What's Killing the Electric Car? The Price of Batteries

At last week's Electric Vehicle Symposium in Los Angeles, a consortium of automakers from the United States and Europe unveiled a speedy new standardized charger for electric vehicles.

Under the old system, a full charge would take two to three hours; with the new system, put together by Big Three American automakers Ford, GM and Chrysler and their German counterparts—Audi, BMW, Daimler, Porsche and Volkswagen—a vehicle could charge in as little as 15 or 20 minutes, while you’re in the grocery store or the doctor’s office.

The initiative represents a step toward an electrified automotive future, akin to agreeing on standard-sized railroad tracks to extend rail networks across the country. But there’s still a major obstacle standing in the way of mass adoption of electric cars: battery technology, and the price that comes with it.

Ford, which plans to have 10 to 20 percent of its products “electrified”—either completely electric or hybrid—by 2020, is rolling out its first all-electric vehicle, the Ford Focus EV, this spring, in conjunction with the charger announcement.

The standard Focus, a sporty little hatchback, is being marketed to young people

[1] and retails new at $18,300. The electric Focus costs $39,950 before a $7,500 federal tax rebate and, in California, a $2,500 tax credit. Even after the tax incentives and the gas savings, that's's still a big difference in price for fairly standard car, and that's reflected in the company's modest sales expectations—they hope to see about 2,000 roll off the lots this year in California, New Jersey, and New York.

With a 76-mile range on one charge, the Focus EV goes further than its main competitor, the Nissan Leaf. It's fun to drive [2] and comes with a bevvy of unique features, including a heads-up display that turns efficient driving into a game and a mobile app that lets you analyze your driving habits and control your car from afar. But it's still hard to imagine many people purchasing it at that price.

Mike Tinskey, Ford's director of global vehicle electrification, says the rollout is something of an experiment for Ford—a chance to figure out what the market wants. Tinskey expects that EV buyers will be regular commuters who seek out the car to save money on gas in the long term, adopt the next wave of auto technology, or just do right by the environment. "Not one technology will fit all customers," Tinskey says. "We should have everything from a battery electric vehicle to a plug-in hybrid to a hybrid to an advanced gasoline engine, and offer that across all of our products."

Still, he admits that the price point might prevent people, especially young people, from buying the car. He notes that Ford's standard offerings include a lot of in-car entertainment technology the company believes will resonate with young buyers, but that demographic also is interested in environmental ethics and populated with early tech adopters. "We really need to focus on getting the cost down, and we almost have a myopic view of continuing to do that," he says.

While Ford is focused on doing that across a range of fronts, from manufacturing innovation to partnerships with electric utilities, the biggest obstacle Tinskey sees for Ford and other automakers is battery cost. Car battery technology has developed quickly in recent years, but balancing longer-lasting, faster-charging, lighter batteries with price is a tricky process. While part of the problem is technological, Tinskey points to economics as the central challenge. "In my opinion, it's scale—how do you prime the pump?" he says. "You really need to get scale at these battery plant manufacturing facilities."

That's part of the logic behind standardizing public charging infrastructure—priming the pump to get more people on the road in EVs, which in turn will spur further innovation and cost-savings in the industry. "We could have a breakthrough, but we're not planning for a breakthrough, we're just assuming that we're going to continue to be able to get costs out, and the next generation will be more affordable than this generation," Tinskey says.

There are 1,000 engineers at Ford working on the problem, he says. With many thousands more at other companies and labs around the world, we may get a truly competitive green car yet. *Photo courtesy of Ford*

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Posted by Janine E. Mooney, Editor

June 4, 2012

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