



“Once they own an electric car, people become much more aware of where their electricity comes from.”

—Chelsea Sexton,  
*Plug-In America*

PHOTO BY BEN WARDEN

# EV Resurrection

BY MICHAEL T. BURR

**W**hen Chelsea Sexton was 17 years old, she took a job with Saturn, hawking cars to help pay for college. She was good at her job, and three years later she found herself involved with GM's most exciting new project: bringing the EV-1 electric car to market.

She threw herself into the mission, to the point of marrying an EV-1 service technician. But in 2001, GM abruptly killed the EV-1 program and dismissed most of its personnel—including Sexton.

What GM didn't realize was that it had created a monster, which was now set loose in the world.

Sexton went on to become one of the country's leading plug-in vehicle advocates. She led protests against GM's decision to scrap thousands of EV-1s, and appeared in the Oscar-nominated film *Who Killed the Electric Car?* She formed advocacy group Plug-In America, and led the creation of the Automotive X PRIZE in 2005.

*Fortnightly* caught up with Sexton in June to discuss the electric vehicle market, and utilities' role in developing it.

**Fortnightly:** Tell me about Plug-In America. What have been the group's most significant achievements?

**Sexton:** The most visible progress is all the plug-in cars that have been announced by automakers. A few years ago not a single company was working on it, and now we have at least a dozen.

The most important thing we do is to work with consumers, teaching them about what's possible and getting them to ask for it. Automakers are saying people aren't asking for electric cars by the millions, so the demand isn't strong enough. But people won't ask for what they don't know is possible. Nobody wanted an iPhone before Apple created it.

Also we work with the auto industry and various utilities, teaching about electric vehicles and helping companies interface with each other and the markets. We also work with lawmakers to

develop policies and mandates that support this movement, as well as things like electric codes and vehicle-to-grid (V2G) standards.

**Fortnightly:** Do automakers see this as a real market?

**Sexton:** They're not entirely convinced, but companies are starting to see that if they want to save themselves, particularly the domestic automakers, they have to build cars people want to buy.

There's a saying in the auto industry: "It's not real until it's in your driveway." But there are a lot of concept cars out there and several have been approved for production. We're guardedly optimistic these cars will be available in the 2010 time frame.

**Fortnightly:** People are shocked now by \$4 a gallon gas prices, but won't they get over it and maybe change their driving habits, rather than give up their gas-powered cars?

**Sexton:** When GM was building the EV-1, people said, "When gas hits \$3 a gallon people will change." Then it hit \$3 a gallon and people said it would have to hit \$5 a gallon. The fact is people won't change if they don't have the option.

It's true that electric cars aren't for everybody, but neither is any particular gas car on the road today. The relevant question is whether there are enough people who want a given car to make a business out of it. Dodge makes a business out of selling 2,000 Vipers a year. The entire Hummer product line turns out 30,000 cars. It's a niche. But the hybrid market started out as a niche, with Honda and Toyota selling 7,000 units a year between them. Now they can't build them fast enough. People are making different decisions due to gas prices.

**Fortnightly:** Hybrid vehicles carry a significant premium and that doesn't seem likely to change any time soon. Won't that limit the market for plug-ins?

**Sexton:** DVD players were »

expensive when they first came out too, and now you can buy them for \$50. Plug-in vehicles will be more expensive than standard cars at the outset, but how much more will depend on the vehicle. Toyota is saying its plug-in with a seven-mile electric range will cost about \$1,000 more. The Volt will carry a premium with about \$10,000 worth of batteries in it. Right now I'm sitting next to a Tesla, and that's a lot more expensive—about \$100,000.

People want them anyway. Some paid \$5,000 over the sticker price for a Prius when they came out.

**Fortnightly:** Apart from economies of scale and cheaper batteries, what would cause electric cars to become more affordable for the rest of us who can't or won't pay the premium?

**Sexton:** I'm seeing enthusiasm for financial models that would facilitate the market. Shai Agassi [formerly a division president at SAP] formed Project Better Place and raised \$200 million in venture capital money to address this exact point. Under his business model, you get the car cheap and pay a subscription fee for the electricity you use. You swap out the batteries at charging stations. The total cost of ownership is about the same in the end, but it's easier to get people into the car if you reduce the up-front cost. *[Editor's note: In May, Project Better Place and its partners, Renault and Nissan, unveiled a prototype electric car with swappable batteries.]*

**Fortnightly:** Some utilities show real interest in electric vehicles as a growth market, but others seem to view it as just a curiosity. Is that changing?

**Sexton:** Utilities are all over the map on this. Some have been wildly interested for many years. Austin Energy started a whole campaign, Plug-In Partners. Southern Company and Virginia Power got interested quite early and got a little burned because they installed a

## SMART CHARGING

Vehicle-to-grid (V2G) technologies promise energy storage capacity for utilities, but a more important step toward electrifying transportation might be less complicated—and nearly as powerful.

"First and foremost, we need to control the load-side behavior of electric vehicles," says John Clark, CEO of technology company V2Green. "We need to avoid the classic problem of having cars charging at the peak, so smart charging needs to come along as vehicles roll off the assembly line."

Once that happens, smart charging can become a powerful utility tool, Clark says. "If you can both predict and shed load down to the feeder level, it's the same thing as being able to generate power. All the value-added services you can get with V2G you can also get with smart charging. You just need a bigger fleet."—*MTB*

ton of chargers throughout their area so they'd be ready when the cars would arrive. But now Progress Energy and Duke are very interested in V2G.

You might expect utilities' interest to be concentrated in areas where people are more environmentally conscious, but it's not. We're seeing interest among all types of utilities, all over the country.

**Fortnightly:** What should utilities be doing to help advance the market for electric vehicles? Will it take regulatory changes?

**Sexton:** It's important for the utility industry to support vehicle policies and infrastructure policies that will help develop the market. But some things utilities can do by themselves, without regulatory changes. One is time-of-use rates. You don't necessarily want people plugging in their cars at 1:00 in the afternoon, and one way to limit that is by offering TOU rates to encourage them to charge vehicles when rates are low (*see sidebar, "Smart Charging"*).

**Fortnightly:** What about building smart-grid and V2G infrastructure?

**Sexton:** In general I think utilities should allow the gadgets to drive the demand for infrastructure. In the first generation, the market for cars will pull the infrastructure along.

With V2G, where you need the infrastructure in place to use the car's

capability [to store power for the utility]. Consumers will want to do that, but you don't need special infrastructure to get plug-in cars on the road.

Also, utilities should keep in mind that vehicles are a right-brain decision. There's a lot of passion behind the choice to purchase a particular car. People want to be recognized for what they drive, and they drive the car that reflects their values.

That's a discussion we've had with utility people. Green power marketing and getting people to consume less energy is a challenge. Part of the problem is that as a customer, your neighbor doesn't know you've made that choice. But if you buy a Prius, everyone knows it.

Utilities provide reliability, redundancy and security. That's great, but as far as most people are concerned, they get their electricity out of the wall and they're not interested in paying more so the utility can rehabilitate the grid. But once they own an electric car, people become much more aware of where their electricity is coming from. About half of the people who own electric cars also have solar panels on their homes.

If utilities help to get electric cars out there, consumers will see the value of the infrastructure, and it will create market pull for what utilities have to offer. ■

*Michael T. Burr is Fortnightly's editor-in-chief. Email bim at mtburr@gmail.com.*