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EYES ON THE ROAD | JULY 13, 2010

Electric Cars: All Charged Up, but Still Stuck in First Gear

By JOSEPH B. WHITE



Nissan

Nissan's electric-powered Leaf, scheduled to be in showrooms in December, has attracted 16,000 advance orders.

Electric-car fever is rising again.

Battery-powered-sports-car maker [Tesla Motors Inc.](#) just launched one of the hottest initial public offerings in years. [Nissan Motor Co.](#)'s electric Leaf is generating buzz ahead of its scheduled December debut and has 16,000 advance orders. President Barack Obama plans to visit an electric car battery factory in Michigan Thursday to promote the government's \$2.4 billion program of grants to subsidize development of electric-vehicle technology.



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Tesla Motors

Tesla Motors has sold about 1,000 of its electric Roadsters since it debuted in 2008.

And of course, the catastrophic Gulf oil spill is reviving anxiety over the national addiction to oil.

So, it's all systems go for a future in which most of our driving doesn't depend on fossil fuels, right?

Not so fast.

To appreciate the obstacles standing in the way of the electric-car dream, you don't need to talk to electric-vehicle skeptics or hybrid haters. Instead, you can listen to the people who believe in electric vehicles, and are investing in those beliefs.

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digits: Revving Up Electric Cars

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With the Gulf oil spill reviving anxiety over the national addiction to oil, it may be the perfect time for electric cars to rev up again. So why are electric vehicles still stuck in first gear? WSJ's Joe White discusses some of the roadblocks that the Tesla Roadster, Nissan Leaf, and Chevy Volt face.



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Tesla Motors

Tesla Motors says its Roadster can be driven 245 miles before needing to be recharged.

Proponents of the technology will tell you that anyone buying an electric vehicle will want to know at least two things: How far can I drive before I have to recharge? And, where can I go to recharge when I am on the road, far from home? Companies acknowledge that clear answers to those questions aren't yet available—and may not be until a good while after the coming flock of electric cars has hit showrooms.

Tesla Motors outlines as part of its public-offering documents a lengthy recitation of risks to its business. It's sobering reading for electric-vehicle enthusiasts. One of the concerns Tesla raises is that the Environmental Protection Agency is looking at new ways to measure how far electric cars can go before they need to be recharged. The aim is to make the advertised range figures better reflect how people drive their cars in the real world. Some of the new test methods the EPA is considering could require electric-vehicle companies to reduce the advertised range of their vehicles by as much as 30%.

The EPA won't comment on its rule-making. Tesla currently tells people who buy its \$101,500 Roadsters that they can expect to drive as many as 245 miles between charges, a figure company officials say is based on existing EPA

tests. (Their reasoning is explained here: www.teslamotors.com/blog/roadster-efficiency-and-range.) Tesla has sold about 1,000 Roadsters since 2008.

Nissan has told prospective buyers of the Leaf that they can expect to drive up to 100 miles on a charge. "Up to" is a critical qualifier in the electric-vehicle business, given how cold temperatures, speed, the power drain from air conditioners and other factors can cut into battery life.

If electric-vehicle marketers are forced to scale back their advertised range figures, it could diminish the number of potential buyers. But large numbers of customers getting stuck by the side of the road with a dead battery because they believed exaggerated range claims would be worse.

The best solution would be a consistent, easy-to-understand federal standard that produces range figures that correspond with real-world experience. That could take a while for the EPA and industry to develop. So consumers who jump to buy a Tesla, Leaf or other electric models coming in the next couple of years will likely have to make purchase decisions without the comfort of a clear federal standard.

Then there's the "where-to-charge" issue.

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That's a top-of-mind issue for Shai Agassi, a former software executive who founded Better Place, a Palo Alto, Calif., company that is best

known for developing a system for rapidly swapping the batteries out of specially designed electric vehicles so that motorists can drive with fresh batteries while the old ones recharge. The system is designed to eliminate the need for vehicle owners on long trips to wait for hours while their batteries charge up.

Better Place also plans to offer recharging stations for electric vehicles that aren't designed for the battery-swapping system. The company earlier this year secured a \$350 million fresh round of funding from an investor group led by HSBC Holdings PLC. The company has charging stations in Israel and Denmark and in October 2008 announced a deal to build charging stations in Australia. The company also has agreements with Renault SA and Chinese auto maker Chery Automobile to develop cars that can use the company's battery-swapping systems.

In the U.S., Better Place plans to develop a charging network in Hawaii. It also has announced a plan to develop a \$1 billion network of charging stations in California. A company spokeswoman says the first of the charge stations could be up and running later this year.

Mr. Agassi says it would cost between \$5 billion and \$10 billion to outfit the major travel corridors of the U.S. with Better Place charging and battery-swap stations. That's the equivalent of "one week's worth of gasoline," he says.

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 DISCUSS

*Civilization has been based
on fire for thousands of
years. Changing that in 20
years or less is likely to be ...
impossible.*

—Eugene Langschwager

So why isn't he doing it? Because when he talks to investors about bankrolling a big play in the U.S., they tell him, "let's do Holland," he says. That's because gasoline in the home of the World Cup runner-up team is two to three times the price in the U.S., which makes the electric alternative more attractive.

"The only way to get off oil is with a system that's cheaper than gasoline, and more convenient than gasoline," he says. "I can't raise the investment in the U.S. to put this (Better Place) on the ground."

Auto makers have called on the government to make it easier for utilities and others to build public charging stations. A bill proposed by Sen. Byron Dorgan (D., N.D.) and others proposes spending \$10 billion in federal money to boost electric-vehicle adoption, including offering subsidies for public charging stations and \$2,000 tax credits for people who install in-home charging systems. In the current political climate, it's not clear Congress will agree to spend taxpayers' money to make it easier for electric-vehicle early adopters to charge their rides.

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