in the State, and transition to EVs in 2-wheelers, 4-wheelers and specifically in public transportation sector will be witnessed gradually.

1.3. Key Investment Zones

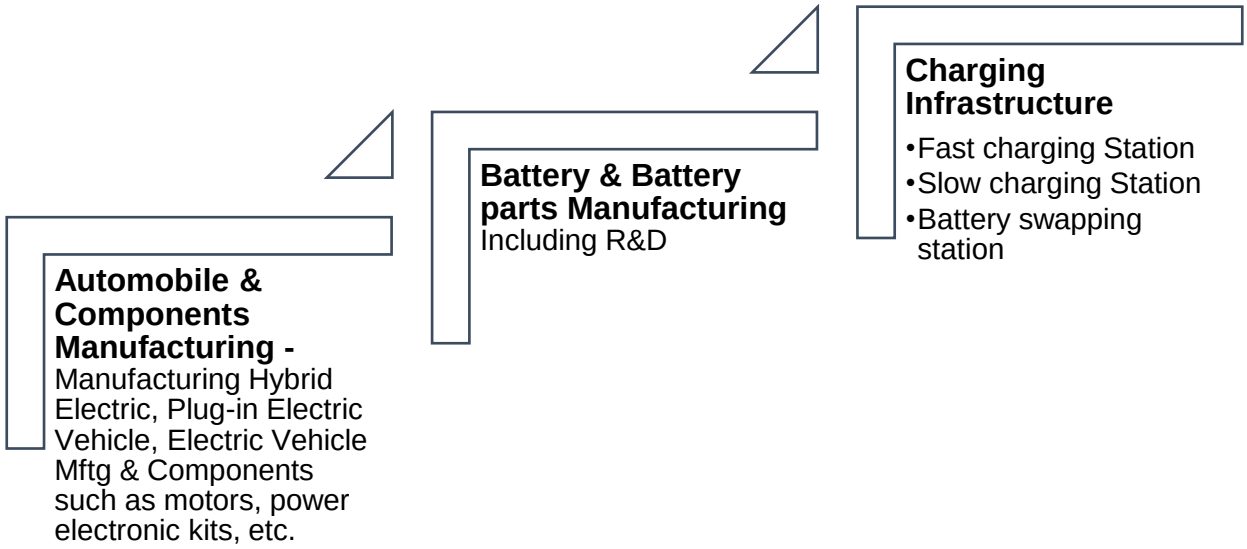
The industrial corridors in the NCR region, including Noida Industrial Area, Greater Noida Industrial Area and Yamuna Expressway Industrial Area and state capital Lucknow are major contributors to the growth of automobile industry in UP.

Uttar Pradesh shares a considerable part of NCR Cluster of Automobile & Automobile components manufacturing hub[10], and hosts manufacturers including India Yamaha Motors, Honda Siel Cars India, New Holland Agriculture/CHN, etc. at Greater Noida, and Tata Motors at Lucknow. In 2016, Tata motors launched Hybrid Electric buses for which the module was designed in their Lucknow plant.

Besides, given to the large SME manufacturing base in automobile sector, Kanpur, Lucknow, Noida, Ghaziabad, Aligarh, Agra, Meerut, Jhansi are other investment zones. Other zones involved in manufacturing battery in the State are located across Greater Noida, Ghaziabad, Fatehpur, Kanpur, Lucknow, Gorakhpur, etc.

[5] Motor Vehicles - Statistics as on 31-03-2015, Ministry of Roads, Transport & Highways.
[6] Data accessed from http://uptransport.co.in/license.aspx
[7] FAME Dashboard http://www.fame-india.gov.in/# (Accessed on 10-1-2018)
[8] Response to Lok Sabha Question, July 2019
[9] Press Releases: Ministry of Heavy Industries & Public Enterprises, Refer http://pib.nic.in/newsite/PrintRelease.aspx?relid=174902
[10] http://www.makeinindia.com/article/-/v/india-s-automobile-hubs

1.4. Key Opportunities



2. About Policy

Towards this, the Uttar Pradesh Electric Vehicles Manufacturing and Mobility Policy 2018 provides attractive fiscal and non-fiscal to attract investments to promote Electric mobility in the state. The policy also promotes early adoption of EVs in the state as well as create demand in the sector. Therefore, the policy contains 3-components:-

(1) Manufacturing

(2) Charging infrastructure

(3) Demand Creation.

This policy complements the UP Industrial Investment and Employment Promotion Policy (UP IIEP), 2017. Besides the department of infrastructure & industrial development, department of transport, department of power and department of urban development play pivotal role in the implementation of this policy.

2.1. Objectives of the Policy

- To promote adoption of EVs in state to create greener environment in the state.
- To establish Uttar Pradesh as preferred destination for attracting investments in manufacturing of Electric Vehicles (EV).
- To create employment opportunities both from supply side and demand side of Electric Vehicles.
- To create a conducive environment for shift from Internal Combustion (IC) engines to Electric Vehicles (EVs).

- To encourage use of Hybrid EVs (HEVs) and Plug-in-electric vehicles (PEVs) during the transition phase.
- To develop human capital and augment the power capacity to meet the needs of the industry promoting electric mobility in the state
- To develop a strong and sustainable ecosystem for battery management, right from production stage to disposal stage

2.2. Policy Targets

1. To attract investments of over INR 40,000 crore in the next 5 years across the electric mobility ecosystem with an employment potential for 50,000 people
2. To launch 1000 electric buses (BEVs/FCEVs), and achieve 70% EV public transportation on identified green routes in identified 10 EV cities by 2030.
3. To phase out all conventional commercial fleets and logistics vehicles and achieve 50% EV mobility in Goods Transportation in identified 10 EV cities by 2024 and all cities by 2030.
4. To roll out nearly 10 lakh EVs, combined across all segment of vehicles, by 2024.
5. To bring in manufacturing units of high density power storage of at least 5GWh capacity in the next 5 years for smooth electric mobility
6. To set up nearly 2 lakh slow and fast charging, swapping stations by 2024

2.3. Definitions

2.3.1. **Electric Vehicle** (EV) refers to all automobiles using an electric motor that is driven by either batteries, ultra-capacitors, or fuel cells. This includes all 2-wheeler, 3-wheeler and 4-wheeler Hybrid Electric Vehicles (HEV), Plug in Electric Vehicles (PHEV), Battery Electric Vehicles (BEV), and Fuel Cell Electric Vehicle (FCEV).

2.3.2. **Electric Vehicle Battery** refers to all energy storage systems used in the defined EVs above. This includes Lithium ion batteries, nickel metal hydride batteries, lead acid batteries, ultra-capacitors and even fuel cells (direct methanol, alkaline, phosphoric acid, molten carbonate, solid oxide and reversible fuel cells).

2.3.3. **Electric Vehicle Manufacturing units (EVMUs)** – All manufacturing enterprises manufacturing Electric Vehicles as defined in this policy (section 2.2.1.) will be eligible for incentives and concessions under this policy.

2.3.4. **EV Battery Manufacturing or Assembly Units (EBUs)** – All EV battery or fuel cell manufacturing (as mentioned in section 2.3.2) will be eligible for incentives and concessions under this policy.