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Electric Vehicles, Clean or Dirty?

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Electric vehicles are cleaner than gasoline vehicles, simple as that. They are relatively quick, quiet, cheaper to operate, and can be charged in your own garage. However, they do have a limited range, longer refueling times, and a significantly higher cost. Studies have shown that the production of electric vehicles has a slightly greater impact on the environment than most gasoline vehicles. This is because manufacturing involves mining of lithium, which is required for batteries. Once on the road, there is no competition. Electric vehicles produce no tailpipe emissions. They can convert about 60% of its electrical energy to power at the wheels, while a typical gasoline-powered vehicle can only convert about 20% of its energy from gasoline. Even though electric vehicles are considered zero emission vehicles, there are still some important factors to take into consideration regarding their cleanliness.

Determining just how clean or dirty electric vehicles are depends on how they get their electricity. Electric vehicles are only as clean as the "juice" that powers them. Places that rely heavily on coal for their electricity generation will prove that electric vehicles technically have about the same emissions as an average gasoline powered vehicle. Still, electric vehicles produce zero tailpipe emissions while in use. In places that support more alternative sources to produce their electricity, will prove that electric cars have at least half of the emissions as the most efficient gasoline powered vehicle. If you were to purchase an electric car in India, the benefits to the climate would be limited. India primarily relies on coal for electricity, producing roughly 370g of carbon emissions per kilometer. Operation of electric vehicles here, results in an increased carbon footprint that is comparable to gasoline vehicles. Paraguay on the other hand, produces about 70g of carbon emissions. Most of the emissions arise from the manufacturing of vehicles. On average, driving one kilometer in Paraguay will only produce less than one sixth of a gram of carbon emissions. Electric vehicles can reduce carbon emissions significantly in places that produce clean electricity, or they can only slightly reduce the emissions of carbon if operated in coal-dominated areas. Still, a slight reduction is better than nothing.

Something that not many people take into consideration about the differences of electric versus gasoline vehicles is the cost of operation. It is obvious that a kilowatt of electricity is significantly cheaper than gasoline. The average price of electricity is about twelve cents per kilowatt-hour. While gasoline costs anywhere from three to four dollars per gallon. The price of gasoline varies quite often which can be very frustrating not knowing what the price will be all the time. Lets take a look into the maintenance of the vehicles themselves: Internal combustion engines are very complex. They require cooling systems that includes toxic ethylene glycol in antifreeze. Highly pressurized fuel injection systems that require an electric pump, and a filter. Fuel pressure regulators submerged into the gasoline tank. Pressurized lubrication systems for bearings, pistons, and valve train requiring another pump and filter to move the oil around. Transmissions use toxic

transmission fluid for the hydraulic system, and finally an electrical system that powers everything. Maintenance can become costly. Electric vehicles are not necessarily cheap to maintain either. The difference here is that electric vehicles have maybe half a dozen moving parts, while a vehicle with an internal combustion engine has hundreds of moving parts. All these moving parts cause wear and tear to the vehicles. With so much complexity involved with internal combustion engines, there will be problems throughout the vehicles lifetime.

The fuel cost for electric vehicles is cheaper than that of gasoline. Unfortunately, the cost for the vehicles themselves is more expensive than a gasoline vehicle. This has been a huge issue when it comes to purchasing an electric vehicle over a gasoline powered one. Many people have concerns about the performance of an electric vehicle, and its battery life. The main reason that we are not adopting electric vehicles is because nobody wants to change what they already have. It is much easier to buy a cheaper gasoline car that has gas stations all over the world than change to something completely different. As the technology continues to develop, the price for an all-electric car will go down. Price drops in electric vehicles have already happened in the last few years, and we will soon see them go down even further. Automobile companies with electric vehicles are offering leasing options that can make purchasing an electric vehicle similar to a gasoline vehicle. Once the production volume of electric vehicles increases, the prices will decrease. Electric vehicles that are purchased after 2010 can be eligible for up to a $7,500 federal tax credit that is determined by the size, and battery capacity of the vehicle. If the government is willing to put a tax credit on electric vehicles as incentive to purchase, then there has got to be some benefit from using electric vehicles.

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