

Electric Vehicle : The Recent Future of Mobility

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Electric vehicles are the vehicles that are fully or partially powered on electric power. With the ever-rising prices of petrol, the world is seeing electric vehicles as the next feasible mode of mobility. A lot of research in the area of battery technology, regenerative braking and Machines are being done to increase the efficiency of electric vehicles. These vehicles have very low running cost and are environment friendly. Electric vehicle industry is a rapidly growing industry in India. The central as well as state government have launched schemes and incentives to promote electrical mobility.

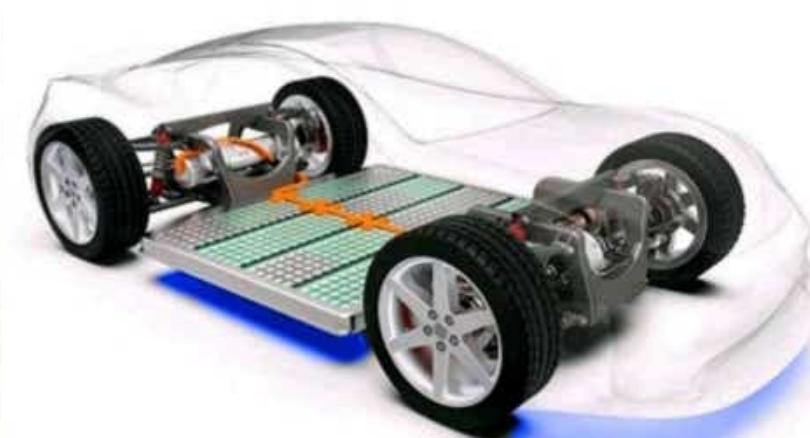
There are various companies manufacturing electric vehicle, Tesla, Mercedes Benz, Hyundai, Mahindra, Chevrolet, BMW and Renault are some of them who manufacturing ground-breaking electric vehicles.

The Major Components of Electric Vehicle Consist of Battery, Motor, Motor Controller and Battery Management System interlinked in between. Though there are different types of batteries like Nickel Cadmium, Lead Acid etc. as of now Lithium-Ion batteries are the front runner by margin due to its much better benefits than others.

By now there are various types of electric vehicles i.e.

1.HYBRID ELECTRIC VEHICLE (HEV): -

HEV combines a conventional internal combustion engine (ICE)with an electric motor to reduce fuel consumption. In these kinds of vehicles electric motor automatically activates only when ICE is inefficient. HEV technology



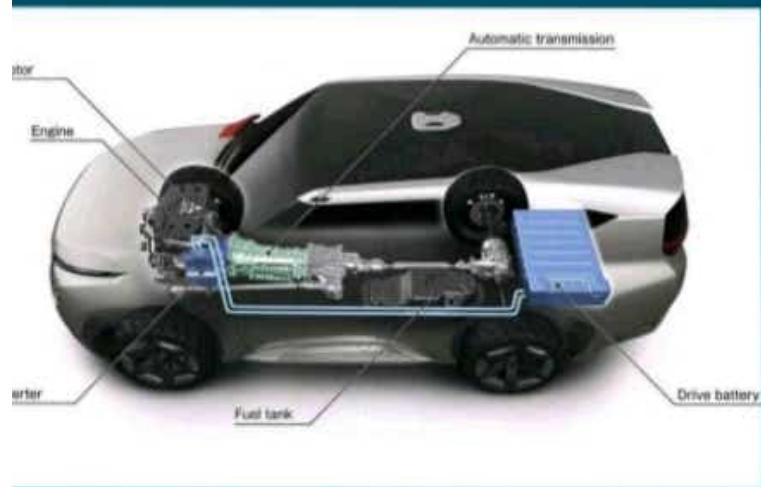
2. PLUG IN HYBRID ELECTRIC VEHICLE (PHEV): -

This is much similar to HVE but with more powerful electric motor and larger battery packs as compared. In PHEV drivers have choice of topping up the vehicle with both fuel and electricity. The vehicle can be run using fully electric mode

3. BATTERY ELECTRIC VEHICLE (BEV): -

This has also been called as "fully electric vehicle". very high-power batteries are used which results in increasing the cost of BEVs. Chargers are must to charge the vehicle. In some countries fast charging stations are being constructed.

- The other two types of variants are a) mild-hybrid EVs (MHEV), b) fuel cell EVs (FCEV)



Let's have look at benefits of electric vehicles

1) Low Cost of Ownership:

EVS have very few components apart from charging the batteries and some preventive servicing of electric motors, no more work needs to be done. As the prices of fossil fuels are increasing at high stakes, EVS are proving more efficient as they are being driven much more distance in a single run, having cost of running very less.

2) Low maintenance:

In traditional combustion engine there are hundreds of parts which need maintenance time to time leads to lots of expenses. But in Electric vehicle as there are very less components so the maintenance is low.

3) Performance:

Electric vehicles are provided with various smart technologies like regenerative braking and connectivity features which increases performance of vehicles.

4) State EV Policies:

Several state as well as central governments are making their vehicle policies pro towards electric vehicles making it easier to own electric vehicles as governments are offering subsidies over it too. As a result, we are seeing slow and steady growth in the number of Electric vehicles in India. The future of Electric Vehicles is bright.

5) Cleaner Environment:

The most important benefit of electric vehicles is they contribute towards a cleaner environment as compared to traditional vehicles they don't emit any hazardous gases and they are silent over riding it. You can say zero air and sound pollution.

THOUGH ELECTRIC VEHICLES ARE MUCH MORE BENEFICIAL, THEY ARE FACING CHALLENGES WHICH ARE AS FOLLOWS:

1) Charging Infrastructure:

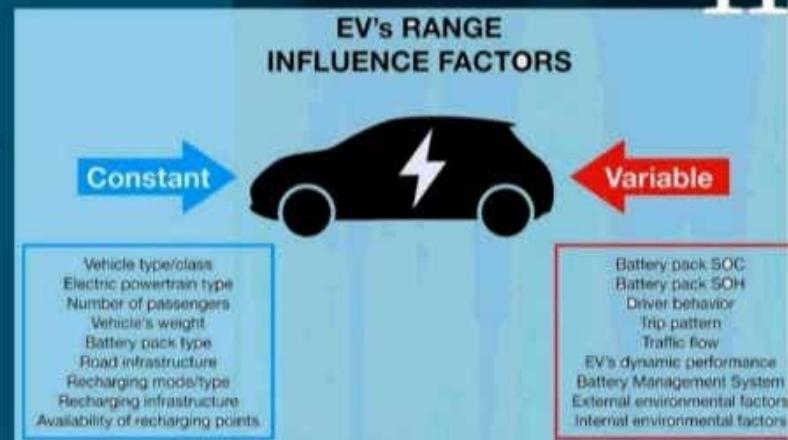
As charging infrastructure for electric vehicles is not developed yet, consumers are anxious about ranges. What if in the middle of the journey the battery drains out, what to do in such a case? To grow the number of EV we need to develop charging infrastructure first to make user feel reliable on Electric vehicles.

2) High Price :

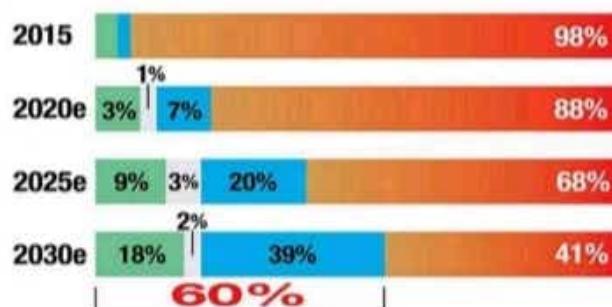
The prices of batteries are much higher, so it makes electric vehicles cost much higher than traditional vehicles. Secondly in case of replacing the battery, if it gets damaged, the cost will be equivalent to the price of a new vehicle.

3) Lack of Products :

Electric vehicles in India are in very early stage so the number of products in India are very low that means buyer has very less choice to choose in between available products.



By 2030 (in 11 yrs) EVs and Hybrids will account for 60% of all global vehicle sales



Source:
JP MORGAN
ESTIMATES



BEV
BATTERY
ELECTRIC
VEHICLE

PHEV
PLUG-IN HYBRID
ELECTRIC
VEHICLE

HYBRID
GAS &
ELECTRIC
VEHICLE

ICE
INTERNAL
COMBUSTION
ENGINE (GAS)



FUTURE OF EV

Looking at today's condition there are lots of negative effects of traditional vehicles on environment and most importantly because of large scale consumption of fuel the resource are about to extinct.

People are looking for a replacement for fuel which will be affordable and electric vehicle is the best option Infront of us for now as a result people will prefer electric vehicle in front of traditional vehicle.