

2009 Center for Automotive Research (CAR) Management Briefing Seminar - Josephine S. Cooper

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As prepared for:

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Center for Automotive Research (CAR) Management Briefing Seminar

"Sustainability of the Auto Industry in an Era of Climate Change:

Auto Sector Climate Policies in an Uncertain Economy"

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"Reinventing Industry-Government Relations"

Good afternoon and thank you, Kim and John, for having me here today and for your kind introduction.

I appreciate the opportunity to be here in Traverse City for this important discussion of sustainability and government policy. Throughout my professional life, I have worked to advance sound environmental public policies, as a young EPA analyst in North Carolina, on the Senate Environment and Public Works Committee, as a political appointee at the U.S EPA's office of external affairs, at trade associations for chemical, forest and paper industries, and today at Toyota.

It is more important than ever before that Washington and the auto industry work together and be serious about resolving our differences, which can lead to more sensible and effective policies.

On May 19, 2009, I believe we turned a corner on doing just that. Let me tell you how we got there.

Last October, as America prepared to vote for a new President, a group of people representing several automakers, environmental groups and the California Air Resources Board met in Los Angeles. The objective was to put an end to the uncertainty, legal maneuvering, mistrust and complexity surrounding a myriad of state and federal fuel economy and greenhouse gas regulations.

Everyone wanted to get to a place where vehicles contribute to solutions to climate and energy problems. Getting agreement on "how," was the difficulty.

The answer was – as it often is – simple: try some trust. Talk to each other. And just as important, listen to each other. Participants agreed to leave legal and political squabbles at the door, and focus on making sound public policy.

This scenario gained momentum soon after President Obama took office. New Presidential appointees Carol Browner (White House Climate Change Advisor), Lisa Jackson (EPA Administrator) and Ray LaHood

(Transportation) saw an opportunity to forge a consensus among federal and state agencies, environmental groups and automakers that would enable us to move forward and tackle the issues of fuel economy and greenhouse gas emissions from automobiles.

After four months of discussion,... and bringing in the Alliance of Automobile Manufacturers and the Association of International Automobile Manufacturers, as well as an array of environmental groups, together...those efforts bore fruit. On May 19th, President Obama announced in the White House Rose Garden his One National Program – comprised of individual company commitments to a single national program to control vehicle greenhouse gas emissions and improve fuel economy.

This agreement was a landmark achievement. It streamlined compliance requirements, which was essential for automakers, and pulled forward already- ambitious fuel economy requirements from 2020 to 2016. This leaves an extremely difficult task ahead for us, but accomplishes a key goal for environmental groups.

I tell you this story because it's an example of how government and industry can – and should – work. But, without broadening the process, and enlisting the might of a variety of powerful organizations, little might have come out of the earlier discussions.

This story illustrates one of the cornerstones of how Toyota approaches public policy – through partnerships.

At Toyota, our top public policy priority is sustainable mobility. This means making vehicles that meet customer needs and expectations, while also being safe, sustainable, and better for the environment.

We take a systemic approach to sustainable mobility, with four basic components:

- The first part involves our Vehicles and the vast array of emerging automotive technologies. We must reduce CO2 and smog-forming emissions through pursuit of diverse and alternative technologies.
- The second component is the Energy required to power these products. What sources and forms of energy will be sustainably available in the future? Which of these can be scaled up to accommodate hundreds-of-thousands, or possibly millions, of vehicles? Can we contribute to energy security?
- The third component is Partnerships like the one I described earlier. The issues we all face – auto manufacturers, cities, states and countries – are so great that solutions require partnerships across many different sectors. None of us acting alone can solve these.
- Finally, our approach considers tomorrow's Urban Environment. For example, we know urbanization is increasing globally. This year, the United Nations reported that half the planet's citizens now live in cities for the first time in history. We need to address this trend with new kinds of vehicles. At the same time, we must localize production and ensure our business decisions result in sustainable communities in which our products contribute to improving people's lives.

It's no surprise to anyone here that hybrid technology remains at the core of Toyota's sustainability strategy. We've said this a million times.....actually, nearly two million times, by putting that many Toyota hybrids on the road globally.

The Toyota Prius remains the most elegant, flexible and scalable technology in the mass market today. Our new 2010 Prius is better than the model it replaces in every respect:

- It is roomier,
- More fuel efficient
- More aerodynamic
- And, more powerful

The beauty of hybrid technology is that it can be used with every other promising innovation to increase fuel-efficiency, whether for high-tech gasoline engines, clean diesels, bio-diesel, ethanol, plug-in hybrid technology, or hydrogen fuel cells.

Today, to punctuate this point, I am pleased to report the results of a recent U.S. government fuel cell hybrid vehicle range and fuel economy field evaluation. The Toyota Highlander Fuel-Cell Hybrid Vehicle – Advanced recently achieved a range of 431 miles on a single fill of compressed hydrogen gas. This represented an average fuel economy of 68.3 miles per kilogram, equivalent to 68 miles per gallon, during a day-long, 331.5 mile trip down the southern California coast.

Take a look at what happened

[FCHV video here] (Total Running Time = 3:30)

You can view download this video on YouTube starting today.

This test demonstrates how rapidly Toyota's hydrogen fuel cell technology has advanced over the last few years. The FCHV-Advanced vehicle has the ability to achieve over twice the range of a current gasoline Highlander Hybrid, while producing zero emissions.

Based on this and other research, Toyota sees a clear path toward commercial introduction of a fuel cell vehicle by 2015. Our primary concern is, of course, the need for the infrastructure necessary to support vehicles on the road. And, the cost of the product will have to be lowered significantly. But we believe hydrogen-fueled fuel cells have the potential to significantly reduce the environmental impact of the automobile.

In our more immediate future, Toyota is planning to launch a short-range, urban commuter battery-electric vehicle in the U.S. in 2012. It will be designed to meet the needs of the urban commuter, and be capable of overnight charging on 110 volt household power.

While our researchers focus on new innovations, there is work to prepare the consumer marketplace for tomorrow's vehicles. We know that regulatory mandates and the desire to get advanced technologies on the road cannot get too far ahead of the market.

In the 1990s we launched a retail version of our RAV4 EV to comply with a demonstration program required under California's Zero Emission Vehicle mandate. We were the most successful automaker to develop the most capable EV at that time. But, our experience confirmed that three conditions must be satisfied before a new technology will be accepted by consumers:

- All technical problems **MUST** be resolved
- The consumer and the market **MUST** be prepared
- Regulatory policy **MUST ALIGN** with both these conditions.

Retail customers were not prepared for the realities of cost and range limitations of the EV. Regulatory policy was ahead of the market. Partly based on our experience with that initiative, California revised the mandate.

Since our RAV4 EV project, demographics and consumer tastes have changed and technology has advanced. Americans are now more aware of the need to conserve energy and address climate change.

We now see a potential new market – albeit small — among younger buyers for that urban commuter vehicle. Hopefully, this time, government will let the market pull EV technology forward and support infrastructure development more effectively than it has in the past.

This brings me to the technology du jour, plug-in hybrids.

President Obama is challenging the auto industry to put one million plug-in hybrids on America's roads by 2015. In today's market, that is 10% of all vehicles. And, I remind you that it has taken 12 years to get to just about 2% of the market for conventional hybrids.

Toyota hasn't been waiting for government mandates or Presidential suggestions to move on hybrids. And we aren't waiting on fuel cells or plug-ins, either. We have been doing our due diligence to reach this goal for some time, to ensure that the vehicle, the infrastructure, and consumers will be ready for this technology.

Toyota will bring a fleet of 150 Plug-In Hybrid Priuses to the U.S. later this year as part of a global initiative to field-test this technology.

- The vehicle will be based on the new 2010 Prius, with a Lithium Ion Battery Pack;
- We will test consumer acceptance and battery durability in real-world operations;
- And we will evaluate the suitability of PHVs in various markets around the world, where consumer expectations may differ from the U.S. to Europe to Japan.

Expectations for plug-in technologies are great. We have heard claims of more than 100 miles-per-gallon from third-party plug-in conversion proponents. But actual results in fleets are likely to be much lower. Plug-in conversion fleet customers like Google, U.S. DOE and Portland General Electric are averaging less than 55 miles per gallon in real-world driving conditions. And the durability of the battery technology has yet to be proven.

So, after telling you some of the ways Toyota is pursuing the ultimate eco-car, you can see why hybrid remains our core technology. It can be applied to all the other technology options. And — most importantly — the consumer has already demonstrated an acceptance of it. Remember, if the consumer doesn't buy it — we fail.

Now, how do we unite the array of technological possibilities with sound public policy? Where are we going from here?

- A national cap and trade initiative is on the menu again, to be considered in September when Congress returns from recess. Getting an agreement, not just one for autos but all of American industry, is an enormous challenge.
- With respect to vehicles, this is best addressed by performance standards, such as CAFE, the upcoming

EPA GHG regulations, and the harmonized rules now being developed by NHTSA and EPA that will address CO2 emissions from vehicles. This is sufficient and – appropriately – vehicles are not a part of the legislation as currently proposed.

- Second, on fuels, putting transport fuels under the cap is fine, but it may have relatively minor impact. There are tough questions to consider: Is it sufficient to send a message to consumers to support advanced technologies? Are higher gas prices the only answer? Is the potential Open Fuel FFV mandate really a sound idea?
- Third, we cannot regulate individual vehicle owners. Government can support green technologies and green manufacturing. That support should be available to all U.S. producers of vehicles. It should provide greater consumer incentives, because creating demand spurs investment – not the other way around. The current success of the new Cash-for-Clunkers program is strong evidence that consumer incentives work.
- Finally, with respect to manufacturing, we prefer the cap to be upstream. However, if the cap is to be source-specific, then we believe 100,000 tons of CO2 per year is the preferable limit for an assembly plant. We support providing stationary sources with early action credits. And it is imperative that overlapping state and federal programs be avoided. Now that we've finally found One National solution on the mobile source side, we certainly want to avoid the same pitfall on the stationary source side.

Above all, government should not pick winners and losers in the technology arena. We should not mandate flexible fuel vehicles or a discriminatory definition of a plug-in hybrid, as the government of Ontario, Canada did just recently. Let the market decide.

We need all new ideas to fight global warming. Government must be consistent in its direction, even as new ideas lead to different technology solutions. Because, with any technology, only mass-marketization makes a real difference.

As I said before, Toyota has not waited for government regulation to address the challenges of tomorrow's sustainable transportation.

- We are the leader in fuel-efficient vehicles among full-line manufacturers in the U.S.
- We are the leader in hybrid technology, having launched our first hybrid a dozen years ago and put nearly 1.9 million in the market to date.
- We are bringing a plug-in, a pure EV, and other advanced technologies to market in the near future to complement our hybrid dominance.
- And, we've already cut emissions from our manufacturing plants by over 150,000 metric tons – or 23% — since 2000, reduced energy use more than 24%, and achieved a 95% reduction in waste. Ten of our 14 plants have achieved true zero landfill.

This is just the beginning. Our sustainable mobility strategy means you'll be seeing more hybrids and more advanced technologies and fuels on America's roads. We are listening to customers to understand market preferences and expectations. We are localizing decision-making, manufacturing and production to better serve communities where we do business. We will be ready for whatever is thrown at us.

I conclude by returning to where we started: the importance of partnerships. It will take monumental cooperation among all key players – automakers, energy providers, suppliers, labor unions, dealers, government, educators, NGOs, individuals and communities – to solve our transportation challenges.

Our customers and other stakeholders are challenging us to take what we learned from our work toward One National Program as we look to future policymaking. They want and expect us to come together for the greater

good of society. We have the model. Now we must be the leaders that our generation – and generations to come – will thank for tackling our energy and environmental challenges.

Thank you