

# The rise of green vehicles marketing essay



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## **Introduction**

A green vehicle is a motor vehicle that has less dangerous and less deadly effects to the environment than any regular gasoline or diesel powered vehicles. The major inspiration of the development of alternative fuels and green engineering are to reduce the harmful environmental impacts and to create the mentality of reducing dependency to oil. Based on what customers' majority demand in automobile industry: low fuel consumption, low cost, low noise pollution, state-of-the-art technology, and environmentally friendly, manufactures are significantly are transforming their technology to the green vehicle technology. Green vehicles are powered by alternative fuels and include hybrids, electric cars, ethanol, hydrogen cars, natural gas, plug-in hybrids, biodiesel, and air powered vehicles. Latest trend of the green vehicles popularity was significantly caused by the rise of oil prices. People are trying to find other ways to save their money from purchasing gas for their gas/diesel powered cars. Tax saving also contributes to the rise of green vehicles popularity in various countries such as United States and European Union. According to IRS website, The Energy Policy Act of 2005 replaced the clean-fuel burning deduction with a tax credit. A tax credit is subtracted directly from the total amount of federal tax owed, thus reducing or even eliminating the taxpayer's tax obligation. The tax credit for hybrid vehicles applies to vehicles purchased or placed in service on or after January 1, 2006 ([www.irs.gov](http://www.irs.gov)).

This paper will answer several questions that people might be curious about. First, I will discuss the causes of the booming market of green vehicles in the <https://assignbuster.com/the-rise-of-green-vehicles-marketing-essay/>

last decade. Secondly, I will discuss the controversies of GM's electric vehicle EV1 and its relation to the conspiracy theories with Oil Company.

## **Background**

As mentioned before, green vehicles include hybrids, electric cars, ethanol, hydrogen cars, natural gas, plug-in hybrids, biodiesel, and air powered vehicles. Hybrids combine two or more different propulsion systems, typically a gasoline engine and one or more electric drive motors. Most hybrids on the road today compliment their gas engines by charging a battery when breaking. Engines running on diesel or other alternative fuels can also be used in hybrids. A hybrid drive is fully scalable, which means the drive can be used to power everything from small commuter cars to large buses and even locomotives. Hybrids get more MPG or miles per gallon than most non-hybrids, and usually have very low tailpipe emissions (greencar.com). Electric cars produce zero localized emissions since they're propelled by electric motors that run on batteries charged at home, or special electric vehicle charging stations. Electric cars are extremely efficient and run for pennies per mile, much cheaper than any other alternative fuel. Ethanol (ethyl alcohol) is the same type of alcohol found in alcoholic beverages. As a fuel, ethanol can be used in more than 30 flex fuel vehicle models that have been designed to run on alcohol, gasoline, or any combination of the two fuels from the same tank. Most ethanol today is produced from corn or sugar cane, although this will change as cheaper cellulosic ethanol made from fast growing woody grasses and other biomass becomes a reality. Hydrogen cars perhaps the cleanest of all alternative fuels, burning with nearly zero emissions in an internal combustion engine and with emissions of only water

vapor and heat in an electro-mechanical fuel cell. Natural gas, the cleanest-burning fossil fuel, is being used by an increasing number of medium- and heavy-duty commercial vehicles like refuse trucks and delivery vans. Natural gas is stored and used in its liquefied or compressed states. It is most commonly abbreviated as LNG for Liquefied Natural Gas, and CNG for Compressed Natural Gas. While a variety of light-duty natural gas cars were once available, the only factory-produced natural gas car made today in the U. S. is Honda's Civic GX. Plug-in hybrids boast great potential for improving fuel economy. Plug in hybrid technology allows gasoline-electric hybrid vehicles to be recharged from the grid and run many miles on battery power alone. A gas engine provides additional driving range as needed after the battery power is gone. Plug in hybrids may never need to run on anything but electricity for shorter commutes. The combination of gas and electric driving technologies can already achieve up to 150 mpg. Biodiesel is a renewable alternative fuel made from various sources ranging from waste vegetable oil to soybeans. It can often be used seamlessly in diesel engines of all kinds. Biodiesel is a cleaner fuel than standard petroleum diesel. Since it can be produced locally, biodiesel has the potential to decrease our dependence on foreign countries for oil, and enhance local economies where biodiesel production is taking place. Air powered cars are relatively new to the green car scene. Compressed air is currently being explored as a viable 'alternative fuel' to efficiently power car engines with little or no environmental impact (greencar. com).

Going back to the history of green vehicles, they have been around for around almost 120 years. Jake Richardson in his article 9 Electric Cars 100

Years Old or More explains that “ the first green vehicle ever made was 1891 Morison. Made by William Morrison in 1891, some say the Morrison was the first electric vehicle in America. It had a four horsepower engine, and could carry 6-12 passengers. Top speed was about 20 mph. The batteries needed to be recharged every 50 miles. It has been said the car was actually completed in 1887 and was driven in a Des Moines parade in 1888. If that is true, the Morrison was first built 122 years ago, and it was built in America, where today they are almost no electric cars on the roads. Next is electrobat, produced from 1894-1899. Electrobats were made for several years in Philadelphia. The first ones were very heavy and used steel tires to support a large lead battery. They employed twin 1.5 hp motors and had a top speed of 20 mph. They could go 25 miles on one charge. Next is the 1900 Riker. Riker is a bulky enclosed cabin four passenger sedan that was made about the turn of the century; the Riker featured electric side lamps, wooden-spoked wheels, and a voice tube so passengers could communicate with the driver. Cabin windows could be raised and lowered. 48 battery cells were onboard, with an electric engine near each rear wheel. The driver’s seat was about 6-7 feet in the air. Next is 1901 Riker torpedo. Andrew Riker, the founder of Riker Electric Vehicles, made the Torpedo in 1901 to be the fastest car on the road. Next is the 1902 Studebaker, 1906 Krieger, 1909 Babcock, and 1909 Bailey” (<http://gas2.org>). It hasn’t been seriously developed until the 1973 when the oil crisis strikes. Paul Lucas in his article The History of Green Motoring explains that “ in the 1980s, attempts to develop the green car concept reached new heights. In Switzerland for example, there was an annual race for solar-powered vehicles called the Tour de Sol. This ran from 1985-1995. In 1991, BMW created a pair of battery

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powered E1 concepts that failed to get past the concept stage. In the same year, the Citroen Citela was born with a range of 130 miles and top speeds of 70mph. GM also introduced its first purpose-built electric vehicle, the EV1, from 1996-1999. Since the turn of the millennium the concept of green cars has expanded at a phenomenal rate. This is because of the contribution of the expansion of hybrid cars, which effectively plug the gap between electric cars and conventional vehicles. Popular models include the Toyota Camry, which was once acclaimed as the top-selling passenger vehicle in America, and the Toyota Prius which in 2007 was the number-one selling hybrid vehicle worldwide. The concept has even been introduced into larger vehicles such as the Lexus RX400h, an off-roader. The Volkswagen BlueMotion Polo, which became available in 2007, cut CO2 emissions even further. Hydrogen fuelled cars arrived in 2006 through the BMW 7 Series, while the Ford Airstream was introduced in 2007 with a lithium battery that was topped up by a hydrogen fuel cell” (www. thegreencarwebsite. co. uk).

## **Major Reasons**

So, what exactly encouraged the rise of green vehicle popularity? One of the major contributors to the popularity of green vehicle is the increase of oil prices all over the world. The advancement of technology is causing the green vehicles to consume less gas. Ricky Lim in his article 3 Advantages Of Hybrid Cars Over Conventional Cars explains that “ Combining the cleaner energy of an electric motor with the long range capacity of a gasoline engine allows a hybrid car to save as much as 30 miles a gallon”

(<http://ezinearticles.com>. One of the technologies of hybrid cars is that they will only use the gasoline engine during constant speed such as highways

speed. During the stop and go traffic, the electric engine will be functioned that's resulting in saving fuel. People always wonder on why hybrids cars are extremely quiet during idle. It is because the gasoline engine is turned off. The electric engine doesn't produce any noise at all. Here are the data of gas consumption on some of the hybrid cars: Ford Escape – 31.9 mpg; Honda Accord – 29.4 mpg; Honda Civic – 46.2 mpg; Honda Insight – 55.3 mpg; Lexus GS 450H – 23.5 mpg; Lexus RX 400H – 25.3 mpg; Mercury Mariner – 29.5 mpg; Nissan Altima – 34.3 mpg; Saturn Vue – 25.9 mpg; Toyota Camry – 36.5 mpg; Toyota Highlander – 26.4 mpg; Toyota Prius – 47.5 mpg (www.greenhybrid.com). Based on www.green-energy-efficient-homes.com, “Hybrid car sales statistics have shown steady growth over most of the last five years, but sales peaked in early 2008 (at 45,000 vehicles) and showed a steady decline in the second half of 2008 with sales starting to recover somewhat in spring 2009. Considering the spike in oil and gasoline prices up to about July of 2008, and their rapid decline once the economic downturn hit later in 2008, it's not surprising that sales show a peak followed by a steady drop. Fortunately for hybrid car manufacturers, gasoline price increases in the second through fourth quarters of 2009 have been accompanied by a return to higher hybrid car sales” (<http://www.green-energy-efficient-homes.com/hybrid-car-sales-statistics.html>). Take a look at this chart, which shows three data series: hybrid car sales statistics by month, a 12-month moving average of hybrid car sales, and average US gas prices per gallon, from January 2004 to December 2009: (www.green-energy-efficient-homes.com)

According to carsdirect. com, “ the August 2009 hybrid car statistics show that of the more than 200, 000 hybrid cars sold in the U. S. year-to-date (YTD), the Toyota Prius is the top selling vehicle. There were 93, 810 Prius sales through August 2009, with 18, 886 units being sold in the month of August alone. Behind the Prius were the Toyota Camry, which sold 17, 630 YTD, Honda Insight, selling 14, 045 YTD, Honda Civic at 14, 014 units sold and Ford Escape in the top 5 at 11, 222 units sold YTD. In the month of August, Toyota Prius sales were 49% of all August U. S. hybrid sales. Camry’s August sales made up 5% of hybrid sales, Insights comprised 11%, Civics 2% and Escape sales were 4% of all August hybrid car sales. There were 38, 701 hybrid cars sold in the United States in August 2009. Sales of the Toyota Prius were 1% of all car sales in the month of August. All hybrid sales were 3% of the car sales that were made in the month. The number of hybrids sold in the month is up 48. 6% over the same time period in 2008, showing a rise in the popularity of these vehicles by American drivers. Toyota, Honda and Ford are the largest makers of hybrid vehicles, with the most sales and models. Toyota features the top-selling Prius, Camry and Highlander models. Honda has the Insight and Civic while Ford produces the Escape and Fusion hybrid vehicles” (www. carsdirect. com). Based on www. mixedpower. com, “ from the states hybrid sales statistics in 2008, California sold the most hybrid cars with 39, 830 units followed by New York: 8, 810; Florida: 8, 612; Texas: 8, 255; and Illinois: 6, 107” (www. mixedpower. com).

The increasing of environmental awareness also contributes to the rise of green vehicles popularity. Alexandria Haber in his article The Facts About Hybrid Car Emissions and Global Warming explains that “ hybrid cars emit



far lower levels of pollutants in the air than conventional cars, resulting decreased pollution and reduced effects of global warming. Because no two people drive the same way, it is therefore difficult to estimate, but emissions can be reduced from 25% to 90%, when comparing hybrid cars to conventional gas-powered vehicles” (www. buzzle. com). Ricky Lim also in his article explains that “ hybrid cars emit lower toxic emissions compared to conventional gasoline-powered cars due to less gasoline being burned” (www. buzzle. com). It is environmentally friendly, causes less pollution and releases less carbon dioxide into the atmosphere (http://ezinearticles. com). Peak oil theory also emerges and causes people to be more aware to consume more oil. Peak oil theory states: that any finite resource, (including oil), will have a beginning, middle, and an end of production, and at some point it will reach a level of maximum output as seen in the graph: (www. peakoil. com)

This is the graph of world oil production from 1900-2080 taken from www. lifeaftertheoilcrash. net

**It indicates that in the future we will have no more oil to be consumed, and the productivity of green vehicles has to be increased to decrease the dependency of oil.**

**The last contributor to the rise of green vehicles is the tax incentives for the green vehicles buyers. It was in 2005 that Energy Policy Act of 2005 was passed by the United States congress and passed by President George W. Bush. The act, described by proponents as an attempt to combat growing energy problems, changed US energy policy by providing tax incentives and loan guarantees for energy production of various types. Consumers can itemize purchases on their federal income tax form, which will lower the total amount of tax they owe the government. In addition to federal tax incentives, some consumers will also be eligible for utility or state rebates, as well as state tax incentives for energy-efficient homes, vehicles and equipment (www. energy. gov). According to www. hybridcars. com, the exact amount of credit given by the government may vary:**

Current Models

Make Model Tax Credit Audi A3 TDI (Clean Diesel) \$1, 300

Audi Q7 TDI (Clean Diesel) \$1, 150

BMW 335d (Clean Diesel) \$900

BMW X5 xDrive35d (Clean Diesel) \$1, 800

Chevrolet Malibu Hybrid \$1, 300

Chevrolet Silverado Hybrid \$2, 200

Chevrolet Tahoe Hybrid \$2, 200

Ford Escape Hybrid (2wd) \$3, 000

Ford Escape Hybrid (4wd) \$2, 200

Ford Fusion Hybrid \$3, 400

GMC Sierra Hybrid \$2, 200

GMC Yukon Hybrid \$2, 200

Honda Civic Hybrid \$2, 100

Honda 2005 Civic Hybrid (auto) \$1, 700

Lexus GS 450h \$1, 550

Lexus LS 600hL \$450

Lexus RX 400h \$2, 200

Mazda Tribute Hybrid (2wd) \$3, 000

Mazda Tribute Hybrid (4wd) \$2, 200

Mercedes GL 320 Bluetec (Clean Diesel) \$1, 800

Mercedes R320 Bluetec (Clean Diesel) \$1, 550

Mercedes ML 320 Bluetec (Clean Diesel) \$900

Mercedes S400 Hybrid \$1, 150

Mercury Mariner Hybrid (2wd) \$3, 000

Mercury Mariner Hybrid (4wd) \$2, 200

Mercury Milan Hybrid \$3, 400

Nissan Altima \$2, 350

Toyota Camry Hybrid \$2, 600

Toyota Highlander Hybrid \$2, 600

Toyota Prius \$3, 150

Volkswagen Jetta TDI (Clean Diesel) \$1, 300

Volkswagen Touareg TDI (Clean Diesel) \$1, 150

**Despite of its cons, green vehicles have the cons as well. Phillip Dunn in his article Hybrid Cars — Pros and Cons explains that all this new technology comes at a price: a hybrid car is complex and expensive. It has two motors and all the ancillary systems to manage them plus a heavy battery and a regeneration system used to produce electricity during breaking. Hybrids are the most gasoline efficient of all cars – they typically get 48 to 60 mpg (claimed). Not bad, but only about 20% to 35% better than a fuel efficient gasoline powered vehicle – like the Honda Civic, for example, that gets 36 mpg. But, when comparing prices – hybrids cost from \$19, 000 to \$25, 000 and gas saver cars cost \$14, 000 to \$17, 000 – the justification to buy becomes less clear. Much of the fuel efficiency comes from improvements in aero dynamics, weight reduction and, the biggest change: a smaller, less powerful gas engine. In fact, any car will get substantially better mileage just by reducing the engine size. The main reason this is not done has to do customer demand – they want the extra power and zippiness (www. physorg. com).**

### **EV1 Controversies.**

Since the rise of green vehicles popularity, have the oil industries been affected tremendously? In the 1990s oil was getting scarcer and the pollution produced by combustion engines was becoming recognized as a very serious problem. Consumers began to demand some solutions that would save their world, their bank accounts and their breathing from gasoline's bad effects. Like mentioned earlier, electric cars have been around for 110 years from the first time it's been made. Alexandra Paul in her article " Who Killed my Electric Car?" explains that in 1900, electric cars outsold both gasoline and

steam vehicles because electric cars didn't have the vibration, noise and dirtiness associated with gas vehicles. But soon afterward — with the discovery of Texas crude oil that reduced the price of gasoline, the invention of the electric starter in 1912 that eliminated the need for a hand crank, and the mass production of internal combustion engine vehicles by Henry Ford — the electric vehicle went the way of the horse and buggy ([www.cnn.com](http://www.cnn.com)). In the 1990s oil was getting scarcer and the pollution produced by combustion engines was becoming recognized as a very serious problem. Consumers began to demand some solutions that would save their world, their bank accounts and their breathing from gasoline's bad effects. In 1990 California passed the ZEV, requiring 2% of new vehicles sold in California to be emission-free by 1998, 10% by 2003. In response to ZEV, GM launched their revolutionary car EV1. The EV1 required no gas, no oil changes, no mufflers and rare brake maintenance. The success of electric vehicles would have threatened the status quo and core business models of two of the world's biggest industries — oil and automobile. Electric cars are a threat to the profitability of the conventional gas-powered auto industry. GM said that it spent more than \$1 billion to market and develop the EV1 ([www.ecosherpa.com](http://www.ecosherpa.com)). Not only would a successful electric car program cannibalize sales of conventional cars, but the electric car costs the auto industry in other ways: lacking an engine, it saves the driver the cost of replacement parts, motor oil, filters, and spark plugs. The EV1's regenerative braking system, in which the car's electronic controls handled much of the work of slowing down the car, spared the car's mechanical brake system from wear. Brake parts and repair is a billion-plus dollar industry alone. The EV1's efficiency was a winner for consumers but a loser for the auto industry. Despite of its

advantages, EV1 still had its disadvantages: it was only available to be leased to the public; it was only available for three year leases with no option for renewal or purchase at the end lease period. Leases ranged from \$299 to over \$574 monthly which was pretty expensive at that time. EV1 also had a short range (around 80 miles) and no backup system. It took 12 hours to fill up the battery. All in all, GM's EV1 has brought pros and cons to the public. It was threatening the oil industry, yet it also had major weaknesses to sustain its existence.

In conclusion, the popularity of the non-traditional energy sources is increasing since more than two decades. People have realized the importance of the green vehicles for the environment. The rise of green vehicles has been encouraged by the uncontrollable increases on gas prices, the awareness trend to save the environment, and also the tax incentives that is given by the government. The electric cars need to be existed for one more time because with the advancement of technology, it wouldn't be difficult to produce a better car than GM's EV1. Electric vehicles will help tremendously to conserve the oil that has been consumed uncontrollably.