



UP POWERING NEW INDIA

INVESTORS SUMMIT 2018

21-22 February

ELECTRIC VEHICLE MANUFACTURING AND UTTAR PRADESH





7



7





NEED FOR ELECTRIC VEHICLES

Electric Vehicles are widely gaining market across the globe. The automotive industry is rapidly shifting from traditional fuel based technology to eco-friendly technologies. Due to high pressure and fast depleting 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 of decarbonising the transport system.



GLOBAL SCENARIO

- Market for Electric Vehicles (EVs) is expanding and new registrations for Electric Vehicles crossed over 750,000 sales worldwide, hitting a new world record in 2016.
- The global Electric Car stock doubled between 2015 and 2016 and surpassed 2 million vehicles in 2016¹.
- With rapid expansion in electric vehicles on road, 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 in 2016 on global level.



¹IEA Analysis: Global EV Outlook 2017.



INDIAN SCENARIO

Indian automobile industry is one of the largest growing industries in the world, and the sector promises further growth in manufacturing sector driving country's economic growth.

a. Large Automobile Base

- It is estimated that more than 25 million vehicles were produced in FY2017, reporting a jump of 5.41% from the previous fiscal.
- This includes passenger vehicles, commercial vehicles, three wheelers and two-wheelers.

Since the industry is seen to largely contribute to pollution, the government has been aggressively trying to control the situation. Promoting Electric Vehicles is a core component of this endeavour.

b. Government Initiatives

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 India², thereby creating wide opportunities in EV manufacturing.
- As on January 2018, under Union Government's FAME scheme, incentives worth INR 211.74 Crores have been disbursed, enabling 1,77,214 vehicles on roads and saving 21.3 lac litres of fuel and reducing 104553 kgs of Carbon Dioxide per day³.
- The Government of India is determined to curb pollution emissions from automobile industry and envisions to switch to 100% hybrid or electric vehicles by 2030.

²Press Releases: Ministry of Heavy Industries & Public Enterprises

³FAME Dashboard <http://www.fame-india.gov.in/#> (Accessed on 10-1-2018)

c. Booming EV Market

The Electric Vehicle market in India is set to go enormous, and is estimated to be around 80 Lakhs by 2020, and approximately 5 Crores by 2030⁴. Prices of Lithium Batteries are rapidly going down, thereby making EVs cheaper. Presently, average cost of a Lithium Battery is around INR 19,500/kWh (2017-18), which is estimated to go down to INR 9,945/kWh⁵ by 2022-23. Electric Vehicles Storage Opportunities (in GW) in India is anticipated to grow at CAGR 44% till 2022⁶.

Estimated Annual Market size of EVs in different segments in India				
Segment / Year	EV Motorcycles and Scooter	EV Auto rickshaw	EV Cars & Jeeps	Total
2020	73,52,000	6,46,000	26,000	80,24,000
2025	1,40,35,000	23,64,000	15,92,000	1,79,91,000
2030	2,65,14,000	40,72,000	1,59,11,000	4,64,97,000

Source: NITI Ayog and RMI Analysis, November 2017

ADVANTAGE UTTAR PRADESH

Uttar Pradesh is access to country's 4th largest state, and 3rd largest economy. Home to 16.5% of India's population, Uttar Pradesh is amongst the top 5 manufacturing state and has 2nd highest number of MSME units. 13.26% growth in exports (CAGR) recorded in the state in last 5 years (2012-17).

a. Enabling Infrastructure

Strategically located along the Golden quadrilateral, the State is well connected to major national and international airports.

- Uttar Pradesh has largest railway network in India spanning over 8,949kms. The upcoming Western Dedicated Freight Corridor (WDFC) that stretches from Dadri in Ghaziabad to Jawaharlal Nehru Port at Mumbai, is set to boost the economic activities in the state by reducing the transportation time to ports.
- Similarly, 57% of the Eastern Dedicated Freight Corridor (EDFC) connect western region to the eastern part of the of the country passes through Uttar Pradesh.
- In order to derive maximum value out of the WDFC and EDFC projects, the state is coming up with integrated manufacturing clusters, logistics and industrial integrated townships in cities like Greater Noida, Allahabad, Kanpur etc. along the corridors.

⁴NITI Ayog and RMI analysis, 'Enabling the transition to Electric Mobility in India', November 2017.

⁵Society of Manufacturers of Electric Vehicles Estimate, November 2017.

⁶Enincon research, IESA.

- The existing logistics infrastructure in Uttar Pradesh includes Moradabad rail linked combined domestic and EXIM terminal, Rail linked Pvt Freight Terminal and Inland Container Depot in Kanpur, ICD at Dadri Terminal, ICD at Kanpur etc. Besides these, multi modal logistics/ transport hubs are also proposed at Noida, Boraki and Varanasi.
- The connectivity web of the state including existing and upcoming expressways like Poorvanchal Expressway, Bundelkhand Expressway, Lucknow- Agra Expressway etc.; 4 lane and 6 lane state highways; national and international airports; NW 1 waterways connecting Allahabad, Varanasi and Haldia sea port etc., is expected to create a web of air, water, road and rail network that will help the state's industries and manufacturing units.
- The Multi-city metro rail projects, coming up at Lucknow, Kanpur, Meerut and Varanasi, and upcoming international airport at Jewar and Kushinagar are also expected strength to State's connectivity advantage.

b. Promising Market

Home to nearly 16.5% of India's population, the state is a promising market for automobile industry and therefore the Electric Vehicles.

- UP is the 3rd largest state in total vehicles registered in India, with some 10.3% of India's total registered vehicles in 2015.
- The total number of vehicles in Uttar Pradesh stands at nearly 2.2 crores⁷ in 2015 and shows the great potential for the electric vehicles in the State.
- The state has witnessed nearly 81% increase in total vehicles registered from 2010 to 2015.
- 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 km⁸, it shows a great running economics for the owners of EVs.
- Uttar Pradesh has been the 3rd largest beneficiary under the FAME scheme, comprising 14,564 EVs on road, largely comprising 2-Wheelers (max power not exceeding 250 Watts), followed by 4-wheelers (passenger cars – Category M1 as per CMVR)⁹.

⁷<https://community.data.gov.in/registered-motor-vehicles-in-india-as-on-31-03-2015/>

⁸<http://www.livemint.com/Opinion/EOelutAWfkMFI2r82z1bnl/The-future-of-electric-vehicles-in-India.html>

⁹FAME Dashboard <http://www.fame-india.gov.in/#> (Accessed on 10-1-2018)

KEY INVESTMENT ZONES

Key automobile manufacturing zones in the State are located in Greater Noida and Lucknow, where manufacturing plants of the following are operational –

Key Automobile Manufacturers in Uttar Pradesh	
At Greater Noida	At Lucknow
1. India Yamaha Motor manufacturing 2-wheelers	Tata Motors
2. Honda Siel Cars India manufacturing passenger vehicles	manufacturing
3. New Holland Agriculture/CHN manufacturing tractors	commercial vehicles

Other zones manufacturing battery in the State are located across Greater Noida, Ghaziabad, Fatehpur, Kanpur, Lucknow, Gorakhpur, etc.

KEY OPPORTUNITIES

Hybrid Electric, Plug-in Electric Vehicle, Electric Vehicle Mftg &

Components such as motors, power electronic kits, etc.

Battery Manufacturing
Including R&D

Charging Infrastructure

- Fast charging Station
- Slow charging Station
- Battery swapping station



Contact : **Executive Director**
Udyog Bandhu

12-C, Mall Avenue, Lucknow-226001 (U.P.)

Phone No.: +91-522-2237582/83

Fax No.: +91-522-2237345

Email: info@udyogbandhu.com

www.udyogbandhu.com



Information and Public Relations Department, U.P.