# AS GOES THE CHEVY VOLT, SO GOES AMERICA?

Me driving a Chevy Volt mule

Yes, I'm being a bit cruel, posting this the week that GM will probably declare bankruptcy. But that may make the question more apt, particularly given rising concerns about the US' own credit rating.

As I told you all a million weeks ago, I had the opportunity to drive a mule version of the Chevy Volt around GM's Tech Center about a month ago (it's in a Cruze body). Perhaps it's because I did the test drive and not our true car wonk, bmaz, but I found the drive as interesting for the big picture issues underlying the Volt as for the test drive itself.

**The Car**

My thoughts about the car come largely from the biggest reason I didn't seriously consider a Prius when I bought a new car last year. I prefer small, efficient cars—with manual transmissions, so I can get what power they have when I need it. It would take a lot to convince me to give up my stick shift and the Prius, with its underpowered engine, wasn't able to do that (particularly not after a friend drove me around the hills of SF in it).

The Volt I drove—which has 80% of the functionality the production car will have—had enough power to convince me to give up a stick shift. It was immediately responsive and the pickup was good. The Volt, like the Prius, also has regenerative braking that uses the engine to brake (making it akin to downshifting), which is another feature that might get me out of my stick shift.

Otherwise, the car drove like a car. bmaz isn't

going to set any speed records with it, but it is responsive and feels like a substantial car.

I say it "feels like a car" and that’s largely deliberate. Though it runs silently, as you’d expect an electric car to, the GM engineers have tweaked the engine so it mimics what people now expect out of combustion engine, such as a pause where the car would normally shift out of first. There’s an interesting balance, it seems to me, in the engineering decisions they’ve made, between playing to the futuristic side of the Volt, and to the expectations of your typical driver.

**Custom car**

One of the more futuristic things they will have on the car are custom themes—background color for the dash screens and custom sounds, just like your cell phone has. At one level, I think this idea is really just a  marketing gimmick—in the same way people spend a lot to customize their iPod or cell phone, they could customize their car. But there are two more reasons I find this idea intriguing.

The plug-in and the engine

It’s one of the things about the engineering that fascinates me the most about the car—the effort to strike a balance between current expectations and the futuristic side of this car.

First, as bmaz and I have talked about repeatedly in threads, one of the biggest challenges of going electric is that car companies—all car companies—rely on the regular maintenance required by a combustion engine to keep their dealers fiscally healthy. Because electric cars have different maintenance needs, you’d either have to give dealers more front-end profit, or they would have a disincentive to sell it (this is one of the things that killed the EV1). But if you change the relationship between dealers and owners, then you might find

an alternative retail model. This customization business might do that. (Also, after GM sheds 1,200 dealers over the next year, dealers will be more profitable and therefore more willing to sell something like this, so there's an upside to all those closing dealers.)

But the focus on customization also shows the degree to which this car has been designed with a kind of adaptability in mind. Partly, that's part of its parallel design with the Cruze, which reflects a more modular design than GM has used in the past. But partly, it's a sign that GM is thinking of how it can customize the Volt itself in a second generation to more specifically meet the needs ot consumers. For example, they talked about a cheaper, 20-mile range Volt that soccer moms might like, or a more souped up Volt for bmaz.

The Volt, as packaged, will be a car that will appeal to a certain kind of early-adopter. But you can tell GM is thinking down the road about ways to extend the concept and adopting to consumers with different needs.

**The bigger picture**

As I said, though, the most interesting part of the test drive for me was the way it fit into bigger picture issues. If this car works, it'll work partly because of the stimulus and the bailout. And it'll introduce a much more holistic view of transportation.

Start with the bailout and—prior to that—incentives for energy efficient developments. Some of the efficiency incentive money will go to a stateside factory for the battery; once fully operational, this will shave $200 off the battery costs alone (because shipping costs will be so high for these batteries).

The battery running the length of the car

There is potential money, too, to go into infrastructure for plug-ins (and the plug-in

technology has been standardized enough that it'll work for anyone's plug-in). So right now, GM is working with cities, pitching them to use stimulus funds that will make plug-in infrastructure available in urban areas. They're also going to talk to employers—companies like Google and Apple—about partnering with governments (maybe 50/50) so as to make charging stations available at their work locations. Undoubtedly, Toyota and smaller electric car companies will be doing the same. But given that you've got a company in which the federal government will have a substantial stake (assuming this week's expected bankruptcy goes somewhat according to plan), you're going to see some focus on making sure that infrastructure gets funded and built. This part is just my speculation, not anything that the GM guys said, but the coincidence of the bailout and possible bankruptcy with the stimulus funds already being appropriated make the chances much higher that you're going to see some urban areas prepped to run this and other plug-in vehicles.

But GM is not relying on the government for these deals. The car will have some upgraded features that suppliers designed just to be a part of this car: a Bose sound system, tires, and so on.

And then there was a holistic approach to the car as a whole. One thing they're thinking about is how to "dispose" of the batteries. GM is testing these batteries for a 10-year or 150,000 lifespan. But they expect after that point the batteries will still have a lot of usable capacity left—perhaps up to 75%. So they're beginning to talk to potential partners—utilities and large landlords—about using the batteries to store energy for backup power generation.

There's a lot that remains uncertain about the Volt's future. There are still questions about the battery (and therefore vehicle) cost. Toyota's been out poo-pooing the future of plug-ins (though on this count, they remind me a lot

of bean-counters from the Big 2.5 talking about hybrids in the 1990s, who were correct in saying hybrids wouldn't be profitable in the near term, but who were wrong to reject hybrids nevertheless). And frankly, unless gas prices are close to $4 a gallon, there **will** be a limited market for these cars.

But in the meantime, GM's on schedule, building a car that will use as much electricity as a refrigerator. Most impressively, it's doing so in such a way really targeted to getting the average American driving an electric car, from the range, to the cues it programmed to mimic an internal combustion engine, to the ability to customize. And GM is doing so in a way that will make the most of both its immediate woes and that of the American economy.

GM may well declare bankruptcy tomorrow. But they're also very much looking forward.