

**PECO Energy Company Default Service RFP**

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## Solyndra shakeout hits the electric car business.

### EV Hype and Hope

By Michael T. Burr

**Six months after Solyndra's bankruptcy, the resulting controversy is affecting other companies that were hoping to secure loans from the Department of Energy. Lawmakers want to know whether the DOE loan program has stalled out -- and whether reforms are needed to clarify the mission and the risks for taxpayers.**

The Department of Energy canceled loan disbursements to Fisker Automotive after the company missed a development milestone in February.



#### The Hundred-Dollar Race

In the electric vehicle (EV) market, the \$100 mark represents a critical threshold for commercialization. For EV batteries to achieve true cost-parity with internal combustion engines, they need to be readily available at a cost of \$100 per kilowatt-hour of storage capacity.

Various reports indicate the batteries in the first generation of modern EVs cost about \$500/kWh, but recent announcements suggest the \$100 price point might not be far off.

- Envia Systems in February said independent test results verified its lithium-ion energy cell had achieved an energy density of 400 watt-hours/kilogram. The company expects the advancement to cut the price of a battery pack by one-half.

- California Lithium Battery in March entered an agreement with Argonne National Laboratory to commercialize technology the company says will reduce battery costs by more than two-thirds.

Both companies are applying nanotechnology research to reduce the quantity of lithium used in batteries and to embed it into materials and nano-scale lattices that allow better charging characteristics and greater durability. -MTB

In the past few years, hype over electric vehicles reached a crescendo in the media and in political circles. The good news is that this hype spurred major investments -- both private and public -- toward R&D and commercialization that's already starting to show results (See "The Hundred-Dollar Race" - left). The bad news, however, is those results haven't yet translated into dramatically better or cheaper cars in showrooms, leaving first-generation EVs to compete against mature gas-powered cars with much lower sticker prices.

The difficulty of that competition became clear in March 2012, when Chevrolet suspended production of the plug-in hybrid Volt, because inventory was stacking up. But in addition to slow sales for products already in the market, some new concepts have failed to get out of the garage, providing fodder for skeptics who say batteries can't against internal combustion, and subsidies are a waste of taxpayer dollars.

Such skepticism isn't entirely misplaced; many questions about battery technology remain unanswered. And the hype cycle for any new technology tends to raise unrealistic expectations in the early years -- expectations that might never be realized. However, potholes and problems don't indicate the end of the road for electric transportation -- far from it. This early-phase shakeout suggests the politically driven DOE loan program needs some restructuring to ensure it achieves the goal of a competitive and financially viable electric transportation industry.

#### The Valley of Death

In every new industry, companies on the so-called "bleeding edge" of technology frequently find themselves at perilous risk of running out of funding before they can establish a sustainable revenue stream. Another metaphor is the "valley of death" -- the place where new technology ideas go to die, because they can't get enough funding to become fully commercial. That seems to be happening now, as companies struggle to deliver on a promise whose technology foundation hasn't yet solidified.

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#### CONTINUED ...

The purpose of the Department of Energy's (DOE) clean energy loan guarantee programs -- including the Advanced Technology Vehicles

#### This early-phase shakeout suggests the politically driven DOE loan program needs reform.

**DOE loan applicants accused the Obama administration of stonewalling to avoid making loan commitments that could provide campaign trail fodder for**

