

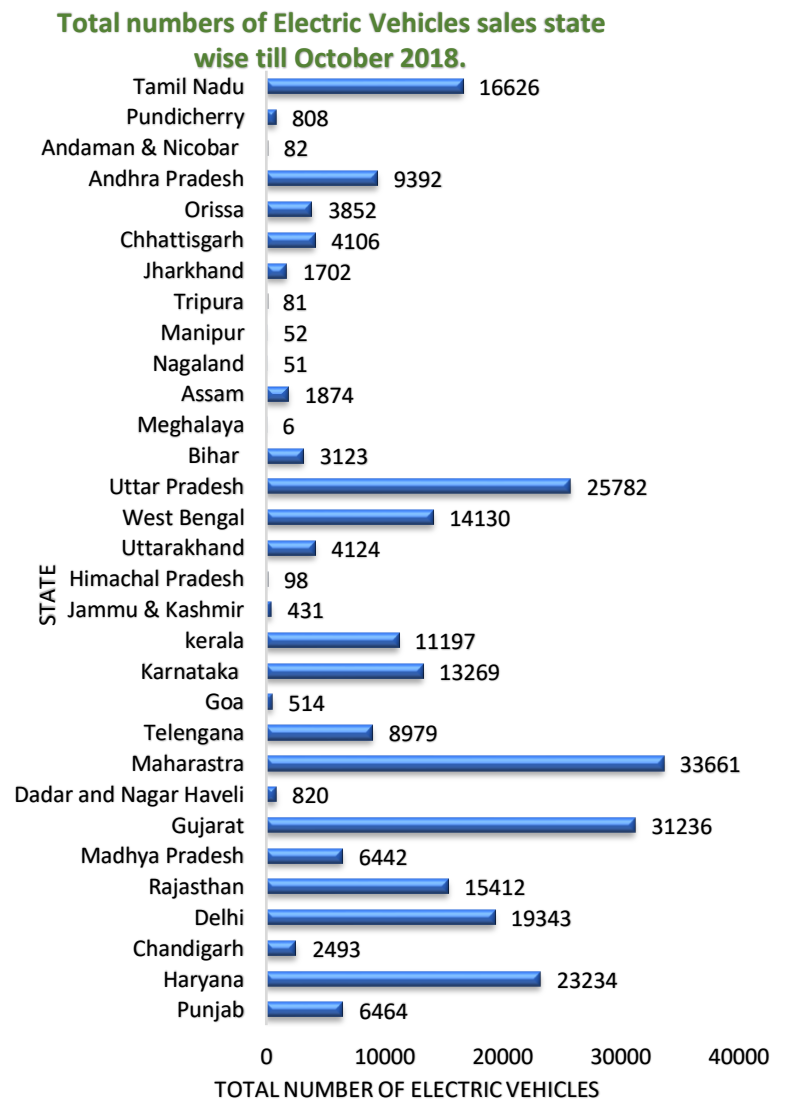
Electric Vehicles in India – Current Scenario

By Satyam Saxena¹

This is the era when every individual is concerned about the pace of climate change. One of the prime reasons is emission of harmful gases due to human activities. Another big challenge is depletion of natural resources. Countries like India, who are highly dependent on imports oil and oil products for production process and consumption, are looking for alternative sources of energy. India is the third largest importer of crude oil in the world which shows oil dependency on their economic activity. Petrol and diesel are the major refined crude oil products which are supplied by the oil industries to the ultimate consumers for running vehicles. Among various sectors that depend on diesel, transportation sector is the largest in terms of consumption of diesel/ petrol.

As per 2017 report, 4 million motor vehicles were sold in India and this number showing an upward trend, because of increasing the standard of living and disposable income of the people. This economic development is hazardous for the environment which causes Greenhouse gases emission, air pollution, and improper disposal of waste, etc, or we can say this development is not an energy efficient development of the economy.

According to the United Nations Intergovernmental Panel on Climate Change (IPCC), greenhouse gas emission must be reduced by 85% by 2050 as per



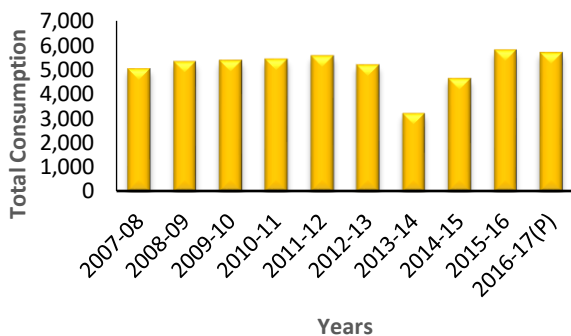
Source - FAME- India, Department of heavy vehicles

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the level of 2000. And to mitigate this adverse effect of climate change, there should be development, and consumption of energy efficient products. Transportation sector is the primary consumer of oil (56,58,000 tonnes in 2016-17) and one of the major contributors of GHG emission as compared to other users. So, to reduce the oil imports and achieve the target of GHG emission reduction, government start supporting automobile industries to produce energy efficient road vehicles in the form of subsidizing the product. Now the biggest challenge for the government is to reduce Co2 emission without disorganizing the mobility of the population. Out of the all other modes of transportation, road transportation itself consumed (26,51,000 tonnes of fuel in 2016-17) which is more than 50%.

An electric vehicle can be a right shift for GHG emission reduction as well as a reduction in oil imports. Many countries have taken initiatives to produce Electric Vehicles and promised to achieve their targets in the next 10 to 15 years. India also made policies for the promotion of such electric vehicles and targeted to shift 1/3 of the petrol and diesel vehicles buyer to electric vehicles users by 2030. For keep tracking and promoting electric cars, the government made a scheme under the Department of the heavy industry

Transportation Consumption of Diesel (000'tonne)



Source -: Energy Statistics 2018, Ministry of statistics and programme implementation

called Faster Adoption and Manufacturing of (Hybrid &) Electric

Vehicle in India. This scheme was launched in the Financial year 2015-16 with the budget of Rs. 75 Crores. Till November 2018, 2,59,327 numbers of electric vehicles are sold by the automobile industry and reduce fuel consumption of 3,63,09,312 litres, i.e. 52,268 litres per day. Not only this, the buyers of 2,59,327 electric vehicle also

helped in reducing CO₂ emission 9,07,13,557 Kg which is 1,29,578 Kg per day.

There are other difficulties India is facing such as lack of infrastructure and electricity production from renewables. Roads in India are not in good condition where the electric vehicle can work efficiently. Also, high electricity transmission losses which needed to improve so that there must be proper utilization of resources. Production of renewable energy are still not up to the that level which can fulfil the demand. Apart the challenges,

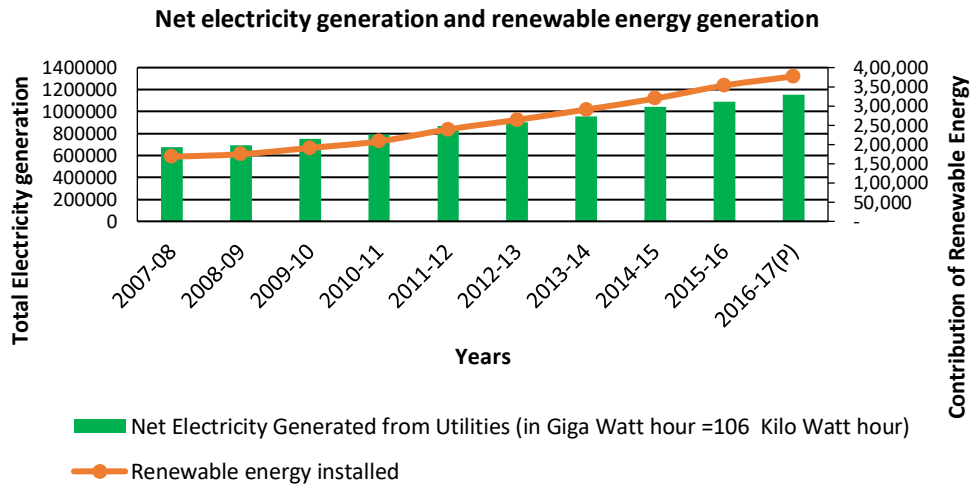
electric Vehicles are coming up with positive sides such as reduction on fuel dependency. To promote this government, provide a subsidy of about 20% on each electric vehicle. Electric vehicles are not only good for environmental protection but also helpful in reducing the running cost of the car. At present there running cost is around Rs. 1 per Km which is very low and economically viable. Although, there are registered fewer numbers of charging stations to get the vehicle charge which are increasing as an increase in demand.

Usage Cost difference between Electric and Petrol based two-wheeler vehicle

| Particulars | Unit | Electric | Petrol |
|--------------------------------------|------------|--------------------------|-------------------|
| Prices of 2 Wheelers | (Rs.) | 35490 | 60489 |
| Consumption of 50 km per day | Km per day | 1.5 units of electricity | 1 litre of Petrol |
| Per unit cost of vehicle | (Rs.) | 11 | 70 |
| Duration of vehicle | (years) | 5 | 5 |
| Total running in 5 year | (Km) | 75000 | 75000 |
| Average Maintenance cost for 5 years | (Rs.) | 10000 | 25000 |
| Cost of Refuelling for 5 years | (Rs.) | 15750 | 90000 |
| Battery Cost for 5 years | (Rs.) | 30300 | 0 |
| Cost of running for 5 year | (Rs.) | 91540 | 175489 |
| Saving in 5years | (Rs.) | 83949 | |

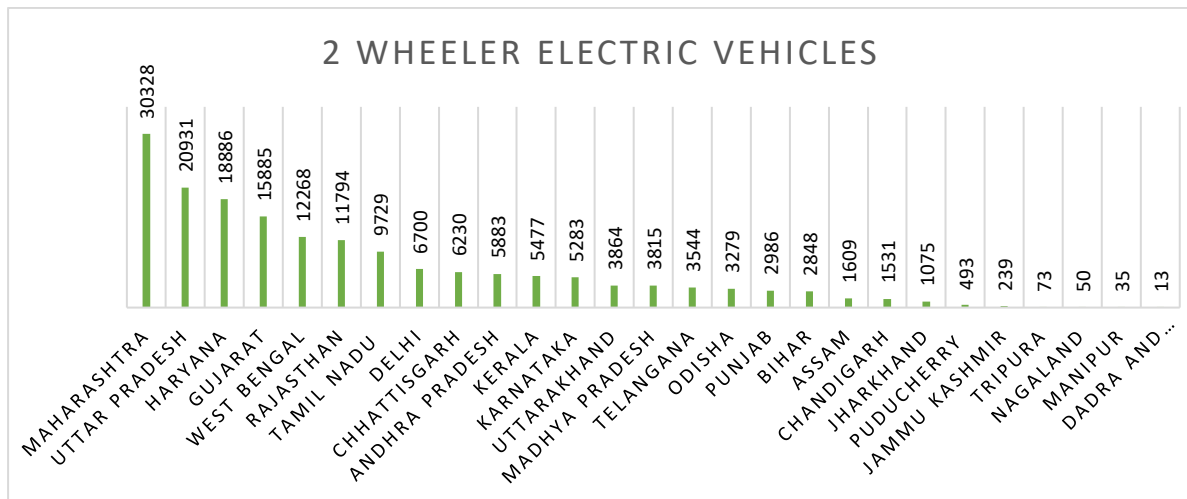
Source -Society of Manufacturers of Electric Vehicles (SMEV)

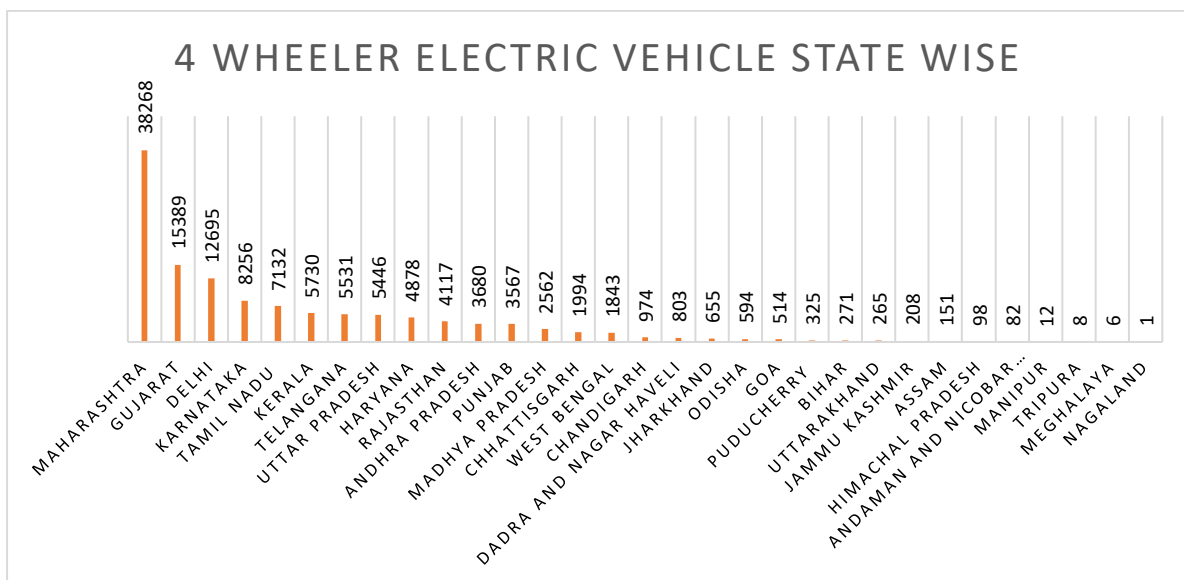
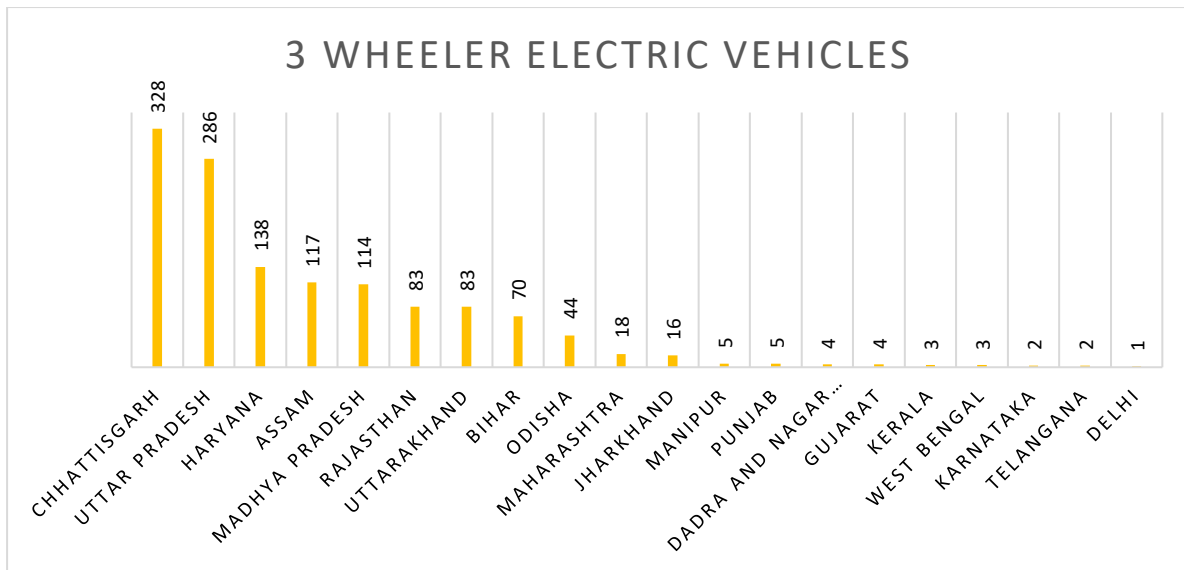
Currently, the total electricity generation capacity is meagre with high transmission losses. And the contribution of renewable sources of energy is also inadequate. So, there must be a considerable improvement required in electricity production to produce energy efficient products in the market.



Source -: Energy Statistics 2018, Ministry of statistics and programme implementation

India has wholly good potential to produce renewable resources. It has the world most substantial solar part in Tamil Nadu. There are many such initiatives taken by the government to achieve their target signed in COP21. The government also announced that by the year 2030 India would have 100% electric vehicles. This target could be reached if the government able to achieve 60% of electricity production from renewable resources by 2026. So, we can say India is in the right direction for meeting their targets. State wise demand of electric vehicles in India distributed based on 2-wheeler, 3-wheeler and 4-wheeler.





Source - FAME- India, Department of heavy vehicles

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