

Motor Press Guild - The Greater Los Angeles Auto Show

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- **Thanks, Mitch** [McCullough, chairman of the Motor Press Guild] **for that kind introduction.**
- It's always a pleasure to come to California and the LA. Auto Show... and that's especially true this year, since I have the great privilege of helping the Motor Press Guild kick off this year's press week.
- I also want to congratulate the L.A. Show and its organizers on achieving your 100 th anniversary.
- California is where so much of the world turns to see "what's new" in technology and design. The fact that the L.A. Show has been doing that longer than just about anyone... and the fact that you have "arrived" this year as one of the industry's top international shows... really makes this a special year for those of you who work so hard to make it a success year after year.
- So, congratulations on a great first century... and on behalf of the entire GM team, let me wish you many more successful years to come.

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- **And speaking of 100 years ago... it's interesting to note that back in 1907, there were three major technologies competing to power the automobile... electricity, steam, and gasoline. Each had its champions, and it was not at all clear which technology would dominate.**
- In 1906, for example, the "Stanley Rocket"... built by the brothers who created the very successful "Stanley Steamer"... set a new land speed record... 127 miles per hour.
- Of course, electrically driven vehicles had their proponents, too – most notably, Thomas Edison, who believed that electricity was the best option for driving automobiles. In fact, he spent years improving battery technology specifically for use in electric cars.
- Today, it looks like Edison might have had a great idea... maybe just a little further ahead of his time than usual. More on that in a minute.
- **Today, as I said, the auto industry is much different from the way it was 100 years ago. In fact, it's much different from the way it was just five years ago.**
- Since 2001, a series of geopolitical, natural, and economic realities... from extraordinary economic growth in China and India ... to regional conflicts in the Middle East ... to population growth, global climate change, and natural

disasters in the Gulf of Mexico ... have combined to drive home the fact that we face an increasingly uncertain energy future on a global basis.

- All of this has created serious concerns about energy supply, energy availability, sustainable growth, the environment, even national security – issues that, collectively, have come to be called “energy security.”
- A few statistics:
- Today, 35 percent of the world's energy needs are met with petroleum products.
- China imports about 46 percent of the petroleum it uses, the U.S. imports about 64 percent, the European Union imports about 79 percent, and Japan imports virtually 100 percent.
- And according to the Department of Energy, from 2003 to 2030, worldwide energy demand will grow an average of 2 percent a year. In other words, we'll need about 70 percent more energy in 2030 than we did in 2003.
- **My conclusion from these figures... going forward, it is highly unlikely that oil alone is going to supply all of the world's rapidly growing automotive energy requirements.**
- For the global auto industry, this means that we must – as a business necessity – develop alternative sources of propulsion... based on alternative sources of energy... in order to meet the world's growing demand for our products.
- This is a huge assignment. But it's also an extraordinary opportunity.
- By developing alternative sources of energy and propulsion, we have the chance to mitigate many of the issues surrounding energy availability... we'll be able to better cope with future increases in global energy demand... we'll minimize the automobile's impact on the environment... we'll be able to take full advantage of the incredible growth opportunity for cars and trucks around the globe... we'll take a lot of risk out of our business, and likely improve the profitability of the industry... and, not to be overlooked, we'll have the opportunity to make the automobile more exciting, more functional, and more fun to drive than ever before.
- The key, as we see it at GM, is energy diversity.
- We believe that the best way to power the automobile in the years to come, is to do so with many different sources of energy.
- **So, what are the conventional and alternative energy sources we're talking about, and how do we see them playing out?**
- First on the list are conventional gasoline and diesel fuels... and they'll continue to be the principal automotive fuel source for some time.

- This means several things:
- First, as an industry, we must continue to improve the efficiency of the internal combustion engine, as we have for decades .
- Second, we must work to reduce the use of traditional petroleum-based fuels by partially “displacing” them with alternatives, such as biofuels like E-85 ethanol and synthetic fuels, such as those derived from coal, natural gas, or biomass.
- **At GM, we believe that the biofuel with the greatest potential to displace petroleum-based fuels in the U.S. is ethanol... and so we have made a major commitment here to vehicles that can run on E-85 ethanol.**
- At GM, we now have more than 2 million E-85 vehicles on the road... with plans to expand production going forward.
- In fact, along with DaimlerChrysler and Ford, we announced in June that America 's three domestic car companies will double our production of vehicles capable of running on renewable fuels by 2010.
- That's more than two million E-85 and biodiesel-capable vehicles a year by the end of the decade – the single largest commitment to renewable fuels in our nation's history.
- And then, in a meeting with President Bush earlier this month, Tom LaSorda, Alan Mulally, and I announced that America 's domestic auto companies were prepared to make fully half of our annual vehicle production bio-fuel capable by 2012... provided there is ample availability and distribution of E-85, as part of an overall national energy strategy.
- **You see, flex-fuel vehicles alone will not get the job done. Right now, there are about 170,000 gas stations in the United States ... and only about 1,000 E-85 pumps.**
- At GM, we're partnering with government, fuel providers, and fuel retailers across the U.S. to help grow the E-85 ethanol fueling station infrastructure.
- Since May of 2005, we've helped add 175 E-85 fueling stations in 11 states... with more to come. In fact, the Department of Energy awarded a grant last month to a team from GM, CALSTART, Pacific Ethanol, CleanFUEL USA , Community Environmental Council, and others to add 15 E-85 pumps in California . We need to do more of this.
- **To the skeptics on ethanol, I say... keep an open mind.**
- We need to diversify our energy sources... consumers are looking for alternatives... ethanol is a proven winner in countries like Brazil ... and, the growth of the biofuel industry in the U.S. continues.
- In 2007, ethanol production alone will approach 7 billion gallons... and that's from grain-based crops. Also promising is the potential to produce fuel from

biomass... and research and commercialization in this area is gaining momentum through programs with the Department of Energy, universities, and the private sector.

- Ethanol has the potential to significantly offset energy demand... and we owe it to ourselves to encourage continued development of the ethanol fuel industry.
- **At GM, we will continue to support the use of E-85 as an important part of a comprehensive national energy policy.**
- And toward that end, I'm pleased to announce this morning that, within the next three years, GM's HUMMER brand will offer biofuel powertrains across its entire vehicle lineup... including our future HUMMER products.
- HUMMER is the world's first automotive brand to make such a commitment.

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- **What are the other fuel options available to us?**
- Well, despite its success on the sands of Daytona Beach 100 years ago, steam is not one of the technologies we're pursuing today... but we are very serious about the third option that was big in 1906 – that is, electrically driven vehicles.
- In fact, I'm announcing today that GM is significantly expanding and accelerating our commitment to the development of electrically driven vehicles, beyond what we have already committed to with our fuel cell and hybrid programs.
- **Why electricity?**
- First, electricity offers outstanding benefits... beginning with the opportunity to diversify fuel sources "upstream" of the vehicle. In other words, the electricity that is used to drive the vehicle can be made from the best local fuel sources – natural gas, coal, nuclear, wind, hydroelectric, and so on. So, before you even start your vehicle, you're working toward energy diversity.
- Second, electrically driven vehicles... when operated in an all-electric mode... are zero-emission vehicles. And when the electricity, itself, is made from a renewable source, the entire energy pathway is emissions free.
- Third, electrically driven vehicles offer great performance... with extraordinary acceleration, instant torque, improved driving dynamics, and so on.
- **Now, some of you may be thinking, "Wait a minute – what about hybrids? What about fuel cells? Didn't GM already commit to those technologies?"**
- And the answer is, "Yes, we did." They are both big parts of our broader commitment to electrically driven vehicles... so, rest assured, we remain committed to both. Let me explain.

- **First, what is an “electrically driven vehicle”?**
- Well, no simple answer. In short, there are degrees... there's a continuum.
- For example, there are what most people think of as “electric vehicles” – pure battery-powered vehicles, such as GM's EV1.
- The EV1 ran solely on electricity that was generated outside the vehicle... from the power grid... which was stored onboard the vehicle, in lead-acid and nickel-metal-hydride batteries.
- **Then there are gas-electric hybrids... which are not, per se, electric vehicles... but which are, in part, electrically driven.**
- How's that? Well, a conventional hybrid vehicle has both an internal combustion engine and an electric drive. And, it can be powered by both systems simultaneously... or, by either system independently.
- The electric energy in a conventional hybrid vehicle is generated by the vehicle itself, and stored onboard in a battery.
- At GM, we have several kinds of hybrid vehicles, either on the road or under development, including...
- more than 550 GM-equipped hybrid transit buses – including more than 70 in California in locations like Orange County and Yosemite National Park;
- the Saturn VUE Green Line... which uses our high-value “ belt alternator starter” system ... and gets the highest highway fuel economy of any SUV on the market, at a great price to consumers;
- and, beginning in about a year, our advanced “two-mode” hybrid system... which is being co-developed with BMW and DaimlerChrysler... on our full-size SUVs and pickups.

- **Another type of hybrid that has attracted a lot of interest recently is the “plug-in hybrid.”**
- A plug-in hybrid will be a conventional hybrid vehicle with an important difference – the battery will be much more advanced... it can store significantly more energy... and, of course, you'll be able to “plug it in” and recharge it at a standard electrical outlet. The result will be significantly better fuel economy, and the ability to use diverse energy sources.
- That all sounds great... but so far, no major OEM has built a plug-in hybrid for

commercial use... because the battery technology doesn't yet exist.

- In fact, given what we know today, it's pretty clear that it will take several years to bring to market, a plug-in hybrid that will meet the expectations and real-world performance standards that our customers expect... things like safety, durability, driving range, recharge time, operating temperature range, and affordability.
- **So, when will someone take the plunge and announce plans to build a plug-in hybrid? I'm glad you asked.**
- At our GM press conference scheduled to begin in about 45 minutes, Saturn General Manager Jill Lajdziak will introduce the new 2008 Saturn VUE... which will continue to offer a high-value hybrid option based on our "belt alternator starter" system.
- Not to steal too much of Jill's thunder, but the all-new VUE also will be the launch platform for the first front-wheel-drive version of our advanced "two-mode" hybrid system in 2008... and this will deliver even more fuel economy for our customers.
- And, importantly, this VUE two-mode hybrid can also be configured as a plug-in hybrid. And in that regard, I'm pleased to announce today that GM has begun work on a Saturn VUE plug-in hybrid production vehicle.
- **The VUE plug-in hybrid, GM's first, will use an advanced battery, like Lithium-Ion.**
- As I said a moment ago, production timing will depend on battery technology development. But based on our work with EV1 and our different hybrid-electric vehicles, we at GM already have a lot of experience developing and integrating advanced battery technology into our vehicles... and we're working today with a number of battery companies to develop the technology necessary to build a plug-in hybrid.
- The technological hurdles are real... but we believe they're also surmountable. I can't give you a date certain for our plug-in hybrid today... but I can tell you that this is a top priority program for GM, given the huge potential it offers for fuel-economy improvement.
- For example, the current VUE Green Line delivers customers a 20 percent fuel economy improvement over the base model.
- We expect the front-wheel-drive, two-mode hybrid VUE... based on current EPA labeling... to improve overall fuel economy by 45 percent over today's base VUE.
- And the VUE plug-in hybrid will provide significantly higher fuel savings on top of that.

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- **There are other types of electrically driven vehicles that we'll see more and more of, as well... including hydrogen fuel cell vehicles, such as the Chevrolet Sequel.**
- A lot of people are confused by this... but yes, a hydrogen fuel cell vehicle is, in fact, an electric vehicle. It drives on electricity that is created by the fuel cell. In fact, electricity and hydrogen are actually interchangeable, and a fuel cell is little more than a battery that stores electricity in the form of hydrogen.
- The beauty of a fuel cell vehicle like the Sequel, is that the electricity is generated onboard the vehicle, without using petroleum-based fuel, and without emissions. And like electricity, hydrogen can be made from diverse energy sources before it ever powers a vehicle.
- So, please don't misunderstand... GM remains committed to fuel cell development. In fact, we continue to make significant progress in this area, and we continue to see fuel cells as the best long-term solution for reducing our dependence on oil.
- Our most recent advanced hydrogen fuel-cell concept vehicle, the Chevy Sequel, has an operating range of 300 miles. In fact, a number of you may have joined us in Camp Pendleton in September when we demonstrated our new drivable version. I think those who did will agree that it is, without a doubt, the most technologically advanced car that GM has ever built.
- And a lot of that technology is finding its way into our latest fuel-cell vehicles – more than 100 Chevy Equinox SUV's, which we will use to create the world's largest fuel-cell test fleet next year. We'll begin placing those vehicles with customers next fall... including, as I'm pleased to announce today, 50 here in the greater Los Angeles area.

- **I should point out that GM's commitment to improving fuel economy, reducing vehicle emissions, and developing electrically driven vehicles is not a short-term strategy. We're in this game for the long term.**
- We see energy and environmental leadership as a critical element of GM's ongoing turnaround plan... a key part of our future business strategy... and we intend to bring our substantial global resources to bear on this issue starting... yesterday.
- As I said earlier, GM is significantly expanding and accelerating our commitment to the development of electrically driven vehicles... beyond what we have already committed to with our fuel cell and hybrid programs.
- We're proud of our work to date... but now, we're taking it to another level.
- GM is committed to the development of electrically driven vehicles that will help improve energy diversity, and minimize the automobile's impact on the environment... and, we'll follow today's announcements with additional announcements during the auto show season... including Detroit, in about six

weeks.

- There is much more to come from us on this issue... stay tuned.

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- **One more point – at GM, we understand that technology, by itself, is of little value... if it isn't put to use on a large scale.**
- To make a difference, technology has to be adopted and embraced by automotive consumers... lots of them... and that's only going to happen if we package it in great cars and trucks, that are beautifully designed, both inside and out. That's why we at GM are committed to... or better said, obsessed with... once again making our cars and trucks leaders in design.
- You see it now in a number of our new and upcoming products – the Pontiac Solstice, Saturn Aura, our new full-size pickups, our Cadillac lineup... wait till you see what's coming there, and much more.
- You see it very clearly in our most recent concept vehicles... the Saab Aero-X, the Chevy Camaro, and the Buick Enclave... which is going from concept vehicle to production vehicle right here at the L.A. Show.
- In short, we're committed to leading in both technology and design... and we can't wait to show you what we have coming down the road.

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- **Let me wrap up by reiterating that, at GM, we believe tomorrow's automobiles must be flexible enough to accommodate many different energy sources. And a key part of that flexibility will be enabled by the development of electrically driven cars and trucks.**
- When you connect the dots... from conventional gasoline and diesel fuel... to biofuels that can displace them, like E-85 and biodiesel... to electricity – whether it is stored or generated on the vehicle, with an internal combustion engine or a hydrogen fuel cell – we at GM see a logical journey from stand-alone, largely mechanical automobiles... to vehicles that run on electricity.
- At the end of the day, this transformation will be as important as the transition from horses to horsepower... and we believe that no company is better positioned to make it happen than GM.
- It's an unequalled opportunity to really reinvent the automobile... as well as the auto business, itself.
- It can help us accelerate industry growth in a sustainable way... mitigate and ultimately solve the energy and environmental challenges of the automobile... and create vehicles that are fundamentally better than their predecessors in virtually every way.

- It's a journey that began in Thomas Edison's day... and one that will drive us straight into the future.
- I have no doubt that, when the L.A. Auto Show celebrates its 125 th anniversary, it will look back at this time as a period of great change... and the formative years of the age of electrically driven vehicles.
- Thank you, and now I'll be happy to take your questions and comments.