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A few glitches for electric cars

Your fancy new green machine is parked in the garage, but how are you going to charge it up?

by Peter Valdes-Dapena, CNNMoney.com senior writer
Last Updated: December 11, 2009: 4:10 PM ET

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NEW YORK (CNNMoney.com) -- If you're looking forward to parking a brand-new electric car in your garage soon, be prepared to spend some money getting that garage in shape.



Nissan Leaf

Electric cars like the Nissan Leaf and Chevrolet Volt ideally use special "quick chargers" that have to be hardwired directly into high-power lines.

Installing the chargers is not like putting in a ceiling fan. The equipment has to be fully approved, installed by a competent professional, and in most cases, a city or state inspector will have to approve it all.



Chevrolet Volt Quick Charger

You could plug your car into an ordinary wall socket, but not if you're in a hurry. Charging a Nissan Leaf would take up to 16 hours, and charging a Volt would take eight. With a quick charger, the job for either would be done in just a few hours. The Volt can also run on gasoline, but what's the point then of having an electric car?

Working out the kinks

Last summer, BMW rolled out an experimental fleet of 450 Mini-e electric Mini Coopers in the Los Angeles and New York City areas.

Unfortunately, by the time the first cars were being delivered, the quick charger equipment had not gotten an official seal of approval from the consumer safety group Underwriters Laboratory, something that's required in many localities.

"It took us a little longer than we anticipated," said Rich Steinberg, BMW's director of electric vehicle operations.

Dr. Lyle Dennis, who lives in suburban New York and commutes to his medical practice in New Jersey, leased one of the Mini-e's and said it took about a month for him to finally get his charger installed and approved. But really it wasn't that inconvenient, he said. He just plugged the car in to a regular outlet for as long as possible, which gave him enough power to get work, where he plugged it in again to fill up for the trip home.

"I was able to drive it pretty much every day," Dennis said.

But those who were affected by the glitch are also the ones most likely to forgive, said Sebastian Blanco, editor of

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"The people in the [electric car] community, they certainly know about the problem," he said. "but they're also the ones that are the most excited about electric cars."

Dennis, for instance, runs two popular electric car blogs -- gm-volt.com and allcarselectric.com -- in his spare time.

But the broader market of car buyers are likely to be turned off by any additional hassles, said Charlie Vogelheim, executive editor of Intellichoice.com. "They all become detriments to making the sale," he said. "That's the type of thing that slows it down going into the mainstream."

Cars like the Chevrolet Volt and Nissan Leaf, which are expected to hit the market late next year, aren't expected to sell in large numbers, and they probably won't be profitable for years, but they're key for good public relations. The media and the general public will be watching and waiting to see how well they're received.

Laying the lines for acceptance

Nissan and GM have been working with city and state governments to prepare them for the arrival of electric car so their customers don't hear, "You need your what inspected?" when they call city hall.

Both automakers are also working on public infrastructure for electric cars. But they admit that parking lot charging stations are more important for creating public acceptance of electric cars -- to do away with worries about running out of juice -- than for actual use.

"We believe that 80% of charging is going to happen at home and at the workplace," said Mark Perry, director of product planning for Nissan.

How little setbacks, problems and hassles will affect public acceptance of electric cars ultimately depends on how the auto companies handle these issues as they arise, said Blanco, but he sees change coming no matter what.

"Little setbacks will not be enough to hold back the tide of people who really want these cars," said Blanco. ■

First Published: December 11, 2009: 6:14 AM ET

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Gregg Mueller 8:37 am

Ed, your numbers are somewhat amusing. As Sarah pointed out, you can't simply compare the amount of energy in a gas tank to it's equivalent in KWh. (I got these numbers from Wikipedia, but I think you can consider them reliable) The Chevy Volt is supposed to achieve 1/4 KWh/mile for the first 40 miles before the gasoline engine kicks to "extend range", meaning I can go 4 miles for every KWh. If a KWh costs me 10 cents, that means those 40 miles will cost me \$1. Last night the station down the street was charging \$2.40 for a gallon of unleaded. Even if my rudimentary math doesn't take into account all the losses associated with charging, driving, etc, I don't think it would come anywhere NEAR the cost of a gallon of gas...and of course my current ICE vehicle doesn't get anywhere near 40 mpg, so the discrepancy becomes even wider. I agree that electric vehicles are still too expensive for the public, but the technology is still relatively new...



Mark Sartor 8:26 am

I hope to own an electric car in a few years. For now, I am looking into buying a used Hybrid to tide me over until Electric, Electric/Hybrid become more affordable.



Gregg Mueller 8:14 am

I think it's hilarious when people try to tell me about the "inefficiency" of electric, and use (usually incorrect) numbers about the inefficiency of Coal-powered plants (disregarding the other - increasing - sources of electricity today). Do they think gasoline magically appears at the pump? What about the cost (financially & environmentally) of drilling, refining, transporting? I won't even get into the political aspect (regarding whether the use of oil and the "importance" of the middle east supports wars & terrorism, etc). If we'd spent half of the amount time trying to improve battery technology as we've spent over the last century improving the gasoline engine (which in my opinion is about as efficient as it can get at this point), we wouldn't even be having these conversations.



Sarah Relihan 8:08 am

Ed
an internal combustion engine is only about 33% efficient, so 2/3 of the 471kWhrs in a tank of gas is lost to heat, i.e. wasted. a battery electric motor system is around 90% efficient so you only need about 150kwhrs of electricity to go the same distance as the 471kwhrs of gas, i.e. at 10cents/kwhrs means \$15, this should easily give a mid sized electric car 600 miles of range.



Bala Srinivasan 8:04 am

Oil under the earth is like a lubricant. The more you dig for it, the problems of earthquake will be more...Leave it alone and go in horses like before.



Mike Deslauriers 7:57 am

So...new investment for future electric power plants will cost money. The Iraq war cost billions - but we were spreading FREEDOM. Joke. And to all the conservatives with their bible blinders on, remember that everytime you fill your gas tank that a portion of that money is helping to finance a terrorist that is killing our soldiers. Most of our oil (gas) comes from the Middle East and some of these billions and billions go to fund terrorism. How can you sleep at night knowing you HELP to kill soldiers and help to fund acts like 9/11 against the USA??



Ryan Gyurkovitz 7:51 am

Mr. Devlin,

Corn farming is extremely nutrient intensive and associated with high levels of erosion and even before the ethanol craze was responsible for the majority of nutrient dumping in waterways of the Midwest. More corn= more high Nitrogen runoff. When this Nitrogen gets to the Gulf of Mexico it creates ideal conditions for algal blooms, when the algae dies, its decomposition robs the surrounding water of oxygen killing or displacing local organisms. This has been well documented and there were indeed record-setting algal blooms this past summer.



Ed Wood 7:14 am

I suppose I should have rounded that number sorry



Ed Wood 7:13 am

@471.72575446820978611192499267507 kilowatt hours for your average 14 gallon gas tank for gasoline the cost to fill yourequivalent electric battery would be about 47 dollars @ .10 cents per kilowatt hour or 4.71 a gallon add a carbon tax top that and you are over 5 dollars a gallon. Did anyone see what happened when gas went over 5 dollars a gallon because our government has refused to let Americans use American resources. Let me see economic collapse. Yeah right lets have more of that. I'm sorry no coal no nuclear no = no electric cars. I am all for electric cars but unless we developr a lot more Nuclear energy it is not possible. Of course if you had 10 acres a few wind mills and didn't have to be anywhere when the wind decided not to blow you could go electric. The minimum cost of windfarm system to supply your car would be between 30 and 70 thousand + 3 thousand a year for maintenance. less if you're not afraid of heights and have a decent understanding of battery chemistry.

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