

The Truth About Hybrids, Ethanol and Hydrogen

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“Who Killed the Electric Car?” is both a documentary and a thriller, a movie that begins with a funeral and presents itself as a murder mystery. In this Altenews editorial we will begin with a summary of the movie, and then offer our review of the movie. Then we will provide opinions on the comparative value of hybrids, ethanol, and hydrogen, the three main alternatives to gasoline, and in the conclusion we will offer a unique answer to the question of who killed the electric cars.

In the 1990’s, GM engineers developed an electric car, a car that could run on electricity in a battery in the engine that could be charged with power from power lines and was as good as a typical gasoline-powered car, although with more limited range. This car was the GM electric vehicle EV1. When the California Air Resources Board (CARB) learned of the electric car, they came up with a plan to promote the EV1 as a way to reduce air pollution in California cities, which was known to be causing smog and lung disease. They passed a law, the Zero-Emissions Vehicle (ZEV) law, an electric vehicle mandate requiring that a percentage of all cars sold in California be electric vehicles. GM, Ford, Toyota and Honda released electric cars in California available by lease, and they sold well and became popular. However, car companies and oil companies fought the law, eventually filing a lawsuit that was joined by the Bush White House, and the law was removed. After that, instead of selling the electric cars when their leases expired, which would have been possible due to the consumer demand, the car companies mysteriously took back all of their new electric vehicles and had them destroyed. That event is the “murder” that the movie investigates.

The movie has two moving scenes. In the first, at the beginning of the movie, a group of electric car fans stage a mock funeral to mourn the loss of their cars. Towards the end of the movie, when the electric car enthusiasts learn that the repossessed cars are being destroyed, they present the car companies with an offer of a check for over one million dollars to buy back the cars. The offer is rejected. Then the electric car supporters organize a protest at the site where some of the electric cars are being removed, and some of the protesters who try to block the activity are arrested. With this much support for electric cars, the reasons behind their destruction are very mysterious. The movie explores the events leading up to the death, offering a range of interviews, documents and footage. Cinematically, the movie is very well done, but its conclusions are a bit oversimplified.

The movie offers a list of suspects and then passes judgment on each one. This list includes many candidates, all of whom are “guilty.” There are the car companies, who are shown to be both for and against their product, who resent being controlled by the law, who sabotage their own electric car programs, claiming that there is no consumer demand when there were waiting lists of car buyers, and claiming that the cars were too expensive to build. There is Big Oil. Documents show that Big Oil funded anti-electric

car activists and sponsored the lawsuit against CARB. There is the Chairman of CARB, a one-time electric car advocate who runs a sham hearing and then kills the electric car law, and then goes on to become a hydrogen fuel cell promoter. In the most controversial part of the movie, it is argued that interest in hydrogen fuel cells also helped kill the electric car, and that Big Oil and politicians are promoting hydrogen because it will not be ready for public use for another twenty years and in the meantime gasoline will continue to dominate. There is the Bush White House, with all of their ties to Big Oil companies and car companies, and then there are the California consumers, most of whom were not informed about electric cars. The one “not guilty” verdict is given to battery technology, which is shown to be competent for electric cars to compete with gas-powered cars.

The message of environmentalism is simple and obvious, but it must be restated: industrial society’s excessive waste and pollution are destroying the world’s natural resources and poisoning the environment, and unless there is a change the world could become uninhabitable. One of the main polluters is exhaust from gas-burning car engines. If cars were lighter, or ran on electricity, or got better mileage per gallon, there would be a major decrease of air pollution. Many environmentalists and scientific experts believe that lighter and more fuel efficient cars would have the single biggest impact on reducing air pollution out of all of the solutions that are available. However, everyone wants their big gas-guzzling SUV, and no one wants to take the lead and promote responsible cars. Hybrids and electric cars may be one of the greenest, cleanest technologies, and unlike hydrogen or cellulosic ethanol, it is ready for immediate usage.

The truth about global warming, as presented in Al Gore’s movie “An Inconvenient Truth,” shows that global warming is the next big threat, the way the Cold War was before and the War on Terror is now. The War on Pollution is coming. Then there is the problem of American dependence on Middle Eastern oil, contributing to such events as the War in Iraq and the threat of Iran. More environmentally responsible alternative fuel cars are necessary to combat these threats.

Critics have raised a number of complaints about the movie and electric cars. Some critics claim that hybrid cars are not as good as “normal” cars. The EV range was claimed to be 60 miles, while the average driver goes approximately 30 miles per day, and the EV could get potentially 300 miles with more expensive batteries. Since the EV could be charged at a cost comparable to \$0.60/gallon, it had an advantage over gas cars. Drivers afraid of reliance on a battery may be ignorant as to how their car works, since gas engines rely on the battery to start the car, and if they are very worried they can get a gasoline-electric hybrid. The real fear among the public is that hybrid cars are not “Big, Strong, Dependable,” as said in the movie, and so consumers want SUVs or Hummers instead of smaller cars so that they will feel safer on the road. What is needed here is public education, to warn the public that smaller cars are much safer than big cars, because the big cars will melt the polar icecaps and cause global flooding, and hybrids are also far more trendy, futuristic and cutting-edge than gas-guzzlers.

Another criticism is that the price of the electric vehicles in the movies is not given. It has been reported that the GM EV1 was leased according to a price of approximately \$34,000 to \$44,000. EV fans were shown in the movie making a very real offer to GM to pay over one million dollars to buy the remaining EVs that were about to be destroyed, and given that Saturn of California had a waiting list of people signed up to buy GM EV1s when the cars were taken off the market, it is evident that there were many

people willing to pay the high price for the EV. This makes sense, since the cars could be charged with electricity at a rate equivalent to paying \$0.60/gallon for gas, which would partially negate the extra cost. Given the rise in gas prices, the charging price would be far smaller in 2006. GM claimed that each EV1 cost \$80,000 to manufacture, but they were including research costs, which would have been paid off had the sale of the cars continued, and it also seems that the market would have supported a higher retail sale price. The sale of hybrids continue to this day, and hybrids are reported to get very good mileage per gallon, making them very attractive.

There has been much more interest in ethanol and hydrogen than in hybrids, on the part of the public, politicians, investors, and environmentalists. Hybrids seem to be just as good as ethanol or hydrogen, so this is suspicious. Altnews is strongly pro-ethanol and pro-hydrogen, and we consider the claim that hydrogen killed hybrids to be overly dramatic and untrue. However, there are problems with ethanol and hydrogen that cannot be ignored.

The problems with ethanol are many, including a lack of “flex fuel” cars that can run on ethanol, a lack of ethanol fueling stations, ethanol getting worse mileage per gallon than gasoline, and various other problems specific to American corn-based ethanol. Ethanol does reduce air pollution and dependence on oil imports, but it has many negatives, such as the fact that many ethanol plants run on coal power, which negates the air pollution benefits. Hydrogen fuel cell cars also have problems. Hydrogen fuel cells are still in laboratory development, and reliable experts believe that it will take 10 to 20 years before mass production can begin. Global warming will not wait for hydrogen technology to become commercialized. Also, fuel-grade pure hydrogen is not found in nature and requires energy to produce. Therefore, for environmentally sound hydrogen fuel to be produced, there must be renewable energy such as solar or wind to use to make the hydrogen.

Altnews is pro-ethanol and pro-hydrogen just as we are pro-hybrid cars, but the timing of the promotion of these three alternatives to gasoline is awful and could not have been worse. What we mean is that hydrogen is meant for 20 years in the future but is being promoted now, hybrid cars would work great now but are said to be 20 years in the future, and ethanol should have been promoted 20 years ago so that we would have cellulosic ethanol and more flex-fuel cars and ethanol fueling stations, but instead ethanol is being promoted now. Based on the hype you would think that ethanol and hydrogen fuel is well developed and electric cars would need a technological breakthrough to commercialize, but it is the other way around. Highly efficient mass produced electric cars can be made now, while cellulosic ethanol and hydrogen fuel cells are still being developed in research labs. The public’s ignorance on this is disturbing.

Cellulosic ethanol and hydrogen both need time for technological development, and they will probably not see mass production until 2010 (for cellulosic) or 2015 (for hydrogen) at the earliest. Meanwhile, hybrid cars should be targeted for use from 2006 to 2015. Cellulosic ethanol and hydrogen fuel cells both contain investment opportunities, but nobody should realistically expect them to be commercialized and mass-produced until around 2015. With hydrogen in particular there is a danger of abuse, because the money that goes to hydrogen research should be balanced against the money for incentives for renewable alternatives that will work right now, not 10 years from now,

such as hybrid cars, solar power, biodiesel, geothermal, tidal power, and wind power, all of which have underappreciated, undervalued potential.

All of this leads to another disturbing development. For most people, what is known as alternative energy, renewable energy, clean tech, or green power, which includes hybrids, ethanol, hydrogen, solar, wind, geothermal, tidal power, etc., are all lumped together. Since these things collectively are the alternative to the traditional fossil fuels, oil, natural gas and coal, and since they all share the qualities of reducing pollution and helping achieve energy independence, many green advocates promote all of these together. Altenews is itself in the practice of grouping these things, since they are all areas with exciting growth potential. However, as green power grows, the competition between different kinds of green power may grow, as each area tries to claim superiority to get political support and financial investment. This competition can be healthy and spur growth, or it can be unhealthy, as different green power industries may tear each other apart and then be easy prey for opposition from fossil fuels. It is important, in the view of Altenews, that environmentalists not turn against each other in this way, as we believe that there is ample room for green power of every kind, and the hybrids vs. hydrogen conflict promoted in the movie is not healthy.

“Who killed the Electric Car?” raises the question of why the GM EV1s, the Toyota electric Rav4s, and the electric Ford and Honda models, which had been leased in California and developed a cult following, were taken back and destroyed instead of being sold to consumers when the leases expired, ending the era of the California electric vehicle. This seems like a very confusing and malevolent event, since it was a direct attack on environmentally responsible driving with no explanation from the car companies. The movie gives a list of suspects, such as Big Oil including Chevron-Texaco, car companies including GM, California consumers, politicians including the California CARB chairman, and competition from hydrogen fuel cells. The movie claims that all are “guilty,” but the arguments offered are simplistic, and as intelligent environmentalists we must probe more deeply to try to answer this question. We should remember the phrase “follow the money,” which Deep Throat said about Watergate, and that is a good rule to follow in any mystery.

Now here is where you have to pay attention, as we follow the money: Take the money Big Oil gets from the profits of the gas it sells to car drivers, what politicians get from Big Oil in campaign contributions and lobbying, the money Big Oil pays to pro-oil special interest groups, the money Big Oil paid to anti-electric car activist groups, what middle eastern royal families and ruling governments get from Big Oil, what middle eastern royal families and ruling governments give to American politicians in the form of campaign contributions and lobbying, the money that Big Oil is willing to spend on lobbying to prevent environmentalist anti-oil regulations, the money that car companies make from the sale of gasoline-fueled cars, the money that car companies get from Big Oil in the form of political support and special interest groups, the money car companies give to politicians, the money car companies are willing to spend not to be controlled by government regulation, the possible money lost if the cost of manufacturing an electric car was greater than the retail sale price of the car, the money that Big Oil loses when it has to lower the price of gasoline to compete with alternatives, and the money that Big Oil saves by reducing or eliminating or controlling the competition for its gasoline, and the money that various interests including Big Oil, politicians, military contractors, and

various other special interest groups get from the American dependence upon oil imported from the politically unstable region of the Middle East.

Now compare that sum of money to what California consumers would have paid for the electric cars, the loss of the profits that the car companies would have made from the sale of those electric cars had they sold the electric cars to consumers instead of having them destroyed, what money that environmentalist groups give to politicians, what money environmental groups can raise from the public or special interest groups, money paid to electric utilities by EV drivers to charge the electric cars, the cost of taking all the electric cars from California and having them destroyed, the profit car companies would have made had they made California a success for electric vehicles and then expanded their line of electric cars to the other states of America, the cost to Big Oil of fighting electric car promoters such as the makers of the film, the cost to car companies of the bad publicity associated with the events, and the cost of air pollution and global warming, including the cost of treating illness caused by air pollution going from car exhaust pipes to the air in California as evidenced by the official “smog alerts” of Los Angeles and a corresponding increase in lung disease, and the money that will need to be spent to bring greenhouse gases down to acceptable levels to prevent global flooding before the end of the century.

The first sum can be seen as the total in the loss column for accounting for the total value of the electric cars, and the second sum is the total in the profit column. This accounting takes into account the value to society as a whole, including businesses, politicians, and the public. The profits and losses added up so that political and corporate influences caused GM to believe that it would make more money by killing its EV1 line of cars than by selling them. This was in part because of the massive amount of money that Big Oil paid directly or indirectly to the car companies, in the form of funding anti-electric car special interest groups, filing lawsuits to have CARB regulations overturned, getting the White House to oppose the CARB electric car law, and whatever they did to financially compensate the car companies for the destruction of their electric vehicle inventories (because no car company would destroy hundreds of new cars if it did not have financial justification to do so). All of this is justified by the accounting of profit and loss for Big Oil, because the economies of scale with oil demand and gasoline sales are so big, as evidenced by Big Oil’s big three posting profits of around \$60 billion per year recently, that they can spend the money to destroy the competition in such a way as to maximize profits. \$60 billion is such a large number that it would take an impressive profit margin to compete against profits like that. However, various factors such as the unique qualities of green power, the demand for environmental responsibility from both business and government, and peak oil will make such competition much easier as time goes on.

The death of electric cars is very frightening for environmentalists, because just as the anti-electric car lobby killed electric vehicles in California, there is a growing and increasingly well-funded anti-wind farm lobby, in America, Australia, Scotland, Britain, and all around the world, that is trying to kill wind power. Evidence suggests that the anti-wind lobby is being funded by special interests including nuclear and coal, and it could grow into a well-organized international lobby against all renewable energy. The case of electric cars shows that environmentalist products can be killed. However, the potential of renewable energy, the environmental and political demand for it, and the

natural resources like sunlight and wind and waves, are so great that they will be able to compete effectively with fossil fuel, and we at Altenews do not foresee something similar to the California electric car death happening again. What we do foresee is that without a campaign to educate the public, hybrid cars will not achieve the popularity that they deserve, and this will have a very bad consequence for air pollution and global warming.

As with so many environmentalist issues, if the public knew about the qualities of hybrid cars, there would probably be far greater consumer demand for them. What is needed is public education, and movies such as “Who Killed the Electric Car?” and “An Inconvenient Truth” are a good beginning. In recent developments, Toyota says it is making money from its hybrid sales and wants to expand and become the leader in hybrids. GM, Nissan and Hyundai are planning new hybrid lines, and Lexus is offering luxury hybrids. Unfortunately, Ford and Honda reportedly want to reduce their hybrid programs. Hybrids are an exciting area in the automotive industry with a lot of growth potential, and should be watched closely.