Electric Car: Reasons Of Popularity

The accessibility of the technology and the likely acceptance of hybrid electric vehicles (HEVs) has encouraged car manufacturing companies to take major steps toward the electric vehicle (EV) market. Australia has a high amount of car usage and ownership due to its large area. Furthermore, the inefficient public transportation system in Australia has resulted in a large potential market for EV (Ustun et al. 2013). According to Electric Vehicle Council industry engagement, 2284 electric cars were sold in 2017 which is forty times greater than the previous year (Climate works Australia 2018). Even though there are some disadvantages of electric cars, the advantages outweigh those disadvantages. Further, government should invest on incentives and building more charging stations to increase the use of electric cars. This essay will discuss advantages such as zero direct emissions, reduced dependency on oil and cheaper fuel and some disadvantages, namely, higher cost range and charging problem.

Electric automobiles are an optimistic technical process for drastic reduction of road transport emissions and thus they are considered as more sustainable. Growing concerns over security of energy supply and change in climate is shifting the transport sector from fossil fuel to alternative fuel such as new electric vehicle propulsion systems. Worldwide, 75% of transport greenhouse emissions come from road transport (Poullikkas 2015). Out of which, 18% of all greenhouse gas pollution is contributed by Australian road- based transport (Henriques 2018). Since road transport contributes profoundly to Greenhouse Gas (GHG) emissions, such emissions could be reduced significantly by increasing the use of electric vehicles (Maniatopoulos et al. 2015).

Furthermore, increased electric vehicles use may reduce the use of oil imported from other countries. Australia has some of the longest distance road and freight levels per capita in the world. One fourth of the national energy was consumed as the fuel by Australian transport sector, which will nearly double by 2049–2050. The range between demand and domestic oil supply in Australia had been increased in the past ten years, resulting the rise in importing of re?ned petroleum products by three times (Maniatopoulos et al. 2015). Internal combustion engines (ICEs), which provide the friction for vehicles since past century, can only give an efficiency of 30% at the highest level. Since the price of the oil is increasing, an alternative to fuel is necessary for sustainable transportation. This also ensures the security policy of many countries as it decreases dependency on foreign oil (Ustun et al. 2013). In addition, electric vehicles can be recharged at a lower environmental and financial cost than a petrol or diesel car (Taylor et al. 2009).

Another main advantage of using electricity as a fuel over new gaseous or liquid fuels is that electricity is available widely. 85% of Australian private dwellings having undercover parking can charge private electric cars at home and especially overnight. This helps people to start each day with a full battery. Further, if the public charging facilities are available in great numbers, the use of electric cars would be more flexible. Because of which vehicles can be charged while they are parked, when they are on long trips. Parking stations, car parks, street parking spaces or dedicated charging stations are the places where public charging infrastructures are can be provided. In addition, the number of private companies (e.g. Better Place, 2008) are developing public charging networks, which also promote the use of electric cars (Taylor et al. 2009).

However, electric vehicles require a long amount of charging time and limited charging facilities exist in Australia. Though there is a worldwide increment in the sales of electric vehicles, some large markets have less than one percent of new vehicles sold. Now also comparatively limited charging infrastructure and long recharging time are acting as the barriers for EV technology to become a large-scale feasible alternative to motor vehicles running on fossil fuels. A battery full of charge in an electric vehicle runs out quickly than a tank full of fuel in combustion vehicle. Thus, ICVs can travel far on a tank of fuel than EVs on a single charge. Moreover, it takes longer time for EV's battery to be recharged than it does to fill a gas tank (Wager et al. 2016). And all the batteries are slow to recharge, but for different reasons. In some types, the evolution of gas cause charging, and must proceed in the way the gas recombines. But for some others, overheating is the big problem. Furthermore, the capacity of the recharger itself is limited.

Beside recharge time, driving range is a major factor that has adverse effect on the peoples' desire to adopt EV technology. The type of car, the capacity of the batteries, the vehicles' efficient design and the way to use it are the factors that determine the drivable range of an electric car. Electric vehicles' efficiency can be decreased by many factors such as charge level, efficient battery capacity utilisation, driving style, vehicle mass, cross-sectional frontal area, drag coefficient, auxiliary loads, driving pattern, vehicle speed and tyre rolling resistance. All these factors can be affected by the EV driver and have a substantial impact on energy consumption and hence drivable range is a. Furthermore, continuous high speeds, increased mass and increased cross frontal area that a roof rack adds to a vehicle will also increase the energy consumption (Wager et al. 2016).

In conclusion, carbon emission reductions, use of renewable energy, and the wish to reduce the dependency on imported oil are some of the reasons why EVs are very popular. But some of the disadvantages such as problem in charging and variation in drivable range are hindering people to adopt electric cars. Though the benefits of electric cars outweigh the drawbacks, government of Australia should encourage people to buy electric cars by providing some incentives and more charging spots. On doing so, there is a great possibility of increasing the use of electric cars surprisingly in near future.