

Congressional Hearings
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Transportation Electrification

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Co-Founder Plug-in Hybrid Development Consortium

Testimony:

Thank you for the opportunity to participate in this hearing today. My name is Kraig Higginson. I am the chairman of Raser Technologies, a public company on the New York Stock exchange. We develop advance geothermal energy and electric powertrain technology, a "Well-to-Wheels" approach to reducing our nation's dependency on oil and green house gas emissions. In our automotive division, we work with Tier 1 suppliers and OEMs. Alan Perriton, a former senior executive at GM is on our board.

In 2004, we co-founded the Plug-in Hybrid Development Consortium with Pacific Gas & Electric, Southern California Edison and other leading utilities along with technology companies such as A123 Systems & others. Recently we completed a two year program with GM to develop an extended range electric powertrain, similar to the Chevy Volt, but for larger vehicles including trucks & SUVs. Working with GM, we introduced this technology in a GM mid-size SUV, demonstrating between 30 and 100 mpg in gas fuel economy for the average driver using electricity as the primary fuel. Because most people drive less than 40 miles a day, on most days it won't burn a drop of gas, driving its first 40 miles on electricity using advanced lithium ion batteries. Applying this powertrain to the light duty truck, America's top selling vehicle, gas consumption could reasonably be cut in half or more. And we can begin doing this beginning today and begin commercialization with America's fleets.

Trucks and SUVs account for about half the vehicles sold in this country with light duty trucks consistently the number one selling vehicle in America. Using new electric powertrain technology, we can improve fuel economy in light trucks & SUVs through by as much as 100 percent or more depending on the route. This significant reduction in petroleum consumption will lead directly to greater national energy security, economic growth and a reduce our trade deficit resulting from exporting cash for oil , cleaner air and most importantly new American jobs with a sustainable future.

The key to achieving the maximum benefits of electrification is designing an electric powertrain that optimizes the vehicle's battery range for the average miles driven. According to the department of transportation (figure 1) most Americans today drive less than 40 miles a day. An electric vehicle with 20 to 40 miles of battery electric range and a small gas/electric generator or range extender, could provide most of the benefits of an electric vehicle while removing critical barriers to mass market penetration such as range limitation and charging infrastructure.

It is becoming clear that **Electrification of Transportation** is emerging as the most practical and immediate way to reduce dependency on oil and to reduce greenhouse gas emissions.

Why Extended Range Electric? This is due to the many advantages of electric transportation. We have a well-established electric infrastructure in place, capable today of accommodating millions of additional electric vehicles. Electric motors are much more efficient, about 90% efficient compared to about 15% for gas engines. According to a study by the Electric Power Research Institute, charging electric vehicles from today's grid would cut GHG emissions in half, even with today's coal-fired power plants. As states meet their renewable portfolio standards, the grid continues to become cleaner. The two key steps to meeting the nation's energy goals are 1) plugging in electric vehicles to the grid, and then improving the grid with renewable energy. The U.S. has the advantage of massive reserves of alternative fuels and renewable energy including the world's largest reserves of geothermal energy.

In fact, the U.S. has led the world in the development of electric motor drive and battery technologies needed for vehicle electrification including, the invention of the Nickel Metal Hydride and Lithium Ion batteries and advanced AC induction and hybrid motor designs.

Yet at the same time, the U.S. is at high risk of losing its leadership in both automotive manufacturing and electric vehicle technology to foreign competitors with government backing.

At one time, the U.S. had a 10-20 year lead on electric vehicle development. But sadly we have a history of being excellent at innovation, but poor at commercialization, failing to capitalize on our own intellectual property in emerging new industries.

As a case-in-point, although the LCD display technology was invented here in U.S., foreign competitors now manufacture over 90% of world's LCD screens, which have nearly completely replaced traditional cathode ray tube or CRT displays. This was due to closer cooperation between private industries and government in countries like Korea.

American Automotive Renaissance

My company has struggled with these very issues. Today we stand together at the crossroads. We can look back and remember the days when America led the global automotive industry, or look ahead to an **American Automotive Renaissance** inspired by clean electric vehicle technology: the RIGHT STUFF in the RIGHT PLACE at the RIGHT TIME. My message to you today is that we have the technology in hand to solve these very significant challenges. Of course we will grow through generations of improvements, just as we have in the computer and networking industries.

Now, I'd like to share with you my thoughts on where we get the most "bang-for-the-buck" so to speak.

I confess, that when I imagined the "car to save the planet," I had something more like the sexy Tesla Roadster in mind, or the elegant Fisker "Karma." (Don't tell my friends at GM but I have already placed an order for the Fisker Karma.) However there is another less flashy vehicle that I believe we will also need on the road to electrification. It is a vehicle very unique to America's working class. A vehicle that is so important to our economy that it has been the number one selling vehicle in this country for the past twenty years. It is the humble but hard-working pick up truck. This is an important vehicle both for the rebuilding of the economy and the electrification of the automotive industry.

Top Selling Vehicles in America



- 1. Ford F-150**
- 2. GM Silverado**
- 6. Dodge Ram**
- 11. GMC Sierra**
- 13. Toyota Tundra**

Sales crippled by rising fuel prices

RANK	VEHICLE	2008	2007	'07 RANK	%Chng
1	F-Series	690,589	796,039	1	-13.2
2	Silverado-C/K Pickup	618,237	836,089	2	-26.8
3	CAMRY	473,108	448,443	3	+5.5
4	Accord *	392,231	354,441	5	+10.7
5	CRUISE	371,790	387,388	4	-4.1
6	RAM P/U	358,295	344,177	6	+1.6
7	Civic *	331,095	316,638	7	+4.6
8	Impala	311,128	289,868	8	+7.3
9	Altima	284,762	232,457	10	+22.5
10	CR-V *	219,160	170,028	20	+28.9
11	Sierra	208,243	210,736	12	-1.2
12	Cobalt	200,820	211,449	9	-5.1
13	TUNDRA	196,833	124,508	23	+57.9
14	PRIME	181,221	106,971	NA	+69.4
15	Carscan	176,150	211,140	19	-16.6
16	Ford	173,213	177,066	16	-2.1
17	Odyssey *	173,246	177,919	16	-2.7
18	RAV4	172,752	152,047	15	+13.6
19	Scionline/Club Wagon	168,722	180,457	11	-6.5
20	Tacoma	165,596	157,393	22	+5.2

Source: JD Powers

✓ Trucks & SUVs make up 40% of vehicles on the road

High Volume & High Margin

For a significant reduction in nationwide gas consumption and green house gas emissions, high volume market penetration is imperative. Therefore, the ideal vehicle for early commercialization would have both high volume and high margin. It is very difficult for automakers to add \$25,000 of advance technology to an economy car with very low margin and remain profitable. Light duty trucks have both high volume, and high profit margin and can better accommodate the additional cost of new technology.

Why Trucks? - The Greatest Good.

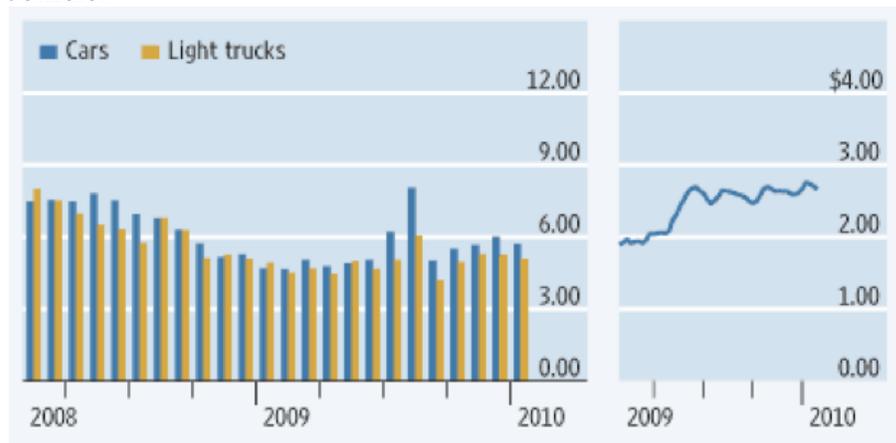
Light duty trucks are the number one selling vehicles in America (figure 2). When combined with SUVs and vans, they make up about half the vehicles sold. Trucks & SUVs make up half of the vehicles yet account for a majority of vehicle emissions and fuel consumption. Yet pick up trucks are also the vehicle of choice for America's small businesses. Trucks may not be driven on Wall Street, but they do drive hard working families in America's heartland back to work. I've heard it said that behind every Prius owner is a friend with a truck. Try to get a 4 x 8 sheet of plywood in the back of a Prius! Due to their versatility, trucks are also the number one vehicle in America's working fleets with government and utility fleets among the highest truck users. Given their broad and necessary role in our economy, we must conclude that unless we also improve truck emissions, we will not likely fully reach the nation's urgent goals to reduce green house gas emissions.

On the other hand, due to their low initial fuel economy, the greatest increase in GHG reductions and fuel efficiency can potentially be achieved through the electrification of America's working trucks.

But can it be done? Is it practical? Is it even possible?

Technology Innovation

America leads the world in electric vehicle powertrain development for this class of vehicles. As a case-in-point: I refer to the Raser GM project to build and demonstrate the first full performance four wheel drive extended range electric vehicle.



Annual sales of cars are nearly equaled by the sale of light trucks

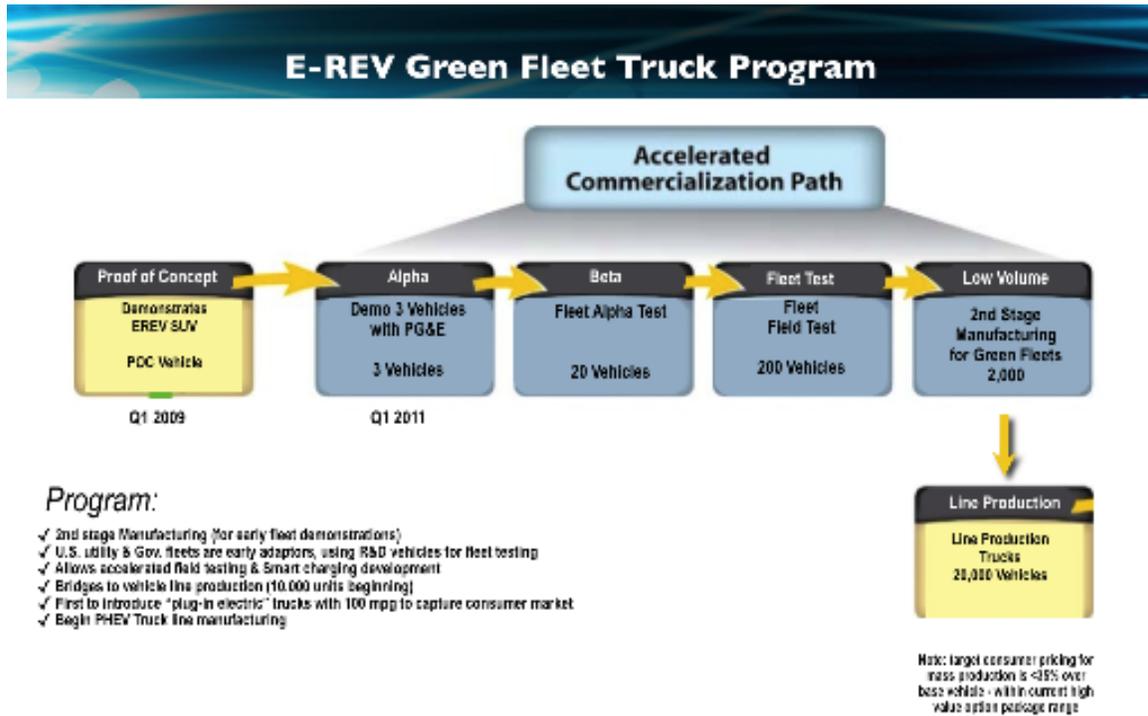
Why Fleets? Fleets Will Lead the Way

Working with the PHEV Consortium, Raser has begun a "Green Fleet Program," to introduce extended ranged electric fleet trucks to the nation's largest utility fleet, Pacific Gas & Electric. David Meisel, Director of Fleet Services for PG&E comments,

In a continuing battle to reduce operating costs, fleets prefer the stable low cost

alternative to gas. In most states as in California, utilities Fleets have strong inherent drivers for early adoption of plug-in electric vehicles led by concerns over rising gas prices and a desire to reduce emissions. Working fleet trucks typically need both fuel economy and occasional light payload. The ideal fleet vehicle has the gas fuel economy of a Prius, with the payload of a pick up. In the past, trucks have been largely excluded from significant increases in emissions standards. Utility fleets are strong supporters of plug-in electric vehicles. Additional funding and incentives to the nation's public and private fleets who are willing early adopters of electric work vehicles majority of duty is "hauling people" with occasional moderate payloads.

Green Fleet Program



David Meisel, Director of PG&E's Fleet Services writes...

"PG&E is co-founder of the Plug-In Hybrid Development Consortium and has been working with Raser Technologies to demonstrate six new plug-in electric fleet pick-up trucks. In addition to being one of the nation's largest and cleanest utilities, PG&E is

also a leader in the development, demonstration and deployment of clean alternative fuel fleet vehicles with over 1500 alternative fueled vehicles operating in its fleet today. PG&E has more pick-up trucks than any other vehicle in their fleet, and with the extended range electric trucks developed by Raser, PG&E can confidently deploy these electric trucks throughout their large service territory as a solution to many of their business goals, including reducing emissions while lowering fuel costs, and helping to address the nation's dependence on imported oil."

--David Meisel, Director Fleet Services, PacifiG Gas & Electric

Minimal Changes.

There are other reasons that the pick up truck is an ideal vehicle to accelerate electrification. Pick up trucks have a high volume to weight ratio giving it the necessary space and payload capacity needed to accommodate the additional weight and size of a large lithium ion battery pack safely without reducing cargo or cabin area.

Offsetting Battery Costs with Mobile Exportable Power and Additional Value.

In addition, the incremental cost of batteries, particularly in early stages of low volume production, can be largely offset by the additional value of mobile exportable power in extended range electric trucks equipped with a 100 kW generator used to provide additional power to the motor and to recharge the vehicles batteries and when driving beyond battery range. That's enough to power construction tools or the entire construction site or enough to provide power to run your home and six of your neighbors in an emergency. Municipal and maintenance crews use Utility fleets highly value the mobile emergency power built into the truck. Unlike consumer vehicles, working fleets find enough value in the mobile power generation to nearly offset the incremental cost of batteries

Key to OEM profitability

In a recent article, the Wall Street Journal sites trucks as key to GM's profitability due to higher margins and high volume. To offset reduces sales due to higher gas prices, GM plans to improve truck fuel economy to meet the 24.1 mpg C.A.F.E. standard set for 2011. High vehicle profit Margins are needed to absorb additional cost of new technology. The Ford F-150 is the top selling vehicle model in America followed by the Chevy Silverado. However, if combining both the Silverado™ and the GMC Sierra brand which is essentially the same truck, then GM would hold top honors.

Trucks offer U.S. automakers a core position of strength to rebuild profitability in a market segment where they still maintain global dominance. With truck sales central to U.S. automotive success, a radical improvement in fuel economy from 15 mpg to as much as 100 mpg for a majority of daily routes and duty cycles can give the automaker a strong advantage over its competitors, enabling it to capture significant market share, even dominating the auto industry. In so doing, if an

automaker is successful in applying extended range electric vehicle technology across its fleet, it will be able to meet or exceed C.A.F.E. standards even while its competitors struggle to meet ever increasing standards necessary to meet more to meet the growing challenge of climate change. Electric trucks in turn put Americans back to work building a more sustainable economy.

Early Adopting Fleets Willing to Pay More for Value

Fleet customers constitute a significant portion of OEM truck sales and are strategically vital to the OEM. Utility fleets in particular are very supportive of plug-in vehicle technologies and tend to share an interest in successful demonstration of clean plug-in vehicles in their communities. Utility fleets seek lowest volume pricing whenever possible. Yet fleets frequently demonstrate that they are willing to pay more for clean trucks if the vehicle offers significantly more value. A cleaner truck with the same fuel economy is valued nearly the same by the fleet because the value is not captured by the fleet but passed on largely to the society, while a clean truck with a 300% higher fuel economy can drive a 5 year return on investment. Add to this other benefits of real economic value greater than to the incremental cost of the vehicle and the market will bear the new price.

Bridge to High Volume

Mass market penetration is essential to achieve economies of sale to reduce costs and for broader more effective displacement of petroleum and emissions reductions. Trucks and several SUV models benefit from a compounded volume aggregate being the most popular vehicle with both fleets and consumers. Rapid market penetration to high volume is essential to amortize the tremendous costs of new technology. Fleets are key to early adoption, rapid market penetration and can provide a crucial bridge to volume. Pacific Gas & Electric's fleet alone contains over 12,000 vehicles with over 8,000 trucks. Government fleets are required to meet EPCRA with 75% of all new fleet purchases being alternative fueled vehicles. Government fleets including municipal, state and federal, are some of the largest users of light trucks & SUVs. In their efforts to encourage automakers to improve fuel economy, federal fleets can provide tremendous stimulus to the market by "walking-their-talk" and purchasing plug-in electric fleet vehicles and trucks given the right incentives.

Market Drivers

One of the most powerful market driver for electric vehicles is the comparatively low cost of grid electricity when charging at night during off peak hours. With a national average of about 6 cents per kilowatt hour, a fleet truck can drive on electricity for about 60 cents per equivalent gallon. This could translate into a 75% reduction in fleet fuel costs. For large fleet operators, such as FedEx, UPS, Comcast, AT&T and others, the fuel savings can increase dramatically over a mild hybrid or even a plug-in HEV that remains gas-engine dependent representing often a 75-100% improvement over mild hybrids. This savings is particularly augmented when vehicle route & duty cycle can be matched to the battery range.

For most working fleets, fuel is the highest operational expense. On average, electricity costs about ¼ as much as petroleum nationwide. Because of the benefits of “load leveling” by charging in “off peak” hours, most utilities now offer or plan to offer a nighttime “off peak” electric vehicle charging program. Pacific Gas & Electric offers a night-time EV rate of just 6 cents per kWh. This translates into less than 60 cents per equivalent gallon. SMUD, the Sacramento Utility District offers a 50% discount for nighttime charging of electric vehicles. The Los Angeles Department of Water and Power (LADWP) offers a discounted rate of just 2.5 cents/kWh for electricity used to charge EVs during off-peak times. Southern California Edison offers a discount program of about 8 cents per kWh and San Diego Gas & Electric offers about 9 cents per kWh. This translates into about a 75% reduction in fuel costs, a powerful market driver.

(source DOE Department of Energy Efficiency & Renewable Energy

http://www.afdc.energy.gov/afdc/progs/view_ind_mtx.php/in/DICS/CA/0

Good for the Grid

Plugging in at night is good for the consumer and good for the utility. Night-time off-peak vehicle charging offers load leveling benefits to the utility improving grid efficiency.

Mass Market Penetration Range & Infrastructure

Two of the most significant barriers to high volume market penetration of alternative fuel vehicles has historically been 1) range limitations and 2) infrastructure. Extended range electric vehicles can bring benefits of immediate electrification without the limitation of battery range or the necessity of charging infrastructure. With the range extender, electric vehicles can

Mass penetration of alternative fueled vehicle has historically been limited by range & infrastructure issues.

In addition to the benefits to the environment, a national fleet of thousands of extended range electric vehicles offers National security of mobile emergency power generation for municipal, military and other critical operations.

Flexibility

To adapt to best available alternative fuels, the extended range electric vehicle can accommodate a variety of fuels including diesel, bio diesel, CNG, and others providing a high degree of flexibility

Fuel Cell Ready

The U.S. has invested billions of dollars into hydrogen fuel cell research. The extended range electric powertrain is by nature “fuel cell” ready. The combustion generator in an

EREV can be replaced with a fuel cell generator for zero emission operation in the future. Hydrogenics, a leading fuel cell company sees this as a more practical pathway to commercialization for fuel cell technology, significantly reducing the size and cost of the fuel cell stack.

Well to Wheel Emissions, Improving.

Driving on grid electricity will provide over a 60% reduction in total well-to-wheels emissions in California according to an EPRI study. More importantly, as state's grid improves to meet new RPS (renewable portfolio standard) in the next few years, the total well-to-wheels emissions will continue to decrease as the percentage of renewable energy increases. PG&E in California offers one of the greenest energy mixes in the country with over 50% of its power coming from low emission sources such as hydroelectric, nuclear, geothermal, wind and solar. As the U.S. moves to meet a national RPS, the well-to-wheels emissions will continue to go down. This is part of the long-term advantage of the plug-in electric vehicle that aligns well with the nations overall energy plan.

Current Status of Electric Vehicle Development

Raser Technologies recently completed a program with General Motors to develop an extended range electric demonstration vehicle

The Demonstration vehicle selected was a mid-sized SUV. The gas powertrain was replaced with an extended range electric powertrain designed for larger vehicles. In testing the 6,000 lb vehicle achieved over 40 miles in electric range on a mixed city/highway drive cycle using about 50% of the available battery pack. We are now applying the powertrain to popular pick up trucks to demonstrate in the nation's leading fleets beginning with the largest utility fleet, Pacific Gas & Electric. We are advancing now to the next phase of the accelerated commercialization program where we will deliver two EREV pick up trucks to Pacific Gas & Electric and then to Anaheim City and other beta test partners.

David Meisel, Director Fleet Services for PG&E comments,

“In addition to being one of the nation's largest and cleanest utilities, PG&E is also a leader in the development, demonstration and deployment of clean alternative fuel fleet vehicles with over 1500 alternative fueled vehicles operating in its fleet today. PG&E is co-founder of the Plug-In Hybrid Development Consortium and has been working with Raser Technologies to demonstrate six new plug-in electric fleet pick-up trucks.

PG&E operates more pick-up trucks than any other vehicle in our fleet, and with the extended range electric trucks developed by Raser, PG&E can confidently deploy these trucks throughout our service territory as a solution to many of our business goals, including reducing emissions while lowering fuel costs, and helping to address the nation's dependence on imported oil.”

In southern California Raser is working with the City of Anaheim to begin implementation of ultra low emission extended range electric fleet trucks. Fleet

Superintendent Karl Hopfer writes,

"Anaheim City is proud to offer its customers clean electric power from Raser's geothermal power plant. In addition, we have teamed with Raser to demonstrate how much cleaner plug-in electric fleet trucks can be, especially when charged with electricity from a zero emission geothermal power plant. Extended range electric trucks offer us the electric range we need for typical daily routes, with the flexibility for longer trips. For us the E-REV truck is like a pick up truck is just what fleets like ours are looking for. Fleets can play a key role in bringing this new cleaner technology to the market. We are in favor of any additional incentives that may be available to help early adapting fleets."

--Karl Hopfer, Director Fleet Superintendent, Anaheim Public Utility

The city of Anaheim also provides power to help Mickey Mouse's home town "go green as well.

Working with consortium partners, over 11,000 soft orders for plug-in electric fleet vehicles have been acquired from over 76 cities, 166 public utilities and 17 state and federal agencies. The green fleet program could soon be ready to convert those soft orders to purchase orders as it completes its beta and field testing. For example, we were recently invited to meet with the city of Seattle who is scheduled to receive \$20 million in stimulus funding in association with Clean Cities, to purchase clean fleet vehicles. Matching fleet demand with fleet incentives to can provide tremendous velocity to commercialization.

There are hundreds of cities across the country like Seattle, Anaheim and others who are seeking to use stimulus funds to buy new clean vehicles. If additional Pricing

Due to current low volumes, battery pricing still remains high. However, we are now receiving bids from battery companies with high volume capacity that now approach \$500 per kilowatt hour, with lower prices closer to the DOE targets on the horizon given adequate volumes. The key seems to be getting batteries to volume with by the chicken or the egg! We believe that by working with fleets will provide an essential bridge to volume early to accelerate commercialization.

Many fleets are willing to pay more for clean vehicles if the value is there including a more significant improvement fuel economy over previous models. Our market research shows that an improvement of over 50% in gas fuel economy can drive a higher vehicle price particularly as gas prices are predicted to continue rising as global demand outpaces supply due to emerging economies such as China and India with a large energy appetite. However additional value is needed to overcome the anticipated incremental vehicle costs during low volume. For working fleets, such as utilities, maintenance crews, contractors, farmers and others, the additional value of mobile power generation may offset a significant portion of battery costs.

How Much will it Cost?

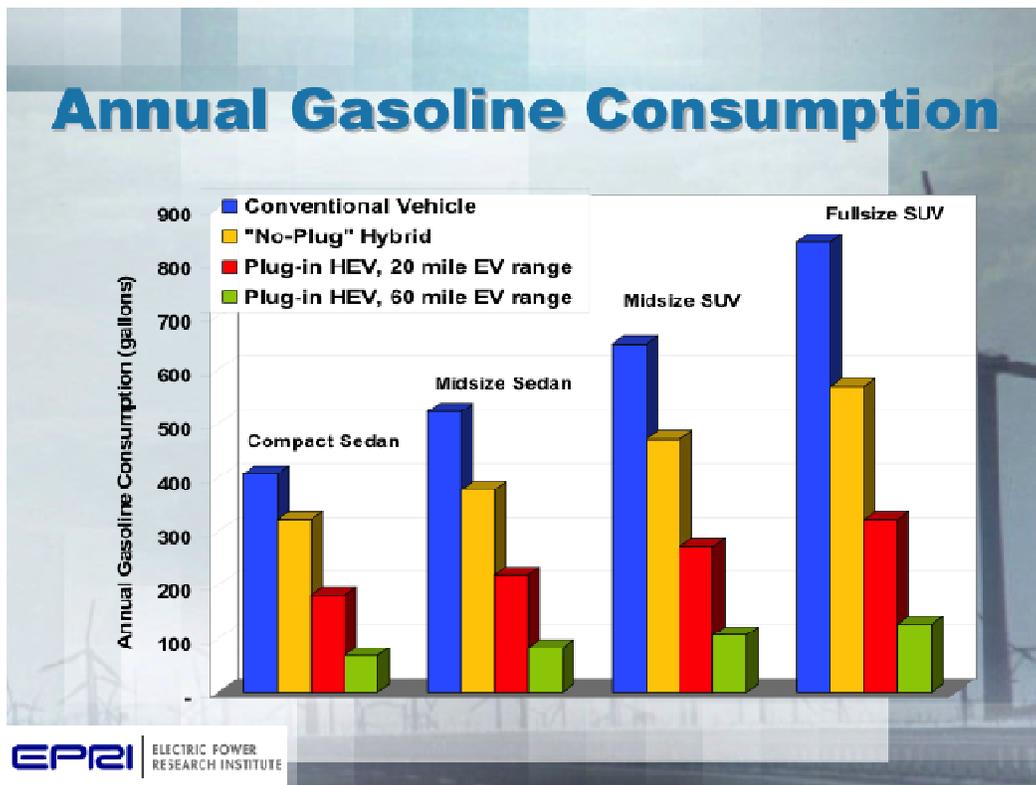
In volume we are targeting a 30% incremental cost for the Advanced Technology package for consumers. Statistics from the Commerce department show that the average truck price is about \$30,000, or 20% over base vehicle. In addition, nearly 25% of all trucks are sold with options adding over 25% to vehicle price. We anticipate that an Advanced Technology Package, with Ultra High Fuel Economy of 50 mpg or higher in a truck, will capture significant market share from 15 mpg competitors and may command a 25% premium package option price. This price point has already been established by consumers who regularly spend 25% more for other high-end options such as a comfort package including leather, wheels, navigation, additional horse power and an entertainment system. Selling value for price is appropriate strategy.

Incentives such as the current \$7500 tax credit (applicable to EREV-40 trucks) and other incentives are key to bridging to high volume.

Economies of Scale – Sharing Common Components

Greater economies of scale are needed to reduce rapidly the cost of new technology. Similar to the way we build on the economies of scale applying a number of different vehicles to a common chassis, we need to find the same economies of scale by leveraging a common electric powertrain class that can be applied in tandem to a chassis class to power broader number of vehicles. For example, the cost of a specialty delivery vehicle for FedEx, USPS or the military can be greatly reduced if it shares a common powertrain with light trucks already in high volume production. The computing industry has successfully leveraged this strategy in the popular “WinTel” model providing flexibility and economies of scale.

For example, we have carefully selected the 2500 class chassis due to its high potential for commonality among a number of high value vehicle platforms shared in common with high volume light duty trucks.



A twenty mile plug-in has the potential to cut gas consumption in half, and a 60 mile EV range vehicle can cut gas consumption by over four times according to this analysis by EPRI.

What is Needed:

Four areas of policy support are needed to aid in the commercialization of vital advanced electric vehicle technologies, manufacturing & consumer incentives, and incentives for early adopting fleets and streamlining of emissions & vehicle certifications.

Manufacturing Incentives.

For smaller innovative technology companies, capital-intensive operations such as extended R&D and new tooling for manufacturing of new technology can be prohibitive. Technology suppliers and tier one suppliers play an important role in supporting the nation's larger automakers with the innovations needed to leap ahead. Loan guarantees for suppliers working with OEMs can be tremendously helpful. Once manufacturing can be achieved, then tax credits can take effect.

Early Adopting Fleet Incentives

The most near-term and effective incentives that are needed should be provided to early adopting fleets who replace low fuel economy trucks & SUVs for electric trucks & SUVs. Many fleets especially government fleets are unable to take

advantage of tax credits. Due to the key role that early adopting fleets play in the acceleration of commercialization of electric vehicles, additional incentives need to be offered to fleets to help bridge to volume and reduce the incremental cost of clean electric vehicles. This would allow government fleets to lead the way without exceeding current replacement purchasing budgets for a limited time, say 3 years.

Consumer Incentives

Several consumer incentives for electric vehicles can help accelerate commercialization and increase total volume. The vehicle's all electric range correlates directly with the amount of petroleum displaced. Therefore purchase incentives tied directly to the vehicles all electric range can be in the public's interest and justified to bridge to volume production. This can be called Petroleum displacement credits valued by the electric vehicles incremental improvement or reduction of emissions over the gas version. This would provide one-time incentive for owners of so-called "gas guzzler" vehicles to upgrade to an electric version which would provide a greater overall reduction in emissions and fuel consumption.

Electric Fuel Charging Incentives

Incentives to charge vehicles at night would benefit the utility and the national grid. Incentives should increase for households who select night time and renewable energy charging options. Overall utility rates can also be discounted with temporary federal and state subsidies.

Low Carbon Fuel Incentives.

Provide additional incentives for clean fuel graduating by lowest carbon content.

Sales Tax the highest polluters.

An environmental recovery tax on vehicles that do not meet C.A.F.E would encourage automakers and consumers to reduce the number of high emissions vehicles and provide funding needed for electric vehicle incentive programs.

Discounts in State Registration fees for Electric Vehicles

1. Streamline Safety & emissions testing for pre-certified vehicles with new clean powertrains
2. Mandate Government Fleets to order first
3. Fund study quantifying TOTAL cost of ownership of cleaner vehicles including total ownership costs including fuel, hidden costs to government and society
 - a. Loss of life
 - b. Damage to environment from emissions
 - c. "cost of carbon"

Conclusion

I feel it a privilege to be alive today, to be apart of this great change for the better. It has been my passion and my pleasure to be a small apart of what I consider to be

the greatest challenge of our time. I believe that our success in going to the moon four decades ago, served to teach us that we can meet any challenge if we work together and set a clear objective. How much more important is our challenge today... to make a giant leap for mankind. Until now, we have lack only the will to do it. We have built this vehicle. It's not perfect, but its more than good enough to begin the journey. In Neal Armstrong's words, "It's time to take the first small step!"

Additional Resources:

Extended Range Electric Fleet Trucks

<http://www.rasertech.com/media/videos/rasers-extended-range-electric-fleet-truck>

40 mile range test of Extended Range Electric SUV – 100 mpg

<http://www.rasertech.com/media/videos/test-drive>

EREV Powertrain 3D Animation

<http://www.rasertech.com/media/videos/series-phEV-drive-system-video>

Governor Schwarzenegger Introduces EREV Hummer

<http://www.rasertech.com/category/media/videos>