

Final Essay Electric Cars

Daniel Han

Visual Culture Sem

Emma Bowen

April 4, 2018

In the late 1900's the government and a number of civilians has been focusing on making things more environmentally friendly, cause little to no harm to the environment, and other things to take care of the earth and spread awareness of it. Society has been doing this by using less resources, alternative power sources, alternative materials, and adapting technology to leave a smaller carbon footprint. Unfortunately, people have a difficult time agreeing on the right way to be sustainable and whether what we are doing is helping at all. An example of of this kind of disagreement is whether or not electric cars are more environmentally sustainable than gas cars. This argument exists because some people feel like having cars get electricity from electric companies that burns fossil fuels has the same impact as using a gas powered car, if not a greater impact. There is also concern for what happens to the batteries inside the electric cars, once people throw them away. Even if the batteries may not be entirely eco-friendly, electric cars are designed to be more efficient and sustainable than gas powered cars in the long run.

Electric cars are seen as harmful to the environment due to their production and how they actually run. One argument against electric cars is that they produce 12.5 tons of carbon emission to make a single vehicle, nearly 1.5 times more than the production of a single gas car¹. The reason for this is because the batteries in electric cars are made of lithium, which has to be mined. The second argument is that electric cars are getting energy from electric companies which produce electricity by burning fossil fuels, and that is essentially just a roundabout way to create carbon emissions.

¹ "Are Electric Cars Really Green?" PragerU, May 04, 2018, , accessed May 04, 2018, <https://www.prageru.com/videos/are-electric-cars-really-green>.

It is true that the creation of the electric car's lithium batteries creates the bulk of CO2 emissions in the manufacturing process. This is made even more worse by the fact that a large amount of CO2 is produced from mining the lithium². However, car companies like Tesla have been working to reduce the amount of emission created. One way electric car companies have been cutting down on carbon emissions is by taking batteries from thrown away or decommissioned cars and putting them into the newly made ones. Electric car manufacturers are also constantly trying to improve the design of the lithium batteries to make them sleeker and emit less carbon, all the while still being able to travel a feasible distance.

The electric cars themselves are designed to be efficient and very visually appealing. The bodies of the cars are made of aluminum, magnesium, and other light exotic, rare and unusual, metals to compensate for the weight of the battery and to give the car an exotic appeal. Electric cars are also designed to appeal to two different types of people, those who enjoy fancy cars and those who want environmentally friendly cars. Cars designed by Tesla, Lamborghini, Mercedes, and other car companies that specialize in sports cars design their cars to look sleek, smooth, exotic and even add things such as lights on the doors and the bottom of the car the give it an incredible futuristic aesthetic. Other car companies like Volkswagen and Honda design some of their cars to be compact, sometimes cubic to give it a bigger interior, making them look and function efficiently.

Electric cars are often the topic of debate based on whether or not they are completely eco friendly. This is mostly due to the misconceptions brought upon us by

² "Are Electric Cars Really Green?" PragerU, May 04, 2018, , accessed May 04, 2018, <https://www.prageru.com/videos/are-electric-cars-really-green>.

how electric cars are marketed. In order to improve car sales, marketing firms usually advertised electric cars as a completely carbon emission free vehicle. When shown in advertisements they usually associate it with plants or clear blue skies to associate it with the idea that it is completely clean as seen in figure 1. They also show people being happy or successful near electric cars to instill the idea that an electric car will make you happy and wealthy and even show them like it is already popular.

When it comes to environmental impact, design and marketing tactics, standard gas fueled cars are different from electric cars. When produced gas cars only create around 8 tons of CO₂ emission, that is 40% less than electric cars. This is mostly due to the fact that they don't have lithium batteries. Their bodies are usually made of steel and designed to look either slick and fast, bulky and strong, or big and reliable. When considering emissions produced when driven, direct and indirect, gas cars produce more emissions than electric cars can possibly indirectly create. In terms of marketing, where electric cars are marketed as something clean and futuristic, standard gas cars are marketed as being powerful and all terrain vehicles, or fast and sporty like in figure 4.

In the past, when electric cars were first being sold, the sales of electric cars were very low due to being very inconvenient, because there was no reliable way to charge the car back then, the technology wasn't advanced enough to allow for decent mileage per kilowatt-hour, and there was less awareness of climate change on the part of the general public. However as time progressed so did the technology to make the cars more efficient. Charging stations have been made more accessible to people on the go. Charging is also cheaper compared to gas, albeit it takes longer to charge than

refuel. Awareness for the environment has also risen which influenced more people to invest in and purchase electric cars. These factors have caused a steady increase in the purchases and interest in electric cars.

Even if electric cars are not completely carbon free as most people thought, with their batteries not being entirely eco-friendly, electric cars are still designed to be environmentally friendly and stylish cars. Their batteries are being recycled to cut down on CO₂ and bodies made of exotic and light metals for efficiency. In terms of emissions made through the lifecycle of the car electric cars are better than gas cars.

Annotated Bibliography

Clayton, Jack. "1 Kilowatt-Hour." *1 Kilowatt-Hour · BlueSkyModel*, blueskymodel.org/kilowatt-hour.

this shows the average co2 produce by power companies based on what materials they use helping me figure out how much co2 electric cars are inadvertently using.

Dincer, Ibrahim, et al. *Thermal Management of Electric Vehicle Battery Systems*. John Wiley & Sons, Incorporated, 2015.

"Greenhouse Gas Emissions from a Typical Passenger Vehicle." *EPA*, Environmental Protection Agency, 6 Mar. 2018, www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle.

This source talks about how much emission is produced by normal cars, this can be used to compare the two.

Quora. "The Carbon Footprint Of Tesla Manufacturing." *Forbes*, Forbes Magazine, 22 Apr. 2016, www.forbes.com/sites/quora/2016/04/22/the-carbon-footprint-of-tesla-manufacturing/#3d5e39676096.

talks explains how much co2 is made during the making process of making electric cars. I can then compare it with regular cars to see which make more.

Voelcker, John. "Electric-Car Efficiency: Forget MPGe, It Should Be Miles/KWh." *Green Car Reports*, www.greencarreports.com/news/1082737_electric-car-efficiency-forget-mpge-it-should-be-miles-kwh.

this explains how much energy is used to travel a certain distance, 100 miles, and then I can figure out how much co2 electric companies make producing that amount of energy and compare with regular cars.

Westbrook, M. H. *The Electric Car: Development and Future of Battery, Hybrid, and Fuel-Cell Cars*. Institution of Electrical Engineers, 2007.

It gives an in depth explanation on the batteries of electric cars.

"Explaining Electric & Plug-In Hybrid Electric Vehicles." EPA. December 12, 2017. Accessed May 04, 2018. <https://www.epa.gov/greenvehicles/explaining-electric-plug-hybrid-electric-vehicles>.

Explains electric cars and hybrids

"Explaining Electric & Plug-In Hybrid Electric Vehicles," EPA, December 12, 2017, , accessed May 04, 2018, <https://www.epa.gov/greenvehicles/explaining-electric-plug-hybrid-electric-vehicles>.

"Are Electric Cars Really Green?" PragerU. May 04, 2018. Accessed May 04, 2018. <https://www.prageru.com/videos/are-electric-cars-really-green>.

In detail explanation of the real effects of electric cars

"Are Electric Cars Really Green?" PragerU, May 04, 2018, , accessed May 04, 2018, <https://www.prageru.com/videos/are-electric-cars-really-green>.

Collegehumor. "Electric Cars Aren't As Green As You Think." YouTube. December 28, 2016.

Accessed May 04, 2018. <https://www.youtube.com/watch?v=MQLbakWESkw&t=1s>.

A lot of info about electric cars and how they aren't all that good and talks about how we should go about helping the environment

Collegehumor, "Electric Cars Aren't As Green As You Think," YouTube, December 28, 2016, ,

accessed May 04, 2018, <https://www.youtube.com/watch?v=MQLbakWESkw&t=1s>.



Figure 1. Bell, Erica. "Tesla Model S." [Ericalynnbell.wordpress.com](https://ericalynnbell.wordpress.com). December 09, 2011. Accessed May 04, 2018. <https://ericalynnbell.wordpress.com/2011/10/22/tesla-model-s/>.



Figure 2. Behance. "Tesla Model 3 Ad Campaign." Behance. Accessed May 04, 2018. <https://www.behance.net/gallery/46828269/Tesla-Model-3-Ad-Campaign>.



Figure 3. "Car Ads." Adstous. June 03, 2013. Accessed May 04, 2018. <https://adstous.wordpress.com/car-ad/>.



Figure 4. "Mitsubishi Motors." Dan Mawdesley. Accessed May 04, 2018. <http://www.danmawdesley.com/work/mitsubishi-motors/>.