

Electric Cars: The Future is Now

By Ryan Forbess

The next time you're filling up the fuel tank of your SUV, imagine getting the equivalent of 230 miles per gallon. Even better, imagine never buying another gallon of gas. After decades of hope and enduring the last few years of hype, electric-powered vehicles finally appear to be on the verge of reality.

Electric powered cars are no strangers to American history. The first electric powered carriage was introduced in 1832. In 1835, Thomas Davenport is credited with building the first practical electric vehicle, a small locomotive.



In 1893, electric cars of different makes and models were on display in Chicago. By 1900, the electric automobile was in its heyday. Of the 4,200 cars produced in the United States in 1900, 28 percent were powered by electricity and electric cars represented about one-third of all cars found on the roads of New York City, Boston, and Chicago.

Henry Ford introduced the Model T in 1908, its gasoline engine offered the ability to travel long distances, had greater horsepower and was mass-produced. By the 1920s, electric cars were no longer considered commercially viable and gasoline was readily available to most Americans. For the next 50 years, Americans enjoyed the relationship they had with gasoline powered vehicles. During this time, the population of the country was rising at a rapid rate and the technology in our vehicles didn't get much better.

The last time Americans looked to electric cars was in the 1970s, a time when there were concerns about the soaring price of oil. The situation came to a head during the Arab Oil Embargo of 1973. The crisis led to a greater interest in renewable energies and started research in solar and wind power. The situation even included an interest in mass transit for many Americans. The embargo was lifted in March 1974 and gasoline once again flowed to all reaches of the U.S. Prices dropped and so did the effort to find ways to improve electric vehicles.

In the summer of 2008, gas prices reached record highs of more than \$4 a gallon and car sales dropped to their lowest levels in a decade. American automakers begin to shift their production lines away from SUVs and other large vehicles toward smaller, more fuel-efficient cars. Electric car ideas once again started coming to the top of the conversation and this time the technology is better and batteries are improving.

In the next few years, at least a dozen true electric or plug-in hybrid cars are planned to hit the market in the United States. Electricity-driven vehicles from familiar companies such as General Motors and Nissan, as well as start-ups like Zenn Motor Company in Toronto or Tesla in California, will provide American drivers with a wide variety of choices. These new vehicles promise to combine fuel efficiency, cutting edge technology and new world styling. Automotive companies and battery makers are scrambling to get their factories ready for the electric car boom. In the meantime, utility districts are trying to figure out just how big the market will be and just how much power they will need to deliver.

These new electric vehicles will be arriving at the perfect time. Recent federal regulations are calling for huge jumps in fuel mileage over the next five years. With the price at the pump rising once again, there is also a demand for cars that burn less fuel, generate very little to zero noise, and for ideas that will push car technology further than ever before.

In August, President Barack Obama set a goal of getting 1 million plug-in hybrid and electric vehicles on the road by 2015. Along with a handful of other states in the U.S., Tennessee has been selected to become a focal point for electric vehicles. Tennessee, Arizona, California, Washington, and Oregon will share a \$100 million grant that will be used to place charging stations in each state. Each state will receive 2,500 charging stations and will be split in each target city. The cities in Tennessee that have been targeted for this grant are Nashville, Chattanooga, and Knoxville. If the stations are split evenly that would equal more than 800 charging locations in each city.

The installation of an electric infrastructure comes at a time when VerdeGoh!, a store in Franklin, has been selling electric cars since 2008. "We have sold 25 electric cars built by ZENN Motor Company," said

VerdeGoh! owner and founder Josh Womack. Currently the company sells several lines of low speed and medium speed vehicles. Read more about this on their Web site at www.verdegoh.com.

For those willing to take the plunge and purchase an electric car, the rewards of owning these vehicles could include putting more money back in your wallet. Thanks to last year's \$700-billion Wall Street bailout legislation, buyers of some electric or plug-in hybrid cars can qualify for a tax credit of as much as \$7,500. The deal is limited to the first 250,000 sold, then the credit starts getting smaller from that point on. The amount will vary based on the capacity of the battery each car uses to power the vehicle.

Routine maintenance will be a bargain too. No more oil changes, serpentine belt replacement, or spark plugs since these vehicles use simple electric motors rather than complex gasoline or diesel engines. The bottom line is they are far easier to service than conventional fossil fuel burning vehicles.

Since an electric car doesn't use an internal combustion engine as its power source, there is no engine exhaust therefore zero emissions. "If there is one thing everyone agrees on it's clean air. Our electric cars don't pollute with dirty exhaust." Womack said. The electric motor has only one moving part, which is the rotating shaft. A conventional engine has more than 100 moving parts. All moving parts have to be lubricated to function properly.

Which one do you think has a greater chance of failing: The electric motor or the internal combustion engine? "The electric vehicle is a much more efficient vehicle with fewer parts that need to be replaced." Womack said. "The main thing you need to keep an eye on is brake fluid and windshield wiper fluid."

Some of the challenges holding electric cars back are price and usability. Costly batteries put these cars out of reach for most Americans, and infrastructure isn't currently in place to allow owners to plug in and charge up cars when they're away from home. Add to that speed and range limitations with electric technology, and it's clear the electric cars future won't come easily overnight. More than 200 million gasoline powered cars and trucks are on the road today in the U.S. Don't expect people to change over to electric completely within 10 years.

Most Americans have at least two vehicles and in some cases three or more. Electric vehicles can replace one of those that you use to drive around town or to go grocery shopping. The electric vehicle costs less than 2 cents a mile to operate compared to a conventional vehicle that costs at least 10 cents and in some cases up to 30 cents a mile. Until electric can go further distances, keep your primary vehicle to go on vacation or weekend trips and drive an electric car for everything else.

One of the main arguments you hear is that electric cars can't go the distance you need to travel each day. In some cases that may be true, but studies show that 47 percent of Americans have an average roundtrip daily commute of 20 miles or less, well within the electric vehicles range of 50-60 miles per charge. We as a people are creatures of habit and comfort. Just because we have access to larger SUVs and crossover vehicles doesn't mean that we necessarily need them for day-to-day commuting.

If you are convinced that an electric car is right for you, there are several options for purchase. You can either go talk to a dealer like Josh Womach at VerdeGoh! today for the lower speed electric vehicles or wait for the highway speed electric vehicles that are planned for 2010 and 2011. Either way, you will be getting a vehicle that will be fun to drive, cost efficient and the wave of the future.

I believe electricity is the fuel of the future. With electricity to power our transportation we can tap into a new realm of renewable resources like hydroelectric, solar, wind or geothermal power. These are resources that are sure to lessen our burden on the environment.

The electric car is the car of the future. With it in place on our roads and no longer a dream we will not only enjoy saving money on fuel, but we will also be able to contribute to the well being of the environment.

For more information about electric cars and the companies that are selling them visit: www.fueleconomy.net/feg/evtech.shtml.

For information about the 2010 tax credit visit: www.fueleconomy.net/feg/taxevb.shtml

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