

Testimony Of
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United States House Of Representatives
Select Committee On Energy Independence And Global Warming
Concerning
Plugging Into Energy Independence With 150 MPG Vehicles
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A123Systems Role In The Coming Hybrid And Plug In Hybrid
Revolution

A123SYSTEMS' ROLE IN THE COMING HYBRID AND

PLUG IN HYBRID REVOLUTION

Mr. Chairman, Congressman Inslee, Congressman Sensenbrenner, and other Members of the Committee,

This Committee's interest and efforts in fostering new American technologies in the critical effort to slow down climate change and reduce our dependence on foreign oil is well known and deeply appreciated. I thank you for the opportunity to appear before you today to explain and answer questions about A123Systems' program for developing and marketing a state-of-the-art lithium ion battery which we and others believe will help enable this nation to lead a world wide plug-in hybrid transportation revolution, and the importance of a modest transitional tax credit for plug-in hybrid conversion modules so that revolution can start now.

Let me explain.

The Company And Its Products

A123Systems started 5 years ago as an MIT spin off with a \$100,000 DOE SBIR grant. Today it has raised over \$100 million, has over 380 employees and operates facilities in Watertown, Massachusetts and Ann Arbor, Michigan. We sell millions of batteries annually to Black and Decker, Dewalt and others for high powered handheld

applications. We also are developing higher powered solutions for the aerospace and defense industries. T/J Technologies, which is our recently acquired Ann Arbor facility, is developing batteries for hybrid vehicle applications for the Army. We have been chosen by GM, and other major American and European automakers, to help develop and power their hybrid and plug-in hybrid sedans, SUVs, trucks, buses and heavy equipment moving vehicles which will be coming on line over the next 3 to 5 years.

This has all been made possible by our development of a unique Nanophosphate based lithium ion battery with a combination of power density, durability and safety in excess of anything mass produced on the market today. This assertion is confirmed by the ever growing list of American and European automakers and partners who are choosing A123Systems as the power source of choice in enabling them to enter the increasingly attractive and profitable hybrid era.

The automotive industry is in the middle of a critical transition to electric drive. Fueled by strong consumer demand for greener vehicles and a growing awareness of our greater responsibilities to our planet and our national security, there are now over 65 hybrid vehicle launches planned by 2010. We will continue to work with all the key players to optimize our technology and provide leading price performance in this market.

The next generation of technology beyond the conventional hybrid is the plug-in hybrid. This significant advance in the technology is one where the US automakers have established technological leadership and which delivers many benefits including

government verified 100 MPG or greater efficiencies at a fraction of the cost of gasoline. A123Systems is a leading supplier of battery technology for hybrids and plug-in hybrids. We are working with General Motors and other leading American and European automobile and heavy equipment manufacturers to validate and introduce this technology into the market.

Over the years, Congress has been in the forefront of recognizing the need to nurture these kinds of breakthrough technologies by insuring early stimulation through the wise use of tax credits to kick start consumer demand. Putting the CLEAR ACT in place in 2005 was critical to both educating the public and producing the sales volumes that have lead to ever improving costs and economics. As a result, today's rapidly growing demand for hybrid vehicles is a tribute to the public's underestimated desire to do something about the health and national security risks of ever rising petroleum dependency when presented with economic choices.

Now we need to move quickly to do the same thing to achieve the far greater oil and emission savings of plug-in hybrids.

Clearly, the number one urgent message I want to leave you with today is that in all the legislation pending before the Congress, nothing other than the plug-in conversion module holds the promise, starting this year, of reducing oil consumption by 80% and emissions by 60% on a car by car basis, with very little infrastructure change.

Think about it. That is a strong statement. And those of you who have seen or driven one of our standard hybrids with an A123Systems plug-in conversion module in the spare tire well will understand the significance of what I am saying. Seeing and testing is believing.

A123Systems has given substantial thought to how best to move along the continuum of producing millions of high performance A123Systems lithium ion batteries for handheld applications today to adding the bandwidth required in 3 to 5 years to supply the major manufacturers with batteries for their fully designed and tested original equipment plug-in hybrid vehicles.

So we have come up with an approach that marries our American battery breakthrough of today to the millions of original equipment conventional hybrids that are already rolling off the major manufacturers production lines now and through the next decade. The answer was to acquire Hymotion, a leader in the field of companies utilizing our batteries in Plug-In Conversion Modules that can be installed in the spare tire well of most existing and future hybrids.

The result of that effort, with your help, can be a giant leap right now into the future of the plug-in hybrid revolution.

Most of today and tomorrow's conventional hybrids -- costing as little as \$22,000 -- can be, and some already have been, successfully, safely and quickly converted into plug-in hybrids – increasing their efficiency from 50 or so MPG to as high as 150 MPG in city

driving. In fact, DOE's Argonne National Lab tested an earlier version of this module providing independent validation of the 150 MPG urban efficiencies that plug-in hybrids achieve. Prototypes now being driven around the country, including here in Washington, have been achieving the same results.

These mass produced, standardized modules will be certified to meet all applicable new car safety and emissions test standards. They will be installed by trained and certified mechanics in less than 2 hours, without any changes to the underlying electronics or materially useable space of the production hybrid other than the installation of the plug in the rear bumper. They can be charged from a standard plug for 4 hours, providing up to 40 miles of electric assisted drive for approximately 60 cents a charge. Off peak night time charging improves a utility's load factor and efficiencies, while further saving consumers energy costs.

These modules will be marketed to fleets later this year and individual consumers in 2008. The initial prices will be in the range of \$10,000 for a 40 mile module to \$7,000 for a 20 mile module. As we have seen with conventional hybrids, the prices will come down as the volumes go up.

That is why a modest transitional tax credit, at least until the OEM's hit the market in volume in the next decade, can make such a difference in a quick start to the oil and emission savings of plug-ins as well as the education of the American consumer as to what is possible now.

With a \$3,300 tax credit for the 40 mile module, the payback period for a fleet owner with \$3.50/gallon gas is about 2 years, with annual travel of 35,000 miles. The payback period for the average commuter using a 30 mile module to drive 11,000 miles annually would be about 4.5 years. And these calculations place no value on the net reduction of approximately 100 tons of carbon dioxide and other emissions over the life of each converted vehicle.

Think of what a difference these modest tax credits could make over the next several years. There will be almost 1 million standard production hybrids on the road in the US by the end of this year. With almost two dozen hybrid models expected by the end of 2008, and over 60 different models by 2010, there will be 5 million standard hybrids by 2010 and perhaps as many as 15 million by the time significant plug-in production is rolling out of the major's plants. With a meaningful start from this year's energy bill, many of these vehicles would become the leading edge of the major oil and emissions savings of the plug-in revolution.

With the provision in the Chairman's bill that the credit can never exceed 35% of the cost of a module, the credit will decline as the costs come down and then finally disappear at the end of the 3 year transition period.

I thank the Chairman, Congressman Inslee and many others for their tireless efforts and urge you all to continue to spread the word and do everything you can to enact a modest

transitional credit for plug-in conversion modules as part of this Session's energy legislation. With this tax credit, the average American can be in a full, responsive, comfortable sedan that can get over 100 MPG and cut net emissions by 60% for under \$30,000 today, and continuing to decline over time. That is a lot sooner and far more tangible than many of the other initiatives currently contained in the pending bills.

To any of the skeptics whose interests are best served by delaying the start of the plug-in era, I would say we welcome the NHTSA and EPA testing that will be conducted this fall -- as well as any other suppliers that meet the safety and environmental standards required to qualify for the credit in the Chairman's proposed bill and all other similar proposals in both the House and Senate.

In conclusion, thank you for the opportunity to further explain what this technology can mean to our nation's energy future, and the importance of acting now. Initially, we estimate a five fold increase in demand for these modules from an increasingly responsive American public as a result of providing for this early responder tax credit. Moving up by years the availability of this breakthrough, so important to our national security, will:

- Introduce a public hungry for action to a new American technology that lets them participate in a transportation revolution they have already started with their unprecedented demand for standard hybrids .
- Gather invaluable experience and data for the next generation of factory produced vehicles through earlier wide spread use of these higher tech batteries in real volumes in the everyday world.
- Stimulate battery cost reductions sooner from volume sales
- Advance by years the much needed 80% reduction in oil consumption and 60% emissions savings associated with every plug in on the road.

- Serve the purpose of potentially speeding up the roll out of factory produced plug ins as a result of the growing public awareness and response to module savings.

If any of you have not yet seen or driven one of these cars, just let me know and we will bring a car to you.

Thank you again for all your efforts and time. We stand ready to help in any way we can.