

Impact of Electric Vehicles

1) Introduction

- All-electric vehicles (EVs) run on electricity only. They are propelled by one or more electric motors powered by rechargeable battery packs.
- Electric vehicles are cleaner than petroleum-fuelled vehicles and are seen as a promising solution to global warming.

2) Need for Electric Cars

- Cars produce a lot of carbon emissions that are ejected into our natural atmosphere, leaving us vulnerable to things like pollution and greenhouse gases.
- In order to help positively the environment we live in, an electric car is a great step forward.
- Although we may end up paying more for Electric vehicle, the positives greatly overshadow the negatives.
- Considering the demand for oil will only be going up as the supplies run out, an electric car will most likely be the next alternative
- Transportation accounts for more than 25% of worldwide greenhouse gas (GHG) emissions, making it the second largest contributor of GHG emissions after the energy sector
- Worse, GHG emissions from road transportation have grown 30% since 2005 and show no sign of declining
- Hence, reducing transportation emissions is one of the most vital steps in fighting global warming.

3) Advantages of an Electric Car

- **No Fuel Required**
 - a) Electric cars are entirely charged by the electricity, meaning there is no need to buy any fuel ever again
 - b) Though electricity isn't free, an electric car is far cheaper to run.
- **No Emissions**
 - a) Electric cars are 100 percent eco-friendly as they run on electrically powered engines
 - b) It does not emit toxic gases or smoke in the environment as it runs on clean energy source
 - c) Reducing the carbon footprint and positively affecting the economy
- **Cost Effective**
 - a) with more technological advancements, both cost and maintenance have gone down making it cost effective

- **Low Maintenance**

- a) Electric cars run on electrically powered engines and hence there is no need to lubricate the engines
- b) Therefore, the maintenance cost of these cars has come down.

- **Reduced Noise Pollution**

- a) Electric cars put a curb on noise pollution as they are much quieter
- b) Electric motors are capable of providing smooth drive with higher acceleration over longer distances

4) Disadvantages of an Electric Car

- **Short Driving Range and Speed**

- a) Most of these cars have a range of about 50-100 miles and need to be recharged again.

- **Longer Recharge Time**

- a) An electric car takes about 4-6 hours to get fully charged. Therefore, there is a need for dedicated power stations as the time taken to recharge them is quite long.

- **Silence as Disadvantage**

- a) Silence can be a bit of a disadvantage as people like to hear noise if they are coming from behind them
- b) An electric car is however silent and can lead to accidents in some cases.

- **Limited seating capacity**

- a) They are not meant for an entire family and a third person can make a journey for other two passengers but uncomfortable.

- **Not Suitable for Cities Facing Shortage of Power**

- a) Cities already facing acute power shortages are not suitable for electric cars.
- b) The consumption of more power would hamper their daily power needs.

- **High cost**

- a) The primary reason for the current high prices of EVs is the expensive battery.

5) Trend in Electric Vehicles

- Every major auto maker is developing or has developed an electric vehicle for launch in the next three years
- The widespread adoption of EVs in the succeeding decades, due to price competitiveness and a strong regulatory and incentive framework, would boost overall EV market share to 25% by 2040

- In terms of market share, no country can compare with Norway, where one in three vehicles (33.1%) registered is plug-in electric
- India and China, the emerging economic powers, which are primarily driven by coal and oil, have also strengthened their cooperation in EVs
- China has sold 100 million electric motorbikes and scooters so far, the world's largest vehicle electrification success to date
- India is working on a scheme to provide electric cars on zero down-payments for which people can pay out of their savings on expensive fossil fuels, for becoming a 100% EV nation by 2030
- It is anticipated that the 2020s will be the decade of the electric car and a step forward towards a clean environment for the next generation.

6) Impact on oil industry

- In 2015, EV sales grew by about 60% worldwide.
- At this rate, EVs would displace 2 million barrels a day by 2020.
- When that happens, EV adoption is likely to accelerate, driving economies of scale that hasten it even further
- A large volume of oil will go unused
- And long before global oil use declines in large absolute terms, it will decline enough to substantially affect the prices.
- Prices of petroleum vehicles will reduce. Hence less profit for auto makers which will affect the employment in this sector
- It could be a disaster for many oil exporting and OPEC countries. May lead to financial crisis.
- Less demand of oil will result in fall in domestic exploration and fall in investment to oil sector.

7) Impact on Environment

- It will help in curbing green house gases. Hence will reduce global warming.
- It will promote use of clean and green energy. Hence environment friendly.
- Will help in achieving the target of "Paris climate agreements".
- Newer vehicles require new Industries for manufacturing base. This might cause land pattern change and deforestation.

8) Government as catalyst

- For EVs to achieve widespread adoption, governments will have to launch strong incentive programmes that will bring down car prices and spur consumer adoption of the technology.

- In the Indian scenario, the government should provide the initial user base and demand to help technologies cross the chasm.
- The government could consider making all new government and corporate vehicles electric.
- Eventually, all police cars and other municipal vehicles can also be made electric.
- This would force government buildings to install EV infrastructure, and hopefully create a large enough ecosystem for the maintenance market in petrol pumps and service shops to take off.
- Although some organizations in India are working hard to help India switch to electric transportation, utilizing what Tesla and other EV manufacturers have to offer will save a lot of time.
- The government's EV programme should waive taxes and customs on such vehicles, at least until the local manufacturers catch up with the technology.
- Recently launched FAME (Faster Adoption and Manufacturing of Hybrid and Electric vehicles) programme will act as a distinct incentive

