

Electric car economics may make sense sooner than you think



BY PAUL WESSLUND

Should your next car be an electric vehicle? The answer could depend on where you live.

At this time, electric vehicles account for just 1.2 percent of the U.S. vehicle market, but sales are booming; they increased 25 percent last year. And the vehicles are getting better and cheaper as researchers improve the batteries that power them. Here's a guide to help you decide if an electric car is for you.

Deal with the distance myth

The first thing to realize about electric cars is that they can travel more than enough miles for you on a single charge, even if you live way out in the wide-open countryside. Of course, your range will be affected by your driving style and how much you use the car's heater and air-conditioning.

To test this idea for your situation, keep track of your actual daily use of the car you drive now, suggests Brian Sloboda, a program and product manager at the National Rural Electric Cooperative Association.

"If you're an insurance salesman, you're logging a lot of miles, so an electric car's not going to be for you," he says, noting that a typical range for an electric car today is over 100 miles, and ranges of 150 to 250 miles are becoming common. "But if you look at how many miles you drive in a day, for most people in the United States – even in rural areas – the number is under 40 miles per day. So, if your car has a range of 120 miles, that's a lot of wiggle room."

According to the Federal Highway Administration, the average American drives 25 miles a day, and for rural areas, the average is 34 miles a day.

Sloboda says another reason it's worth thinking realistically about your daily mileage comes from the most likely way an electric car would be refueled. When an electric car is done driving for the day, you can plug it in to recharge overnight. Essentially, you're "topping off the gas tank" while you sleep, giving you a fully-charged battery every morning.

There are three ways to charge an electric car:

- **Level 1** – The simplest charging technique is to plug the car into a standard home outlet. That will charge the battery at a rate that will add from 2 to 5 miles to its range each hour. That's pretty slow, but Sloboda notes the battery might start the charging session already partially charged, depending on how far it's driven that day.
- **Level 2** – Faster charging will require a professional installer to upgrade a circuit in the garage to a higher voltage for a unit that will add between 10 and 25 miles of range for each hour of charging – a rate that would fully charge the battery overnight. Sloboda says

installing a Level 2 charger in a house or garage would run \$500 to \$800 for the equipment, plus at least that much for the labor. You can also use a timer to charge the vehicle in the middle of the night when electric consumption is typically lower.

- **Level 3** – A DC fast-charging system requires specialized equipment more suited to public charging stations; it will bring a car battery up to 80 percent of capacity in 30 minutes. However, Sloboda warns this high-speed technique only should be used for special long-distance driving, since it can degrade the battery over time. That's also why DC chargers shouldn't be used to bring a battery up to a 100 percent charge.

Take advantage of off-peak electric rates

What you pay to charge your electric car could also depend on where you live, says Sloboda. He advises checking to see whether your local electric cooperative offers a lower rate to charge an electric vehicle overnight, when the utility has a lower demand for electricity.

"It's different depending on where you are in the country," says Sloboda. Some local co-ops have fairly stable electric demand throughout a typical day, so they may not offer a special electric vehicle rate. He adds, "There are areas of the country where the on-peak, off-peak difference in price is extreme," so it might make financial sense for the utility to offer an overnight charging rate.

Another factor affecting the economics of an electric car is, of course, the original cost of the vehicle. Today, the prices of many electric cars fall into the luxury or near-luxury price classes, but industry projections put their cost coming down to match conventional vehicles by about the year 2025. Today, the average electric car costs close to \$40,000, compared with less than \$30,000 for one with an internal combustion engine.

Consider the environment

For many people, one of the biggest selling points for electric cars is their effect on the environment.

The sources of electricity for a local utility vary across the country – some areas depend heavily on coal-fired power plants, others use larger shares of solar or wind energy. The Union of Concerned Scientists analyzed all the local electric utility fuel mixes, and determined that for most of the country, electric vehicles have much less of an effect on the environment than conventional vehicles. That study shows that in the middle part of the country, driving an electric vehicle has the equivalent environmental benefits of driving a gasoline-powered car that gets 41-50 miles per gallon. For much of the rest of the country, it's like driving a car that gets well over

50 miles per gallon.

“Seventy-five percent of people now live in places where driving on electricity is cleaner than a 50 MPG gasoline car,” says the report.

On the other hand, some folks worry that the manufacturing process for the batteries in electric cars may cause more pollution than the production of a conventional vehicle – and there are concerns about recycling or disposing of old batteries.

Sloboda concedes that electric vehicles aren’t for everybody – yet. One limit to their growth is that no major carmaker offers a fully electric version of the most popular vehicle sold in America: the pickup truck. This applies to SUVs too.

Sloboda says there’s no technological barrier to making an electric truck. He even suggests possible advantages: a heavy battery in the bottom would lower the center of gravity for better handling, and at a remote worksite the battery could run power tools.

“Within the next 24 months I believe there will be a credible pickup truck on the market,” says Sloboda. “It’s just a matter of time.”

Paul Wesslund writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the national trade association representing more than 900 local electric cooperatives. From growing suburbs to remote farming communities, electric co-ops serve as engines of economic development for 42 million Americans across 56 percent of the nation’s landscape.

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