S. HRG. 110–1213

PENDING CORPORATE AVERAGE FUEL ECONOMY (CAFE) LEGISLATION

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

MAY 3, 2007

Printed for the use of the Committee on Commerce, Science, and Transportation

U.S. GOVERNMENT PRINTING OFFICE

80–033 PDF WASHINGTON : 2013

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

DANIEL K. INOUYE, Hawaii, *Chairman*

JOHN D. ROCKEFELLER IV, West Virginia	TED STEVENS, Alaska, *Vice Chairman*
JOHN F. KERRY, Massachusetts	JOHN MCCAIN, Arizona
BYRON L. DORGAN, North Dakota	TRENT LOTT, Mississippi
BARBARA BOXER, California	KAY BAILEY HUTCHISON, Texas
BILL NELSON, Florida	OLYMPIA J. SNOWE, Maine
MARIA CANTWELL, Washington	GORDON H. SMITH, Oregon
FRANK R. LAUTENBERG, New Jersey	JOHN ENSIGN, Nevada
MARK PRYOR, Arkansas	JOHN E. SUNUNU, New Hampshire
THOMAS R. CARPER, Delaware	JIM DEMINT, South Carolina
CLAIRE MCCASKILL, Missouri	DAVID VITTER, Louisiana
AMY KLOBUCHAR, Minnesota	JOHN THUNE, South Dakota

MARGARET L. CUMMISKY, *Democratic Staff Director and Chief Counsel*
LILA HARPER HELMS, *Democratic Deputy Staff Director and Policy Director*
CHRISTINE D. KURTH, *Republican Staff Director and General Counsel*
KENNETH R. NAHIGIAN, *Republican Deputy Staff Director and Chief Counsel*

CONTENTS

WITNESSES

APPENDIX

PENDING CORPORATE AVERAGE FUEL ECONOMY (CAFE) LEGISLATION

THURSDAY, MAY 3, 2007

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 3:02 p.m. in room SR–253, Russell Senate Office Building, Hon. Daniel K. Inouye, Chairman of the Committee, presiding.

OPENING STATEMENT OF HON. DANIEL K. INOUYE, U.S. SENATOR FROM HAWAII

The CHAIRMAN. Today's witnesses have been invited to comment on S. 357, the Ten-in-Ten Fuel Economy Act, a bill to improve the Corporate Average Fuel Economy Program that was introduced earlier this session by Senators Feinstein, Snowe, and Inouye, as well as five other members of the Committee. A number of other Senators on the Committee have introduced or cosponsored legislation to improve CAFE standards, including the Vice Chairman, Senator Stevens. I've asked the witnesses to be prepared to discuss all the bills pending before the Committee.

Increasing CAFE standards is both a national security and ecological imperative. The issue is not simply that the United States is dependent on foreign oil imports, but that it imports a substantial portion of these imports from areas that are politically unstable and could become hostile to America overnight. It is in our national security interest that Congress takes practical steps now to reduce our dependence on foreign oil.

In addition, car exhaust is a major contributor to global warming. By increasing fuel efficiency, we can decrease the amount of carbon dioxide released in the atmosphere, and slow the harm to the planet.

I believe that everyone here shares the dual desire of improving our environment and strengthening our national security through decreasing our dependence on oil, and I look forward to hearing from our expert panel about the best way to achieve these goals.

May I call upon my Vice Chairman?

STATEMENT OF HON. TED STEVENS, U.S. SENATOR FROM ALASKA

Senator STEVENS. Thank you, Mr. Chairman, for calling this hearing today. I think it's important, and look forward to hearing our colleagues, so I'll be very short.

The issue of fuel economy of our cars and light trucks is significant as our country faces an increasing energy crisis. And I think since September 11, the need for us to reduce our dependence on foreign oil increases. I'm not going to talk about ANWR today, so you can forget about that——

[Laughter.]

Senator STEVENS.—for a while, that is.

[Laughter.]

Senator STEVENS. As the Chairman said, I introduced legislation in January to address conservation, and, with it, a reduction in greenhouse gas emissions. As the impacts of climate change are more evident in Alaska than anywhere in the country, this bill would provide authority to the Department of Transportation to reform the passenger car fleet fuel economy program and set an aggressive target for the passenger car fleet by 2017.

Since then, I have worked with the Chairman and his staff to try to develop an approach that would not only advance our national security interest in reducing dependence on foreign oil sources, but also an approach that will avoid unintended consequences that would adversely impact the domestic auto industry and consumer choice. It's my hope that I will be able to join the Chairman in introducing his bill.

I still am worried about how to deal with light trucks. These are extremely important to the West, and particularly important to my state. So, I want to continue to work with my good friend on that portion of the bill, but I do hope that today's hearing will be helpful in advancing the Committee's progress.

Mr. Chairman, thank you very much.

The CHAIRMAN. Well, thank you, sir.

Senator Kerry?

STATEMENT OF HON. JOHN F. KERRY,
U.S. SENATOR FROM MASSACHUSETTS

Senator KERRY. Mr. Chairman, thank you. Thanks for having this hearing. Thank our colleagues for coming and testifying.

We've been at this for a long time on this Committee and in the Congress. I think, since 1985, at the 27 mile per gallon limit. We really haven't made any progress. In fact, we've gone backward in some areas.

I see we are going to hear from Alan Reuther, and I welcome him here. And I've talked to a lot of folks in the auto industry over these last years, and all of us want a strong domestic auto industry. All of us want cars made in America, and we want Americans to buy American cars. And we want our workers to be producing them, as much as possible. So, we're sensitive to that need as we think about this.

But there's a convergence of two major issues here, and we need to figure out what the best approach is going to be. One is obviously oil dependency and energy dependency itself—independence. And the other is global climate change and emissions. And one of the questions we need to examine here today is which is the right standard or is there a mix of a standard, because part of the—I mean, there are many experts who are convinced that what we do at the—in the tailpipe, and—that the mileage is not, in fact, going

to liberate America with respect to fuel, but, on the other hand, it's the CO_2 emissions that are perhaps the larger concern, and whether that might not be more of the focus in the context of our overall approach.

So, I think there are a lot of issues on the table. I'm glad we're going to have this hearing. I think it's a very important one.

I do note, as I will in the question period, that, you know, Detroit, at one point, was producing a terrific electric car. And it stopped. I've driven in that car. It's a superb car. And I think the question has always been open, why it stopped.

The other day, I visited a car here in Washington, just outside the Russell Building, which is—it happens to a Prius, unfortunately—but it had a battery conversion, which is available in the market today, a retro-conversion, and it gets 150 miles to the gallon. The average commute of Americans is 40 miles. And batteries have the capacity today to take people those 40 miles. So, there's a serious question here about why these kinds of technologies and opportunities aren't being grabbed more rapidly, and why we aren't producing those. And I look forward to exploring those today.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Klobuchar?

STATEMENT OF HON. AMY KLOBUCHAR,
U.S. SENATOR FROM MINNESOTA

Senator KLOBUCHAR. Thank you, Mr. Chairman, for holding this hearing. And thank you, to my colleagues, for being here.

I come from Minnesota, where, I have to tell you, in the last year, there has just been more and more focus on trying to make our country more energy independent. And I think some of it comes from people who live in rural areas, who are trying to fill up their tanks with gas, and find out it's so expensive, they can only fill up half a tank, or it's kids worrying about penguins drowning, or it's people putting their fish-houses out and realizing that, you know, they're having to put it out a month later than they ever used to do.

And so, it's really—the climate change issue has gone from just a—something that scientists are talking about and writing about in reports, to real people wanting real changes. And it's about climate change, but it's also about the cost of oil. We're spending over $200,000 a minute on foreign oil in this country. And it's also about our national security.

And, I think, for the first time, the people in this country are seeing it themselves, and I think they're way ahead of where we are in Washington, in terms of getting laws passed. And, like Senator Kerry, I'm very concerned that we've been going backward. The efficiency of the American car and truck is at its lowest level in 20 years. And that's why I'm very glad that we're holding this hearing. I see this as potential jobs for our rural areas, if we can move more to biodiesel and ethanol, as well as better for our climate and better for our national security.

The CHAIRMAN. Senator McCaskill?

STATEMENT OF HON. CLAIRE MCCASKILL, U.S. SENATOR FROM MISSOURI

Senator MCCASKILL. Mr. Chairman, I would—with consent, I would like to submit a statement for the record.

Senator MCCASKILL. I would say that I think the challenge we have is trying to respond to two issues. One is global warming, and the other is our dependence on foreign oil. And I think sometimes when we try to mix the two, and—we are not as disciplined as we should be about making sure that everyone understands what we're doing, what we're trying to get at, whether we're trying to get at global warming or whether we're trying to get at dependence on foreign oil. And, in both issues, I think we have to be doing things legislatively that most effectively do both. And so, I think it's important we stay focused on that as we look at the legislation that's pending.

I also think it's very important that we make sure that we move forward on getting more fuel efficiency at the same time we don't penalize American manufacturers. And so, the devil is in the details and how we get to those places, and I look forward to hopefully finding the right way that accomplishes all of the goals I've talked about.

Thank you, Mr. Chairman.

[The prepared statement of Senator McCaskill follows:]

PREPARED STATEMENT OF HON. CLAIRE MCCASKILL, U.S. SENATOR FROM MISSOURI

Thank you Mr. Chairman,

This is a very difficult decision I have to make. On the one hand I believe that this Committee and this Congress have an obligation to do everything necessary to help curb our dependence on foreign oil not only for the purpose of our national security, but also to address global climate change. On the other hand, we also have an obligation to the hundreds of thousands of workers who manufacture automobiles and automobile parts in the U.S., thousands of those workers are located in my home state of Missouri. We must do everything necessary to protect not only these workers, but perhaps even more importantly, the 550,000 retirees and their families. Candidly, they are potential victims that could be devastated by the lack of foresight by American car manufacturers. And these manufacturers must be forced to face the future responsibly.

Additionally, we must not lose sight on the fact that this is only one small portion of a larger portfolio of problems related to global climate change and energy independence. We must make sure that we do not continue to put the onus on one industry. This is a challenge that should be borne by many.

In the end, I think this bill is a good start. But there is still a lot of work to be done, much of which lies outside the confines of this Committee's jurisdiction. Therefore, I cannot support this bill in its present form. I do, however, look forward to working with the Committee and other Senators to craft comprehensive legislation that will move us closer to our goals of energy independence, start to slow global climate change, and protect the thousands of Americans jobs that are at stake.

The CHAIRMAN. Senator Lautenberg?

STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM NEW JERSEY

Senator LAUTENBERG. Thanks, Mr. Chairman.

Holding this hearing is really important and a timely thing, and I thank you for doing it. But I want to look at the unvarnished truth about where we are.

America's current fuel economy standards are insufficient and are hurting our natural world. Our standards contribute to global

warming by letting too much greenhouse gas into the air. And these gases are already harming our planet.

The average global temperature in 2006 was 2.2 degrees warmer than the average temperature during the 20th century. And it's not an anomaly, this is a recurring fact. The last seven 5-year periods were the warmest 5-year periods on record. And we can trace some of these directly to the tailpipes of our cars and trucks, because that's where one-third of America's greenhouse gases come from.

Well, if we want to reduce global warming, then we've got to begin to act now to cut the emissions coming from our vehicles. And I'm pleased that there seems to be consensus in this Committee that we should act to increase our country's fuel economy.

We lag behind the rest of the world in the fuel economy of our cars. And I want to just have a chart shown here for a moment. The one that says that we've been at the same standard since—somebody help him, please—since 2002. We were at the lowest level then, and we continue to be at a lower level far more than we were before. And as that chart shows, Japan is leading the world at fuel economy, at more than 40 miles a gallon. Now look at the United States. We are way behind. Our passenger cars have been regulated at 27 and a half miles per gallon since 1990, and our light trucks are just at 21.6 miles a gallon. We can, and we must, do better.

Time to improve our fuel economy and tackle global climate change. And I believe that we have the ability, with our manufacturers, to rise to the challenge. And I sure hope that, working with this Committee and the Senate on this issue, we can do better.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Carper?

STATEMENT OF HON. THOMAS R. CARPER,
U.S. SENATOR FROM DELAWARE

Senator CARPER. Thanks, Mr. Chairman.

I want to thank our colleagues for coming by to—listening to our opening statements.

[Laughter.]

Senator CARPER. And we look forward to listening to yours in just a few minutes.

Sitting right behind Senator Feinstein, in the—two rows back, is Dave McCurdy, with whom I once served in the House of Representatives—in fact, someone with whom a number of us once served—and he now is—heads up the Auto Alliance. He's going to be one of our witnesses.

I remember, I joined the House in the beginning of 1983. I think it was, maybe, 8 years after CAFE was first enacted, if my memory is correct. And at the—for most of the time that I was in the House, the time I was Governor, and the time I've been in the U.S. Senate, we've heard from our friends, and they really are friends, within the auto industry, the domestic auto industry—we've heard, "Don't do anything further on CAFE, because if you do, it will cost us market share. Don't do anything more on CAFE, because if you do, we will lose money. Don't do anything more on CAFE, because if you do, we'll be forced to close plants. Don't do anything more on CAFE, because if you do, we're going to have to lay off employ-

ees." And, really, for pretty much the last 25 or so years, we've not touched CAFE. And over the last 25 years, actually—especially the last 10 years, the last several years—we have seen the Big Three lose market share, we have seen the Big Three lose money, close plants, and lay off a lot of employees. And all the time, we've been trying to protect them from the evils of—or the problems, or the challenges posed by changing our approach to CAFE. There's an irony there. And it's one that's not lost on us. And I would say to our friends from the auto industries, "If you come to us looking for us to do not much on CAFE, we listen to those arguments with a bit of skepticism. While we still love you, and we do; while we want you to be successful, and we still do; we need to do something."

I sat here next to Senator McCaskill, and I said, "Have I—did I miss your opening statement?" And she says, "I'm not going to give one." And then she turned around and gave my opening statement.

[Laughter.]

Senator CARPER. And the points that—among the points that she made, there are three things that we—I think we need to accomplish. One is to reduce the amount of oil that we consume, especially that which is derived from foreign sources, and we have—we're too heavily dependent on them. We all know that. Second, we need to improve our air quality, and we need to reduce the threat of global warming, climate change. And, third, we need to do the first two without further undermining the competitiveness of our auto industry.

And I think we also need to remember that reducing fuel use in pollution involves addressing more than just auto efficiency, but also the availability of cleaner fuels and reducing fuel use by providing some alternatives to driving, get us out of our cars.

Over the last 6 years or so, we've had similar contentious debate over regulating CO_2 emissions from utilities. And I, along with some of my colleagues, including Senator Feinstein and others here at the dais, took the approach that we should set a goal, and then lay out steps for reaching that goal. And what we've done in some of our legislation is to say we want to reduce CO_2 emissions from utilities by some 20–25 percent by a date certain, while increasing the cost of electricity by just a little. And I would suggest to my colleagues we may want to take a similar approach with respect to CAFE.

And the last thing I would say is, I think we ought to set achievable steps that might require CAFE improvements slowly at first, ramp up over time, and there should be credits for early action, and maybe provide some off-ramps in case we, in Congress, set some goals that are not technologically feasible. And we should support attribute-based standards that are sensitive to varying fleet mixes between different manufacturers.

Thank you.

The CHAIRMAN. Thank you.

Senator Cantwell?

STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR FROM WASHINGTON

Senator CANTWELL. Thank you, Mr. Chairman. I'll put a statement in for the record, that's a longer statement.

Thank you for having the hearing.

I hope today we hear as much about flex-fuel cars as we hear about CAFE. I plan to offer some language on that if we go to a markup on legislation regarding fuel efficiency.

Thank you.

[The prepared statement of Senator Cantwell follows:]

PREPARED STATEMENT OF MARIA CANTWELL, U.S. SENATOR FROM WASHINGTON

Introduction

Thank you, Mr. Chairman.

I very much appreciate you holding this hearing today on what I believe is an absolutely vital effort to tackle one of the preeminent problems facing our nation—our over reliance on oil. I look forward to hearing from today's witnesses and mark-up of our bipartisan bill next Tuesday.

Facing a Very Challenging Energy Situation

I think every member on this Committee, and hopefully the entire Congress, realizes that we are facing a very challenging energy situation. We are just a major hurricane, or turmoil in a major oil producing nation, or, god forbid, some terrorist attack or accident that takes part of our energy infrastructure out of commission, from energy prices spikes that could stop our economy cold. And that's in the short-term.

Looking even a few years out—I am concerned if we stay on the path we are on, if we don't challenge Americans to work together and harness our innovative spirit and ingenuity, we are headed for years of crippling high energy costs and a severe global warming crisis.

That would mean continued distortions to our foreign policy objectives, oil companies continuing to reap exorbitant profits, and hundreds of billions of dollars more would be drained from the pocketbook of American families to the Middle East and other nations that don't necessarily have our interests at heart.

We Must Make Our Tranportation System More Productive

I know that's a future we all want to avoid. But the only way to really tackle the problem, the only way to start really improving our energy, environmental, and homeland security is to make our transportation system more efficient and enable it to run on alternatives to petroleum.

I believe the key to this strategy is making our cars and light trucks go farther for each gallon of fuel we buy, and create new markets for alternatives to gasoline and diesel.

An Announcement of Intention to Offer Flex Fuel Amendment

As several witnesses noted in their prepared testimony, biofuels are a particularly promising clean-burning alternative fuel. But despite considerable government and public support to date, their growth has been hampered by the classic "chicken-and-egg" dilemma.

Farmers don't want to start growing biofuel feedstocks if they aren't sure there will be a market. Entrepreneurs don't want to invest in biofuel processing facilities if there aren't any feedstocks. Car manufacturers don't want to build many flex fuel vehicles if there isn't any biofuel being produced or places where people can get it. And gas stations don't want to put in biofuel pumps if there aren't any cars that can use them.

Well as many of my fellow members of the Energy Committee can attest, yesterday we took an important step forward on one aspect of this dilemma by passing out a bill that significantly increases the Renewable Fuels Standard to 36 billion gallons by 2022.

But that just deals with the supply part. On the demand side we need to put in requirements to ensure a minimum amount of biofuel infrastructure and then allow the market to grow from there.

Today, almost all the cars on our roads can only use up to 10 percent ethanol, meaning all together they can only utilize around 15 billion gallons of ethanol. That's why we need make sure there are enough flex fuel capable vehicles—that is

cars able to use either petroleum or biofuels or any mix in between to absorb billions of more gallons of biofuels required under any RFS increase and we need boost the number and distribution of pumps to deliver the fuels.

That's why I plan to introduce an amendment on Tuesday—based on legislation I introduced last Congress with 24 other cosponsors—that would require a certain percentage of vehicles sold in the U.S. be flex fuel capable, as well ensure the availability of a minimum number biofuel pumps.

Need for Government Leadership

History proves how effective Congressional action in this area can be. Following the first oil embargo in the 1970's—by the same Middle Eastern countries who we are even more dependent on today—Congress legislated the CAFE program as one of the least controversial provisions of the Energy Policy and Conservation Act of 1975.

Thirty years ago, this body heard many of the same warnings we are hearing today. We heard that fuel economy standards will render this Nation's auto manufacturers extinct, that it will cost thousands of jobs, that it will reduce vehicle safety. But the 94th Congress rejected those erroneous claims and passed a visionary law that was in the best interests of our Nation.

The record affirms their foresight. In the decade following enactment, our Nation doubled the fuel economy of our Nation's passenger vehicles. Those savings mean that today our Nation is importing nearly three million barrels per day less than we would have without the 1975 legislation. Put another way, American consumers are avoiding paying for an amount of oil equivalent to what we today import annually from the entire Persian Gulf.

Conclusion

Now once again Congress is in a position to take action and moves things forward. I am proud to be a cosponsor of Senator Feinstein's Ten-in-Ten Fuel Economy Act along with the Chairman and several members of this Committee because I believe that it takes the right approach.

Mr. Chairman, now is the time to provide the leadership on this issue that has been missing for the last 20 years.

Simply put, improving the fuel economy of our Nation's vehicles is the easiest and most cost-effective way to reduce our Nation's vulnerability to oil supply shocks and dependence on unfriendly regimes.

I look forward to hearing the witnesses and working with my Committee colleagues to endorse and act on the numerous security, environmental, and consumer benefits that increasing the efficiency of our Nation's transportation system.

Thank you.

The CHAIRMAN. Thank you.

Senator Dorgan?

STATEMENT OF HON. BYRON L. DORGAN, U.S. SENATOR FROM NORTH DAKOTA

Senator DORGAN. Mr. Chairman, Thank you very much.

I won't prolong this at great length, but I—I mean, cars have changed—our vehicles have changed dramatically. We have heated seats and iPod docks and never-lost navigation and keyless entries, and what a wonderful thing, but one thing that hasn't changed very much is efficiency. It just hasn't. And 70 percent of the oil that we use—nearly 70 percent—goes for our transportation fleet. I was one of those who said, "Let's have NHTSA figure this out." The fact is, they haven't, and they won't.

I have introduced, as you know, a piece of legislation called the SAFE Act, which would establish efficiency standards. I don't think it's an end-all or be-all to talk about efficiency of vehicles. There's so much else—so many other things we need to do. But we can't move forward any longer without dealing with this. We suck about 85 million barrels of oil out of this planet every day, and we use a little over 20 million barrels of it here in this country. Seventy percent of that is for transportation. We can't continue to look the

other way when it comes to the question of making these vehicles more efficient.

One final point. We looked, recently, at a vehicle that we purchased 10 years ago, at the new version of that vehicle. Ten years later, the mileage on the window sticker was identical to what it was 10 years ago. And they say, "Well, the car's more efficient, because it's heavier." Oh, yes? Well, it is still using the same amount of petroleum, isn't it? I mean, there's no efficiency in the mileage standards.

We need to do something. And I appreciate very much your hearing, and I hope that the markup next week can be productive, as well.

The CHAIRMAN. Senator Lott?

STATEMENT OF HON. TRETT LOTT,
U.S. SENATOR FROM MISSISSIPPI

Senator LOTT. Mr. Chairman, I'm just looking forward to hearing our panel of experts.

The CHAIRMAN. Thank you.

Senator Nelson?

STATEMENT OF HON. BILL NELSON,
U.S. SENATOR FROM FLORIDA

Senator NELSON. Mr. Chairman, I can sum it up. Increased mileage equals increased national security through increased energy independence, and that means that we have a better chance of saving our planet. That's my summary.

I'm a cosponsor of Senator Feinstein. She goes to 35 miles per gallon. I think it ought to go to 40.

The CHAIRMAN. Thank you.

Senator Boxer?

STATEMENT OF HON. BARBARA BOXER,
U.S. SENATOR FROM CALIFORNIA

Senator BOXER. Mr. Chairman, I'll just put my statement in the record. I'm extremely supportive of Senator Feinstein's bill.

The CHAIRMAN. Without objection, so ordered.

Senator BOXER. Thank you.

[The prepared statement of Senator Boxer follows:]

PREPARED STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM CALIFORNIA

Mr. Chairman, thank you for holding this important hearing today.

The United States' dependence on oil has grave environmental, geopolitical, and environmental consequences.

Raising Corporate Average Fuel Economy (CAFE) standards is a meaningful way to help reduce our country's unhealthy dependence on oil and thereby minimize its negative consequences. I have long been an advocate for boosting the CAFE standards that auto manufacturers must meet.

There is available and proven technology to produce vehicles that are fuel-efficient while also being safe and featuring excellent performance. Increasing CAFE standards will ensure that more such vehicles are available on the market.

One key benefit of increased use of fuel-efficient vehicles is environmental. With all the gasoline we consume in this country—over nine million barrels per day—we are polluting the air we breathe, and contributing to global warming. Transportation accounts for one-third of our annual emissions of carbon dioxide pollution.

Another advantage of placing an increased number of fuel-efficient vehicles on the market, as would occur with higher CAFE standards, is a decreased dependence on

foreign countries for our country's energy needs. Sixty percent of our oil consumption is from imports. This dependence on foreign oil is a national security liability.

Finally, maximizing the use of fuel-efficient vehicles on America's roads will translate to a reduced demand for gasoline, which should cause prices to ease. Gasoline prices this week are unusually high for this time of year: $2.97 per gallon nationwide, and $3.36 in California. Since Americans consume so much gasoline, high prices take a bite out of the budgets of both individuals and business owners, and are a drag on the economy that we cannot afford.

When you add together the all the environmental, geopolitical, and economic costs of America's oil dependence, it is obvious that we need auto manufacturers to start giving us more fuel-efficient vehicle options.

It is also important that our Federal Government leads by example when it comes to fuel-efficient vehicles. That is why I reintroduced a bill this year that would ensure that cars purchased and leased by the Federal Government for the Federal fleet are the most fuel-efficient possible.

Each year, the Federal Government purchases more than 60,000 passenger vehicles. Unfortunately, the average fuel economy of the new gasoline-powered vehicles acquired for the fleet in 2005 was an abysmal 21.4 miles per gallon.

That is pathetic when there are hybrid cars on the market that can achieve over 50 miles per gallon.

I drive a Toyota Prius and can attest that there is no loss of performance associated with vehicles that get great fuel economy.

Mr. Chairman, I look forward to the Committee voting on this important issue next week and hope that we can see action on the floor soon.

The CHAIRMAN. And now I'll call upon the panel of experts, politicians.

[Laughter.]

Senator LOTT. Expert politicians?

Senator LEVIN. Do you want to bypass us altogether?

[Laughter.]

The CHAIRMAN. May I first recognize Senator Levin?

STATEMENT OF HON. CARL LEVIN,
U.S. SENATOR FROM MICHIGAN

Senator LEVIN. Mr. Chairman, let me thank you and the members of the Committee for holding this hearing.

It's a very important hearing, for all the reasons that you've given. I don't think there's anybody in this room that does not share the thoughts that have been expressed by every member of this Committee, in terms of the need to address the problems of global warming, particularly, and the threat of imported oil. And the real question is, how do you go about that in a way, hopefully, which can also support American manufacturing, which has been hit hard by a lot of causes, some of which are their own making, but many of which are because they're operating in a global economy, where other countries support their manufacturing. Our companies are not competing with foreign companies, they're competing with foreign countries. When it comes to currency manipulation, when it comes to restrictions on our exports, when it comes to joint R&D projects with other countries, we are in a competition against other countries, not just against other companies.

I believe the way that we can reduce the use of oil and gasoline is by leap-ahead technologies. And the CAFE system is a poor alternative to investing in those leap-ahead technologies. The CAFE system, if you get to a 4 percent increase over the number of years you're talking about, will produce a minute improvement in the amount of CO_2.

We have a chart here, which will show you that improvement.

If you can get to the back charts first.

I want to first show you the amount of CO_2 currently going into the air.

The other one.

This is the current—the blue box is the current amount of CO_2 production in the world, the U.S. contribution. And I think copies of this may be in front of each of you. The U.S. contribution is about a fifth, 21.8 percent. The transportation percentage of that is 6.8 percent. The passenger vehicle and light truck part of transportation, it's only—it's two-thirds of that, so you're at 4.2 percent. That's the passenger-vehicle and light-truck contribution to world CO_2 production, that lower yellow box.

Now, if you adopt the proposed CAFE change, and achieve a 4 percent reduction by the year 2030—OK, this is with a 4 percent increase in CAFE—this is what the reduction will be in carbon dioxide. It's that little red box at the bottom. That's what will be achieved.

It's a—that doesn't mean we shouldn't achieve it, by the way. I think we can do a lot better if we would invest in the leap-ahead technologies—the fuel cells, the plug-in hybrids, the advanced diesels—instead of going the CAFE route. We can do better than CAFE if we use the resources that we have to invest in leap-ahead technologies instead of these incremental changes that are very minute, but which are aimed at trying to meet these 2 or 3 or 4 percent increases. That's my first point. Put our resources where they will make a heck of a lot bigger difference than that minute difference that will be made by a 4 percent increase in CAFE.

Now I want to address Senator Lautenberg's point. You put up a chart, Senator Lautenberg, which shows that the Japanese fuel—that the fleet of Japanese vehicles are more efficient than our fleet. The impression that is created—and, I think, erroneously—is that Japanese vehicles are more fuel efficient than ours. And they are not. It's an impression which is in the minds of a lot of people, but it is a wrong impression. And if we're going to do the right thing and not do harm needlessly and unfairly to an American industry, we then have got to look at the facts relative to the efficiency of vehicles.

First, let me put up four vehicles, the same weight. This is a minivan, and I'm going to just go through these very quickly. This is the fuel economy, same weight, a Buick Terraza, Dodge Caravan, Honda Odyssey, Nissan Quest. They're all the same weight, they all get the same miles per gallon. That is true across the fleet. The same weight, approximately—and sometimes exactly—the same number of miles per gallon.

Let me just give you one more example of this. The Ford Freestyle, 4,250 pounds, does better than the Toyota Highlander, 4,250 pounds—2 miles per gallon better.

I'm not trying to prove that American vehicles are more fuel efficient than the Japanese. What I do want you to accept as a fact is that Japanese and other vehicles, pound for pound, are no more fuel efficient than American vehicles. Until you get to the hybrid, obviously. We're talking about comparing 98 percent of the fleet. Hybrids are different, and that's why we should focus on getting to the leap-ahead technologies.

Instead of a CAFE system which discriminates against American vehicles, because, historically, that system is based on the entire fleet, and, when the fleet has concentrated on the larger cars instead of smaller, historically, which have been in demand in America, those companies which have produced a larger percentage of smaller vehicles have room to sell all the larger vehicles they want. It's perverse. It works against American jobs, with not a darn bit of benefit to the air. It doesn't do the environment one bit of good for Toyota to be able to sell more and more Highlanders, but Ford not to be able to sell Freestyles, because they bump up against the CAFE limit. It doesn't do the air any good. It doesn't do the environment any good. And it hurts American jobs.

So, our plea, my plea, is that whatever system you put in place, eliminate the discriminatory features of the CAFE system. And the way to do that is to have the same miles per gallon based on the same size or class. Do this by class, not by fleet.

And I want to commend Senator Feinstein. In her bill, the first part of her bill does that. She has the same miles per gallon, class—not the same—she goes miles per gallon size—depending on the size. In other words, class by class by class, she has the same miles per gallon across the class, and does not impose the same standard on each company, even though their fleets are designed so differently.

And I want to—I want to just point that out. That part of the Feinstein bill is an—a very significant improvement to avoid going by the entire fleet, and to do this class by class, so that the Highlander and Freestyle class will be treated the same way. And the discrimination in that regard will end.

Now, we can argue whether CAFE makes sense or if you want to go leap-ahead versus incremental. That's an argument which, it seems to me, is an important argument. You can do a lot better if you get companies to commit to use their research and development dollars on leap-ahead technologies. Sign agreements with companies to invest in the leap-ahead technologies, the way we've done, as I understand, in a number of other areas.

However, if you're going to go CAFE, follow the approach that Senator Feinstein has used in the—going by class, rather than by company fleet.

However—and I want to end with this—there is language—there is language in the Feinstein—I want to—I just want to read one thing, from the National Academy of Sciences, before I change my point. The National Academy of Sciences, in 2002, made the exact point that I just made, and I want to read it to you, "A policy decision to simply increase the standard for light-duty trucks to the same level as passenger cars would operate in this inequitable manner. Some manufacturers have concentrated their production in light-duty trucks, while others have concentrated production in passenger cars. But since trucks tend to be heavier than cars, and are more likely to have attributes, such as 4-wheel drive, that reduce fuel economy, those manufacturers whose production was concentrated in light-duty trucks would be financially penalized relative to those manufacturers whose production was concentrated in cars. Such a policy decision would impose unequal costs on otherwise similarly situated manufacturers."

The National Academy of Sciences has it right. And, by the way, I believe that Senator Carper made the same point, that we ought to go attribute-based, as he put it which means by class, which essentially means by size, rather than by going company fleet by company fleet.

Now, there's other language in here—I will close—there's other language in the Feinstein bill which some have interpreted—and I believe, now, erroneously interpreted—that goes in the opposite direction and would require NHTSA to set for each company a combined car and truck standard of 35 miles per gallon by 2019. Such a requirement would exacerbate the discriminatory impact of the current CAFE system and hurt our American manufacturers disproportionately, because they have a higher percentage of trucks in their overall fleet.

And now, I want to just state this very carefully, so this part I'm going to read.

"I discussed this matter yesterday with Senator Feinstein and her staff, and conferred further with the Commerce Committee staff as to the intent of the language in setting a combined standard of 35 miles per gallon by 2019. I was reassured to learn that the intent of S. 357 is not to set a combined standard for each company, but, rather, to set a number globally across the entire fleet of new vehicles sold in the U.S., and to give NHTSA the discretion to achieve that number by setting fuel economy standards using different attributes for different classes of vehicles." Senator Carper's point. "The intent of that language, in S. 357, in my judgment, needs to be clearer in order to avoid worsening the discriminatory impacts of the CAFE system; that is, the intention of this bill is to give NHTSA the flexibility to meet the industry-wide fuel economy number, taking into consideration both technological feasibility, the size and weight of different types and classes of vehicles, and the differences in each manufacturer's overall fleet mix."

"The goal of CAFE reform through a class-based standard is an important advance and must not be set back or reversed by a combined standard."

Thank you very much, Mr. Chairman.

[The prepared statement of Senator Levin follows:]

PREPARED STATEMENT OF HON. CARL LEVIN, U.S. SENATOR FROM MICHIGAN

Mr. Chairman, thank you for the opportunity to appear today to testify on the Corporate Average Fuel Economy bills pending before your Committee.

As temporary stewards of the planet, we all need to be conscious of our impact on the global environment and take actions to address our dependence on oil and our contribution to global greenhouse gas emissions.

As Chairman of the Committee on Armed Services, I am also very conscious of the effects of our continued reliance on oil that comes from unstable regions of the globe. I am also concerned that global climate change may present new security challenges in some of the most volatile regions of the world. I believe that we can address both of these challenges, but I also believe that there are ways of doing it that boost American manufacturing.

America has lost 3 million manufacturing jobs since 2001, over 200,000 jobs in the automotive sector. Our companies face enormous competition in the global marketplace without sufficient support from the U.S. Government. Our companies are not just competing against other global companies—they are competing against other governments that strongly support their manufacturing sectors with currency manipulation and trade barriers against our products. American companies must compete against those who are protected from import competition by their govern-

ment, have cheap labor costs, do not pay health insurance and legacy costs, or do not have to meet our strict environmental standards. Our manufacturers can compete with anyone on a level playing field but right now that field is tilted against them.

We can reduce our dependence on oil, reduce our greenhouse gas emissions, and improve the overall fuel economy of our vehicles on the road while supporting our American manufacturers in the global market place. To do that, we need a major public-private partnership and major investments in leap-ahead energy technologies, including advanced technology vehicles. We need a massive infusion of resources and a commitment from both the private sector and the Federal Government to support efforts to reach these important goals. In other words, we need a comprehensive American Manufacturing Initiative. But at a minimum, we cannot have our government act in ways that will unfairly disadvantage our American manufacturers against their global competitors.

In the area of autos specifically, it would be better for our resources to be invested in leap-ahead advanced vehicle technologies rather than in the incremental approach to vehicle fuel economy improvement that the CAFE regulatory scheme requires. To the extent that the constrained R&D resources of our manufacturers are used on incremental improvements in current technology, it limits their ability to commit those R&D resources to advanced leap-ahead technologies. Better those resources be invested in big leaps ahead, such as advanced hybrids and advanced batteries, hydrogen and fuel cells, advanced clean diesel, and alternative fuel technologies such as biofuels. One way to accomplish that would be to have companies commit a certain amount of money for R&D on these technologies as an alternative to the incremental approach of CAFE.

The current CAFE system is also an example of where our own regulatory scheme has discriminated against American manufacturers. There is a common misconception that Japanese vehicles are more fuel-efficient than American cars. That simply is not the case. Pound for pound, the vehicles are the same. The Japanese vehicles are no more fuel-efficient than ours.

CAFE has historically been built around the average fuel economy of manufacturer's total fleet of cars or light trucks. Because American manufacturers have historically offered more full-sized vehicles, they have typically had a lower fleet-wide average fuel economy than their foreign competitors. Even when individual American models have fuel economy performance equal or superior to comparably-sized foreign models, the "product mix" of the American manufacturers has produced a lower "fleet average."

Under the perverse logic of the CAFE system, therefore, an American manufacturer of a full-size pickup truck, such as the GM Silverado, which gets 18 miles to the gallon, is constrained in how many of these pickup trucks it can sell and still meet the overall CAFE fleet average requirement, which is now 22.2 miles per gallon. At the same time, CAFE allows a foreign manufacturer to sell several hundred thousand more comparable pickup trucks that get 16 miles to the gallon. This is because the foreign manufacturers have produced more small vehicles historically. In essence, a foreign manufacturer has more "headroom" to increase its market share of full-size pickup trucks, without any requirement to increase the fuel economy of these vehicles.

There are numerous examples of similar size and weight vehicles, made by domestic manufacturers and foreign manufacturers, all of which have the same fuel economy for the same size and weight. For instance, the Ford Freestyle small SUV gets 23 mpg, while the Toyota Highlander small SUV gets 21 mpg. Both are the same size and weight—4,250 pounds. The Chevy Suburban and the Toyota Sequoia are both large SUVs, and both weigh 5,500 pounds—the Suburban gets 17 mpg while the Sequoia gets 16 mpg. One last example—four different minivans, made by four different manufacturers, each of which weighs 4,750 pounds, and each gets 21 mpg.

In 2002, the National Academy of Sciences recognized these inherently discriminatory features of CAFE, stating the following in its report, the *Effectiveness and Impact of Corporate Average Fuel Economy Standards*.

> One concept of equity among manufacturers requires equal treatment of equivalent vehicles made by different manufacturers. The current CAFE standards fail this test.
>
> If one manufacturer was positioned in the market selling many large passenger cars and thereby was just meeting the CAFE standard, adding a 22-mpg car (below the 27.5-mpg standard) would result in a financial penalty or would require significant improvements in fuel economy for the remainder of the passenger cars. But, if another manufacturer was selling many small cars and was

significantly exceeding the CAFE standard, adding a 22-mpg vehicle would have no negative consequences.

A policy decision to simply increase the standard for light-duty trucks to the same level as for passenger cars would operate in this inequitable manner. Some manufacturers have concentrated their production in light-duty trucks while others have concentrated production in passenger cars. But since trucks tend to be heavier than cars and are more likely to have attributes, such as four-wheel drive, that reduce fuel economy, those manufacturers whose production was concentrated in light-duty trucks would be financially penalized relative to those manufactures whose production was concentrated in cars. Such a policy decision would impose unequal costs on otherwise similarly situated manufacturers."

Over many years, CAFE has allowed an unfair competitive advantage to foreign vehicle manufacturers, without improving our fuel economy or reducing CO_2. Proposed increases in CAFE would barely make a dent in CO_2 emissions, while, if done in a discriminatory way, could do huge damage to American jobs. It could also be a step back on environmental improvement if American manufacturing is sent to countries with less stringent environmental standards.

If we must have a CAFE system, then it needs to be significantly revamped so that it is not discriminatory against our companies, and the numbers should be set in a non-discriminatory way by experts who understand what can and cannot be done from a technology standpoint. We need to give this authority to the National Highway Transportation Safety Administration, or NHTSA, and give them the tools to set standards in a way that treats manufacturers fairly and ensures sufficient lead time to get new technologies into the market. NHTSA should be given the authority to set standards by class for passenger cars as they have done for light trucks. It would also promote leap-ahead technologies instead of incremental changes if NHTSA is clearly authorized to set a five-year CAFE number instead of an incremental annual approach, using a CAFE system based upon attributes, such as size or weight.

In her bill, S. 357, Senator Feinstein provides authority for NHTSA to set separate standards for different classes of passenger automobiles. NHTSA already has that authority for light trucks. That is an important and positive step forward in terms of fairness to our American manufacturers.

There is other language included in S. 357, however, that some have interpreted—erroneously, I now believe—to go in the opposite direction and require NHTSA to set for each company a combined car and truck standard of 35 mpg by 2019. Such a requirement would exacerbate the discriminatory impacts of the current CAFE system and hurt our American manufacturers disproportionately because they have a higher percentage of trucks in their overall fleet.

I discussed this matter yesterday with Senator Feinstein and her staff, and conferred further with the Commerce Committee staff as to the intent of the language in setting a combined standard of 35 mpg by 2019. I was reassured to learn that the intent of S. 357 is not to set a combined standard for each company, but rather to set a number globally across the entire fleet of new vehicles sold in the U.S. and to give NHTSA the discretion to achieve that number by setting fuel economy standards using different attributes for different classes of vehicles. The intent of that language in S. 357 needs to be clearer in order to avoid worsening the discriminatory impacts of the CAFE system, *i.e.,* that the intention is to give NHTSA the flexibility to meet an industry-wide fuel economy number, taking into consideration both technological feasibility, the size and weight of different types and classes of vehicles, and the differences in each manufacturer's overall fleet mix. The goal of CAFE reform through a class-based standard is an important one and must not be set back or reversed by a combined standard.

I want to emphasize again that I support improvements in fuel economy, and I fully support efforts in this Congress to reduce our dependence on oil and reduce our greenhouse gas emissions. I believe it is our duty to future generations.

But it is important to recognize where U.S. auto emissions fit into the overall picture. World CO_2 production is 28 billion metric tons. The U.S. contribution is 6 billion metric tons, or 21.8 percent of world production. U.S. transportation contributes 6.8 percent of the world production, and U.S. passenger vehicles and light trucks contribute 4.2 percent of world CO_2 production. The U.S. passenger vehicle contribution to world emissions is less than one-fifth of the U.S. contribution. Therefore, CAFE can make but a small contribution to the overall reduction in CO_2 production. That should not stop us from making improvements in our vehicle technologies, but it should drive us to solutions that can give us the greatest bang for the buck.

We all want to reduce carbon dioxide emissions from vehicles, but we need to do it in a way that is fair to all manufacturers and in a way that unleashes great technological advances in vehicles. We can make leaps ahead in hydrogen use; in hybrid use, including plug-in hybrids; and biofuels. We need to focus on these leap-ahead technologies and give the incentives to manufacturers to develop and move to those technologies. If we focus instead only on CAFE as the main mechanism for CO_2 reductions, we will miss an opportunity to do real good and might do real harm. Our manufacturing sector in America has been damaged already. We must, therefore, be doubly cautious about further disadvantaging our American manufacturers by pursuing the wrong approach.

I am committed to work with this Committee and others in the Congress to develop the right approach to improving fuel economy, reducing our dependence on oil, and reducing our contribution to global climate emissions.

The CHAIRMAN. Thank you very much.

Senator Feinstein?

STATEMENT OF HON. DIANNE FEINSTEIN,
U.S. SENATOR FROM CALIFORNIA

Senator FEINSTEIN. Thank you very much, Mr. Chairman.

I was very heartened to hear the comments of the Senator from Michigan, and very much appreciative of them. We did work together yesterday. His staff—my staff did meet with your staff, who helped draft this section. And so, I think the intent is clear.

I want to thank you, Mr. Chairman, for being an original cosponsor of this bill, along with Senators Snowe, Durbin, Kerry, Senator Boxer, Senator Nelson, who's here, Cantwell, Lautenberg, Lieberman, Menendez, Collins, Reed, Leahy, Sanders, Dodd, and Akaka.

The thrust of this bill would raise CAFE standards to 35 miles per gallon by model year 2019. This is essentially a 40 percent increase over 10 years. Similar increases are contained in virtually every CAFE bill proposed this year, including bills offered by Senator Dorgan and Craig, and by Senators Obama and Lugar.

In the President's State of the Union speech, he set a goal for America to conserve up to 8 and a half billion gallons of gasoline through better fuel economy by 2017. Now, what would it take to achieve this goal? An increase in fuel economy for cars and trucks of about 4 percent per year, which is, again, in line with our bill.

Now, we all know what's causing the remarkable agreement on how much we can accomplish through CAFE legislation. And the simple truth is this: national security imperatives, global warming concerns, and public opinion are all aligned in favor of a cleaner fleet. The devil's in the details of how we get there.

By 2025, this simple step would reduce emissions of greenhouse gases from United States cars and light trucks by 18 percent below projected levels, the equivalent of taking 50 million of today's cars and light trucks off the road in 1 year. As I think Senator Boxer knows, and others know on this Committee, the transportation sector is responsible in this country for about 33 percent, or a third, of global warming gases. Of that 33 percent, the passenger and light truck part of the transportation industry is about 25 percent. So, that's what we have.

The bill would save 2.1 million barrels of oil per day, or nearly the amount of oil we import today from the Persian Gulf.

The Ten-in-Ten bill is also fair, as I think Senator Levin stated, to the domestic auto industry. Detroit has suggested that the bill

would require each manufacturer to produce vehicles averaging 35 miles per gallon. In other words, General Motors, Toyota, and Honda would all have to make enough high-mileage cars for model year 2020 to offset their low-mileage light trucks and average 35 miles per gallon.

However, as Senator Levin just pointed out, this is not the way this bill works. Instead, it is the entire nationwide fleet of cars and light trucks sold in this country that must average the 35 miles. NHTSA will set size-based mileage standards dependent on the mix of vehicles in the entire U.S. fleet. Companies that manufacture mostly larger vehicles will only have to meet lower mileage standards for these vehicles. To be sure, every type of vehicle, from the smallest to the largest, will have to improve its mileage to the extent possible.

Critically, as Senator Levin stated, the National Highway Traffic Safety Administration, NHTSA, will retain the discretion to decide the most appropriate combination of mileage improvements for each vehicle class that will get the nationwide average to 35 miles per gallon. So, it can be class-by-class. Neither American nor foreign manufacturers will be especially advantaged or disadvantaged. Each manufacturer will have to improve the vehicle it makes to meet the standards that the agency sets.

This bill, I deeply believe, is fair to all American manufacturers, and it is also fair to the car-buying public. Some have expressed concerns that drivers would have to choose between fuel efficiency and acceleration, safety, or space. But experts at the National Academy of Sciences have shown that we can increase the fuel economy of mid-sized SUVs to 35 miles per gallon; large cars, to 39 miles per gallon; minivans, to nearly 37 miles per gallon, and large pickups, close to 30. This is the NAS report of 2002, pages 41, 45, at tables 3 and 4.

If you average the improvements that the National Academy considers achievable over the next decade for these different-sized classes of passenger cars and light trucks, you can actually get to 37 miles per gallon for the U.S. fleet, even better than the 35 miles per gallon required in this Ten-on-Ten bill. The source of this is a Union of Concerned Sciences analysis of the NAS study based on the 2005 sales mix.

So, all of this can be done, we believe, without sacrificing performance or safety.

In conclusion, the average fuel economy of new vehicles sold today is lower than it was two decades ago. That goes to some of the comments made by members of this Committee.

The Ten-in-Ten bill, I think, offers a straightforward and sensible solution. One, it can be done with existing technology. Two, it would satisfy the public's desire for a more fuel-efficient fleet. And, third, it would reduce carbon emissions and limit America's reliance on foreign oil.

In 1963, President Kennedy set a national goal of putting a man on the Moon within the decade. Technology, paired with American ingenuity and hard work, achieved this historic objective.

Today, we're advocating, certainly, a less lofty goal, raising fuel economy standards by 40 percent over the next decade. And I think it, too, can become a reality.

Mr. Chairman and those members that are cosponsors of this bill, I thank you for that.

To both Senator Levin and Senator Stabenow, I'm certainly prepared to work with you. We began yesterday. I think we achieved something yesterday.

I thank you very much, Mr. Chairman, for your work on this, as well as the expertise of this Committee's staff.

Thank you very much.

The CHAIRMAN. Thank you.

Senator Stabenow?

STATEMENT OF HON. DEBBIE STABENOW,
U.S. SENATOR FROM MICHIGAN

Senator STABENOW. Well, thank you, Mr. Chairman.

And I want to also thank Senator Feinstein. She's allowing us to surround her today. So——

Senator FEINSTEIN. Yes.

[Laughter.]

Senator STABENOW.—we appreciate that, and very much appreciate, Mr. Chairman, your holding this hearing, and to all of our colleagues.

I don't disagree at all about the importance of creating more fuel efficiency. We've got to decrease our reliance on foreign oil. It is a national security issue. We need to address, from an environmental standpoint, what's happening. There's no question in my mind that global warming is real, and every sector of the economy has to do its part.

So, for me, this is not about the goals, but it is very seriously about how we achieve it, because it very much impacts the American manufacturing economy and jobs if we don't get it right. And so, that's what I'm asking today.

First, though, I want to just speak a moment about the auto industry, because I think it's very important for us to recognize that our American auto industry really helped create the middle class of this country and is key to continuing it. This isn't your father's factory anymore. This is high-tech manufacturing. And if you have not had an opportunity to visit a plant recently, we would welcome you to do so. It is extremely impressive.

But, unfortunately, this industry has faced a lot of difficult challenges right now that, frankly, have nothing to do with quality of the vehicle or the competitiveness of the vehicles. Unfair trade practices, like currency manipulation and counterfeiting; rising healthcare costs, where they compete with other companies whose countries pay for the costs of those dollars of healthcare. GM, Ford and DaimlerChrysler, in 2005, spent $12.2 billion on healthcare, and they covered 2 million Americans. Experts predict that future health liabilities for Detroit automakers range from anywhere from $70 billion to $140 billion.

Now, why would I say that in a hearing on CAFE and on the issue of increasing fuel efficiency? Because, frankly, every time one of our automobiles adds $1,435, which it does, on average, to pay for healthcare, that's not $1,435 that's going into new technologies, all of which we want to have happen.

So, this is connected. What is happening to manufacturing, where the dollars are going, is all connected. And, frankly, I want to free up those dollars so that we can put more of that into those technologies and where we want to go.

Meanwhile, other countries are able to put their money into new technologies. Just to give you an example, the Governments of Japan and South Korea are spending five times more on new battery technologies. There's something wrong when we see Ford, with the Escape, the hybrid using battery technologies, by—having to look to another country to get the battery. And part of what we've got to do is make sure whatever incentives we do are creating the jobs here, not just the new science and the new technology.

But Japan invested $50 million last year, and South Korea invested $70 million, committed over the next 6 years. In comparison, our budget has $11 million, for one of the most critical technologies to doing what all of us want to do.

And I believe the American auto industry's really hit twice, because we're not investing in those technologies, we're not addressing competitiveness costs, and we regulate our automakers in different ways than their foreign competitors.

I'm here today, though, not to say we should do nothing. Far from it. In fact, we've got to move ahead, and we've got to be smart about it, and we've got to raise the bar, in terms of increased fuel efficiency and technology innovations.

Now, let me speak to the concerns about increasing CAFE, Mr. Chairman. And certainly in light of Senator Feinstein's comments, I certainly appreciate that we've had some good discussion, and we can look at how we move so that these issues are addressed.

But there's no question that a fleetwide average does not increase fuel efficiency, as Senator Levin said. If you have—if it's company-by-company, and one company is making larger vehicles, and the other, smaller, then the one making smaller cars can have a lot of room to go up on a cap, and those vehicles don't have to be efficient. Those pickup trucks and SUVs don't have to be efficient, and you still don't meet the cap. That's not fair.

In the United States, the majority of our jobs are coming from those pickup trucks, are coming from trucks, light trucks, SUVs, and larger vehicles. And so, that is a critical issue for us as it relates to CAFE.

And, second, I would argue that CAFE creates a situation of incremental change that I believe is slower than how we need to do this. If we are looking at something year to year, where—we're looking at situation that forces the companies to look at short-term strategies, not investing for the next 5 years, but looking at the weight of the car, the size of the engine, what's involved in the vehicle. It may mean as—cutting vehicles from the fleet. For those of us that produce automobiles, that means cutting plants, potentially. It means limiting production of certain kinds of automobiles.

And those are the kinds of things, in the short run—you can address the weight or the size of the engine—but we need something bolder than focusing on these short-term, incremental approaches to increasing fuel efficiency. And that's what I'm most concerned about.

Senator Levin talked about bold, leap-forward strategies. And I believe that's exactly what we need to do, not talking about 4 percent here or 6 percent there. We need to be looking at cutting-edge technologies that reach exactly what Senator Feinstein said.

I have no doubt that if we do this right, and we can set a requirement on where we need to be. And if we boldly invest in the technology, we can meet those numbers and surpass it.

It's a question of how we set it up and whether they're forced to look at short-term strategies or longer-term strategies.

And I also, Mr. Chairman, would have to say that we need to remember that our automakers, both foreign and domestic, have already invested millions of dollars in developing cleaner, better technologies. We are seeing the focus on the electric technology, the Volt, by General Motors. And right now we're—the key question is the advanced battery technology and how fast we can get this to a point where they can bring it to market. But we also have biodiesel, and DaimlerChrysler focusing on important efforts that relate to diesel, clean diesel—I know Senator Carper has been focused on that—and biodiesel. For example, with new technology, today's clean diesel engines achieve 20 to 40 percent better fuel economy than the equivalent gasoline engine. And over a lifetime of the vehicle, this is very, very significant.

Just as an example, this year the 2007 Jeep Cherokee will use 418 fewer gallons of gasoline each year than a traditional Jeep Cherokee. And we want all of them to do that. Also, as compared, for instance, to—a hybrid Honda Civic to a conventional Civic, that has a savings of about 154 gallons.

If we have all new Jeep Cherokees with new diesel engines, we would save 23 million gallons of gasoline a year. And they're moving in that direction. It's not that this isn't happening. That's where they're going.

Another example is flex fuel vehicles. We all know about ethanol and what is happening there, and what we can achieve, and what we can achieve with cellulosic ethanol. There are extraordinary things that are happening. Fueling half of the fleet by 2012, which is less than 5 years away, would save us 3.9 billion gallons of gasoline, or approximately 42 percent of our 2012 fleet's projected annual consumption of gas. Moreover, 77 million tons of carbon would be saved. And, frankly, that is more than what we're talking about through these CAFE standards. There are bolder, better, bigger ways to get to where we want to go.

And so, Mr. Chairman, I would say, in summary, that just two new technologies, flex-fuel vehicles and new diesels, together, are on track to reduce American gasoline consumption by over 4 billion gallons of gasoline annually in less than 5 years.

What I believe our challenge is, is to make sure, particularly as it relates to biofuels, that the infrastructure is there, and that's where many of us are working to make sure that it is.

As a comparison, a CAFE increase would save just 2.8 billion, instead of 4 billion, by focusing on a CAFE increase as has been traditionally structured.

We need to move ahead more boldly. We have many committees that are working on this together, not only this distinguished Committee, but the Finance Committee, where we are focusing on tax

credits and incentives; we have the Energy Committee, that reported, yesterday, some very, very positive things, a new requirement to reduce America's gasoline consumption by more than 32 million gallons per year, the same amount of ethanol that we can help produce in the Agriculture Committee with the farm bill, where we are also working; EPW, with Senator Boxer. We have the opportunity to work together to do what I believe is something very, very bold and also something very good for our economy, creating jobs. And I would urge us to look more broadly than just this one strategy. And I believe we can get there faster than the incremental change that has been the type of change in the structure, which started in the 1970's—we've got a 1970's structure of CAFE, and we're in 2007, with a whole different set of challenges that are bigger and more serious. And I think there's a bigger, bolder way for us to address those, and I look forward to working with the Committee.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Levin, Senator Feinstein, Senator Stabenow, on behalf of the Committee, I thank all of you.

Senator FEINSTEIN. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. And I think this just demonstrates to all of us that the forthcoming debate will be a very serious, mature, and productive one.

Thank you very much.

Senator LEVIN. Mr. Chairman, I would ask consent that my entire—I would ask consent that my entire statement and an attachment be made part of the record.

The CHAIRMAN. It is so ordered.

Senator LEVIN. Thank you.

The CHAIRMAN. And now, we will call upon the panel of experts: Mr. Alan Reuther, Legislative Director of the United Auto Workers International Union; Mr. David Friedman, Research Director of the Clean Vehicles Program of the Union of Concerned Scientists; Admiral Dennis Blair, United States Navy (Retired), former Commander-in-Chief of the United States Pacific Command, and presently Omar Bradley Chair of Strategic Leadership, Army War College and Dickinson College; Mr. Michael J. Stanton, President and Chief Executive Officer of the Association of International Automobile Manufacturers; Vice Admiral Dennis McGinn (Retired); and Mr. David McCurdy, President of the Alliance of Automobile Manufacturers.

May I first call upon Mr. Reuther.

STATEMENT OF ALAN REUTHER, LEGISLATIVE DIRECTOR, INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA (UAW)

Mr. REUTHER. Thank you, Mr. Chairman.

My name is Alan Reuther. I am the Legislative Director for the UAW. We appreciate very much the opportunity to testify today before this Committee on the subject of the pending CAFE legislation.

For several reasons, the UAW strongly opposes these bills. The auto manufacturers will have to incur enormous retooling costs to achieve the fuel economy improvements mandated by these bills.

The Bush administration has estimated that GM, Ford, and DaimlerChrysler would have to spend $85 billion, or about 75 percent, of these costs. The UAW is deeply concerned that the magnitude of these costs and their disproportionate impact on GM, Ford, and DaimlerChrysler would inevitably lead to calamitous results in the auto industry.

Unlike their competitors, GM, Ford, and DaimlerChrysler are facing extremely serious financial situations. In the past 2 years, they have posted shattering losses, closed numerous facilities, and downsized their workforces by almost 90,000 jobs. At the same time, GM, Ford, and DaimlerChrysler face much heavier retiree health legacy cost burdens than their competitors. GM has almost 3 and a half retirees for every active worker. Ford and DaimlerChrysler have over one retiree for each active worker. Together, these three companies spend over $5 billion each year to provide healthcare for 550,000 retirees and their families.

Thus, it is abundantly clear that we do not have a level playing field in the U.S. auto industry. The CAFE increases proposed in the pending legislation would severely aggravate this situation by imposing huge, disproportionate retooling costs on GM, Ford, and DaimlerChrysler. If these three companies are forced to shoulder these costs, they will be placed at a further competitive disadvantage. Something will have to give. The most likely result is that they will be forced to shutter more facilities, destroying jobs for tens of thousands of additional workers, and weakening the economic base in many communities across this country. They will also be pressured to reduce, or completely eliminate, retiree health insurance for their 550,000 retired workers and their families.

UAW believes that this economic and human toll is unacceptable. Accordingly, we strongly urge this Committee to reject legislation requiring drastic increases in fuel economy unless it is accompanied by measures to provide assistance to the struggling auto manufacturers and to help level the playing field in the auto industry.

UAW is prepared to work with this Committee to develop mechanisms, such as Federal loan guarantees, that can provide meaningful assistance to the companies.

The UAW is also concerned about structural problems in the pending CAFE bills. We were very pleased to hear the discussion in the panel before us, between Senator Feinstein and Senator Levin, that the intent of S. 357 is not to impose a flat 35 mpg fuel economy requirement on the combined passenger car/light truck fleets of each manufacturer, but, instead, to have a global, industrywide target. We think that's a much better approach, and we look forward to working with the Committee to clarify the language in that regard.

We are also concerned that all of the pending CAFE bills would allow NHTSA to promulgate an attribute-based CAFE system, but do not contain an adequate anti-backsliding rule, or else allow for credit trading between the manufacturers. As a result, these bills would jeopardize the continuation of small car production and jobs in the United States. I would note that S. 357 does attempt to do an anti-backsliding rule. We think, again, the language needs to be

clarified so it has the intended result, and that we don't lose our small car production in this country.

The UAW shares the growing national concerns about climate change and energy security. We believe the best approach to address these problems would be an economywide mandatory tradable permits program to reduce greenhouse gas emissions. In addition, we believe Congress should establish carbon performance standards to require reductions in the carbon emissions of light-duty vehicles, as well as reductions in the carbon intensity of fuels that go into those vehicles.

We also support other initiatives to promote the use of alternative fuels in motor vehicles. This includes mandating that certain percentages of all vehicles sold in the U.S. by each automaker must be flex-fuel capable by specified dates, as well as additional incentives or mandates relating to the conversion of filling stations so they have the capability to distribute alternative fuels.

Finally, the UAW urges Congress to provide incentives to encourage domestic production of advanced-technology vehicles and their key components. This would help to maintain and create tens of thousands of automotive jobs in this country. At the same time, it would help to accelerate the introduction of these vehicles, and, thereby, reduce global warming emissions and our dependence on foreign oil.

In conclusion, the UAW appreciates the opportunity to testify before this Committee. We look forward to working with you and the entire Senate to fashion new policies that will enable the United States to make significant progress in reducing greenhouse gas emissions and oil consumption while protecting jobs and benefits for American workers and retirees.

Thank you.

[The prepared statement of Mr. Reuther follows:]

PREPARED STATEMENT OF ALAN REUTHER, LEGISLATIVE DIRECTOR, INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA (UAW)

Mr. Chairman, my name is Alan Reuther. I am the Legislative Director for the International Union, United Automobile, Aerospace & Agricultural Implement Workers of America (UAW). The UAW represents over one million active and retired workers across the country. Many of these UAW members work or receive retirement benefits from auto manufacturers and parts companies. The UAW appreciates the opportunity to testify before this Committee on the subject of pending Corporate Average Fuel Economy (CAFE) legislation. This includes the "Ten-in-Ten Fuel Economy Act" (S. 357), sponsored by Senator Feinstein; the "Improved Passenger Automobile Fuel Economy Act of 2007" (S. 183), sponsored by Senator Stevens; the "Fuel Efficiency Energy Act" (S. 1118), sponsored by Senator Dorgan; and the "Fuel Economy Reform Act" (S. 767), sponsored by Senator Obama.

The UAW strongly opposes these CAFE bills for several reasons. First, we are deeply concerned that the stringent fuel economy improvements mandated by these bills would impose enormous retooling costs on the auto manufacturers. GM, Ford and DCX cannot afford these costs because of their serious financial conditions and large retiree health care legacy costs. The net result is that the bills could lead to further plant closings and job loss, as well as cut backs in or the elimination of health insurance coverage for 550,000 retirees and their families.

Second, the CAFE increases in some of these bills contain severe structural problems. Imposing a much higher flat mpg requirement on the *combined* car and light truck fleets would discriminate against auto companies whose product mix is more oriented toward light trucks. Furthermore, authorizing NHTSA to adopt an attribute-based CAFE system for passenger cars, without establishing an adequate

anti-backsliding rule, would jeopardize small car production and jobs in the United States.

The UAW shares the growing national concerns about climate change and energy security. We believe these serious challenges can best be addressed through an economy wide cap-and-trade program that limits greenhouse gas emissions, along with *additional* performance standards that require reductions in the carbon content of fuels *and* improvements in vehicle efficiency. This type of approach can also help to provide various industries, including struggling auto manufacturers, with the resources needed to make investments in the advanced technologies that will provide significant reductions in greenhouse gas emissions and oil consumption.

Economic Feasibility

There is no dispute that the improvements in fuel economy mandated by the pending CAFE bills would necessarily entail enormous retooling costs for the auto manufacturers. The Bush administration has estimated that to comply with a 4 percent rate of increase in the CAFE standards that would save 8.5 billion gallons of oil by 2017, all of the automakers would have to incur retooling costs of $114 billion. However, these costs would not be distributed uniformly among the companies. GM, Ford and DCX would have to incur $85 billion, or about 75 percent of these costs.

The UAW is deeply concerned that the *magnitude* of these costs, and their *disproportionate impact* on GM, Ford and DCX, would inevitably lead to calamitous results in the auto industry. GM, Ford and DCX are already facing extremely serious financial situations. In the past 2 years they have posted shattering losses. In response, they have announced unprecedented plans to downsize their operations, involving the closing of numerous automotive facilities and buy-out programs that could result in the loss of almost 90,000 jobs. Speculation continues about further industry restructuring that could lead to even more plant closings and job loss. In contrast, Japanese, German and Korean competitors have been making large profits and expanding their operations.

At the same time, GM, Ford and DCX face much heavier retiree health care legacy cost burdens than their competitors. GM has about 3½ retirees for every active worker; Ford and DCX have over 1 retiree for each active worker. Together these three companies spend over $5 billion each year to provide health care to about 550,000 retirees and their families Many of these retirees are younger than 65, and thus are not covered under Medicare. In contrast, the Japanese, German and Korean operations in this country are relatively new, and thus have very few retirees. And the health care costs from facilities in their home countries are heavily subsidized through national health care systems.

Thus, it is abundantly clear that we do not have a level playing field in the U.S. auto industry. The CAFE increases proposed in the pending legislation would severely aggravate this situation, by imposing huge, disproportionate retooling costs on GM, Ford and DCX.

The stark reality is that GM, Ford and DCX do not have the ability to shoulder these additional, discriminatory costs. If they are forced to do so, they will be placed at a further competitive disadvantage. Something will have to give. The most likely result is that these companies will be forced to shutter more facilities, destroying jobs for tens of thousands of additional workers and weakening the economic base of many communities across this country. They will also be pressured to reduce or completely eliminate health insurance coverage for their 550,000 retired workers and their families.

The UAW believes that this economic and human toll is unacceptable. Accordingly, we strongly urge this Committee and Congress to insist that any legislation requiring improvements in fuel economy must be accompanied by measures to provide assistance to struggling auto manufacturers and to level the playing field in the industry. Because none of the pending CAFE bills include adequate measures to achieve these objectives, the UAW urges you to reject these bills.

Structural Problems in Pending CAFE Bills

The UAW remains skeptical about the magnitude of the CAFE increases proposed in the pending bills. We do not believe the study by the National Academy of Sciences in 2001 supports increases of this magnitude. However, we also are deeply concerned about several structural problems in the pending CAFE bills.

First, the "Ten-in-Ten Fuel Economy Act" (S. 357) would combine the passenger car and light truck fleets under the CAFE program, and impose a flat 35 mpg fuel economy requirement on the *combined* passenger car-light truck fleet. This is often referred to as closing the "SUV loophole."

This approach would greatly increase the magnitude of the proposed fuel economy increase, since light trucks are starting from a lower base line. Even worse, this ap-

proach would have a severe discriminatory impact on GM, Ford and DCX, because their product mix is much more oriented toward light trucks than other companies. In effect, GM, Ford and DCX would be required to make their passenger car fleets meet extremely high mpg standards in order to balance out their much larger fleets of light trucks. Or, they would be forced to curtail production and/or close many of their light truck operations.

This problem is not ameliorated by the fact that S. 357 gives NHTSA the authority to do an attribute-based CAFE program for passenger cars, as well as light trucks. This bill still mandates that every company must meet the flat 35 mpg standard for its combined passenger car-light truck fleet, and thereby imposes a much larger burden on GM, Ford and DCX.

The UAW submits that this discriminatory approach is fundamentally unfair. In our judgment, all companies should be required to improve the fuel economy of their entire fleets in a comparable manner. Fuel economy requirements should take account of the significant product mix differences between the companies, so that any requirements are even handed and do not impose disparate costs and technological burdens on certain companies.

Second, all of the pending CAFE bills would allow or require NHTSA to promulgate an attribute-based CAFE system for passenger cars, as well as light trucks. But these bills do not appear to contain an adequate anti-backsliding rule, or else would allow credit trading between manufacturers. As a result, these bills would jeopardize the continuation of small car production and jobs in the United States.

Under the existing passenger car CAFE program, the combination of the fleet-wide averaging and the two-fleet (domestic and foreign) requirements ensures that full line auto manufacturers must maintain small car production in North America. This is because the production of smaller, more fuel efficient vehicles is needed to offset the production of larger, less fuel efficient vehicles. However, if NHTSA is authorized or required to promulgate an attribute-based CAFE system for passenger cars, this would undermine the fleet-wide averaging requirement, and would therefore enable the auto manufacturers to offshore all of their small car production and jobs.

Over 17,000 American workers are currently employed in five U.S. assembly plants that produce small passenger cars. This includes GM, Ford, DCX, and NUMMI plants in Lordstown (OH), Spring Hill (TN), Wayne (MI), Belvidere (IL), and Fremont (CA). Almost 50,000 American workers produce parts for these vehicles. The jobs of these workers would be directly threatened by the pending CAFE bills because they would allow or require NHTSA to promulgate an attribute-based system for passenger cars, and therefore would undermine the fleet wide averaging requirement. The loss of these jobs would inevitably have a negative ripple effect on the rest of the economy.

As the UAW has previously testified, there is an easy way to obtain the benefits of moving to an attribute-based CAFE system for passenger cars, while avoiding the down side of losing our small car production and jobs. Specifically, the UAW urges Congress to impose an "anti-backsliding" requirement on any new attribute-based CAFE rules that NHTSA would be authorized or required to promulgate for passenger cars. This requirement should specify that both the domestic and foreign passenger car fleets for each auto manufacturer would still have to meet or exceed the CAFE standard under the current system (*i.e.*, the 27.5 flat mpg fleet wide standard). To be effective, this "anti-backsliding" benchmark must be increased in line with the overall fuel economy improvements required under any attribute-based passenger car CAFE system.

The establishment of this type of "anti-backsliding" requirement would prevent companies from offshoring all of their small car production and jobs. It also would ensure that the auto manufacturers cannot subvert the objective of any new attribute-based CAFE system by "up-sizing" many of their vehicles, resulting in worse overall fuel economy.

Unfortunately, S. 1118 does not contain any anti-backsliding provision. Although S. 357 and S. 183 do contain versions of an anti-backsliding rule, these provisions are poorly drafted and would not be effective in protecting small car production and jobs. Because S. 357 combines the passenger car and light truck fleets, the benchmark set forth in its anti-backsliding rule is set too low to be effective. Similarly, because S. 183 merely adopts the existing 27.5 mpg standard as the benchmark for its anti-backsliding rule, and does not increase this in line with overall improvements in fuel economy, this also would not be effective.

In addition, S. 357 and S. 767 would establish a "credit trading" system that would allow auto manufacturers to buy and sell CAFE credits for passenger cars and/or light trucks. This would also have the effect of undermining the two fleet rule

and/or fleet wide averaging. As a result, it would inevitably jeopardize the continuation of small car production and jobs in this country.

The UAW is concerned about a number of other problems in the pending CAFE legislation. A number of the bills would expand the CAFE program to cover heavier vehicles (above 8,500 lbs.), thereby substantially increasing the stringency of the overall program and making it even more difficult and costly for the auto manufacturers to comply with the proposed standards. Similarly, S. 1118 would eliminate the flex fuel CAFE credit. This also represents a back door means of increasing the stringency of the overall program, as well as the compliance costs for the companies. Both of these proposed changes in the CAFE program would have an especially negative impact on GM, Ford and DCX, because their fleets contain more heavier and flex fuel vehicles.

Two of the pending CAFE bills, S. 1118 and S. 767, would require the auto manufacturers to improve the fuel economy of their passenger car and light truck fleets by 4 percent per year. Although the bills purport to give NHTSA the discretion to allow a more reasonable rate of increase, the findings that it would have to make in order to do this are so stacked that it would be impossible for the agency to ever make such a determination. In effect, the so-called "off-ramps" are illusory.

Because of the foregoing structural problems in the pending CAFE bills, the UAW urges the Committee to reject these measures, and instead to explore better approaches for addressing the pressing problems of climate change and energy security.

Need for Better Approach to Reduce Greenhouse Gas Emissions and Our Dependence on Foreign Oil

The UAW shares the growing national concern about climate change. Scientific studies have confirmed that human use of fossil fuels is contributing to global warming. These studies underscore the major environmental challenges posed by global warming, including rising sea levels, changes in climate patterns and threats to coastal areas. To avoid these dangers, the growth in greenhouse gas emissions must be reduced, and ultimately reversed.

The UAW is also concerned about the national security implications of our Nation's dependence on foreign oil. Currently, 28 percent of the world's oil is produced in the Persian Gulf. Although less than 11 percent of the oil used by the U.S. comes from this volatile region, disruptions in this oil supply can still create serious problems for our economy. As a result, in recent years our Nation has become entangled in deadly, costly conflicts in the Middle East. In our judgment, the long range economic and national security interests of the U.S. would better be served by implementing policies to reduce our dependence on foreign oil.

The UAW believes that climate change and energy security are serious problems that need to be addressed by Congress and the Bush administration. We urge Congress to pursue initiatives that will deal with these issues in an integrated and balanced manner that protects jobs and benefits for American workers and retirees.

It is important to recognize, however, that these problems cannot be solved through measures such as the pending CAFE bills. Light duty vehicles (both passenger cars and light trucks) account for approximately 16 percent of greenhouse gas emissions and 42 percent of oil consumption in the United States. The CAFE program only affects new vehicles sold each year, which represent about 7 percent of the total vehicle stock on the road. It takes about 14 years for the U.S. vehicle fleet to completely turn over. Furthermore, because of the long lead time needed to retool vehicles, any changes in the CAFE program will necessarily have a delayed impact.

Thus, it is apparent that the proposals in the pending legislation to increase the stringency of the CAFE program would only have a very modest impact in the short term in reducing greenhouse gas emissions and oil consumption.

In addition to these shortcomings, there are a number of other reasons why focusing on the CAFE program does not represent the best approach for addressing the problems of climate change and energy security. The CAFE program does nothing about the fuels that go into vehicles. It is not integrated with any broader economy-wide cap-and-trade program to limit greenhouse gas emissions. Historically, the CAFE program has been subject to gaming by the auto companies. And it does not generate any revenue that could be used to assist struggling auto manufacturers in doing the retooling needed to meet stiffer vehicle efficiency requirements.

To address the problem of global warming in a meaningful way, the UAW believes we need a broad, comprehensive policy. In our judgment, this policy should require all sectors of the economy to come to the table and help to reduce our Nation's greenhouse gas emissions. This includes all mobile sources, not just light duty vehicles. It also includes stationary sources, such as power plants and factories. And,

of course, it includes our fossil fuels such as coal, oil and natural gas. Each sector should be required to contribute to the reduction of greenhouse gases in a proportionate manner. No sector should enjoy a free ride. No sector should be required to bear a disproportionate burden, or to shoulder costs that would have a devastating impact on its operations or employment.

Specifically, the UAW strongly supports the establishment of an economy-wide mandatory tradable-permits program that will slow the growth of, and then reduce greenhouse gas emissions in the United States. We believe this type of "cap-andtrade" program should be done on an "upstream" basis in order to minimize regulation and to ensure that all sectors of the economy participate in a proportionate manner. We also believe this program should include a "safety valve" cost cap to ensure that no sector is hit with unacceptable burdens that would have a negative impact on economic growth and jobs. In addition, this program should include measures to ensure that our businesses and workers are not placed at an unfair competitive disadvantage with U.S. trading partners and developing countries.

The UAW believes that this type of "cap-and-trade" program can make a major contribution to reducing greenhouse gas emissions. It would ensure that such reductions are accomplished in an economically efficient manner. Because of the ripple effect of higher oil prices throughout the economy, it would also help to reduce oil consumption.

To adequately address the problems of global warming and energy security, the UAW recognizes the need for *additional* measures to deal with the automotive sector. To be effective, we believe it is critically important that these measures address the fuels that go into vehicles, as well as the efficiency of the vehicles themselves. Furthermore, any auto sector policies should recognize that it is much more expensive to achieve reductions in greenhouse gas emissions from light duty vehicles than from other sectors. In our judgment, the best way to address this disparity would be to integrate any auto sector policies with economy-wide efforts to reduce greenhouse gas emissions. At a minimum, the Federal Government should provide assistance to the auto industry to offset this much higher compliance cost.

(A) Auto Carbon Limits

Instead of becoming mired in the old dead-end debate over the CAFE program, the UAW urges Congress to explore the feasibility of establishing an additional carbon control policy that would require reductions in the carbon emissions of light duty vehicles sold in the United States, as well as reductions in the carbon intensity of the fuels that go into these vehicles. This two-pronged approach could make a direct, major contribution to reducing greenhouse gas emissions. At the same time, it also could contribute enormously to a reduction in oil consumption.

Under this approach, auto manufacturers would have a strong incentive to improve the efficiency of their vehicles. But there also would be a strong incentive to increase the availability and use of alternative fuels. This approach could be integrated with an economy-wide cap-and-trade program, thereby increasing the overall efficiency of efforts to reduce greenhouse gases and oil consumption. It could also avoid the gaming and other complications that have arisen in connection with the CAFE program. Significantly, through the allocation of allowances, this approach could help to generate the revenues needed to provide assistance to struggling auto manufacturers and to level the playing field in the auto industry.

Obviously, there are many details that would have to be worked out in order to establish this type of carbon system for the auto sector. The UAW is prepared to work with this Committee and the entire Senate to fashion this type of system.

(B) Alternative Fuels

There are a range of other initiatives that Congress could pursue to promote the use of alternative fuels in motor vehicles. These initiatives could make an enormous contribution to reducing greenhouse gas emissions and our reliance on foreign oil.

Obviously, there is a need to promote the production of vehicles that are capable of running on alternative fuels. The technology required to make vehicles flex fuel capable is relatively inexpensive—about $150 per vehicle. GM, Ford and DCX have already voluntarily committed to making 50 percent of their fleets flex fuel capable by 2012. The UAW would support legislation mandating that certain percentages of all vehicles sold in the U.S. by each automaker must be flex-fuel capable by specified dates. Meanwhile, to avoid any counterproductive disincentive, the CAFE credit for flex fuel vehicles should be extended and expanded to cover bio-diesel.

To increase the use of alternative fuels, there also is a need to overcome technical hurdles facing cellulosic ethanol and bottlenecks in distribution networks. Thus, the UAW supports the continuation of existing incentives for the production of bio-fuels.

We also support additional incentives or mandates relating to the conversion of existing filling stations so they have the capability to distribute alternative fuels.

The UAW welcomes the Bush administration's proposal to increase the renewable fuels mandate. We also believe the fuels carbon cap recently proposed by Governor Schwarzenegger represents a thoughtful approach that is worth examining on a Federal level.

(C) Assistance to Encourage Domestic Production of Advanced Technology Vehicles

The Federal Government currently provides tax credits to consumers who purchase certain advanced technology (hybrid, diesel, fuel cell) vehicles. These incentives are designed to encourage consumers to purchase more fuel-efficient vehicles. However, the tax credits are available regardless of where the vehicles and their key components are built. They are not tied to domestic production. Unfortunately, many advanced technology vehicles currently are assembled in other nations. Even worse, virtually all of the key components (hybrid electric motors; diesel engines) for these vehicles are built overseas, including the key components for vehicles assembled in this country, as well as those assembled in other countries. As these advanced technology vehicles gain a larger share of the market, this means we are replacing vehicles that have higher levels of domestic content with vehicles that have much lower domestic content. As a result, the consumer tax credits are effectively subsidizing the movement of automotive jobs overseas. For this reason, we believe it would be a major mistake for the Federal Government to rely solely on these consumer tax credits to encourage the expansion of advanced technology vehicles. Certainly, these tax credits should not be expanded by increasing the amounts or lifting the cap on the number of qualifying vehicles.

Instead of this flawed approach, the UAW urges Congress to provide incentives to encourage *domestic production* of advanced technology vehicles and their key components. As was demonstrated by a November 2004 study conducted by the Office for the Study of Automotive Transportation (OSAT) of the University of Michigan Transportation Research Institute, and commissioned by the bipartisan National Commission on Energy Policy, this type of approach would help to maintain and create tens of thousands of automotive jobs in this country. At the same time, it would help to accelerate the introduction of these advanced technology vehicles, and thereby reduce global warming emissions and our dependence on foreign oil. Moreover, in light of the highly competitive nature of the U.S. auto market, any savings realized by the auto manufacturers and parts companies would inevitably be translated into cost reductions for consumers, and thereby encourage sales of these more efficient vehicles. Significantly, the OSAT study indicated that the increased tax revenues for Federal, state and local governments generated from the jobs created for American workers would more than pay for the costs of such manufacturer incentives.

The UAW is pleased that proposals for a manufacturer's tax credit to encourage domestic production of advanced technology vehicles and their key components were included in a number of bipartisan bills in the last Congress, and that a similar proposal is included in one of the pending CAFE bills, S. 767. However, because of the current financial situations of GM, Ford and DCX, such tax credits would be of limited value to them. Thus, the UAW urges this Committee look at other mechanisms for providing assistance to auto manufacturers to encourage domestic production of advanced technology vehicles and their key components. This could include proposals for Federal loan guarantees and/or tax exempt status for any bonds issued to cover such investments. It also could include allowing auto manufacturers to monetize banked R&D and/or AMT credits that they have accumulated, provided the funds are used for such investments.

(D) Leveling the Playing Field in the Auto Industry

As previously indicated, to make it economically feasible for GM, Ford and DCX to shoulder the retooling costs associated with any improvements in vehicle efficiency, Congress needs to help level the playing field in the auto industry relating to retiree health care legacy costs. There are a number of ways Congress could do this. This includes allowing auto manufacturers to use federally guaranteed and/or tax exempt bonds to help fund retiree health care benefits, or to buy their early retirees into the Medicare program or a catastrophic reinsurance program. It also includes expanding the existing 65 percent refundable, advanceable health care tax credit so it applies to early retirees of older manufacturing companies that have large numbers of retirees. The UAW is prepared to work with this Committee and the entire Senate to craft these or other proposals so they will help the struggling auto manufacturers and level the playing field in the auto industry. We believe it

is essential that such proposals accompany any legislation that would impose stiffer vehicle efficiency requirements on the auto manufacturers.

Conclusion

In conclusion, the UAW appreciates the opportunity to testify before this Committee concerning the pending CAFE legislation. We look forward to working with this Committee and the entire Senate to fashion new policies that will enable the U.S. to make significant progress in reducing greenhouse gas emissions and oil consumption, while protecting jobs and benefits for American workers and retirees.

The CHAIRMAN. Thank you, Mr. Reuther.

And may I now recognize Mr. Friedman.

STATEMENT OF DAVID J. FRIEDMAN, RESEARCH DIRECTOR AND SENIOR ENGINEER, CLEAN VEHICLES PROGRAM, UNION OF CONCERNED SCIENTISTS

Mr. FRIEDMAN. Mr. Chairman, members of the Committee, I really appreciate the opportunity to testify before you today; in part, because our country is faced today with a critical question, and it's the same question and the same decision that this Committee faces, are we going to act to decrease our oil addiction? Are we going to reduce the greenhouse gas emissions from our cars and trucks, which are currently responsible for more global warming pollution than the entire economy of India? It may have looked small on that chart that Senator Levin showed, but that's only because our country produces so much. We also have to ask, are we going to give consumers a solution to $3 a gallon gasoline prices? Unless you pass a strong 35 mile per gallon or 4 percent per year fuel economy bill out of this Committee, you will be answering no to these questions. But Americans need you to answer yes.

You can say yes with confidence, because the facts have moved beyond the old debates. First, there is absolutely nothing arbitrary about relying on research from our Nation's top scientists and engineers in setting fuel economy standards. By relying on the congressionally requested research from the National Academy of Sciences, Congress can set fuel economy standards of at least 35 miles per gallon over the next 10 years, or about a 4 percent per year increase.

Nobody is claiming that fuel economy standards are a silver bullet. We will also have to tap into low-carbon renewable fuels and, in the long run, fuel cells and plug-in hybrid electric vehicles. We will also have to ask consumers to take responsibility for the number of miles they drive. But a good dose of common sense, loophole-free fuel economy policy and good engineering can deliver the cars and trucks this country needs to tackle our oil addiction.

Second—and we heard some of this, I think, in the earlier panel—a size-based system completely changes the way you should look at fuel economy standards. Hopefully, you have before you a chart, where I tried to show an example of how size-based standards fulfilling the 35 mile per gallon requirement would treat different vehicle classes.

If you look at the chart, you will see that large pickups would only have to reach about 28 miles per gallon, significantly less than the 35 mile per gallon fleet average. Instead of large pickup trucks having to meet that average, all vehicles will have to improve fuel economy under a size-based system.

Automakers have already developed the technology for large pickups to reach 28 miles per gallon. The National Academy of Sciences says so. Our analysis says so. These pickups would have the same performance, size, and safety they have today. The added fuel economy technology would pay for itself in less than 2 years at today's gas prices, and pickup truck owners would save an additional $4,500 on gasoline over the life of the vehicle. Higher fuel economy standards will help farmers and small businesses.

Now, for the same reason pickups are protected, size-based standards effectively eliminate any arguments about competitiveness between automakers based on the standards. Individual manufacturers who have to sell more small vehicles to offset—sorry. Individual manufacturers will not have to sell more small vehicles to offset sales of large vehicles. A company that focuses more on cars, like Volkswagen, would only have to—would have to reach about 39 miles per gallon, while General Motors, which sells vehicles in all size classes, would only have to reach 34, 5 miles per gallon lower, even though the Nation's fleet would average 35.

Now, this also means that the light-truck loophole can be eliminated, because the new size-based system provides automakers with added flexibility.

The third important fact that has changed is that increasing fuel economy will boost profits and create more jobs in the United States. We've heard 30 years of concern, and understandable concern, about how fuel economy standards will impact our manufacturers. But a recent 2006 study from the University of Michigan shows that Detroit's Big Three could increase profits by $1.3 billion in 2010 if they invest in fuel economy, even if gasoline only costs $2 per gallon. Our own work shows that auto-sector jobs could grow due to higher fuel economy standards, compared to the shrinking world autoworkers are facing today.

Finally, fuel economy standards are the only policy under consideration today that will cut consumer spending at the pump. A 35 mile per gallon fuel economy standard is equivalent to cutting today's $3 per gallon gasoline price by 65 cents, even after paying for the technology to reach that goal.

Mr. Chairman, Americans have moved beyond the old debate, and it's time for Congress to do the same. A recent *New York Times* poll showed that over 90 percent of Americans support increasing fuel efficiency. A *Detroit Free Press* poll showed that a majority of Michiganders favored higher fuel economy standards. And a yet-to-be-released poll by the Mellman Group shows that 84 percent of American pickup truck owners support a mandatory increase in the fuel efficiency of cars, SUVs, and trucks, even when it is made clear to them that they would have to pay more up front in order to save money on gasoline in the long run. Americans are ready to do their part. They want to buy more patriotic cars and trucks that cut oil dependence, reduce global warming pollution, and save them money. What America needs is leadership from you. Saying yes to guaranteed 35 miles per gallon over 10 years, or a guaranteed 4 percent per year increase in fuel economy standards, will deliver what Americans are asking for.

Thank you very much.

[The prepared statement of Mr. Friedman follows:]

PREPARED STATEMENT OF DAVID J. FRIEDMAN, RESEARCH DIRECTOR AND SENIOR ENGINEER, UNION OF CONCERNED SCIENTISTS

Mr. Chairman and Members of the Committee, I appreciate the opportunity to testify before you today.

I appreciate the opportunity because our country is faced with a critical decision, the same decision faced by this committee. Are we going to continue to increase our addiction to oil?

There are many important ways to ask the same question:

- Are we going to continue to weigh down our economy by paying to import 60 percent of our oil at more than $60 per barrel?
- Are we going to continue to produce more global warming pollution from our cars and trucks than the entire economy of India?
- And are we going to continue to leave consumers with no solutions to $3.00 per gallon gasoline prices?

We have been asking these questions for 30 years, and, for a long time, it seemed like we were having the same debate over and over again, but the facts have now moved beyond the old debate.

Fact: There is nothing arbitrary about relying on research from our Nation's top scientists and engineers in setting fuel economy standards. By relying on Congressionally requested research from the National Academies of Science and research from MIT, Porsche Engineering, the American Council for and Energy Efficient Economy, and the Union of Concerned Scientists, Congress can set science-based fuel economy standards of at least 35 mpg for the fleet of new cars and trucks over the next 10 years, or about a 4 percent per year increase in fuel economy. Analysis of the NAS data shows that a 37 mpg fleet is possible using existing technology. Our own analysis shows that we could top 40 mpg.

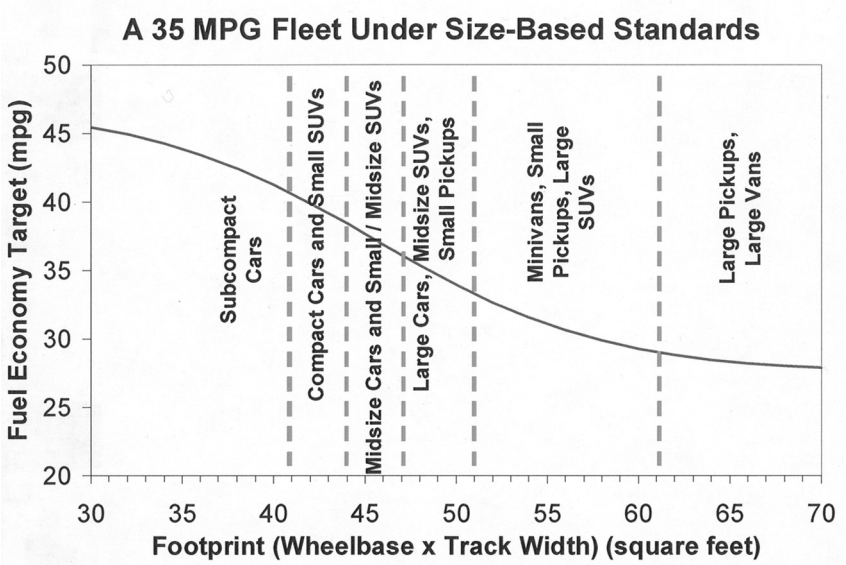
There is no reason to leave the standard setting task to the National Highway and Traffic Safety Administration (NHTSA) which has a very poor record when it comes to increasing standards.

The Ten-in-Ten bill would:

- Cut our oil dependence by 2.1 million barrels per day in 2025—almost as much as we currently import from the Middle East.
- Save consumers over $40 billion in 2025, even if gasoline is only $2.00 per gallon.
- Reduce global warming pollution by more than 350 million metric tons of carbon dioxide equivalent—an 18 percent reduction that is equivalent to taking about 50 million of today's typical cars and trucks off the road.

Fact: Pickups are protected under the reformed fuel economy standards and farmers and small businesses will get the performance they need while saving thousands of dollars. The administration is asking for the ability to use vehicle size when setting fuel economy targets—*a size-based system completely changes the way you should look at CAFE*. Automakers would not have to sell more small vehicles to offset sales of large vehicles. *All* vehicles will have to use better technology to improve fuel economy, not just big vehicles.

The chart below is an example of how a sized-based standard fulfilling the 35 mpg fleetwide requirement would treat different vehicle classes.



Combining a fleetwide fuel economy standard of 35 mpg with the President's request to use size-based standards means that large pickups would only have to reach about 28 mpg—they will *not* have to hit the fleetwide 35 mpg average. Instead, all vehicles will have to improve fuel economy, including compact cars which would have to reach about 40 mpg.

With existing technology, the NAS showed that full-size pickups could reach 29.5 mpg. Our analysis shows that a pickup achieving 28 mpg would save its owners over $6,000 on gasoline during the life of the vehicle. The pickup would have the same power, performance, size and safety it has today, and would cost an additional $1,500. However, the added fuel economy technology would pay for itself in less than 2 years with gasoline at $2.50 per gallon. Higher fuel economy standards will help farmers and small businesses who rely on trucks as much or even more than the average consumer.

Fact: Automakers that concentrate on the pickup market won't have to compete on fuel economy with automakers that focus more on cars—the old competitiveness arguments are effectively eliminated. The 35 mpg goal applies only to the aggregate fleet of new cars and trucks sold by all automakers. NHTSA will be able to set separate fuel economy targets for different classes, so a company that focuses more on cars, like Volkswagen, would have to reach 39 mpg, while GM, which is spread out more across different size classes, would only have to reach 34 mpg. The new system requires all automakers to invest in fuel economy, addressing automaker complaints that they are currently being treated unfairly if they sell more large vehicles.

This also means that the light truck loophole, and its problematic impacts, can be eliminated because the new size-based system provides automakers with added flexibility around larger vehicles.

Fact: Increasing fuel economy will boost Big 3 profits and create more jobs in the U.S. A 2006 study from the University of Michigan shows that Detroit's Big Three could increase profits by $1.3 billion in 2010 if they invest in fuel economy, even if gasoline costs only $2 per gallon. However, if they follow a business-as-usual approach their lost profits could be as large as $3.6 billion if gasoline costs $3.10 a gallon.

There is a real opportunity here. If existing technologies are used to reach a 40 mpg fleet in 10 years, we found that these investments would lead to 161,000 more jobs throughout the country. In the automotive sector, projected jobs would grow by 40,800. These new jobs would be created because of investments in new technologies by the automakers and because consumers would shift spending away from gasoline to more productive parts of the economy.

Fact: Adding a fleetwide goal to size-based standards addresses the key Achilles heel of that system. Size-based standards alone can create an incentive to make vehicles bigger to avoid meeting tougher standards, even if consumers are not pushing

for bigger vehicles. This would allow automakers to push down America's fuel economy and increase our oil dependence. A fleetwide goal eliminates that incentive by requiring all automakers to add technology if they push up the size of the fleet. On the other hand, if consumers do demand bigger vehicles on their own, they can get them under this system. All vehicles, whether large or small, will just have to add more of the existing technology.

Fact: Fuel economy standards are the only policy currently under consideration that will cut consumer spending at the pump. A 35 mpg fuel economy standard is equivalent to cutting today's $3 per gallon gasoline price by 65 cents, even after paying for the improved technology. That represents a 22 percent cut in summer gas prices.

Gasoline savings would pay for the added cost of fuel economy technology ($1,100) in about 2 years. After that, the average consumer would save $3,400 more on gasoline over the remaining life of the vehicle. Looking at it another way, assuming you are the typical person and you take out a loan on the car, your monthly gasoline costs will go down more than your monthly loan payments will increase to pay for the added fuel economy technology, so you will begin saving money on the first day you own the car.

Fact: Fuel economy standards work. If we still had the same fuel economy we did in the early 1970's, we would be using an additional 80 billion gallons of gasoline on top of the 140 billion gallons we will use this year. That would represent an increase in oil demand by 5.2 million barrels of oil per day, or a 25 percent increase in our oil addiction. At last year's average price for regular gasoline, about $2.50 per gallon, that represents $200 billion dollars saved. That number could have been much better, however, if fuel economy standards had not remained essentially unchanged for the past two decades.

Fact: These standards can be met by putting existing efficiency technology to work; we don't even need hybrids, though they certainly can contribute.

Fact: These standards can be met while maintaining or improving highway safety. Major reports from researchers at Oakridge National Labs, Lawrence Berkeley National Labs, the University of Michigan, and DRI demonstrate that fuel economy is not linked with increased fatalities, large vehicles do not have lower fatality rates when compared to smaller vehicles, and increased weight is actually associated with increased fatalities.

Fact: A 35 mpg fleet can keep the performance we have now. Today, you can buy a family car that goes from 0 to 60 mph as fast as a late 1960s Mustang or Porsche 911. Using technology to increase fuel economy will allow us to keep that performance but focus new technology applications on the crisis at hand: oil addiction, climate change and high gas prices.

Fact: Consumers are trying to buy cleaner and more efficient vehicles, but they don't have many choices. The higher fuel economy version of America's top selling car, the Toyota Camry outsells the lower fuel economy version by nearly four to one. But even that vehicle does not break the 30 mpg barrier for EPA combined fuel economy. The auto industry's version of a 30 mpg vehicle is a compact car, leaving millions of Americans who need minivans, family cars and SUVs with no option.

Fact: Americans have moved beyond the old debate.

- A recent *New York Times* poll showed that over 90 percent of Americans support requiring automakers to make more efficient cars.
- The same holds true for people living at the center of the auto industry—a *majority of Michiganders favor higher fuel economy standards* for cars and trucks, with some supporting increases to 40 miles per gallon or more, and many would pay hundreds of dollars extra for more-efficient vehicles, according to the latest *Detroit Free Press*—Local 4 Michigan Poll.
- Pickup drivers also want higher fuel economy. A yet to be released poll by the Mellman Group shows that 84 percent of American pickup truck owners support a mandatory increase in the fuel efficiency of cars, SUVs, and trucks—even when it was made clear that they would have to pay more up front to save money on gasoline. These findings held across party lines and were even stronger among owners who live in rural areas than those who live in cities.

It is time for Congress to move beyond the old debate too.

Americans are ready to do their part, they want to buy more patriotic cars and trucks that cut oil dependence, reduce global warming and save them money. What Americans need is leadership from you. Requiring higher fuel economy standards will ensure consumers can have the choice to buy the higher fuel economy cars and trucks that the National Academies say are possible—a 29.5 mpg pickup, a 34 mpg

SUV, a 37 mpg minivan, and a 41 mpg family car. These standards should be size-based, but should put in place steps to eliminate or counteract any loopholes.

Nobody is claiming that fuel economy standards are a silver bullet. We will also have to tap into low carbon renewable fuels and ask consumers to take responsibility for the number of miles they drive. Nobody should be allowed to shirk their patriotic responsibility to cut our oil addiction and address the high costs climate change will have on our economy. But a good dose of common sense fuel economy policy and good engineering can deliver the cars and trucks this country needs to help tackle these critical problems.

For further information, I have attached my recent testimony before this committee for additional details on these important issues. I have also attached a fact sheet on the Ten-in-Ten bill, the National Academies report, and the fuel economy potential both for the country and for trucks. I hope you find these helpful.

The CHAIRMAN. Thank you very much, Mr. Friedman.

Admiral Blair?

STATEMENT OF ADMIRAL DENNIS C. BLAIR, USN (RET.), FORMER COMMANDER-IN-CHIEF, U.S. PACIFIC COMMAND, USN; MEMBER, ENERGY SECURITY LEADERSHIP COUNCIL; OMAR BRADLEY CHAIR OF STRATEGIC LEADERSHIP, ARMY WAR COLLEGE AND DICKINSON COLLEGE

Admiral BLAIR. Thank you, Mr. Chairman.

This afternoon, I'm speaking on behalf—turn it on. All right. This afternoon, I'm speaking on behalf of the Energy Security Leadership Council. We're a group of 20 business executives and retired senior military officers. We're led by Fred Smith, of FedEx, and General P.X. Kelley, retired United States Marine Corps. And our driving belief is that the oil dependency that we have severely threatens the economic and the national security interests of the United States. And this is one of the most important security issues facing this country.

In December, we unveiled a set of recommendations to the Nation on reducing U.S. oil dependence, and we recommended a comprehensive program, specific measurable steps to cut in half the number of barrels of oil that we consume to produce a dollar of GDP by 2030; that is, to halve the oil intensity of this country. And, based on these recommendations, Senator Dorgan and Senator Craig have designed the Security and Fuel Efficiency Energy Act of 2007, that Senator Dorgan referred to, and they recently introduced the fuel economy sections of this bill as the Fuel Efficiency Energy Act of 2007.

And we've already heard the contributions that many distinguished Senators in this Committee have made in recognizing that transportation fuel efficiency is a vital national security imperative. The iron logic is, we import 60 percent of the 20 million barrels of oil we use every day. Seventy percent of that is used in the transportation sector. The transportation sector depends on oil. A strategy for reducing oil dependency has got to tackle the transportation sector. That's not all it has to tackle, but it has to tackle that.

So, under our Council's proposal, we propose that the fleet of new passenger cars and light trucks sold in the United States each year, the entire fleet, will have to get 4 percent better mileage every year than the fleet sold the year before. We also would apply the same standards to commercial trucks, which have never previously been subject to limitations.

This 4 percent is not a number plucked out of thin air. It's in line with the historical annual gains that we made when we took this thing seriously and we last committed ourselves to fuel economy, and this has been cited several times. This is consistent with technical study results. We can do it.

We also believe that these new standards have to have flexibility. We believe that NHTSA ought to have the discretion to establish attribute-based classes of vehicles so that there could be a different standard for freight-hauling vehicles from that for passenger vehicles.

We also believe that there ought to be off-ramps. If NHTSA, based on expert opinion and data, judges that 4 percent in a given year is either technologically infeasible or it endangers safety or it's not cost-effective, then they should have the ability to change it.

And so, we believe that this idea of a 4 percent standard, vehicle classes based on attributes, and off-ramps gives credit to American ingenuity, technological prowess, and it will protect business from value-destroying mandates.

And finally, the legislation that we favor contains a variety of consumer and manufacturer tax credits that will help car makers and car buyers to adjust to buying cars which have greater fuel economy. And this will result in, we think, two outcomes. It'll improve our energy security and will also provide for a domestic automobile industry that is competitive.

Now, I personally honor and respect the historical contribution to national defense that companies like GM and Ford have made. More than half a million "deuce and a half" trucks carried U.S. troops and their gear around in World War II. The Ford's Willow Run plant, by itself, produced nearly 9,000 B–24s. And we think the American auto industry can contribute to the national defense in the future, as it has in the past.

One question we're often asked is, what is a bunch of retired senior officers doing getting so worked up about fuel-efficient cars? And I guess the answer is that we've seen firsthand how increasing U.S. dependence on oil from underdeveloped volatile areas overseas creates security risks for the country. It puts strains on our military forces and assigns them expensive missions for which they're the wrong instrument of national power.

When I first joined the Navy, in 1968, the entire U.S. military presence in the Persian Gulf was one flagship and two destroyers. Now our security policy in the Gulf is dominated by the use of major military force units. It's expensive. The Persian Gulf is on the other side of the world. It takes over three ships to maintain one over there. It takes three soldiers, airmen, or marines. You just got back, you're there, or you're going. And it's difficult to do it right. When we put major force units into underdeveloped volatile countries, it has major unintended consequences, rarely turns out to be quick, controlled, and short-lived, and our forces there of this size with this duration cause local resentments and dangers that really work against what we're trying to achieve with our overall security policy.

You look at new sources of oil, like Central Asia, West Africa, they're drawing U.S. military forces into similarly underdeveloped volatile regions. We can see the same playbook being rewritten. We

need to find a better approach to oil security, and we have to reduce our dependence on overseas oil.

So, let me tie things back to the policy objectives of this Committee. Improved security will require greater conservation, as well as increased production of petroleum and alternatives here at home. So, improved fuel economy will increase not just our energy security, but our military security, our overall national security. We'll be less susceptible to being whipsawed by events in the Persian Gulf, Central Asia, and West Africa. We'll not have to be on a hair-trigger for major military involvements in these regions with their expense and all the difficulties of doing the mission successfully and extracting cleanly.

So, let me finish by encouraging you to support amendments that ensure an aggressive, but flexible, approach to increasing fuel economy of the entire—the entire—U.S. transportation fleet. The essential elements of this approach are a 4 percent annual increase applied to all on-road vehicles, including medium and heavy trucks, and containing these off-ramps that will protect consumers and manufacturers.

And we, on the Council, are committed to working with you to continue making this an important—getting the work done. And we just all feel that it's really time to move and reverse this increasing energy dependency, which is endangering our national security. We can do it in a bipartisan way that the entire country can support.

Thank you, Mr. Chairman.

[The prepared statement of Admiral Blair follows:]

PREPARED STATEMENT OF ADMIRAL DENNIS C. BLAIR, USN (RET.), FORMER COMMANDER-IN-CHIEF, U.S. PACIFIC COMMAND, USN; MEMBER, ENERGY SECURITY LEADERSHIP COUNCIL; OMAR BRADLEY CHAIR OF STRATEGIC LEADERSHIP, ARMY WAR COLLEGE AND DICKINSON COLLEGE

I would like to thank the Committee for the opportunity to discuss fuel-economy legislation from the perspective of national security. I speak to you on behalf of the Energy Security Leadership Council (Council), a non-partisan group that brings together twenty business executives and retired senior military officers who are concerned about the perilous state of U.S. and global energy security. We are led by Frederick W. Smith, Chairman, President and CEO of FedEx, and General P.X. Kelley (Ret.), the 28th Commandant of the United States Marine Corps. And we are united in the belief that oil dependence severely threatens the economic and national security of the United States.

On December 13, 2006, the Council unveiled a set of *Recommendations to the Nation on Reducing U.S. Oil Dependence*. This report outlines a comprehensive energy security strategy. It replaces the false hope of domestic energy independence with strategies for better managing the reality of global energy interdependence. The suggested initiatives are aggressive while being balanced and credible. Where the market cannot be expected to provide solutions, government has been asked to apply workable standards capable of spurring the needed private-sector responses. The members of the Council have pledged to continue working until these policy recommendations are enacted into law.

During the last few months, the Council has collaborated with Senator Byron Dorgan and Senator Larry Craig to design legislation that incorporates the central elements of the *Recommendations*. This collaboration has given rise to the "Security and Fuel Efficiency Energy Act of 2007 (SAFE Energy Act)," which was formally introduced on March 14. Senators Dorgan and Craig recently introduced just the fuel economy sections of this bill as the "Fuel Efficiency Energy Act of 2007." I want to commend Senators Dorgan and Craig for their leadership and commitment.

I also want to thank Chairman Inouye and Vice Chairman Stevens along with Senators Feinstein, Snowe, and all others who have recognized that increased transportation fuel efficiency is a vital national security imperative. Our nation consumes more than 20 million barrels of oil per day (mbd), more than 60 percent of it im-

ported. Nearly 70 percent of our oil consumption goes to fuel the transportation sector. Transportation relies on oil for 97 percent of delivered energy with almost no substitutes available. By any measure that I know of, such extraordinary dependence is inconsistent with national security.

The Council's approach tackles oil dependence through many policies, but none of these is more crucial than reformed and strengthened vehicle fuel economy standards. Standards are necessary because there is no free market for oil. Oil prices may be a function of supply and demand, but the oil market is well removed from the free-market ideal. As much as 90 percent of all oil and gas reserves are held by national oil companies (NOCs) that are either partially or fully controlled by governments, not public companies operating in the free market. Moreover, the market is highly cartelized, with one group—OPEC—setting prices and supply based on a variety of pressures including political concerns. The marketplace alone will also not act preemptively to mitigate the enormous damage that would be inflicted by a serious and sudden price increase. Thus, government must apply workable standards capable of spurring private-sector responses.

Under the Council's proposal, the *fleet* of new passenger cars and light trucks sold in the United States each year will have to get 4 percent more miles per gallon than the *fleet* of cars and light trucks sold the year before. The same will be true of commercial trucks, which have never previously been subject to fuel efficiency standards. The proposal gives the National Highway Traffic Safety Administration (NHTSA) the discretion to require different percentage increases for different classes of vehicles in pursuit of 4 percent annual fuel economy improvement for the entire new vehicle fleet.

These measures will help us reduce the oil intensity of this country. Oil intensity—the amount of oil needed to generate a dollar of GDP—has been cut in half since the oil shock of the 1970s. The result is a U.S. economy that still sees steady growth despite high oil prices such as those experienced over the last few years. Unfortunately, progress in further lowering oil intensity has slowed noticeably in the last decade. We must do better.

Four percent is not an arbitrarily chosen number. It is right in line with the historical annual gains that were achieved when the Nation last committed itself to fuel economy. It is also perfectly consistent with scientifically-validated forecasts of cost-effective future fuel economy improvements. Between 1975 and 1985, the miles per gallon (mpg) performance of passenger cars in the U.S. increased 5.5 percent per year. The figures for light trucks rose 4.2 percent per year over the same period.

In its 2002 study of CAFE, the National Academy of Sciences (NAS) concluded that the fuel economy of large U.S. passenger cars could be cost-effectively raised by as much 27 percent within a decade using available and emerging technologies. For the largest light trucks, the potential improvement was 42 percent. The implied potential fuel economy for the entire fleet given the existing mix of vehicles was 30.3 mpg, more than 25 percent above the current figures. Significantly, these improvements were premised on the use of existing and emerging technologies without altering the average weight, size-mix, or performance of the fleet. The 2002 study was conducted on the basis of gasoline prices of $1.50 per gallon. One of the principal authors of the 2002 study, Dr. David L. Greene of Oak Ridge National Laboratory, has incorporated today's higher fuel prices into the NAS model while holding technology assumptions constant. A retail gasoline price of $2.50 per gallon raises the expected cost-effective fuel economy of the entire fleet to 33.9 mpg. Even these projections may be too pessimistic in light of accelerating technological progress. Indeed, since diesels and hybrids did not figure in the cost curves utilized for the 2002 study, but are now viewed as promising candidates for large-scale introduction in the U.S. marketplace, Dr. Greene is optimistic that current fuel economy levels can be raised by as much as 50 percent—even after applying the same weight and performance constraints used in the 2002 study.

The new standards are designed to be very flexible. For instance, pickup trucks may not be able to obtain the same fuel-economy levels as SUVs or minivans, but the ESLC proposal does not require them to do so. To reiterate, NHTSA will have the discretion to require different percentage increases for different classes of vehicles in pursuit of 4 percent annual fuel-economy improvement for the entire new vehicle fleet. Vehicle classes will be determined by key attributes, and under this approach it would be perfectly justifiable to hold primarily freight-hauling vehicles to a lesser fuel-economy standard than would be applied to vehicles designed first and foremost for transporting passengers. By assessing multiple attributes, NHTSA can constructively classify vehicles to maximize fuel economy while tailoring the standards so that pickups will not be forced to compete with sedans that are roughly as long and as wide.

Flexibility is further ensured by "off-ramps" that may be employed if NHSTA finds 4 percent improvement in a given year to be technically infeasible, unsafe, or not cost-effective. These are not loopholes, since expert opinion and data will be required to invoke them. But, together, the 4 percent annual improvement standard and the off-ramps give credit to American ingenuity and technological prowess while protecting business from unachievable or value-destroying mandates.

Finally, the proposed legislation contains a variety of consumer and manufacturing tax credits that will help car makers and car buyers adjust to greater fuel economy.

Overall, this approach aims for two highly desirable outcomes: improved energy security and a competitive domestic automotive industry. To improve energy security, America needs to get millions of fuel efficient cars on the road. But we will not have a secure source of these vehicles without public policies that expedite the needed transition of U.S.-based manufacturing capacity. In order to level the playing field and enable domestic manufacturers to effectively compete in the growing market for advanced-technology vehicles, we support tax incentives for the retooling of domestic automobile parts and manufacturing facilities.

Let me say that I recognize and respect the historical contribution that car companies like GM and Ford have made to our defense. More than half a million GMC "Deuce and a half" trucks gave U.S forces in World War II unmatched logistical support. Ford's Willow Run plant by itself produced nearly 9,000 B–24 bombers that provided the U.S. Army Air Corps with much of its strategic punch. I am asking these companies to continue this legacy of service to the Nation by embracing the mission of improved fuel economy.

Having outlined the fuel-economy legislation we support, I'd like to devote the rest of my time to describing why improvement is so necessary. I will do this from a military vantage point, since this is where my expertise and knowledge are concentrated. Put simply: the increasing U.S. dependence on oil imported from underdeveloped volatile regions of the world is putting a strain on our military forces and it is assigning them expensive missions for which they're really the wrong instrument of national power.

This problem is best understood by looking at the Persian Gulf which is home to the five countries with the greatest proven conventional petroleum reserves. When I first joined the Navy in 1968, the entire U.S. military presence in that part of the world was a one star Navy admiral and two destroyers that would deploy to hold simple exercises with Gulf countries. As I recall gas at that time ran 30 to 40 cents a gallon for my Austin Healey 3000, and the Persian Gulf was a rare duty station for members of the armed forces.

In the late 1970's two serious threats to Persian Gulf oil were identified by the Carter Administration, which became seized by the issue. The first was a potential Soviet invasion from the north into the oil regions around the Gulf, a concern heightened by the Soviet occupation of Afghanistan. The second was an aggressive and fundamentalist Iran, which was led by a regime that had permitted and then exploited the takeover of the American Embassy in Tehran. In response, the Department of Defense created the Rapid Deployment Joint Task Force, the RDJTF, a planning headquarters and contingency force that could quickly deploy to the Gulf to defeat a major land invasion. In 1983 as part of its general military buildup against the Soviet Union, the Reagan administration upgraded this task force to a regional command like the European Command and the Pacific Command, where I served and where I ultimately commanded. So this Central Command had full time responsibility for U.S. interests in the region.

Every commander of the Central Command, which was what the new organization was called, has had the mission of ensuring the security of oil from the Persian Gulf since that time. In response to the 1987 attacks on tankers by Iran and Iraq as part of their war, the United States gave Kuwaiti tankers U.S. registry and provided naval escorts for them as well as for tankers of allied nations. So, by 1990 America had a functioning military command structure, had deployed major forces to the Gulf both for exercises and for combat operations, and had established a military commitment to oil security. The military component of American security policy in the Gulf region had greatly increased, and—as we saw—it crowded out diplomacy, reliance on the market, and more indirect instruments of national power.

U.S. security policy in the Gulf since then has been in the headlines, familiar to everyone, and dominated by the use of major military force: operations Desert Shield and Desert Storm in 1991; during the course of the 1990's the maintenance of Air Force and Navy air wings in the Gulf on a full time basis to enforce no-fly zones in the north and the south of Iraq; an Army brigade full time in Kuwait; periodic bombings of Iraq during that period. And then following 9/11, the intervention in Afghanistan and invasion and occupation of Iraq. For those of us in the armed

forces the operations in this region of the world are expensive and tactically problematic.

As a general rule, the use of large scale military force in volatile regions of underdeveloped countries is difficult to do right, has major unintended consequences and rarely turns out to be quick, effective, controlled and short lived. The Persian Gulf is just about on the other side of the world from the United States. It takes more than 3 ships in the U.S. Navy to keep one ship on station: one there, one going, one coming. Pretty much the same ratio holds for airplanes and, as we're learning in Iraq, for soldiers and Marines. You just got back, you're there or you're getting ready to go again. A major military presence in the Gulf region raises local resentments and dangers that work against what we're trying to achieve. This is not just a post-9/11 phenomenon. It was true well before 9/11 in terms of the effect of major U.S. military forces staged or spending large amounts of time in the Gulf region. So after all this major military effort, what's the bottom line? Gas is pushing $3 a gallon, we're extending the tours of soldiers in the Gulf region to 15 months, and we're more subject to events in the Persian Gulf than we ever were in the past.

Now, why has American security policy developed in this way? The fast pace of operations in the region has given little pause for reflecting on overall trends and effectiveness. American forces have been engaged in the Middle East since the tanker wars of 1987, and events have seemed to demand increasing our military force, not reducing it. But driving this engagement is America's ever growing dependence on overseas petroleum. This dependence has influenced successive administrations to strengthen military engagement rather than to search for other means—perhaps politically more difficult but in the long run more cost-effective means—for boosting energy security.

This expensive and somewhat clumsy model is shaping our energy security approach in other regions of the world outside the Gulf. Consider Central Asia, home to an increasing share of the world's oil and natural gas reserves in the future. Already we see recourse to some of the early chapters to the same play book we followed in the Persian Gulf, 20 and 30 years ago.

In conclusion, let me tie things back to the policy objectives of the Committee: improved security will require greater conservation as well as increased production of petroleum and alternatives here at home. Put another way, improved vehicle fuel economy will increase our military flexibility and our overall national security, not just our energy security. We'll be less susceptible to being whip-sawed by events in the Persian Gulf, Central Asia and West Africa. We will not have to be on a hair-trigger for major military involvements in these regions with their great expense and all the difficulties of successful mission execution and withdrawal of forces. And we will be in position to break the cycle of increasing oil dependence followed by increased deployments of major U.S. forces into volatile and underdeveloped regions where they are often poorly matched to the mission of oil security.

So let me conclude by encouraging you to support amendments that ensure an aggressive but flexible approach for increasing the fuel economy of the entire U.S. transportation fleet. In keeping with the Council's fuel-economy proposal as it is embodied in the SAFE Energy Act and the Fuel Efficiency Energy Act of 2007, future fuel-economy provisions should:

1. require 4 percent annual increases in vehicle fuel economy,
2. be applied to all on-road vehicles, including medium and heavy trucks, and
3. contain "off-ramps" that will protect consumers and manufacturers by relaxing the 4 percent annual increases if they prove to be too costly, unsafe, or technically infeasible. These are not loopholes, since expert opinion and data will be required to invoke them.

The Council is committed to working with you in true bipartisan fashion to achieve these goals. Our nation deserves no less.

The CHAIRMAN. I thank you very much, Admiral Blair.

Mr. Stanton?

STATEMENT OF MICHAEL J. STANTON, PRESIDENT AND CEO, ASSOCIATION OF INTERNATIONAL AUTOMOBILE MANUFACTURERS, INC.

Mr. STANTON. Thank you, Mr. Chairman.

AIAM and its members have historically taken progressive positions on fuel economy, energy security, and global climate change.

We have consistently supported the need to addresses these issues and the auto industry to play a role in this process.

In a 2001 statement before the National Academy of Sciences, AIAM recognized the seriousness of these issues and urged that consideration be given to the adoption of an attribute-based CAFE program. AIAM supports NHTSA's restructuring of the light truck CAFE program based on vehicle footprint. Although this program is new, we are optimistic that NHTSA has promulgated a good final rule. Consequently, we favor legislation to authorize similar restructuring of the passenger-car standards, leading to the adoption of some form of an attribute-based system.

Such a system is desirable, since it enables NHTSA to set standards at levels that are feasible for manufacturers, offering different mixes of vehicles and more flexibility in responding to changing market conditions. In addition, this approach helps ensure that future gains in fleet fuel economy will be the result of technology, and not shifts in fleet mix.

Lead time for any new standards is also critical. Current law requires NHTSA to set standards with a minimum of 18 months lead time. However, 18 months is sufficient only for standards that impose little increase in stringency. For more aggressive standards, substantial lead time is necessary to allow for the development and implementation of new technology. AIAM recommends that NHTSA set standards in 3-year increments and provide a minimum of 3-year lead time.

AIAM unequivocally opposes the adoption of a uniform percentage improvement requirement or any other similarly discriminatory program such as a specific manufacturer total carbon tailpipe cap-and-trade system.

AIAM supports the elimination of the domestic import fleet requirements for passenger cars. This requirement was originally intended to inhibit domestic manufacturers from importing large numbers of small captive-import vehicles as a compliance strategy. In practice, this provision has created a disincentive for foreign-based companies to increase the U.S. content of their vehicles to levels above 75 percent. This disincentive is real, and has cost U.S. jobs.

We also support enhanced trading of CAFE credits between a manufacturer's fleets. The law should allow credits to be traded between import and domestic passenger car fleets, if the distinction is not eliminated, and between passenger cars and light trucks. This approach would maintain the fleet average concept central to the determination of compliance under the existing law.

And we also believe the carry-forward and carry-back provisions in current law should be extended from 3 years to 5 years. This will have no adverse effect on fuel savings, but will provide additional compliance flexibility. Enhanced credit trading has, in fact, been recommended by the National Academy of Sciences as a means of increasing manufacturers' compliance flexibility while reducing costs.

AIAM is concerned that State-level fuel economy standards, or standards that are functionally equivalent to fuel economy standards, would impose severe manufacturing and marketing burdens. As a result of the Supreme Court's decision in *Massachusetts*

versus *EPA,* NHTSA has authority to set fuel economy standards, and EPA has authority to set emission standards. However, we believe that the methods of complying with CAFE standards, on the one hand, and with carbon dioxide standards, on the other hand, are virtually indistinguishable. AIAM favors a national program that avoids separate requirements.

Finally, the effectiveness of CAFE would be significantly enhanced if coupled with appropriate market-based incentives for consumers. Tax credits for advanced technology vehicles are an example of an incentive that is potentially very effective. Such credits are helpful in overcoming the high initial cost of new technology.

And thank you for the opportunity to testify today. AIAM and its members look forward to working with the Committee as it moves forward on this important subject.

[The prepared statement of Mr. Stanton follows:]

PREPARED STATEMENT OF MICHAEL J. STANTON, PRESIDENT AND CEO, ASSOCIATION OF INTERNATIONAL AUTOMOBILE MANUFACTURERS, INC.

Good afternoon, Mr. Chairman and members of the Committee. I am Michael J. Stanton, President and CEO of the Association of International Automobile Manufacturers, Inc. ("AIAM"). I appreciate the opportunity to discuss with you today the very important matter of legislation regarding the Corporate Average Fuel Economy (CAFE) standards program.

AIAM is a trade association representing 14 international motor vehicle manufacturers who account for 40 percent of all passenger cars and light trucks sold annually in the United States. AIAM members have invested over $35.5 billion in 47 U.S. vehicle plants, component manufacturing facilities and R&D centers which employ 92,500 Americans with a payroll of nearly $7 billion. AIAM member company U.S. facilities produced 3.37 million units in 2005—more than 31 percent of total U.S. production. More than half (54 percent) of all vehicles sold by AIAM members in the United States are made in the United States.

AIAM members plan to invest another $3 billion in the United States to create 7,000 new American jobs by 2009 by constructing three new vehicle assembly plants and an engine plant and expanding existing facilities. AIAM companies purchased nearly $52 billion in parts and materials from U.S. suppliers in 2005 and that number is growing.

AIAM member companies have for many years been leaders in offering fuel-efficient vehicles for the U.S. market. Historically, vehicles produced by our member companies have topped the Environmental Protection Agency's (EPA) annual list of most fuel-efficient vehicles. Nine of the top ten models on the EPA's Fuel Economy Leaders list for 2007 are manufactured by AIAM members. Member companies have achieved this fuel economy leadership to a significant degree by pioneering the introduction of advanced automotive technology into their vehicles. In recent years, this leadership has been demonstrated with the introduction and popular acceptance of hybrid vehicles and continuously variable transmissions and successful development work on other advanced technology vehicles including fuel cells. Starting in 1999, AIAM members were the first to offer American consumers hybrid electric vehicles and have now sold more than a half-million hybrids in the United States. For the 2007 model year, AIAM members offer eight hybrid models—six cars and two SUVs. Our member companies continue to introduce a variety of advanced technology models.

AIAM and its members have historically taken progressive positions with regard to the related issues of fuel economy, energy security and global climate change. We have consistently supported the national need to address these matters and for the auto industry to play a constructive role in that process. In a 2001 statement before the National Academy of Sciences (NAS), AIAM recognized that the seriousness of energy security and global climate change justify a regulatory role for the Federal Government in enhancing vehicle fuel efficiency. At that time we urged that consideration be given to the adoption of an attributebased CAFE standards system, such as one based on vehicle market class, size, or weight. AIAM supports increasing CAFE standards through rulemaking by the U.S. Department of Transportation (DOT) as a reasonable approach to enhancing national security and energy conservation and reducing greenhouse gas emissions from motor vehicles. Our support

for such standards is conditioned upon the standards being technologically achievable, providing manufacturers adequate leadtime for compliance, and being established in a form that does not discriminate against any segment of the auto industry. We prefer the approach of allowing DOT to set the standards, since it assures that the standards are analytically based, reflects well-understood technology developments and statutory considerations, and provides an open process for the consideration of public comments on proposed standards. It is impossible to predict future fuel prices or the rate of technology development. This makes it impossible to accurately predict the optimum level for CAFE standards. Thus, it is essential that an expert agency, such as DOT, evaluate the pace of technology development and fuel prices and adjust the standards, up or down, as needed.

The issue of adequate leadtime for new standards is critical. The current law allows DOT to set standards with a minimum of 18 months leadtime. However, the 18 month period is sufficient only for standards that impose little or no increase in stringency. For more aggressive standards, substantial leadtime is necessary to allow for development and implementation of new technology, with the most efficient technologies generally requiring the longest leadtime. Moreover, given the need for substantial in-use vehicle fleet turnover before new technology achieves widespread market penetration, the benefits of implementation of new technology take significantly longer to substantially affect total in-use fuel consumption. In any event, major improvements in new vehicle fuel economy cannot be achieved with the current statutory leadtime. AIAM recommends that the National Highway Traffic Safety Administration (NHTSA) set standards in 3 year increments and provide a minimum of 3 years leadtime.

We generally support NHTSA's recent restructuring of the light truck CAFE standards based on size class principles. Although this program is new and we have no practical experience with it yet, we think NHTSA promulgated a good final rule based on an extensive analysis of complex data. Consequently, we favor legislation to authorize a similar restructuring of the passenger auto standards leading to the adoption of some form of attribute-based system. Such a system is desirable since it enables DOT to set standards at levels that are feasible for manufacturers that offer different mixes of vehicles, and it is more flexible in responding to changed market conditions. In addition, future gains in fleet fuel economy will be the result of technology and not shifting fleet mix.

AIAM unequivocally opposes the adoption of a uniform percentage improvement (UPI) standards format, or any other similarly discriminatory program. Simply stated, such standards represent bad public policy. The UPI format has been roundly criticized and thoroughly discredited by several respected organizations, including two National Academy of Sciences Committees that considered the CAFE program, the Office of Technology Assessment, and the U.S. Department of Justice. The UPI format would create unique fuel economy standards for each manufacturer, based on the manufacturer's performance in a base year. The same percentage increase would be required for each company, but the actual standards differ due to differences in the fuel economy baselines. Under UPI standards, if two manufacturers were to produce the same mix of vehicle sizes and technology in the same year, one manufacturer could be assessed civil penalties while the other could be awarded credits, due to differences in the two companies' baselines. We believe that a system that assigns differing compliance consequences to the same conduct by two entities is fundamentally discriminatory.

Moreover, a UPI regulatory system would penalize those manufacturers that have exceeded CAFE standards, thereby discouraging any fuel economy accomplishments above the baseline in the future. The approach is also unfair because the currently available technology for improving fuel economy might already have been incorporated in the base year by the manufacturer that faces the most stringent future-year fuel economy requirements, leaving fewer technological options to increase fuel economy in the future. In addition, the selection of the base year could create arbitrary advantages or disadvantages for the manufacturers due to the product mix or technology that was applied by the manufacturers in that year. Under a UPI system, manufacturers with high average fuel economies would be impeded in entering U.S. markets for larger vehicles because such entry—even if they produce more efficient larger vehicles than are currently available—could prevent them from meeting the new standards. Thus, competition would suffer and the fuel efficiency of a whole category of vehicles could be kept artificially low.

AIAM supports the elimination of the domestic/import separate fleet requirement for passenger autos. The current law requires dividing a manufacturer's passenger automobile fleet into domestic and import classes that must comply separately with fuel economy standards. There is no similar requirement for light trucks. This requirement was originally intended to inhibit domestic manufacturers from simply

importing large numbers of small, "captive import" vehicles as a compliance strategy. This provision has created a disincentive for foreign-based companies to increase the U.S. content of their vehicles to levels above 75 percent, since doing so would place the vehicles in a separate compliance fleet. This disincentive is real, not theoretical, and has cost U.S. jobs. This domestic/import separate fleet requirement has also had the perverse effect of content manipulation to move a model from a manufacturer's domestic fleet to its import fleet. Attribute-based standards remove any incentive for U.S.-based manufacturers to achieve compliance by simply importing large numbers of very small vehicles.

We also support enhanced trading of CAFE credits between a manufacturer's fleets. The law should allow credits to be traded between import and domestic passenger car fleets and between passenger autos and light trucks. We envision this expanded credit trading authority as being conceptually consistent with the current authority for year-to-year transfer of credits. In the current system, credits are calculated as the product of a number of tenths of a mpg by which the standard for a class of vehicles is exceeded multiplied by the number of vehicles in the credit earning class, with the total credit amount thus calculated being available to offset a CAFE shortfall. This approach would maintain the fleet average concept that is central to the determination of compliance under the existing law. The carry-forward and carry-back provisions in current law should also in our view be extended from 3 years to 5 years. This will have no adverse effect on fuel savings but will provide additional compliance flexibility. Enhanced credit trading has been recommended by the NAS as a means of increasing manufacturers' compliance flexibility while reducing costs.

AIAM is concerned that state fuel economy standards or standards that are functionally equivalent to fuel economy standards would impose severe manufacturing and marketing burdens on manufacturers due to multiple inconsistent design or distribution targets. As a result of the Supreme Court's decision in *Massachusetts* v. *EPA,* NHTSA has authority to set fuel economy standards and EPA has authority to set emission standards. We believe that the methods for complying with CAFE standards and with carbon dioxide emissions standards are so similar as to be virtually indistinguishable. AIAM favors a national program that avoids separate state requirements. Congress should address this issue as it moves forward.

The effectiveness of CAFE would be significantly enhanced if coupled with appropriate, market-based incentives for consumers. Tax credits for advanced technology vehicles are an example of an incentive that is potentially very effective. Such credits are helpful in overcoming the effect of high initial costs of new technology, assisting in stimulating sufficient demand for the new technology to allow production volumes to increase to levels where costs begin to decrease.

The energy security and climate change issues are real. AIAM and its members look forward to working with the Committee as it moves forward on this important subject.

The CHAIRMAN. I thank you very much, Mr. Stanton.

And now, may I recognize Admiral McGinn.

STATEMENT OF VICE ADMIRAL DENNIS McGINN, USN, (RET.), SENIOR VICE PRESIDENT AND GENERAL MANAGER, ENERGY, TRANSPORTATION AND ENVIRONMENT DIVISION, BATTELLE MEMORIAL INSTITUTE

Admiral MCGINN. Thank you, Mr. Chairman, Mr. Vice Chairman, members of the Committee. It is an honor to appear before you today to discuss the critically important need for tough fuel economy standards based on the imperatives of national security, energy dependence, and climate change. Today, I'd like to talk about the national security impacts of our oil dependency *right now,* not in 10 years.

In my view, our continued dependence on oil constitutes a clear and present danger to our national security, economically, militarily, and diplomatically. The United States consumes 25 percent of the world's annual petroleum production, and we depend on oil to supply 97 percent of our transportation needs. Yet we only hold 3 percent of the world's oil reserves, and two-thirds of the reserves

are situated in that core of global instability, the Persian Gulf. Even if we tapped every last drop of oil on our soils and off our shores, we could still not produce enough to meet U.S. oil demand in the present business-as-usual mode.

Our burgeoning demand for oil weakens U.S. diplomatic leverage around the globe, burdens our Armed Forces, and leaves the U.S. economy vulnerable to unpredictable price spikes and an ever-growing trade imbalance. Taken together, these dynamics create a daunting national security challenge that must be met immediately.

Terrorist networks have openly called for, planned, and carried out attacks on the global oil infrastructure, because they know that oil is the economic lifeblood of the U.S. and the world's economy. Just last week, a major oil infrastructure attack plan was disrupted by Saudi Arabia at the 11th hour. Had it been successful, the adverse consequences would likely have been severe, immediate, and felt around the globe.

Our fine men and women in the Armed Forces serve our Nation with honor protecting American interests abroad. The major focus of their activities for nearly 30 years has centered in the Middle East, a region from which so much of the instability, strife, root causes of terrorism, and Persian Gulf oil flow.

The economic impact of our oil dependency threatens our national security, as well. We lose $25 billion from our economy every month, at a rate of $500,000 a minute. And oil imports now account for nearly a third of our Nation's trade deficit. Our economy is exposed on a daily basis to oil shocks and supply disruptions. Regardless of how they are caused—by global market dynamics, natural disasters, terrorist attacks, or politically motivated oil embargoes—our economy grows more vulnerable each day. The trends of our growing oil demand in a business-as-usual mode will make those price shocks much more frequent, more deeply felt, and longer-lasting.

There's a great urgency to reverse this dependence on oil, and this urgency is twofold. Our dependency on unfriendly regimes is increasing, not decreasing, and the impacts of global warming emissions, if not swiftly and significantly reduced, will have profoundly negative national security impacts. According to top retired military leaders in a recent report from the Center for Naval Analysis, global warming poses a, "serious threat to America's national security," acting as a, "threat multiplier for instability," in some of the world's most volatile regions, adding tensions to stable regimes, worsening terrorism, and likely dragging the U.S. into fights over water and other resources shortages.

We need to solve our oil dependency problem within the context of global warming, and the solution must include tough fuel economy standards for vehicles. In this regard, Corporate Average Fuel Economy standards have proven to work. After Congress set fuel economy standards for vehicles in 1975, our dependence on oil imports decreased very quickly, from 46 percent in 1977 to 27 percent in 1985, even though the price of oil fell in 1981.

Ten years of CAFE progress saved the U.S. billions in oil and money. Without those standards that motivated automakers to increase fuel economy from the 1975 level to today's average of 25

miles per gallon, we would be using an additional 80 billion gallons of gasoline each year. At today's average price for regular gasoline, about $2.75 a gallon, that represents $220 billion saved. If CAFE had not stalled after 1985, the U.S. would have saved additional billions more in oil and dollars, especially in light of tremendous advances in technology available to improve vehicle fuel economy for both cars and light trucks.

Americans, as has been pointed out earlier, do not have to sacrifice safety, comfort, or utility in their vehicles in order to achieve much greater fuel economy. The technology advances that have been primarily used to increase power and weight can now be directed to fuel economy. Data in the 2002 report on CAFE standards by the National Academy of Sciences, that Senator Levin mentioned in the previous panel, on CAFE indicate that technology exists to reach 37 miles per gallon in a fleet of the same make-up as the one that the National Academy analyzed, even ignoring hybrids and cleaner diesels. And I would make the comment that in my view, tough CAFE standards do not preclude leap-ahead technologies; in fact, they motivate the auto industry to produce them.

One of the most important steps that Congress can take now to avert the worst consequences of oil dependency and global warming is to substantially raise fuel economy standards. As we have in our Nation's past struggles, dedicated and concerned Americans from every part of the country want to play a role in decisively meeting the energy and environmental challenges which we already face and which grow greater every year we delay taking action.

The key questions, in my mind, for this hearing, and as various legislative proposals move forward, are: How will the actions on CAFE by this Congress be viewed in 10 or 20 years? Will we be able to look back and say that a bold, comprehensive, and enlightened mandate produced substantial oil savings, increased our national security, helped our economy, and significantly reduced carbon emissions?

We have less than 10 years to change our course in significant ways. Our Nation's security depends on the swift, serious, and thoughtful response to these challenges by you, our elected officials.

Thank you, Mr. Chairman, Mr. Vice Chairman, and members of the Committee. I look forward to your questions.

[The prepared statement of Admiral McGinn follows:]

PREPARED STATEMENT OF VICE ADMIRAL DENNIS MCGINN, USN, (RET.), SENIOR VICE PRESIDENT AND GENERAL MANAGER, ENERGY, TRANSPORTATION AND ENVIRONMENT DIVISION, BATTELLE MEMORIAL INSTITUTE

Mr. Chairman, Members of the Committee, Ladies and Gentlemen, it is an honor to appear before you today to discuss the critically important need for tough fuel economy standards based on the imperatives of national security, energy independence and climate change. Thank you for the opportunity to share my views which are based on over thirty-five years of service to the Nation in the United States Navy and as a senior executive presently involved on a daily basis with the science and technology of energy, transportation and the environment.

The rationale and urgency for holding this important hearing was clearly underscored by the world's leading scientists earlier this month in their warning to the world that we have a short window of time to begin reducing our global warming emissions if we are to avert the worst impacts.

Today, I'd like to talk about the national security impacts of our oil dependency right now, and not just in 10 years.

Our continued dependence on oil constitutes a clear and present danger to our national security—economically, militarily and diplomatically.

- Data from the Energy Information Administration indicates that we imported about 60 percent of our oil and other petroleum products in 2006. Last year alone, our net imports were more than 12 million barrels per day.
- The United States consumes 25 percent of the world's annual petroleum production and depends on oil to supply 97 percent of its transportation fuels.
- Yet the U.S. holds only 3 percent of the world's oil reserves, while two-thirds of reserves are situated in that core of global instability, the Persian Gulf. Even if we tapped every last drop of oil in our soils and waters, we could not produce enough to meet U.S. oil demand.
- As a key leader of the global economic community, we must rely on foreign energy sources, with many of them in hostile, unstable regions, to provide us with our economic lifeblood and quality of life.
- Our burgeoning demand for oil weakens U.S. diplomatic leverage around the globe, burdens our armed forces and leaves the U.S. economy vulnerable to unpredictable price spikes and an ever growing trade imbalance. Taken together, these dynamics create a daunting national security challenge that must be met immediately.

U.S. oil dependency weakens U.S. leverage, undermines foreign policy and leaves us vulnerable to unstable or hostile regimes.

- According to a new Rice University study, 77 percent of the world's 1.148 trillion barrels of proven reserves are in the hands of the national companies; 14 of the top 20 oil-producing companies are state-controlled.[1]
- With oil at $60 a barrel, $500,000 a minute is flowing out of our country, increasing our trade deficit, creating huge opportunity costs and, most significantly, putting money into the hands of some regimes that are hostile to our interests.
- Last year Iran's supreme leader, Ayatollah Ali Khomeini warned that "if the Americans make a wrong move toward Iran, the shipment of energy will definitely face danger and the Americans would not be able to protect energy supply in the region."[2]
- In the southern hemisphere, we seem to be on a collision course with Venezuela's President Huge Chavez over access to some of the most coveted energy resources outside the Middle East. Chavez represents a direct threat to the advances of democracy and free markets in our Hemisphere. The false promises of his populist appeal in Latin America have been compared with the pan-Arabism of Col. Muammar el-Qaddafi of Libya two decades ago.[3]
- Terrorist networks have openly called for, planned and carried out attacks on the global oil infrastructure because they know oil is the economic lifeblood of the U.S. and the world's economy. Just last week, a major oil infrastructure attack plan was disrupted in Saudi Arabia at the eleventh hour. Had it been successful, the adverse consequences would have been severe, global and immediate.
- By enriching the coffers of fundamentalist regimes with our gasoline purchases, we are inadvertently financing, but directly enabling, the spread of a flawed and deadly brand of Islam which is tilting key regions in a more intolerant and dangerous direction.[4]

U.S. oil dependency burdens our military forces and exacts a huge price tag in protecting sea-lanes, military bases of operations and maintaining continuous high level of forward presence.

- Our fine men and women in the Armed Forces serve our Nation with honor, protecting American interests throughout the globe. The major focus of their activities for nearly thirty years has centered in the Middle East, a region from which so much of the instability, strife, root causes of terrorism and Persian Gulf oil flow.
- The October 2000 terrorist attack on the USS COLE, while on a refueling stop in Yemen, was a tragic reminder of the convergence of oil, instability, terrorism, and the need for ever vigilant presence by American servicemen and women who are forward deployed.
- Recent energy-market disruptions and increasing awareness of the vulnerability and insecurity of supplies world-wide have added urgency to the U.S. military's efforts to curb its use of oil and other fuels.[5]

- One study estimates that in peacetime the "true" cost of oil in a given year is $800 billion dollars, assuming 2004 oil prices.
- Retired Air Force General Charles Wald estimates that if the true cost of military security were incorporated into the price of gasoline, we would be paying between $6.50 and $7 a gallon.

The economic impact of our oil dependency threatens national security.

- We lose $25 billion from our economy every month, and oil imports now account for nearly a third of our Nation's trade deficit. Our economy is exposed on a daily basis to oil price shocks and supply disruptions. Regardless of how they are caused, by global market dynamics, natural disasters, terrorist attacks, or politically motivated oil embargoes, the trends of our growing oil demand in a "business as usual" mode will make those price shocks much more frequent, deeply felt and longer lasting.
- Every event overseas—Iran's capture of British soldiers, Nigeria rebels warn of attacks on oil industry—causes our stock market to roil. Just last week, oil prices surged causing stocks to tumble in response to political turmoil and possible election fraud in Nigeria underscoring our daily vulnerability resulting from oil dependency.[6]
- There are nightmare scenarios—much more than conjecture at this point—that are already having an impact on our economy. *The Wall Street Journal* recently wrote about oil traders' concern over an obstruction of oil traffic through the Persian Gulf. Under the scenario, Iran, in a bid to preempt or respond to U.S. military action, closes the Strait of Hormuz, the Persian Gulf chokepoint through which 20 percent of the world's oil supply passes. The consequence would be swift: by most experts' reckoning, oil prices would soar to $100 a barrel and even higher, potentially plunging the world economy into a depression.[7]
- A *Wall Street Journal* survey of economists found strong support for government intervention in the transition away from fossil fuels. When asked to pick the greater geopolitical threat to the economy, by nearly a 3-to-1 margin the economists chose a disruption in crude oil supplies caused by tensions in the Mideast over the impact on spending and confidence that could follow a major terrorist attack.[8]

Our oil consumption puts money in pocket of terrorists.

- Former Republic National Committee Director of Communications Clifford D. May wrote, "Every time we fill the tanks of our cars with gasoline we put money in the pockets of terrorists intent on killing Americans."[9]

There is great urgency to reverse our dependence on oil.

The urgency is two-fold. As a result of our increasing oil consumption: (1) Our dependency on unfriendly regimes is increasing not decreasing; (2) The impacts of global warming emissions, if not swiftly and significantly reduced, will have profoundly negative national security impacts.

The world oil supply is tightening as demand surges leaving little elasticity in a very volatile market and creating increased U.S. reliance on the Middle East.

- Energy analysts expect global oil-demand growth to surge this year to an additional 1.39 million barrels a day from growth of 800,000 bpd in 2006, according to a new Reuters' poll. OPEC's biggest producer, Saudi Arabia, may be incapable of raising its production any time soon.[10]
- Government data shows U.S. crude and gasoline stockpiles are much lower than analysts had forecast.[11]
- Oil analysts say that the market has not fully recognized the constraints on oil supply in Venezuela, Iran and Kazakhstan. Other factors favoring higher prices: rapidly rising demand in China and India, and the location of much of the world's oil reserves in politically volatile and unstable countries.[12]
- Mexico's oilfield Cantarell—one of the largest offshore oil fields ever found—is dying, losing a staggering one-fifth of its production, with daily output falling to 1.6 million barrels from two million within the last year. Cantarell, which currently produces one of every 50 barrels of oil on the world market, is fading so fast analysts believe Mexico may become an oil importer in 8 years.[13]
- The continued deterioration of the world's second-biggest field by output puts pressure on prices on the global oil market, where supplies are barely keeping up with growing demand as it is. *Our growing dependence would leave the U.S.*

even more dependent on Middle Eastern supplies—and that much more vulnerable to political tumult in that region.[14]

- Some predict we will reach peak of oil production within a few years, others say peak oil won't arrive until 2030 or later. In either case, our demand is going in the opposite direction while oil is getting harder and more expensive to extract.

OPEC, which added Angola as its newest member this year, will likely see its clout reinforced in coming years as it is poised to control more than 50 percent of the oil market in coming years, up from 35 percent today.[15]

The threat of climate change is a national security matter.

Climate change acts as a threat multiplier for instability in some of the most volatile regions of the world.

- According to top retired military leaders in a recent report from the Center for Naval Analysis, global warming poses a "serious threat to America's national security", acting as a "threat multiplier for instability" in some of the world's most volatile regions, adding tension to stable regions, worsening terrorism and likely dragging the U.S. into fights over water and other resource shortages. On the simplest level, it has the potential to create sustained natural and humanitarian disasters on a scale far beyond those we see today. The consequences will likely foster political instability where societal demands exceed the capacity of governments to cope.[16]
- Climate change is different from traditional military threats, according to C.N.A. report author Vice Admiral Richard H. Truly because it is not like "some hot spot we're trying to handle." "It's going to happen to every country and every person in the whole world at the same time."[17]
- Not only will global warming disrupt the environment, but its effects will shift the world's balance of power and money.[18]
- Drought and scant water have already fueled civil conflicts in global hot spots like Afghanistan, Nepal and Sudan, according to several new studies. The evidence is fairly clear that sharp downward deviations from normal rainfall in fragile societies elevate the risk of major conflict, according to experts at Columbia University.[19]
- The world's leading scientific panel on climate change—including more than 200 scientists and officials from more than 120 countries and the U.S.—released its most detailed portrait on the impacts of human induced climate change, predicting widening droughts in southern Europe and the Middle East, sub-Saharan Africa, the American Southwest and Mexico, and flooding that could imperil low-lying islands and the crowded river deltas of southern Asia.[20]
- Without action to curb carbon emissions, man's livable habitat will shrink starkly, said Stephen Schneider, a Stanford scientist and IPCC report author. "Don't be poor in a hot country, don't live in hurricane alley, watch out about being on the coasts or in the Arctic, and it's a bad idea to be on high mountains with glaciers melting." "We can fix this," by investing a small part of the world's economic growth rate, said Schneider. "It's trillions of dollars, but it's a very trivial thing."[21]
- James Hansen, a pioneering climate researcher at NASA's Goddard Institute and at Columbia University, says, "If human beings follow a business-as-usual course, continuing to exploit fossil fuel resources without reducing carbon emissions or capturing and sequestering them before they warm the atmosphere, the eventual effects on climate and life may be comparable to those at the time of mass extinctions."[22]

Ignoring global warming undermines U.S. international leadership and influence.

- The United States will emit about 20 percent more greenhouse gases by 2020 than it did in 2000, according to a draft report that the Bush administration was scheduled to submit to the United Nations a year ago.[23]
- Recently the U.N. Security Council held its first-ever discussion of the link between climate change and international conflict. An overwhelming majority of nations voiced grave concerns about climate change and many urged stricter worldwide controls on greenhouse gases.[24]
- The harmful effects of global warming on daily life are already showing up, and within a couple of decades hundreds of millions of people will not have enough water, according to the authoritative IPCC. "Things are happening and hap-

pening faster than we expected," said Patricia Romero Lankao of the National Center for Atmospheric Research, a report co-author.[25]

Climate change, national security, and energy dependence are an interrelated set of global challenges. As President Bush noted in his 2007 State of the Union speech, dependence on foreign oil leaves us more vulnerable to hostile regimes and terrorists, and clean domestic energy alternatives help us confront the serious challenge of global climate change. Because the issues are linked, solutions to one affect the other. Technologies that improve energy efficiency also reduce carbon intensity and carbon emissions.[26]

Without swift and serious legislative action and investment, the U.S. will continue barreling headlong toward the catastrophic national security, economic and human suffering effects of climate change.

As retired Marin Corps General Anthony C. Zinni, former Commander of U.S. Central Command said "The intensity of global temperature change can be mitigated somewhat if the U.S. begins leading the way in reducing global carbon emissions." He concluded "We will pay now to reduce greenhouse gas emissions today . . . or we will pay the price later in military terms and that will involve human lives."[27]

Key principles for reducing oil dependence and greenhouse gas emissions.

First and foremost, the size and speed of the solution must match the size and speed of the problem.

We must solve our oil dependency problem within the context of global warming—to do otherwise would be at the risk of our national security.

The solution must include both market and mandates. We cannot do one without the other.

Key players in the global market are already responding to their perception of regulation certainty. The right kind of regulations can create certainty and spur the market to a much more stable and productive future. Leading international businesses, investors and industry sectors recognize this fact and are asking for market certainty through an effective, long-term cap on emissions.

- ConocoPhillips recently became the first U.S.-based oil company to join ten of the Nation's largest companies, including GE, DuPont and Duke Energy, to call for mandatory cuts in global warming emissions. Such action likely means higher costs for these companies, but they fear the Administration's failure to engage will leave them with a hodgepodge of state and foreign restrictions.[28]

The solution must include fuel economy standards for vehicles.

- Vehicles are the source of 20 percent of U.S. greenhouse gas emissions and directly account for more than 40 percent of our oil dependency.
- By mid-century, the world's vehicle population is expected to reach 2 billion, almost triple the current figure. To limit global vehicle emissions to 50 percent more than today's levels, the average fuel economy of cars and trucks on the road would have to rise to about 60 mpg in 50 years or less, according to calculations by the Carbon Mitigation Initiative at Princeton University, a research effort funded in part by Ford. Because it takes a decade or two for new technology to make it into every car on the road, all new vehicles within 35 years or less would need to reach 60 mpg.[29]
- Yet, as a new report from National Highway Traffic Safety Administration (NHTSA) reveals, the average fuel efficiency of U.S. cars and trucks sold in the 2006 model year showed no improvement from the year before at 25.4 mpg.[30]

Corporate Average Fuel Economy standards (CAFE) work.

- After Congress set fuel economy standards for vehicles in 1975, our dependence on oil imports decreased very quickly from 46 percent in 1977 to 27 percent in 1985, even though the price of oil fell in 1981.
- Ten years of CAFE saved the U.S. billions in oil and money. Without standards that forced automakers to increase fuel economy from the 1975 level to today's 25 mpg, we would be using an additional 80 billion gallons of gasoline on top of the 140 billion gallons we will use this year. That would represent an increase in oil demand by 5.2 million barrels of oil per day, or a 25 percent increase in our oil addiction. At today's average price for regular gasoline, about $2.75 per gallon, that represents $220 billion saved.
- Even today, these standards continue to save nearly 3 million barrels of oil per day, according to the National Academies of Sciences. Since 1985, however, fuel economy has been stagnant and our imports have grown.

- IF CAFE hadn't stalled after 1985, the U.S. would have saved additional billions more in oil and dollars, especially in light of tremendous advances in technology available to improve fuel economy.
- The United States is falling behind other nations pushing for better fuel economy as concerns mount over global warming. Even China, oft touted as the reason why the U.S. shouldn't act, has tougher fuel economy standards.[31]

Voluntary action does not work.

- Automakers did not meet voluntary agreements to reduce greenhouse gas emissions in Europe. As a result, the European Commission in Brussels is moving to mandate automakers to limit carbon dioxide emission to an average of 130 grams per kilometer for all new cars by 2012.[32]

Detroit plays a critical role in reducing U.S. dependency on oil.

- James Hansen of NASA's Goddard Institute and at Columbia University, says that the biggest obstacles to avoiding greater climate disaster are utility plants and motor vehicles that inefficiently use too much fuel. "Automakers oppose efficiency standards and prominently advertise their heaviest and most powerful vehicles, which yield the greatest short-term profits," according to Hansen.[33]
- A recent draft report from the Environmental Protection Agency (EPA) finds that the U.S. transportation sector accounts for about a third of greenhouse gas emissions and is the fastest growing major source of greenhouse gases, according to a recent summary.[34]
- The automotive industry is in a period of unprecedented technology development but up to now, domestic automakers have used technology advances to nearly double power and increase weight by twenty-five percent instead of increasing fuel economy.[35]
- Americans do not have to sacrifice safety, comfort or utility in their vehicles in order to achieve much greater fuel economy. The technology advances that have been used for power and weight can now be directed to fuel economy. Data in the 2002 report by the National Academies of Sciences on CAFE indicate that the technology exists to reach 37 mpg in a fleet of the same make-up as the NAS analyzed, even ignoring hybrids and cleaner diesels.[36]
- Paul Portney, Chair of the NAS committee, noted that, "It might be possible to meet more stringent fuel economy standards at lower costs than the Committee foresaw." [37]

Detroit's future competitiveness requires a more fuel-efficient fleet.

- Toyota just unseated GM as the world's number one automaker, shattering several sales records, as domestic automakers continue to lose sales and market share due to an over-reliance on fuel-inefficient cars and trucks, continuing the trend of the last 2 years.[38]
- Dr. Walter McManus, a former GM market analyst now at the University of Michigan, reported recently that if U.S. automakers increased their vehicle fuel efficiency to accommodate increasingly conservation-minded customers, they could collectively increase profitability by $2 billion in model year 2010. Following their current plans, Dr. McManus concluded, they are projected to lose $3.6 billion that year.[39]

The American people, and Michigan citizens, specifically, want the government to take action to reduce greenhouse gas emissions and increase fuel economy.

- A new Gallup poll shows overwhelming support to strengthen government restrictions on greenhouse gas emissions and to spend more taxpayer money to develop alternative energy sources, with 79 percent supporting higher auto emissions standards.[40]
- The latest *Detroit Free Press*-Local 4 Michigan Poll shows a majority of Michigan citizens favor higher fuel economy standards for cars and trucks, with some supporting increases to 40 miles per gallon or more. Many would pay hundreds of dollars extra for more efficient vehicles. When asked how much they would be willing to pay for an 8 mpg improvement in fuel economy for vehicles similar to what they drive now, 47 percent said they would pay $1,000 to $2,000 more, and 20 percent said $500 to $700.[41]
- Forty-six percent of today's car shoppers say the feds ought to force automakers to meet higher fuel economy standards, according to Kelly Blue Book Marketing Research.[42]

- There is "a significant shift in public attitudes toward the environment and global warming [with] fully 83 percent of Americans now saying global warming is a 'serious' problem, up from 70 percent in 2004," reports the Yale Center for Environmental Law and Policy.[43]

Policy Recommendations

We can no longer afford any aspect of energy policy that undermines our national security by funneling billions of dollars to our enemies around the world, and continues to increase emissions of heat trapping gases that cause global warming. Our oil dependence and global warming problem require immediate and comprehensive action from Congress in order to address both challenges together.

Scientists warn that we have only a short window for action to prevent catastrophic global warming. Delay—as many recent economic studies reveal in sharp relief—would make emissions reduction more difficult and more costly than action now.

*One of the most important steps Congress can take **now** to avert the worst consequences is to substantially raise fuel economy standards.*

In the immediate term, I urge the Congress to raise vehicle fuel economy standards to at least 35 miles per gallon by 2018—the level recommended by the National Academies of Sciences and consistent with the President's proposal of 4 percent per year improvement.

By making this level of improvement binding, rather than leaving it up to this or future administrations, we could save as much oil as we currently import from the Persian Gulf, benefiting our economy and our long-term strategic interests.

Congress should follow key steps to realize substantial oil savings and emission reduction benefits from available vehicle technology:

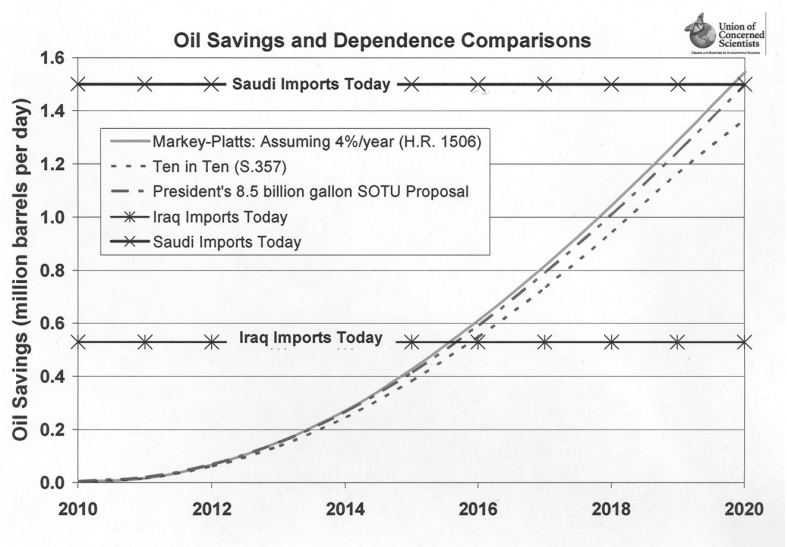
1. Require at least 35 mile per gallon fuel economy for cars and light trucks by 2018, and regular rate of improvement thereafter.

2. Give the administration flexibility to restructure the standard, but do not leave goal-setting up to the administration. The only way to ensure guaranteed oil savings is for Congress to direct the Department of Transportation and NHTSA to raise standards to a certain level.

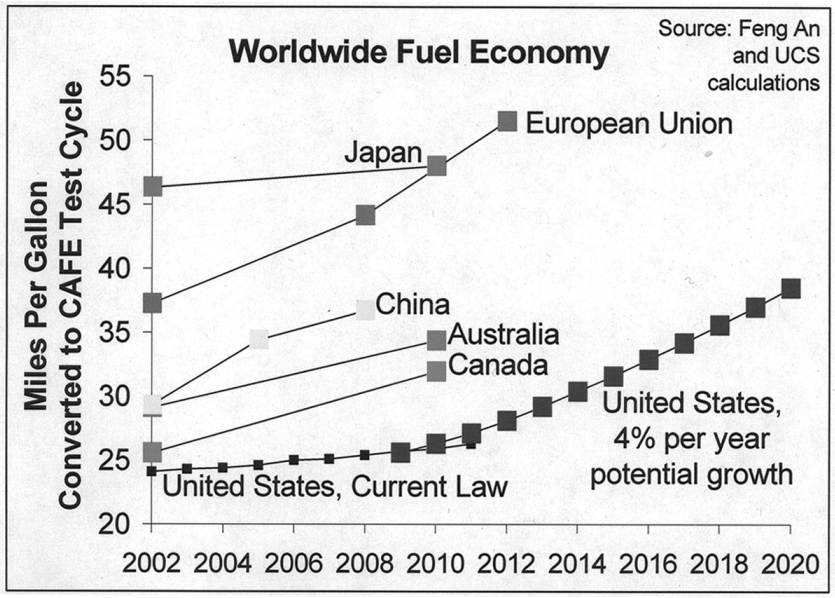
3. Provide consumers and/or automakers with economic incentives to invest in technology for increasing fleet wide fuel economy.

Current Congressional proposals will have significant impact on our oil dependency.

As the chart below shows, a 4 percent per year increase in vehicle efficiency will produce significant savings and will make real progress in reducing our dependency on imported oil.



As next chart shows, while a 4 percent per year path would still leave us 7 years behind Australia, 9 years behind China, and more than 15 years behind the European Union, the 4 percent per year path would cut oil dependence, slow global warming, and save American consumers billions at the pump.



Conclusion

Our actions as Americans cannot stop with these measures. As noted earlier—*the size and speed of the solution must match the size and speed of the problem*.

Throughout our history, Americans have successfully met critical challenges in both war and peace. Building a new, clean energy economy has become one of the great challenges of our time. Together we can move our Nation toward clean and secure energy supplies with policies that promote energy efficiency and the greatly increased the use of renewable energy. As we have in our Nation's past struggles, dedicated and concerned Americans from every part of the country want to play a key role in decisively winning the energy and environmental victory.

> How will the actions on CAFE by this Congress be viewed in ten or twenty years? Will we be able to look back and say that a bold, comprehensive and enlightened mandate produced substantial oil savings, increased our national security, helped our economy and significantly reduced carbon emissions?

We have 10 years to change course in significant ways. Our Nation's security depends on the swift, serious and thoughtful response of you, our elected leaders in Congress.

Thank you.

Endnotes

[1] Krauss, Clifford and Simon Romero. "In Venezuela, a Showdown Looms Over Oil." *The New York Times* (Apr. 10, 2007).

[2] Farivar, Masood and Ian Talley. "Crisis Sparks Oil-Supply Fear/U.K.-Iran Standoff/Has Traders Pricing/In Risks of a Disruption." *The Wall Street Journal* (Apr. 2, 2007).

[3] Krauss, Clifford and Simon Romero. "In Venezuela, a Showdown Looms Over Oil." *The New York Times* (Apr. 10, 2007).

[4] Friedman, Thomas. "The Power of Green." *The New York Times* (April 15, 2007).

[5] Farivar, Masood. "Military Seeks Oil Savings/Rising Demand, Supply Risks/Spur Conservation Move." *The Wall Street Journal* (Jan. 9, 2007).

[6] McKay, Peter. "Dow 13000 Takes Detour" *Wall Street Journal* (April 24, 2007) *Wall Street Journal* Roundup "Observers Call Election in Nigeria Deeply Flawed" *The Wall Street Journal* (April 23, 2007).

[7] Farivar, Masood and Ian Talley. "Crisis Sparks Oil-Supply Fear/U.K.-Iran Standoff/Has Traders Pricing/In Risks of a Disruption." *The Wall Street Journal* (Apr. 2, 2007).
[8] Izzo, Phil. "Is It Time for a New Tax on Energy?/Economists Say Government Should Foster/Alternatives—But Not How Bush Proposes." *The Wall Street Journal* (Feb. 9, 2007).
[9] May, Clifford D. "Diversity Can Pave the Road Toward Energy Security." *Scripps Howard News Service* (Jan. 25, 2007).
[10] Gongloff, Mark. "Oil Demand Growth to Double; Can OPEC Meet It?" *The Wall Street Journal* (Mar. 8, 2007).
[11] Chambers, Matt. "Crude, Gasoline Prices Surge/Decline in Imports/Helps Cut Reserves; 'Temporary Blip'?" *The New York Times* (Mar. 8, 2007).
[12] Bruner, Jon. "Stock Focus/Sliding Back Into Oil." *Forbes* (Feb. 2, 2007).
[13] Luhnow, David. "Mexico Tries to Save A Big, Fading Oil Field/Cantarell's Drop-Off/Faster Than Expected;/Turning to Technology." *The Wall Street Journal* (April 5, 2007).
[14] *Ibid*.
[15] Mouawad, Jad. "Oil Innovations Pump New Life Into Old Wells." *The New York Times* (March 5, 2007).
[16] CNA Report on "National Security and the Threat of Climate Change" *http://securityandclimate.cna.org/report/National%20security%20and%20the%20Threat%20of%20Climate%20Change.pdf* (April 16, 2007).
[17] "Military on Climate Change" *The Washington Post* (April 15, 2007).
[18] Informed Reader column "How Global Warming Will Play With Investors" *The Wall Street Journal* (March 9, 2007).
[19] Revkin, Andrew "Global Warming Called Security Threat." *The New York Times* (April 15, 2007) *http://www.ciesin.columbia.edu/pdf/waterconflict.pdf*.
[20] *http://www.ipcc.ch/SPM6avr07.pdf* Kanter, James and Andrew C. Revkin. "Scientists Detail Climate Changes, Poles to Tropics." *The New York Times* (April 7, 2007). Jolis, Anne and Alex MacDonald. "U.N. Panel Reaches Agreement On Climate-Change Report." *The Wall Street Journal* (Apr. 6, 2007).
[21] Max, Arthur. "Climate report: Poor will suffer most." *Associated Press* (April 6, 2007).
[22] Brown, Peter and Harry Stoffer. "The heat is on/How global warming is closing in on the U.S. auto industry." *Automotive News* (February 7, 2007).
[23] Revkin, Andrew, "U.S. Predicting Steady Increase for Emissions." *The New York Times* (March 3, 2007).
[24] *The New York Times* "Global Warming and Security" (April 20, 2007).
[25] Associated Press Editorial Reprint. "Top Scientists Warn of Water Shortages and Disease Linked to Global Warming." *New York Times* (March 12, 2007).
[26] CNA Report on "National Security and the Threat of Climate Change" *http://securityandclimate.cna.org/report/National%20security%20and%20the%20Threat%20of%20Climate%20Change.pdf* (April 16, 2007).
[27] *Washington Post* "Military on Climate Change" (April 15, 2007).
[28] Ball, Jeff "Conoco Calls for Emissions Cap" *The Wall Street Journal* (April 11, 2007); Murray, Alan. "Bush Health-Care Plan Finds Business Backers." *The Wall Street Journal* (January 24, 2007); Barringer, Felicity. "A Coalition for Firm Limit on Emissions." *The New York Times* (January 19, 2007).
[29] Brown, Peter and Harry Stoffer. "The heat is on/How global warming is closing in on the U.S. auto industry." *Automotive News* (February 7, 2007).
[30] Hyde, Justin. "U.S. Cars Show No Fuel Efficiency Gains" *Detroit Free Press* (April 24, 2007).
[31] Freeman, Sholnn. "Democrats Plan to Press Automakers on Fuel Efficiency." *The Washington Post* (March 10, 2007).
[32] Hutton, Ray. "Emissions row divides carmakers/Europe's motor industry can't decide how to deal with tough new limits on carbon emissions." *Sunday Times* (March 18, 2007).
[33] Brown, Peter and Harry Stoffer. "The heat is on/How global warming is closing in on the U.S. auto industry." *Automotive News* (February 7, 2007).
[34] *http://epa.gov/climatechange/emissions/usinventoryreport07.html.*
[35] EPA Fuel Economy Trends Report, 2006.
[36] NRC, 2002.
[37] Portney, Paul. (February 9, 2005).
[38] Chozick, Amy "GM Slips into Toyota's Rearview Mirror." *The Wall Street Journal* (April 25, 2007); Terlep, Sharon. "Big 3 Sales Sink" *Detroit News* (April 4, 2007).
[38] (*http://www.osat.umich.edu/research/economic/FuelEconStrat.pdf*).

[40] Saad, Lydia. "Most Americans Back Curbs on Auto Emissions, Other Environmental Proposals/Solid majority opposes drilling for oil in Alaskan wilderness." *Gallup News* (April 5, 2007).
[41] Hyde, Justin. "Michigan Poll/Most favor tougher auto mileage rules, but not at Detroit's expense." *Detroit Free Press* (March 20, 2007).
[42] PR Newswire. "More Than Half of Vehicle Shoppers Still Affected by Gas Prices." Kelley Blue Book Market Research (October 26, 2007).
[43] *http://www.yale.edu/envirocenter/yale__epoll2007__pr.pdf.*

The CHAIRMAN. Thank you very much, Admiral McGinn.
Now may I call upon Mr. McCurdy?

STATEMENT OF DAVE MCCURDY, PRESIDENT AND CEO, ALLIANCE OF AUTOMOBILE MANUFACTURERS

Mr. MCCURDY. Thank you, Mr. Chairman.
And I thank my colleagues. At one point, I counted six of my former colleagues on the panel.
As an introduction, I want to make it clear that it's the view of the Alliance of Automobile Manufacturers that enhancing energy security and reducing carbon dioxide emissions are priorities to all Americans and the auto industry, which must continue to aggressively pursue our innovation agenda.
In a March 14th House Energy and Commerce Committee hearing, CEOs from DaimlerChrysler, Ford Motor Company, General Motors, and Toyota all committed to working with Congress to find new ways to address the issues of climate change and fuel economy. I'm here today to share that message with this Committee.
As a former Member of Congress with an extensive national security background—I notice that Admiral McGinn mentioned the CNA report; I serve on their Defense Advisory Board—I'm very sensitive to how our dependence on foreign sources of oil impacts our foreign policy. However, autos are only one part of our energy security picture.
Alliance members support enhancing energy security, promoting fuel diversity, and increasing fuel efficiency through accelerating the availability of the growing number of advanced technology and alternative fuel automobiles in the market. Alternative fuel autos, including vehicles that run on biofuels, diesel, electricity, hydrogen, natural gas, and others, will help our country address the growing concerns about U.S. gasoline consumption and oil imports.
Today 10.5 million alternative fuel vehicles are already on the road, and the Alliance members are offering more for sale this year. Additionally, there are 60 models of alternative fuel vehicles on sale today, up from 12 in 2000, and many more models are planned for future production.
However, many substantial infrastructure and technology challenges need to be overcome before the promise of alternative-fuel automobiles can be fully realized. Thousands of automotive engineers are working on innovative technologies every single day, but many promising technologies, such as plug-in hybrids and fuel cells, still need significant research and development before they will be commercially ready.
Federal and State incentives for consumers who purchase alternative-fuel automobiles and incentives to help expand the alternative-fuel infrastructure will help accelerate the continued introduction of these highly fuel-efficient vehicles. Working together, we

believe that government and industry can put more alternative-fuel automobiles on our roadways.

We've been talking about CAFE, enacted in 1975. But, as history has shown, the U.S. cannot achieve energy security through CAFE alone. CAFE is a one-dimensional and incomplete program. Additionally, higher CAFE standards would have no near-term impact on gasoline use. First, increases in the size of the overall fleet, and the number of vehicle miles traveled each year, are far greater influencers of U.S. oil consumption and gasoline prices than CAFE requirements. Because CAFE is based on the mix of vehicles sold each year, whether a manufacturer meets the CAFE standard or not depends both on what products are offered and, as importantly, on what products consumers purchase. And, while consumers value fuel economy, they also want many other attributes in today's vehicles, such as safety, passenger and cargo room performance, towing and hauling capacity, and others. Our challenge is to develop vehicles that combine these attributes with improved fuel efficiency and an affordable price.

Automakers offer close to 200 models that have an EPA estimated highway rating of 30 miles per gallon or more; however, each year since 2001, American consumers have purchased more light trucks than passenger cars. By failing to take into account the cost of fuel and consumer buying habits, CAFE addresses only one component of the fuel economy equation. Consumers value fuel economy, but they typically value more attributes of the vehicles that they purchase.

Regarding S. 357, as well as S. 183 and S. 1118, the most important message of Alliance members is very clear. And, Mr. Chairman, this may actually come as a shock to some, but we support improving fuel efficiency to the maximum feasible level. Improving fuel economy is a consumer issue, an economic issue, a climate change issue, and an energy security issue, and, thus, a priority. The Alliance supports NHTSA obtaining the authority to reform the CAFE standard for cars into an attribute-based system, as we've heard today. The Alliance, however, opposes legislation that is not technologically feasible, because of the proposed arbitrary CAFE target and/or the proposed arbitrary lead time.

The Alliance believes Congress should look beyond CAFE, and should consider a multisector integrated transportation energy policy that motivates all stakeholders to make decisions consistent with the shared goal of reducing petroleum imports. An effective transportation energy policy needs to foster more alternative-fuel choices, especially more low-carbon renewable fuels; implement an aggressive program to enhance the alternative fuels infrastructure in America; empower the research and development community to move us closer to breakthroughs on technologies like batteries for full electric vehicles, as well as for plug-in hybrids and fuel cells. We need to motivate consumers to conserve fuel and to consider purchasing one of the many fuel-efficient autos on sale today.

Today, Mr. Chairman, there is a clear choice before the Committee. Policymakers can continue to look backwards, reworking a 1970's program that was created in a very different world, or policymakers can move forward, focusing on broader climate change issues in a rapidly changing world.

Increasing fuel economy and reducing carbon dioxide emissions is a shared responsibility that must include vehicle miles traveled, fuel substitution, and vehicle technology. Attempts to address concerns about energy security and carbon dioxide emissions cannot succeed by focusing only on one component of gasoline demand. An economywide approach is needed. A market-driven, market-responsive approach is needed. Any effective program needs to consider the realities of the marketplace.

And finally, Mr. Chairman, an effective approach needs to be comprehensive and nationwide. The United States needs a consistent national policy that avoids the marketplace chaos that would surely arise from a patchwork of conflicting State fuel economy and carbon dioxide mandates.

Once again, autos are only one part of the energy security picture. Broader-based policies in addressing fuels, and the use of those fuels by consumers, need to be explored, as well.

And, Mr. Chairman, we look forward to working with you and the Committee, and I'd be glad to take questions.

[The prepared statement of Mr. McCurdy follows:]

STATEMENT OF DAVE MCCURDY, PRESIDENT AND CEO,
ALLIANCE OF AUTOMOBILE MANUFACTURERS

Mr. Chairman,

Good afternoon, my name is Dave McCurdy and I am the President and CEO of the Alliance of Automobile Manufacturers. The Alliance is the auto industry's leading trade association representing nine manufacturers including BMW, DaimlerChrysler, Ford Motor Company, General Motors, Mazda, Mitsubishi, Porsche, Toyota and Volkswagen.

On behalf of our members I'd like to thank you for giving me an opportunity to be here today to share with you both the industry's progress in, and future challenges to, increasing fleet fuel economy. Alliance members share the concerns of our customers, the Congress and the American public about fuel economy and carbon dioxide emissions.

As an introduction, it is the view of the Alliance of Automobile Manufacturers that enhancing energy security and reducing carbon dioxide emissions are priorities to all Americans, and the auto industry must continue to aggressively pursue its innovation agenda. At a March 14, House Energy and Commerce Committee hearing, CEOs from DaimlerChrysler, Ford Motor Company, General Motors and Toyota all committed to working with Congress to find new ways to address the issues of climate change and fuel economy. I am here today to share that message with this Committee.

Because the only feasible way to reduce the amount of current carbon-based fuel from automobiles is to reduce the amount of fuel a vehicle uses, auto engineers are working hard to include a diverse range of highly fuel-efficient technologies in new vehicles. Today, every model is available with some kind of fuel-efficient technology, including direct fuel injection, four cylinder engines, variable valve timing, continuously variable transmissions, cylinder deactivation and more.

Automakers are investing significantly in advanced technology vehicles powered by electricity, biofuels, diesel, hydrogen and compressed natural gas. Still, autos are only one part of the energy security picture. Through the Corporate Average Fuel Economy (CAFE) program, we are already a "carbon-constrained" industry and one that is heavily regulated.

Manufacturers believe that the best way to enhance energy security and reduce carbon dioxide emissions is through the use of alternative fuels including E85 and flexible fuel vehicles. Today, 10.5 million alternative fuel autos that operate with hybrid technology or run on fuels like clean diesel, ethanol, hydrogen and others are already on the road, and Alliance members are offering more for sale this year. Additionally, there are 60 models of alternative fuel vehicles on sale today, up from 12 in 2000 and many more models are planned for future production.

Since the 1970s, new vehicles have continued to become more fuel-efficient. EPA data demonstrates that fuel efficiency has increased steadily at 1–2 percent per year on average from 1975 for both cars and light trucks. Passenger car fuel economy

has more than doubled from 14.2 mpg in 1974 to 29.8 mpg in 2006 and light truck fuel economy has increased by 60 percent since 1974. But as we have noted on many previous occasions, the ultimate decisions about what vehicles are purchased and how they are driven belong to American consumers.

And while consumers value fuel economy, they also want many other attributes in today's vehicles, such as safety, passenger and cargo room, performance, towing and hauling capacity. Our challenge is to develop vehicles that combine these attributes with improved fuel efficiency . . . and an affordable price.

The auto industry leads the way when it comes to investing in research and development. Automakers are committed to being first to market with breakthrough technologies that can produce new generations of autos with advanced powertrains and fuels. Automakers are competing to bring these vehicles to market, as soon as the technology is feasible, affordable and meets consumer expectations.

The U.S. cannot achieve energy security through CAFE alone. CAFE is a one-dimensional and incomplete program. Any transportation energy policy must be comprehensive and multi-dimensional to be effective, and we believe that all sectors of the economy, not just transportation and certainly not just automakers, should strive to reduce petroleum consumption.

The Alliance believes Congress should look beyond CAFE and should consider a multi-sector, integrated transportation energy policy that motivates all stakeholders to make decisions consistent with the shared goal of reducing petroleum imports. An effective transportation energy policy needs to:

- Foster more alternative fuel choices, especially more low-carbon, renewable fuels;
- Implement an aggressive program to enhance the alternative fuels infrastructure in America;
- Empower the research and development community to move us closer to breakthroughs on technologies like batteries for full electric vehicles, as well as for plug-in hybrids and fuel cells;
- Encourage the U.S. investment community to stimulate economic investments in our future fuels and technologies;
- Involve all levels of government; and
- Motivate consumers to conserve fuel and to consider purchasing one of the many fuel-efficient autos on sale today.

Corporate Average Fuel Economy

The Corporate Average Fuel Economy (CAFE) program was established by Congress in 1975 to reduce U.S. dependence on foreign oil by reducing overall fuel consumption. The Energy Policy and Conservation Act directed the National Highway Traffic Safety Administration (NHTSA) to set national fuel economy standards at the "maximum feasible" level taking into account key elements such as technological feasibility, affordability, safety, emissions controls, consumer choice, disparate impacts on manufacturers and effects on American jobs.

For Model Year (MY) 2008, each automaker's fleet must average 27.5 mpg for cars and 22.5 mpg for light trucks (pickups, vans, minivans and sport utility vehicles). For light trucks, NHTSA recently reformed the standard setting system for light trucks. Automakers are currently in the fourth year of seven straight years of light truck CAFE increases, which started in MY 2005 and proceeds through MY 2011.

When reforming light truck Corporate Average Fuel Economy (CAFE) standards, NHTSA used an attribute-based approach that acknowledged consumers require different sized vehicles for their business and family needs. NHTSA's attribute-based approach addressed some of the previous concerns about safety and about inequitable effects on different manufacturers arising from the previous "one size fits all" standards.

The Alliance supports NHTSA's obtaining the authority to reform the CAFE standard for cars into an attribute-based system, but NHTSA should not prejudge the issue by assuming that the footprint-based system used in the light truck reform rulemaking makes the most sense for cars. The Alliance supports a rulemaking process that maximizes consumer choice, avoids safety concerns, and allocates the burdens of the CAFE program equitably among manufacturers, without injuring competition or any individual automaker. Attribute-based approaches, when properly designed, can help achieve these objectives, but ultimately, success in meeting these objectives depends on the provisions of the program, such as the specific attributes or set of attributes that are chosen, the level at which standards are set, and the adequate provision of lead-time. Whatever attributes are considered for cars must preserve the diverse types of passenger cars.

CAFE, Consumers and Gasoline Use

While the CAFE program targets the fuel economy of the new vehicles that automakers produce, other factors have dramatically increased gasoline use in the light duty fleet. Relatively low fuel costs (compared to the rest of the world) coupled with increasingly fuel-efficient autos have resulted in consumers driving more miles. The Department of Transportation documents that "vehicle miles traveled" (VMT) has increased 40 percent during the timeframe CAFE has been in effect, from 10,000 miles per licensed driver in 1977 to almost 14,000 miles per licensed driver in 2001. Analysts predict that, as auto fuel efficiency continues to improve, VMT will continue to increase.

Higher CAFE standards would have no near term impact on gasoline use. First, increases in the size of the overall vehicle fleet and the number of vehicle miles traveled each year are far greater influencers of U.S. oil consumption—and gasoline prices—than CAFE requirements. (Even though the fuel economy of the light duty fleets of vehicles has increased dramatically since the 1970s, U.S. demand for oil has not declined and imports have increased substantially.) Second, with over 230 million vehicles on the road and only 17 million new vehicles sold each year, it takes 15–20 years for higher fuel economy vehicles to displace the ones on the road today.

Automaker product decisions alone cannot guarantee compliance with CAFE standards. Because CAFE is based on the mix of vehicles sold each year, whether a manufacturer meets the CAFE standard or not depends both on what products are offered, and on what products consumers purchase. While the law holds manufacturers responsible for meeting CAFE standards, in reality consumer purchases play a huge role in determining whether a manufacturer meets, exceeds or falls short of the standard in any given year.

When considering what kind of vehicle to buy, consumers evaluate all the different uses they will demand of their new car or light truck. Most consumers select vehicles that best serve their peak uses, whether carrying kids, carpooling adults, towing trailers, hauling supplies, accommodating handicapped, handling adverse terrain and weather, addressing recreational needs and/or meeting job/business demands—even if these attributes may be used infrequently.

Automakers share the goal of increasing fuel efficiency as they develop vehicles that meet the various needs of American families and are committed to offering fuel efficient vehicles in every segment. According to www.fueleconomy.gov, automakers offer close to 200 models that have EPA-estimated highway ratings of 30 miles per gallon or more. However, each year since 2001 American consumers have purchased more light trucks than passenger cars. In 2006, for the fifth year in a row, pickups, minivans, vans and SUVs outsold passenger cars. More than 53 percent of all new vehicles purchased last year were light trucks.

By failing to take into account the cost of fuel and consumer buying habits, CAFE addresses only one component of the fuel economy equation. Consumers value fuel economy, but they typically value even more the other attributes of the vehicles they purchase. As a result, when CAFE pushes automakers to add technology or reduce size/weight of vehicles, the additional costs involved and the tradeoffs of other attributes may not be embraced by consumers. These vehicle decisions can have dramatic and adverse competitive implications among automakers.

Proposed CAFE Legislation

Regarding S. 357, as well as S. 183, S. 1118, and S. 767, the most important message of Alliance members is very clear:

> We support improving fuel efficiency to the maximum feasible level. Improving fuel economy is a consumer issue, an economic issue, a climate change issue, an energy security issue, and a priority.

The Alliance opposes legislation that is not technologically feasible, because of the proposed arbitrary CAFE target and/or the proposed arbitrary lead time. The Alliance also opposes CAFE targets that are not based on a balance of objective criteria. When setting "maximum feasible" fuel economy standards for the Nation, Congress required NHTSA to gather extensive data on technological feasibility, affordability, safety, emissions, consumer choice and effects on American jobs. This approach balances the many trade-offs and consequences, and it remains a solid policy approach.

We oppose the provision in S. 357 that would combine car and light truck CAFE standards. Starting with the 2010 model year, the overall car/truck fleet would face an increase in CAFE requirements of over 40 percent by 2019. Based on today's 50/50 split between cars and light trucks, achieving this level would require the car fleet to reach nearly 40 mpg and the light truck fleet to reach nearly 32 mpg. These are essentially the same levels of increase that have been proposed legislatively in

the last three energy bill debates and soundly defeated in both the House and the Senate.

Existing Federal law rightfully separates cars and light trucks in the CAFE program by setting differing fuel economy standards for each. Cars and light trucks have distinct characteristics, so the two programs should not be combined into a single standard, as these characteristics are essential and need to be preserved for consumers who value different attributes in their vehicles. Combining car and light truck standards would raise the costs of many popular utility and work-related vehicles, hurting small businesses, trades people, farmers and others who are dependent on light duty trucks for their livelihoods. However, automakers support both the car and light truck programs being based on attribute-based systems, though the attributes may differ since cars and light trucks have different characteristics.

Alternative Fuel Autos

Alliance members support enhancing energy security, promoting fuel diversity and increasing fuel efficiency through accelerating the availability of the growing number of advanced technology and alternative fuel automobiles in the market. Alternative fuel autos, including vehicles that run on hybrid-electric technology, clean diesel, and alternative fuels like E85 ethanol and hydrogen, will help our country address the growing concerns about U.S. gasoline consumption and oil imports.

Federal and state incentives for consumers who purchase alternative fuel automobiles can accelerate the introduction of these highly fuel-efficient vehicles. Working together, we believe that government and industry can put more alternative fuel automobiles on our roadways.

An important provision of the Energy Policy Act of 2005 (EPAcT 2005) is the increased promotion of renewable fuels in the transportation sector. Since 1996, auto manufacturers have been producing vehicles capable of using high concentration blends of ethanol, including E85. Currently there are more than five million of these E85 capable vehicles on the road with nearly one million more being added each year.

And while EPAcT 2005 will help in E85 infrastructure development by raising the requirement for the use of ethanol and other renewable fuels to 7.5 billion gallons per year by 2012 and providing tax incentives aimed at making more E85 pumps available to the driving public and helping to reduce reliance on oil imports, we still have a long way to go before widespread availability of E85 is achieved. Of the more than 170,000 fueling stations nationwide, roughly 1,200 currently offer E85 to consumers.

Hybrid-electric vehicles are on sale today and already saving fuel. The number of these vehicles will increase substantially over the next years. They offer significant improvements in fuel economy, up to 50 percent, and reduced emissions. These vehicles use electric motors for propulsion and to reduce some burdens on the traditional internal combustion engine, and they capture usable energy through regenerative braking. By 2010, more than 50 hybrid nameplates are expected to be available in North America, with volumes approaching one million vehicles. Hybrid technology can also be applied to diesels, alternative fuel and fuel cell vehicles.

Vehicles that are powered by clean diesel technology, such as direct injection diesels, offer greater fuel economy and better performance than conventional gasoline-powered engines. In Europe more than 50 percent of all new vehicles purchased are diesel vehicles, compared to less than 1 percent in the U.S. Diesel-powered vehicles are popular in Europe for several reasons. Economic incentives have been established to enhance their appeal. Because of higher fuel costs, European drivers tend to put a premium on fuel economy. In the European Union, tax policies drive consumers to highly value fuel economy. The EU taxes gasoline at $4.02/gallon and diesel at $3.04, which incentivizes diesel. In contrast, the U.S. taxes gasoline at $.38 per gallon and diesel at $.45 per gallon.

The EU also prioritizes fuel economy over nitrogen oxides (NO_X) emission standards. For instance, NO_X standards for diesel in the light-duty fleet are more than seven times higher in the EU than in the U.S. Achievement of U.S.-level NO_X standards would require expensive after-treatment, raising the costs of diesel vehicles, eroding the fuel-economy benefits, and reducing consumer demand.

Recently, ultra-low sulfur diesel fuel (ULSD) that is 97 percent cleaner went on sale in the U.S. This new diesel fuel opens the door for a new generation of highly fuel-efficient diesel vehicles to be sold in the U.S. that will run dramatically cleaner than their predecessors.

These types of vehicles could provide fuel economy gains of up to 30 percent compared to conventional vehicles. In addition, most diesels are capable of running on good quality biodiesel blends of up to 5 percent (B5) and many are designed to use up to 20 percent or 100 percent biodiesel fuel (B20 or B100). If all diesel vehicles

on the road today were fueled with B5 (5 percent biodiesel) we could displace 1.85 billion gallons of petroleum per year; and 7.4 billion gallons per year if B20 (20 percent biodiesel) were utilized.

Several manufacturers have also announced progress toward the introduction of plug-in hybrid vehicles. Once batteries become available in affordable power trains, these products may be of interest to consumers. Plug-in hybrid-electric vehicles, which are hybrid cars with a larger capacity battery, look and perform much like "regular" cars but they can be plugged into a 110-volt outlet (for instance each night at home, or during the workday at a parking garage) and charged. Plug-in vehicles can reduce oil consumption and rely on domestically produced energy for a greater portion of their operation. Once the range of the battery is exceeded, the vehicle will automatically switch to a conventional internal combustion engine. Manufacturers are still working on several significant issues, including size, lifetime cost and recyclability of the battery, but we remain optimistic.

From a vehicle perspective, hydrogen-powered fuel cells offer the greatest potential improvement in fuel efficiency and emissions reductions. They also create a great opportunity for eliminating dependency on petroleum. However, widespread commercialization of this technology and establishment of the hydrogen infrastructure are some years away.

Another promising and enabling technology is hydrogen-powered internal combustion engines (ICEs). The concept of using hydrogen ICEs offers several advantages: near-zero emissions, maintaining the utility, flexibility, and driving dynamic of today's automobile, assisting in the development of hydrogen storage technology, and developing hydrogen distribution channels and helping to promote hydrogen refueling infrastructure.

While fuel-efficient technologies are on sale today, more technology is being developed for possible future introduction. Thousands of automotive engineers are working on innovative technologies every day, but many promising technologies, such as plug-in hybrids and fuel cells, still need significant research and development before they will be commercially ready.

Conclusion

Today, there is a clear choice before the Senate Commerce, Science, and Transportation Committee. Policymakers can continue to look backward, reworking a 1970s program that was created in a very different world. Or, policymakers can move forward, focusing on broader climate change issues in a rapidly changing world.

In March, the auto industry testified before the House Energy and Commerce Committee to consider the creation of a broad, multi-sector cap and trade approach to regulating carbon dioxide. While the Senate Commerce, Science, and Transportation Committee is focusing on CAFE, we encourage the Senate to consider autos in the context of a broader carbon dioxide program. There are strong reasons to do so.

CAFE alone does not address consumer preferences. In the U.S., 70 percent of the new vehicles purchased by consumers have a 6-cylinder or 8-cylinder engine. In the European Union, fleet fuel economy is about 35 mpg, or the goal of S. 357. But in Europe, 89 percent of new automobiles are sold with a 4-cylinder or *smaller* engine. In the U.S., 92 percent of new autos are sold with automatic transmissions, compared to 20 percent in Europe.

Vehicle miles traveled (VMT) will continue to increase in the United States. VMT is a result of population growth and affluence, two factors that policymakers should never seek to restrict. In fact, as autos become more fuel-efficient, consumers tend to drive more, which ultimately has the opposite effect of increasing gasoline use. CAFE has no effect on the price of gasoline, so a broader approach is needed.

The carbon burden needs to be shared. Reducing carbon is dependent on three intertwined factors: VMT (which includes consumers), fuels substitution, and vehicle technology. Attempts to address concerns about energy security and carbon dioxide emissions cannot succeed by focusing only on one component of gasoline demand. Vehicle fuel economy will continue to increase as new and improved technologies find their way into the market, but vehicle technology alone will not slow the growing demand for gasoline in the U.S. transportation sector.

Clearly, an integrated approach is needed. In 1999, President Clinton signed into law EPA's landmark regulations called Tier 2. These regulations are noteworthy because for the first time, autos and fuels were regulated as a system. Our clean autos needed clean fuels, and the higher sulfur fuel sold in the 1990s would have disabled our new clean vehicle technology. As Congress considers the broader climate change issue, one important goal is to consider fuels and autos together. Automakers need to invest to accommodate alternative fuels, and energy providers need certainty that more alternative fuel autos will be on U.S. roads.

An economy-wide approach is needed. The costs of reducing a ton of carbon dioxide are not the same in every sector. For autos, the costs of reducing carbon dioxide are extremely high compared to other sectors. The most effective way to reduce carbon, as well as the most cost-effective way, may be through an economy-wide cap and trade program.

An economy-sensitive approach is needed. Many segments of our economy depend on cars and light trucks. Farmers, tradesmen, small businesses and others need vehicles, especially larger cars and light trucks, for their livelihoods. Any program that reduces the availability of these work vehicles or significantly raises their costs represents a burden on the U.S. economy, and especially a burden on independent and small businesses.

A market-driven, market-responsive approach is needed. Any effective program needs to consider the realities of the marketplace. CAFE can create distortions in the market, depending on the price of gasoline. By contrast, incentives in place for the renewable fuels program enable competitive pricing of ethanol, which is resulting in increased consumer demand for this alternative fuel.

Incentives are needed to encourage real reductions in carbon dioxide. Incentives can encourage consumers to purchase the many advanced technology autos on sale today. Incentives can encourage energy providers to increase availability of alternative fuels. And incentives can reward automakers for high achievement in developing new technologies and producing more alternative fuel autos. CAFE, by contrast, has few incentives and fails to bring consumers into the equation.

Any effective, broader program to reduce carbon dioxide needs to allow for companies to grow and thrive, without imposing provisions that would result in job loss. The ultimate goal is real reductions in tons of carbon dioxide, not wealth transfer among companies or higher cost autos.

Fuel economy/carbon dioxide targets are important as part of a reformed, broader-based economy-wide program, but lead time is critical. Some climate change program proposals incorporate a "step-down" approach, which includes reductions over a specified period of years, such as every 5 years. This approach provides more certainty to manufacturers, and a step-down approach enables an industry such as auto manufacturing that requires 5 years to develop and introduce a new model, and 7 years to make significant changes to power trains.

Finally, any effective approach needs to be comprehensive and nationwide. The United States needs a consistent national policy that avoids the marketplace chaos that would surely arise from a patchwork of conflicting state fuel economy/carbon dioxide mandates.

Once again, autos are only one part of the energy security picture. For 30 years we have been a "carbon-constrained" industry. Broader based policies addressing fuels and the use of those fuels by consumers need to be explored as well. To be effective, these policies must incorporate all stakeholders, including alternative energy suppliers, the R&D community, the investment community, government at all levels, and especially consumers. To be successful, the goal of reducing petroleum consumption and carbon dioxide must be viewed as a shared responsibility.

I thank the Committee for giving me the opportunity to testify and welcome any questions you may have regarding the Alliance positions on improving fuel economy and reducing carbon dioxide.

The CHAIRMAN. Thank you very much, Mr. Stanton.

To demonstrate our interest in this issue, and because of the importance of this issue, I'm certain you've noted that we have not imposed any time limitation on speaking, and nor did I impose any limitation on Senators to speak. And I can assure you that this Committee will do its absolute best to try to come up with something workable.

Senator Stevens?

Senator STEVENS. Well, thank you very much, Chairman. I congratulate you. I do, too, agree with your concept of letting all the witnesses speak fully on the statements. And I'm sorry to say I have to go now, but I do want to thank Admiral Blair and Admiral McGinn for bringing in the security issue. I hope the Senate and the Committee listened to you, because the security issue is the turning point on this, as far as I'm concerned. And I think if we listen to you, we will get a bill that will make some sense.

I do thank you very much, Mr. Chairman.

The CHAIRMAN. I thank you, sir.

Senator Kerry?

Senator KERRY. Mr. Chairman, thank you.

Thank you, all, on the panel.

Picking up on what Senator Stevens just said about the security issue, Admiral McGinn, I heard you use the reference to the 10-year window here. And I think that's a really important framework. In my judgment, there's a threshold that you've got to begin to, sort of, look at this whole picture through, if you will. And that is, sort of, what's driving this. Really, we're back here having this discussion, not because the, the automatics of 20 years of delay have suddenly expired or run their course, it's because a whole new set of compelling facts are staring us in the face. And the bottom line of those facts is, essentially, if you accept Jim Hansen's notion, and the scientific consensus, there's a 10-year window here. We have a 10-year window within which to deal with the climate change issue appropriately. Now, that's if you accept the science. I do. And I accept it, because the feedback that we're getting from the predictions made by all of those scientists, 2,000-plus strong from 130 countries, is coming back at a greater rate and in greater amount than they had predicted. So, their alarm bells are ringing.

Given that, and recognizing that we need a 10-year concept here, then if you also accept that you need an economywide cap, because the economywide cap is the only way you're going to begin to get at all the pieces of this sufficiently to get somewhere between a 65 to 80 percent reduction by 2050—and I assume it's the 80 percent, frankly, because of the rate that things are coming back—therefore, everything's got to be part of it, and that includes automobiles.

One gallon of gasoline, I believe, is about 22 pounds of CO_2. So, every gallon of gasoline that you don't use because you're not driving or you have a more efficient car, you're beginning to reduce your CO_2. So, that's one reason to compel.

The other is obviously the security issue about who we depend on for our fuel, and what we're relying on, and how independent America is with respect to that.

So, let me ask you, based on that, are we able to believe that the 35 miles per gallon standard that they want to set, fleetwide—let me just say parenthetically here, I accept Senator Levin's argument. Senator Levin and I met yesterday. I've talked to him over several years on this argument. And we had a runaround on this when Senator McCain and I were the leaders on the CAFE effort a number of years ago on the floor. And I believe there is a legitimate argument, Mr. Chairman, that we do have to take into account, about the discrimination. It doesn't make sense that a foreign manufacturer can come in here and sell a light truck to a greater degree, which gets the same mileage, or worse, than an American truck, but they can do it, because the corporate average says you've got a whole—your fleet has a whole bunch less—you know, you've got a lot more small cars, a lot less trucks, so go ahead and sell the trucks, and you make up the difference, because we're going to measure the whole average. It doesn't make sense anymore. I believe we ought to have a nondiscriminatory attribute-based system of some kind or another.

But the question, to come back, is: Is it adequate, is it responsible, within the framework of what you're saying, to have 35? Senator Stabenow and Senator Levin said that, "We think maybe we ought to be pushing the"—what was the term they used? I think—"leap-ahead technology and large technology and so forth"—well, one of those leap-ahead technologies is obviously a plug-in hybrid, which I talked about earlier. I mean, if you've got people who can drive around and get 150 miles per gallon today, why can't we leap ahead and have a whole bunch more of those vehicles available to Americans, which doesn't require them to give up size, to give up ability to take the kids to the soccer game, to do all the things we've heard about in these arguments for years, but could do it at much less cost and greater efficiency? And we could provide a $3,000 or $4,000 tax credit, which I, incidentally, proposed 3–4 years ago, that would cover the entire cost for the consumer.

So, should we be thinking of a larger concept than 35? And, do we get enough of what we're trying to grab out of the standard we're talking about here? And, the third part of the question is, why won't it do the things that Alan Reuther has said it'll do to the industry, in your judgment?

Admiral MCGINN. Thank you, Senator Kerry.

In my view, CAFE is not—it's necessary, but not sufficient. It's a good start. We have to start in a lot of areas.

In terms of breakthrough technologies, certainly plug-in hybrids are a key part. I believe Mr. Reuther mentioned that in his testimony, that the idea of bringing some of the key components that would go into plug-in hybrids to be built here so for example we can manufacture longer-lasting, higher-capacity batteries to extend the vehicle miles on a daily basis of plug-in hybrids, reducing the requirement to burn any type of liquid fuel, whether it's gasoline or, more importantly and more likely in the future, bio-based fuels. I think there's a lot that can be done in this country, in terms of the entire choice of fuels. This needs to be done beyond gasoline or hydrocarbons, in carbohydrate-based fuels, in a way that isn't simply, "Let's make ethanol from corn," but, rather, "Let's make ethanol from prairie grass, switchgrass, biomass from farms." And, I think, also there's a great place for newer, high-efficiency diesels. In a plug-in hybrid, the internal combustion engine can be literally anything. It can be gasoline-powered, diesel-powered, the fuel that goes into it can be a whole variety of bio-based or hydrocarbon.

Senator KERRY. That's—sorry.

Admiral MCGINN. But I think that we need to recognize that these technologies are available now, they can be improved by American manufacture——

Senator KERRY. Let me stop you there, just for a minute. If they are available now, then what's going to get them out there into the marketplace faster? I met with one of the——

Admiral MCGINN. Right.

Senator KERRY.—Big Three CEOs a few years ago, and I sat there and asked that question several years ago, and I won't say who it was, but you know what the answer was from the CEO of one of the Big Three? "Well, the American consumer isn't asking for it."

Admiral MCGINN. Yes.

Senator KERRY. So, we've lost those 3 years, essentially. You want to answer that, Mr. McCurdy, you can. I don't want to—let the Admiral——

Admiral MCGINN. I would just——

Mr. MCCURDY. Let the Admiral finish. I want to——

Admiral MCGINN. I would just say that incentives, as you've pointed out, Senator, are certainly a way to help stimulate that market. There are external forces that you also mentioned that are—and I have really focused on in my testimony—that are really going to influence the market. People understand about high gas prices. They really got a dose of it—we got a dose of it—post-Katrina. That is not going to get less frequent or less intense, it's going to get more frequent and more intense. And we live in a very, very dangerous world. The threat of terrorism, the threat of political embargoes all are real, and the American people understand that, and they understand what it can do, right to their pocketbook, on practically a daily basis as the prices go higher at the gas pump.

The other point I would make is that as a result of the science being more and more consistent, longer-term, things like the Intergovernmental Panel on Climate Change reports series that is going now, people understand that climate change is a real threat, not just in an abstract sense, but in a very personal way for us today, and, in particular, when we think about our children and grandchildren.

Senator KERRY. The one part you didn't answer is to Mr. Reuther's testimony about this negative impact that it will have on the industry.

Admiral MCGINN. I believe it's an opportunity for the industry to seize on these technologies, the ones that exist, the ones that are about ready to come into production, or could come into production, and really do the leap-ahead.

CAFE will, or rather could be, looked at in retrospect as an artifact of an old technology marketplace. If we really, really invest, the way that Americans can, the way American industry can, in the right kinds of automotive technology, CAFE does not preclude great advances in fuel efficiency, it motivates them to be produced.

Senator KERRY. Mr. McCurdy?

Mr. MCCURDY. Thanks, Senator.

Couple of quick points. You asked the question why some of the technology is available. And, actually, Admiral McGinn, in his formal statement, quotes a person whom I have a great deal of respect, and, having an Air Force background, probably lean that way a little bit more—and that's General Chuck Wald. And General Wald, who's part of the group, indicated that if you factor in the cost of military security into gasoline, that the real price of gasoline is somewhere between $6.50 and $7 a gallon. And, as a matter of fact, Senator Lugar's Committee last year, when he was Chair, had hearings and testimony that said it was closer to $10. The price of gasoline—equivalent—in London today is $6.17 a gallon. The reason that the European prices are high are because they have energy taxes. Those taxes drive consumer behavior. What's available in Europe today, 53 percent of the vehicles in Europe are diesel. They're clean diesel. It's not the diesel that we used to think

about in the 1980's, and, you know, in the United States. This technology could be available. Now, it's having to be certified in California, but, you know, we're getting to that point.

But the fact is, the important factor—and that's what I tried to raise earlier—it's one thing to talk about vehicles, it's another thing to talk about fuels, which have to go hand-in-hand. It's why you have to have a comprehensive approach. But if you leave the consumer out, I don't believe the market's going to work. And the market does have a real role to play.

And in some of my conversations with the SAFE group, one of the concerns I have is that they do not argue—they do not believe that gas tax or that the price signals are sufficient to drive that consumer behavior. However, within the NHTSA criteria, they would like to have a cost factor added on the cost-effectiveness that would, in effect, add 50 percent to the price of a gallon of gasoline. So, what we see here is a hidden tax that—I think it should be much more transparent, and that the consumer know what these costs are. We're passing on the cost to one sector. And all we're asking is—we're prepared to do our share. We had the four CEOs testify. They support real movement on climate change and caps. And other groups may say they——

Senator KERRY. But are you suggesting that caps alone is—would——

Mr. MCCURDY. No.

Senator KERRY. OK.

Mr. MCCURDY. I think it has to be a combination. There will be a performance metric for automobiles that should be applied. I don't think it's the old CAFE, but it could be a CO_2 equivalent grams per mile. That is fair, and that is an appropriate way to do it.

Senator KERRY. I don't want to abuse my time here, Mr. Chairman but I do have more questions. But I just—you know, again you come back to the 10-year framework, and you come back to the, sort of, leadership issue necessary, both on national—security in terms of global climate change and security in terms of supply of fuel and dependency on the Middle East and elsewhere. And, incidentally, we're not—that's not—the Middle East isn't the number-one supplier. But the bottom line is that we have a responsibility to put in place whatever incentives are going to bring about that consumer behavior; not wait for the consumer, but we have to lead the consumer. And that's what I think has been, sadly, absent somewhat in the leadership out in—you know, with respect to the designs and what they've been willing to embrace.

Prius, you know, and Insight, are out there like crazy. They're selling like mad.

Go ahead.

Mr. MCCURDY. Senator, I just want to make one comment here. For the last 3 months, there have been incentives on hybrids. I own a hybrid. And they're great technologies. There are second generations that will be occurring. But when I was Chairman of the Subcommittees on Armed Services, and Science and Space, and the Intelligence Committee—and these gentlemen know it well—one of the biggest challenges the military faced and NASA faced is battery technology. It's power storage. And we still have challenges there.

Senator KERRY. I completely——

Mr. MCCURDY. That is——

Senator KERRY.—understand that.

Mr. MCCURDY.—where government can, in fact, help a great deal. But the fact of the matter is that fuel-efficient vehicles today, even at $3 a gallon, are not selling—there was early adoption, but there is less demand today for that, and manufacturers actually lose money on those sales.

Senator KERRY. They do, today. And I understand that. But I don't think they have to. If we were to put the right policies in place, is the bottom line. And also, you know, it depends partly on what you're marketing to people. I mean, you can see the marketing differential between muscle vehicles and big power. We've even gone up in power nowadays. We're—you know, this is—it's a question of where your priority is and what you want to start to go out and tell—sort of, suggest to people is important. And, I might add, I think, from a leadership perspective, given what our troops are sacrificing on our behalf, it wouldn't have been a bad idea to ask Americans to join in this effort. And that might have begun to change behavior.

So, I think there are a lot of options that were available to us with respect to that. And I know, from personal experience, I own several hybrids, one here in Washington, one up in Massachusetts. I would have loved to have been able to buy a van. I have a van up there, because I have to run around the state with press in the car, and staff in the car, and I need the room. I couldn't find the vehicle.

So, we're not getting the kind of choice that we ought to be getting. And I hope that that will change, rapidly.

Mr. Reuther?

Mr. REUTHER. Senator, there has been discussion about incentives to encourage quicker penetration of the advanced vehicles. And I just want to underscore, if all you do is have enhanced consumer incentives, we're going to lose all the jobs associated with producing these vehicles and the key components. What we need is to have a manufacturer's incentive that says, yes, here's assistance that's going to make it cheaper, and so we get the vehicles in quicker, but we want to tie it to the work being done in this country, so we also keep the jobs.

Senator KERRY. As you recall very well, Alan, because you and I worked together closely on all of this, my proposal in 2004 was to put $1 billion on the table immediately for the retooling for the industry to assist in that, and $2 billion directly into some of the clean technologies so we could accelerate this development. We are playing at the margins right now, in terms of what is really the national emergency, urgent issue. It's not being treated that way. Now, hopefully we have an opportunity—we do have an opportunity, and the Chairman's leadership—and I appreciate it enormously, because this hearing is important and long overdue.

The last question, Mr. Chairman, Mr. Friedman, or anybody on the panel, again, I think there are a lot of opportunities here. I think there's an enormous amount of money to be made. I think we can resuscitate the industry. I think there's just a brilliant opportunity staring us in the face, with the right marketing and the

right joint venture partnership here. Mr. Reuther is articulating concerns about what this does to the industry if we don't put these other pieces in place. Do you accept the notion that we also have a responsibility to try to put these incentives and cushions in place in order to facilitate this transition?

Mr. FRIEDMAN. Well, I think you've actually heard a remarkable amount of agreement today. Everyone says cars need to do something, but so does the rest of the economy. And I think you will probably get a lot of agreement that we need incentives. Automakers are going to be able to increase profits by selling higher fuel economy cars and trucks. Why? In part, because if consumers are spending less money on gasoline, they can buy better cars, they can buy more expensive cars. They can also, maybe, rent an extra DVD or also spend some time creating jobs in other parts of the economy. But, at the end of the day, increasing fuel economy will increase profits and increase jobs in the auto industry.

Are there going to be transition costs? Absolutely. Are you going to need to make investments in technology? Absolutely. Is there a role for the Government to play to help industry making those investments? Absolutely. Consumers are in a position to save tens of billions of dollars a year. Consumers' savings will dwarf the investment cost to the auto industry. So, it absolutely makes sense for consumer tax dollars to help the industry along the way.

It also makes sense to recycle some of those tax dollars to help steer consumers toward better vehicles. I think part of the challenge here is, we absolutely need to address all parts of the issue, but you've got to start. You've got to start walking before you run. And the way you start is by raising fuel economy standards.

I sat before you, about 6 years ago, December of 2001, talking about this very issue. You were chairing this Committee. And we were talking about 40 miles per gallon back then. We've gone backward in some ways, despite the fact that technology has gone forwards. So, absolutely can we do more.

Can we switch to fuel-cell vehicles tomorrow? No. Can we switch to plug-in vehicles tomorrow? No. These are really exciting technologies, and they will have a substantial role to play 20 or 30 years from now. Ten years ago, I helped build a plug-in hybrid vehicle while I was studying engineering in graduate school. We took a Ford Taurus, we converted it into a plug-in, and we got over 60 miles per gallon. Clearly, it can be done. But right now, the batteries are too expensive, and they don't last long enough. You can do it in small volume, but not yet in large volume.

Fuel-cell vehicles are too expensive right now. But that doesn't mean we should stand still. We should invest in that technology. But in that 10-year window you talked about, the single biggest thing that we can do to cut our oil dependence and reduce global warming pollution is to invest in auto mechanics, is to invest in engineering, it's to take these simple steps with technologies automakers have already developed, that can raise fuel economy standards, by our analysis, to 40 miles per gallon over 10 years. I'll take 35 to start, but we can definitely go farther.

I also, just quickly, in mentioning the price issue, I have to say that I'm a little concerned. It's a little disingenuous to hear the auto industry talking about gas prices, when I don't really hear the

auto industry lobbying to raise gas taxes. It also concerns me a little bit that the auto industry is talking about Europe, where gas prices are higher, and they absolutely are, and fuel economy is higher, but it's not high enough. The European Union is setting standards to reduce global warming pollution from cars and trucks, because their prices haven't been enough. So, even $6 a gallon gasoline in Europe isn't enough. Before we raise prices for consumers, let's save them money. Maybe down that road we'll need to invest money in highways and make sure that we can do that, but let's start off by saving consumers money, providing them incentives, and getting better fuels out there.

Senator KERRY. Thank you very much.

Mr. Chairman, thank you for the time. And, as I close, I'd just mention, I hope we will work through this issue. You know, I don't know which one we're going to wind up with, or where, but I just have a concern about the off-ramp piece, just given the record and experience we've had on NHTSA and so forth. I think we've got to really be firm here, and strong. So, I want to work through it. I talked to Fred Smith earlier today, and want to follow up on how we might think about it.

But, Mr. Chairman, thank you very much. You've been very generous with the time. And I thank my colleague from Delaware for his patience.

The CHAIRMAN. Thank you.

Senator Carper?

Senator CARPER. Thanks, Mr. Chairman.

To our witnesses, welcome, and thank you very much for joining us today, and, for some of you, for joining us in recent days and weeks.

Mr. Friedman, just a quick thought that comes to mind. Did you say it was 10 years ago that you and some of your colleagues in graduate school worked on a—did you say it was a hybrid?

Mr. FRIEDMAN. A plug-in hybrid——

Senator CARPER. Plug-in hybrid on a—the Ford Taurus?

Mr. FRIEDMAN. On a Ford Taurus, exactly.

Senator CARPER. I'm just wondering why Ford didn't hire you. Maybe if they had hired you and some of your friends, we'd still be making Ford Tauruses in this country, and selling them around the world.

Mr. FRIEDMAN. Well, frankly, there are a lot of really talented engineers in the auto industry. They don't need me there. They've got a lot of great engineers who have already developed a lot of this technology. But, even then, we knew that that plug-in wasn't quite ready. But some of the technologies we put in that vehicle were ready. In fact, that vehicle was produced by Ford and made out of aluminum. The auto industry had the technology to cut the weight out of cars and trucks while maintaining, or even improving, safety, and increasing fuel economy. We also put in a more efficient engine design at that time. Many of those technologies are still here. The challenge I think we've heard before is, for the last 10 years—and really for the last 20 years—most of that technology has gone to nearly doubling the power of our cars and trucks. A family car today—you can buy a family car that accelerates as fast as a late-1960s Mustang or a late-1960s Porsche 911. That's great. Let's

keep it. That's what we did for the last 20 years. But let's spend the next 20 years taking the technology we've got to increase fuel economy.

Senator CARPER. Good. Thank you for that comment and for your insights.

Mr. Chairman, there are just a couple of things I want to get off my chest, and then I want to ask a question or two.

And some of the folks in the audience here have heard me say this before. I would just ask you to be indulgent with me.

Lee Iacocca has a new book out. I think it's, maybe, titled, "Leadership". And he was interviewed recently on NPR. They were talking about the auto industry and how we ended up in the situation where we have figured out how to lose market share, close plants, lay off employees, and lose a ton of money over the last 10 or so years, even longer than that. And he said—I'll paraphrase him—he said we weren't very smart. What he actually said, I think—I'm told he said we were very stupid. And, you know, it's easier on this side of the dais, looking at the industry. But we could have gone to flexible manufacturing, where you'd make not just one vehicle in a plant, but maybe two, maybe three, maybe four; you'd be able to vary your production for the different vehicles in accordance with what's being demanded by the marketplace. Or you'd have a pilot vehicle that you're working on, we could have done that. Frankly, we're sort of, "Johnny come lately's" on it.

Alan Reuther says, with great precision and accuracy, we spend a whole lot more money on healthcare for the folks that are building a—we'll say, a Durango that we build in Newark, Delaware, compared to what they spend building a similar kind of SUV in another part of the world.

Having said that, though, there are a lot of things we can do to reduce the cost of healthcare in this country, and I'm just going to go through a real quick list, real quick. We can harness health information technology. We can incentivize folks to actually take better care of themselves, to exercise, to eat the right foods, to not smoke, not drink to excess. We can do those things. We can do a better job of chronic disease management. We can adopt things like stem cell research, whether you want to get embryonic stem cell or different kinds. We can build more community-based health centers so that folks have, right in their communities, access to healthcare, that they're not using the hospital emergency rooms. We can put employee-based health clinics for primary healthcare right in places where folks work. We can institute pay for performance, where we actually are paying for better healthcare and better results. We can actually use the mapping of the human genome to develop what I call boutique drugs that target in on certain populations that are going to be helped more by small molecule or large molecule drugs. We can help incentivize the creation of small business purchasing pools to enable small businesses to have the kind of advantages that we have as Federal employees. We can better inform consumers in consumer-directed health insurance, about health savings accounts, so they'll make the right kinds of decisions. We can help bring down the cost of defensive medicine. We can do that. It's not just the folks sitting here on this panel, but

the industry, the economy, a lot of our folks. There's a lot that we can do.

If we're really smart, the auto industry and other industries in this country will figure out how to do a variety of those, to help rein in the grown of healthcare costs. And I hope we'll be that smart.

I want to—under the banner of "we weren't very smart," go back to Lee Iacocca. I remember a conversation I had with the leader in one of our Big Three auto companies back in 2001. I think, Mr. Friedman, you talked about testifying for a panel that Senator Kerry was a part of. That same year, I remember being in Detroit, meeting with the leader of one of our auto companies, I said to him, "Doesn't it frost you that we're letting Honda and Toyota steal an environmental march on you, and we're not creating, really, any product to compete in that sector, something highly energy efficient?" And he said to me at the time, he said, "You know, for every Prius that they build over at Toyota, they're going to lose $20,000." They may lose some money on Priuses but one of the things they do is use that to draw people into the showrooms. And if they don't buy a Prius, they buy something else. That's smart. And our friends at GM have learned how to build Pontiac Solstices, at a loss. They build them in Wilmington, Delaware. They don't make money on them, but it brings a lot of people into Pontiac showrooms, and they buy something else. They've learned how to build Saturn Skyes. They lose a little money, I believe, on the Saturn Skyes, but it sure brings a whole lot of people into the showroom. I think maybe Toyota figured that out with the Prius. Eventually, they may be smart enough to figure out how to make money on them. They're also smart enough to figure out how to make not one vehicle in a plant, not two vehicles—maybe not three—but maybe four. We ought to be that smart, as well.

Under the banner of "we weren't very smart," same company, someone—a fairly senior guy there said to me—we were talking about energy efficient vehicles, and he said, "Well, we're going to put our eggs in the fuel-cell basket." This is 6 years ago. "We're going to put our eggs in the fuel-cell basket, because that's where we think the future lies." And I'd say, "Shouldn't there be a bridge to the future? Maybe, shouldn't there be something like a hybrid or like a flex-fuel hybrid, or a plug-in hybrid bridge to the future?" At the time, 6 years ago, "No, the future is fuel cells, and that's where we're going to invest our money." To their credit, the hottest car I saw unveiled at the Detroit Auto Show this year was the Chevrolet Volt. A great-looking vehicle. It's smart. It's not just a plug-in hybrid. It recharges the battery by putting on the brakes. It's a plug-in hybrid with a flexible-fuel power generator with it. The battery runs the wheels and you recharge the battery when you put on the brakes. You also recharge the battery with a fuel-cell power system onboard, or a diesel-powered system, or an internal combustion engine onboard. They're always recharging the battery. That is so smart. And as some of you have said, the impediment for us is: How do we—play catchup with the Japanese and others on the battery technology? And we're going to come back to that in just a moment.

But the idea for us to have been saying, 6 years ago, "We're going to put all of our eggs in the fuel-cell basket. There doesn't have to be a bridge to the future"—now we realize there does. We're just behind the eight ball.

And last rant and then I'll get over it, and then I'll, maybe, ask a question or two. We have a DaimlerChrysler plant in my state. It's in Newark, Delaware, just south of the University of Delaware, right off of I–95. When I was State Treasurer, a million years ago, I actually negotiated a State's loan to Chrysler to help—along with other states and the Federal Government—to help save the company when it was about to go under. This is something I care about a whole lot, and have thought about a whole lot. That's a plant that has been on the bubble for a long time.

2001, my first year, I had just stepped down as Governor, been elected to the Senate, 2001, and had a meeting here in Washington. Senator Biden, Congressman Castle and myself had the privilege of meeting with a number of the folks from DaimlerChrysler. At the time DamilerChrysler was saying, "We're going to try to figure out whether to build a second-generation Durango, and where to build it, if we do." And the great news they shared with us that day: they're going to build a second-generation Durango. We were delighted. The first one was being built in Newark, Delaware. They said, "We're going to build the vehicle in Delaware," so that was great news. And they said, "The third piece of good news is that we're going to offer a hybrid option starting in 2004." Bingo. It was like the hat trick, it was a triple play. And we were delighted, and left the meeting. A year later, we got back together with the same folks, you know, from DaimlerChrysler, "Still going to build a second-generation Durango, still going to build it in Newark, Delaware. We're not going to offer a hybrid option."

Now, last year, when gas prices rose over $3 a gallon, it was about 150-day inventory of unsold Durangos in dealer lots across the country. You know, we're really—Iacocca's right, sometimes, not very smart. Smart thing, though, that we did in—on the tail end of that is, our friends from GM, DaimlerChrysler, BMW got together, created a partnership, a consortium, and now that partnership has led to the creation of a new next-generation hybrid. They're going to be in Dodge Durangos next year. They'll be in Chrysler Aspens next year. That's wonderful. It's too bad they weren't in them 2–3 years ago.

All right, I've got that off my chest. Thank you for bearing with me. That'll give us all something to think about.

One of the great values of having panel like this—and I thought about this when Senators Levin, Feinstein, and Stabenow were before us—I thought, if we could get the three of them to agree on a path forward, we could probably get something done, and something good for our country. Just sitting here today, Mr. Chairman, looking at this panel, I'm thinking, you know, if we can get this panel to agree on a path forward, it would probably be pretty good for our country and for the industry, as well.

As I've listened to y'all speak here today and our Senators before you, a couple of things have come to my mind that we agree on. I want to ask, Are we in agreement on this?

One, I think we agree that the status quo is unacceptable. I think we agree that we have a great deal at stake here, in terms of our national security—not just our economic security, but our national security. I think we agree on that. I think we agree that we need to get started, sooner rather than later, but there's a need to acknowledge that there are start-up delays because of technology. You just can't turn a crank and do this overnight, produce the vehicles overnight, because of the—R&D, engineering, developing the parts, and so forth. But, over time, we can do better. But we need to get started. I think we agree on that.

I think I heard consensus here today that for manufacturers that do get started earlier, they ought to get credit for early action. I think I heard consensus on that.

I think I heard consensus on the need for whatever approach we take, whether we take the attribute approach—which I think makes sense, and I think others do, too—that there be some exit ramps. In case we have missed something here, if the world changes in some way that we haven't thought about, that there are sort of escape valves—not easy ones, but real ones. I think, for the most part, I've heard us say that.

I think that we agree on the need to have not just a focus on, fuel efficiency, but also this issue of vehicle miles traveled. We've got to think about not just how much fuel we're using in our vehicles, but how do we get people out of their vehicles sometimes. How do we actually deal with land use to promote that? I think I heard us agree on biofuels, say we need to turn some of those cornfields into oil fields, and some of those soybeans into oil fields. I believe I heard a number of people say that.

A couple of you talked about a way to sort of morph from a CAFE-based approach to a more of an economy-wide approach that deals with CO_2—to find a way to morph from one to the other as a good approach. I think I heard folks say that.

Here's my question. Did I misstate any of those? In terms of things that we agree on. Secondly, how do we not just say to the industry, "We're going to have this tough-love approach with you on fuel efficiency and trying to change gears here"? How do we help them? How do we help the industry? I know Mr. Reuther has called for us doing a good deal more on healthcare. I'm going to set that aside for right now. But how do we help the industry, especially the domestic industry?

I think I've heard some of you say, "Invest in new battery technology. It's one of the best things we can do." Does it make sense for us to try to find a way to include in the legislation that we're going to take to the floor or bring up on the floor authorization for significant new investments over, maybe, a 5-year period of time, but a multiyear period of time, in new battery technology? Does it make sense for us to include in the legislation that we move, either out of this Committee or on the floor, biofuel standards, to actually create a biofuel standard for—B20 or B30 fuel for greater biofuel content in our diesel? Does it make sense to try to include some adjustments of our tax credit for low-emission diesel so that—for example, does DaimlerChrysler, whose BLUETEC technologies is actually going to produce—is producing a Bin8—not Bin5, but a

Bin8 emission vehicle? Does it make sense to try to move up their eligibility to use Bin8 as a basis for consumer tax credit?

Finally, does it make sense for us to include in the language we take to the floor further incentives, for the creation of additional biofuels? I'll tell you what I have in mind. Not just how we turn corncobs into ethanol. How do we turn cellulosic materials into ethanol? Also, how do we develop follow-on biofuels, like biobutanol? At the DuPont company, do you know we're making biobutanol out of sugar beets? We can make it out of switchgrass and a lot of other waste materials. Should we use this legislation as a way to incentivize not just R&D on that stuff, but to actually commercialize the technology?

What do we append to this legislation of the, four areas that I discussed, things that can actually help the industry, but also help reduce our country's dependence on foreign oil?

Thank you.

Mr. REUTHER. Senator, if I could say I think assistance with battery development is important, but I don't think that should be the only thing. The retooling costs that the companies are going to have to incur to meet significantly higher CAFE standards are very large, and I think there's a role for this Committee and the Senate to play in helping to provide that assistance through loan guarantees or otherwise.

Yes, we've talked about healthcare, but it's not just healthcare, it's the whole range of retooling costs. And, you know, there has been a lot of talk on the panel in—today about the national security importance of reducing oil consumption. And we agree with that. But if you're talking about national security, that's something that benefits the whole country, and we share the cost of our national defense. And we think a similar rationale applies here, that we should be sharing, as a country, the cost of having the industry have these retooling costs, not have the costs all borne by the workers and retirees in the industry.

Senator CARPER. All right, thank you. Again, let's just say to the panel, my questions—just so we're clear—of those things—I went through about eight or nine elements of things that I thought we agreed on, or I think we—I heard us agree on. And I want—did I miss something? Did I misstate something? And next, in terms of reporting language out of here, a bill out of here next week, to go to the floor, should we try to append to it some of the—I mentioned about four ideas to try to add either on the—in the Committee or on the floor. So, those are my questions.

Yes. Mr. Friedman?

Mr. FRIEDMAN. Senator—should I go down the line? Thank you.

Well, relative to the list that you went through, I would say, generally, I think we agree very strongly with the majority of them. One question is exit ramps. I think we have to think very, very carefully about exit ramps. At a minimum, we know we've got the technology to hit at least 35 miles per gallon over the next 10 years. Maybe after that, it might be time for some off-ramps. But, for the next 10 years, our country needs to stay on the highway, going at top speed toward cutting our oil dependence.

Second, you asked about an economywide cap and morphing CAFE into some sort of similar approach. Well, the great thing is,

actually, CAFE is already set up to fit perfectly well within an economywide cap. How do you reduce global warming pollution from cars? You improve efficiency, you use low-carbon fuels, and you drive less. Well, if you have a cap on global warming pollution, and if you have a standard to increase efficiency, you've taken care of one of those things. What else do you need? A low-carbon fuel standard. I would actually say that's even better than a renewable fuel standard, because you're directly targeting global warming pollution, and you're getting oil at the same time. Plus, you want to make sure, of course, that you're growing those biofuels sustainably. But let's target the carbon on those, and that way you know how to treat the different fuels. Not all biofuels are created equally. Let's make sure we account for that. And, of course, we definitely need policies to reduce VMT.

Do we need research for better batteries for better fuel cells, for cellulosic ethanol, for biobutanol—in part, to reduce some of the potential health hazards that you could get with low bends of ethanol? Absolutely. Government has that role to play.

Senator CARPER. Good.

Mr. FRIEDMAN. The Government also has a role to play to provide incentives and—there are already tax credits for diesel vehicles and hybrids. For the largest vehicles, there's a Bin8 classification. Over time, actually, that should come down, because the technologies you're talking about, they're targeting Bin5——

Senator CARPER. I think in 2009 they'll have the Bin5 ready to roll, and I think in 2008, they'll still be with Bin8. Thank you very much.

Congressman McCurdy and then Mr. Stanton.

Mr. MCCURDY. Tom, I actually wrote 12 questions down, so the—and it's a clean dozen, so I'll put it that way.

Yes, the status quo is unacceptable. And the Alliance—and I know Mike Stanton and I agree—between the two of us, our associations represent probably 100 percent of—or 99 percent of the automobile manufacturers that sell in the United States. And we both agree that there has to be fuel-economy improvements and performance improvements. We support, the reform of a passenger-car rule, and we think attribute-based system makes sense. So, that is an important step.

There is a lot at stake. There's not only a lot at stake internationally from the climate change issue, but also economic and national security.

We do want to get started. CAFE doesn't really kick-start action on climate change but there are other things that can do it, and some of the things that you mentioned are not contingent on CAFE.

I do want to spend a few minutes on exit ramps, but I'm going to leave it until last.

Biofuels, yes, absolutely. Flex-fuels are important. I think Congress has to be a little careful, though, not to get swept up and try to pick winners and losers. The agriculture community is looking very excitedly at some of the technologies, and that's important, but long-term cellulosic and other types of ethanol production are critical, and enzyme production, all those things that go with that are critical.

I do believe that it makes sense to—and I believe—because our CEOs testified before the Congress and made a commitment that they would work toward a—an economywide cap-and-trade system. The reason they did that is not to shift the cost from the transportation sector, or from just automotives. We believe it is a national problem. It's a global problem. It's not a State problem, or local. It's a global problem. We have to deal with China and India and other developing countries, but we do believe it's time to step up and try to do that. A good place to start is in transportation, by including the fuels that you mentioned here.

There is—biofuels standards, absolutely. You know, MIL Spec—we know, where there's a B20, there could be a civilian on commercial B20. They're the kinds of steps that are important.

Tax credits are good for consumers. And I think there need to be other incentives.

Mr. Friedman mentioned exit ramps, and Senator Kerry did, as well. When you look at the——

Senator CARPER. I'm going to ask you to sum up quickly so we can hear from Mr. Stanton.

Mr. MCCURDY. OK.

Senator CARPER.The Chairman has been very——

Mr. MCCURDY. And if you've like to have a——

Senator CARPER.—generous with his time.

Mr. MCCURDY.—separate discussion on off-ramps, we could do that after this, because I don't want to interrupt the flow with the rest.

But I do think it's worth bearing just a couple of minutes on the off-ramps, of what it really means, and that they're serious.

Senator CARPER. OK, good. Well, let's have that conversation. I'm sure we will.

Mr. Stanton?

Mr. STANTON. I'll, kind of, pick up there, because the off-ramps are very important to us, too.

Senator CARPER. OK.

Mr. STANTON. Obviously, we don't know what the world's going to look like in 10 years. We are approaching this today—all of our members are because we recognize the fact that we do have a national problem, and we do have to move forward, and we do have to move forward aggressively.

One of the recommendations that we would make is that we treat all of the alternative fuel sources equitably. We don't know whether or not we're going to get through to cellulosic ethanol. We know we need to do work there. We know we need to do work on battery technology development. We know to do work on raw materials. Nickel, right now, is a scarcity, and we've got nickel-metal-hydride batteries, which we're using a lot now for the hybrids. Every—obviously, everyone would like to go to lithium-ion batteries. We need breakthroughs to get there. So, there's an urgency about all of this that we want to convey today.

We certainly support all that Dave said, the need for the standards, as well. We would also, though, say that we're very familiar with the CAFE program. We know what it is. We know that it's not the answer, certainly; it's a part of the answer. If there is changing to another metric, like CO_2, the truth of the matter is, is

that CO_2 is one way of measuring mpgs. You can go back and forth. We just want to make sure that, as the Committee goes forward, we work with you, and we come up with something that is reasonable. Our preference would be that NHTSA set the requirements to do that. We're sensitive to the need that the members here want to have a number. If they pick a number, please give us good off-ramps.

Senator CARPER. Admiral Blair?

Admiral BLAIR. Yes, Senator Carper, your grasp of all of these aspects of this problem is certainly impressive. But I just want to emphasize one major thing.

I remember a lesson in leadership I learned early on in my career as a Navy officer. There was something that really—the ship really had to do, everybody knew we had to do it. I asked for volunteers. Nobody volunteered. I went back and talked to some of the sailors later and said, "You know, what happened? We all know this has to be done. Asked for a volunteer. Nobody volunteered." Our sailor he said, XO, if this has to be done, just tell us to do it, and we'll do it, and we'll support it. We all know this has to be done. Polls show it has to be done. People just want to be told to do it, and they'll do it.

And so this business of getting a big move that sets in a standard that we know is achievable with some work, that appeals to the best in America, that everybody wants to line up behind, I think that's what we need to do, and not get too bogged down into, you know, a little incentive for this guy and a little one for that guy and so on. But let's put it out there, where all the people will say "OK, let's do it."

Senator CARPER. Thank you. I was an old naval flight officer for 23 years. I——

[Laughter.]

Senator CARPER.—appreciate what you just said. Thank you.

Admiral MCGINN. Senator——

Senator CARPER. Vice Admiral?

Admiral MCGINN.—I agree with Mr. Friedman on off-ramps. Off-ramps, to me, presume too much of a high probability of failure. We want to be focused on success and positive outcomes. And I do believe we have the technology to do that.

We have a history of legislative action on fuel standards that are just fraught with loopholes. And we don't want to do that, going forward. The problem is pretty clear, and the solution ought to be clear.

I agree with a lot of the comments and subjects that you brought up. Investment in the battery technology. It is basically all about, how do you store electrons and can you do it for cars? We also need to be able to do it for renewable forms of energy, like wind energy and solar energy, when the wind isn't blowing and the sun isn't shining. So, this type of investment—national investment and private-sector investment in electron storage, battery storage, is very, very important, has a lot of implications for our future.

Biofuels are not just about the feedstock, where it comes from. We need to be able to break biomass down for ethanol production. Cellulosic ethanol is an example of that. But we also need to have the right kinds of industrial processes or plants that have the abil-

ity to capture and sequester carbon, not just from when we're doing coal to electricity or—but, when we're doing ethanol production or biodiesel production.

Clean diesels, absolutely. There's a lot of good progress that has been made, particularly in some of the European countries, that we need to either replicate, improve upon, or import.

Incentives, selected incentives for consumers can, in fact, move the market in the right direction, but, as Admiral Blair said, I think it's got to be an important message, "This is the right thing to do. It's a real problem. Let's get moving on it."

I think, also, there are aspects to planning land use, that you mentioned, total—trying to reduce vehicle miles traveled. Tremendously positive.

But all of that said, I think the clarity of this CAFE legislation ought to be unencumbered by too much complexity in amendments. It ought to be clear. Yes, those other things are good, and there are other legislative bills that could deal with them more directly and more clearly. And my recommendation would be, let's focus on the major opportunity here, and keep it to that.

Thank you, sir.

Senator CARPER. Thank you, all.

Mr. Chairman, thank you for your patience and generosity.

The CHAIRMAN. Thank you.

Senator Klobuchar?

Senator KLOBUCHAR. Mr. Chairman, thank you for allowing me to return with some questions. I was presiding over the Senate, as we do, many hours a week as freshmen. And I got back in time. So, I wanted to thank you.

And I appreciated your remarks, Admiral Blair, about putting those standards in place. As I said in my opening comments, I think the American people are crying out for that kind of leadership right now.

I'm on the Agriculture Committee, as well as the Environment and Public Works Committee and this one, so I, kind of, live and breathe these issues. And I knew things were getting bad when I came home the other day and my 11-year-old daughter was working on a big tagboard, and it had this sea with these little heads bobbing above, and I said, "What are you doing? What are those?" She said, "Those are drowning penguins." She was doing a report on global warming. So, anyway hopefully, she has not been completely corrupted by all of this discussion.

But I think that as we go forward, one of the things I struggle with is how we make sure we get to that economywide level that you're talking about, Mr. McCurdy. And I understand that it may not all be in one bill, but I think we have to start doing it sector by sector. Certainly, these CAFE standards, and doing them in a way that we understand some of the issues that have been raised about the American auto industry, but also, we have to start somewhere, and I think if we are doing the CAFE standards, we're doing some of the building efficiency work that the Energy Committee is working on. It's going to be a lot easier for us to work on some of the power industry in the bills that Senator Carper and others have as we go forward. I think you certainly know this isn't going to be singling out one industry as we go forward.

As I mentioned, Minnesota has a huge growing biodiesel, biomass industry. I'm taking the lead in the Senate side on the cellulosic ethanol issue in the Agriculture Committee, because we see so much potential there as we move forward and build on the other kinds of ethanol. I'm curious about the flex-fuel vehicle issue. And I just would ask both of you at the end there what the percentages are for how many vehicles we're producing now that are flex-fuel, and if left to its own devices, where it's going.

Mr. MCCURDY. I'll take a run at that. Last year, 2006, there were 1.5 million flex-fuel vehicles sold. There are 10.5 million on the road today. The challenge, Senator, is that there's not the appropriate fueling opportunities for those vehicles. There's just over 1,000—I think it's 1,079—stations that provide E85——

Senator KLOBUCHAR. And, Mr. McCurdy, do you know how many are in Minnesota?

Mr. MCCURDY. Most of them. Actually——

Senator KLOBUCHAR. 312.

Mr. MCCURDY. That's right. And that's out of 177,000 gas stations in——

Senator KLOBUCHAR. Right.

Mr. MCCURDY.—this country. So, there's——

Senator KLOBUCHAR. Exactly.

Mr. MCCURDY.—an infrastructure issue there. So, if ethanol is there, there are some standards issues, there are other issues that need to be addressed. And this is where we do have to work together.

There will be more. And if you look at a map of the United States, where those 10 and a half million—there are 17 million vehicles sold every year, so you're talking about 10 percent. That would increase dramatically, provided there was fuel. Unfortunately, consumers often don't know that they have that capability, because it's not there, they don't see the fuel.

And diesel—you know, I'm a big supporter of cellulosic and other forms of ethanol, but I think we really shouldn't neglect diesel. Fifty percent or more of the vehicles in Europe, where they have 25 to 30 percent more fuel efficiency—and they aren't compromising on size and weight with that.

Senator KLOBUCHAR. And also, I mean——

Mr. MCCURDY.—is an important technology——

Senator KLOBUCHAR.—diesel—I'm sorry to interrupt, but——

Mr. MCCURDY. Biodiesel is an important——

Senator KLOBUCHAR. Right.

Mr. MCCURDY.—part of it. The Senator from North Dakota, who's not here, they're just producing the canola bean factory in biodiesel. So, there's a lot going on there, and I think it's an important component of this, and we support it.

Senator KLOBUCHAR. Given that biodiesel's more fuel efficient, do you think that the higher CAFE standard would actually encourage the promotion of more biodiesel and production if it?

Mr. MCCURDY. No, I actually think where you get to that is if you are looking at a cap-and-trade, that you have some fuel standards, and you bring the fuels into the transportation mix. If you look at the amount of transportation fuels that are in the system, it is a significant part, but that's—autos and light trucks are one-

half of the transportation fuels. That's a lot of carbon going into it. It's actually 2,000 million metric tons. That's something that you could capture. And I think—if you were looking at the broader sense. So, we're part of that. We're half of that. But there's a whole bunch more that you could capture. And that's where these other standards on specs on B20 and others really come into play.

Mr. STANTON. And, Senator, from our point of view—we support the research, development, and use of all biofuels, but we think that the jury's still out on which ones will eventually be the winners. Maybe there's a shared market for each one of the fuels. But it's still early in the process, quite honestly. We need the breakthrough on the enzymes on the cellulose.

Senator KLOBUCHAR. Mr. Friedman?

Mr. FRIEDMAN. Thank you.

I think everyone is justifiably excited about the potential for biofuels. They are, among the alternative fuels, probably the technology that is likely to be brought on the quickest, especially if we put smart policy in to support to them.

One of the problems today, though, is our fuel economy policy is not smart about some of the biofuels. There's a loophole in the current fuel economy policy that gives credit to flex-fuel vehicles, even if they're not using alternative fuels. Now, does that mean flexible-fuel vehicles are bad? Of course not. It just means we need to close a loophole that's draining away and increasing some of our oil dependence. I think we should just ask the auto industry to follow through on what they've talked about, in terms of the potential to deliver about half their fleet as flex-fuel vehicles. I think consumers would gladly pay an extra $50 or $100 to know that they can fill up their tank with an alternative fuel. Of course, we need the infrastructure, and your state has clearly been a leader. We need to replicate that around the country. And we need low-carbon fuel standards to get us out there.

One other important issue about biodiesel that you mentioned, one of the challenges for many consumers today is, most diesel engines are only warranteed to about 5 percent biodiesel. So, one other things I'm looking forward to is the auto industry bumping up that warranty, getting in the technology on those diesels, so that you can take advantage of the efficiency benefit of a diesel, about 25 percent, plus, where you can get it, the biodiesel benefits, as well.

Senator KLOBUCHAR. So, do you think raising the CAFE standards is helping to promote the production of biodiesel?

Mr. FRIEDMAN. I would argue CAFE's focus is vehicle efficiency. If you make a dedicated alternative-fuel vehicle, then, yes, it can have an impact. But right now, we're—the vehicles are focused on flexible fuel, and so, you can't guarantee they're actually going to use the fuel. Maybe you can change that loophole so that you get credit based on the previous year's alternative-fuel use. But I think the best way is just to—let's get the vehicles out there, with one policy. Let's get the fuels out there, with a low-carbon fuel policy. I think—you know, as other people have said, maybe you don't marry them, maybe you do. I think it depends on what the Senate can deliver in the next few months. But let's just not let the perfect

be the enemy of the good. There are a lot of really good solutions out there.

Mr. MCCURDY. Since you're on the Agriculture Committee, you know about the chicken and the egg. The problem is, you're requiring the vehicles to be produced, but there's no fuel. If the fuel's not there, how in the world are they going to be able to do it? So, it is a tremendous technology, it should be explored, it can be expanded. But, again, you're putting all of it on one sector. In the fuel sector, let me tell you, they're not losing money. They actually ought to be in to—in this system. So, I think that's something that—I know the other committees of jurisdiction are looking at that. The difference between the House and the Senate, there you have one big Committee that's pulling all this together——

Senator KLOBUCHAR. Well——

Mr. MCCURDY.—here it's a little more——

Senator KLOBUCHAR.—I just think we should think of it that there are a lot of eggs being laid everywhere. And I would—part of this is getting some incentives, which we're working on, as well, into the Agriculture bill, to help farmers and co-ops and to put more of these pumps in place. Part of it is making sure that we have these flex-fuel vehicles, and getting that in place. And the other is, as we've talked about all day today, raising the CAFE standards in a way that is not going to destroy our auto industry, but in a way that encourages some changes that we just haven't been seeing the last few years.

Thank you.

Mr. MCCURDY. Senator Carper, could we revisit, for just 1 minute, your off-ramp issue?

The CHAIRMAN. Is it my turn now?

[Laughter.]

Mr. MCCURDY. Mr. Chairman——

Senator CARPER. We yield to the Chairman.

Mr. MCCURDY.—you always control the table.

The CHAIRMAN. With all the discussions we've had this afternoon, my announcement may come as a surprise. This bill before us will be on a markup next Tuesday. However, based upon your testimony, and upon the studies that we have made, we have concluded that there's much agreement among us. One, that there's a fuel problem, an energy problem. As the Admiral stated, our national security is dependent upon the availability—steady availability of fuel. We know that none of us here want to put our domestic auto manufacturers out of business. We want to keep them not only alive, but prosperous. Based upon this, the Committee staff, together with the staffs of Senator Stevens, Senator Snowe, Senator Smith, Senator Dorgan, in consultation with the staff of Senator Levin and Senator Feinstein, have been working, for the last 10 days, day and night. I feel confident enough to tell you that, by tomorrow, close of business, we will have a bill, a managers' bill, which we will present—we will send copies to all of you, and we will present at the markup on Tuesday as a substitute to the Feinstein bill. I think you'll be pleased with it. Not completely, but sufficiently.

It will not have credits in it, because that's not within the jurisdiction of this Committee, but we will be recommending that that

be seriously considered. And I'm certain that when this measure is considered on the floor, some amendment will be presented to provide tax credits and grants.

The record will be kept open for another 2 weeks. Now, you may be wondering why the record will be kept open for 2 weeks when the markup is on Tuesday. I've been in this business now for 50 years, and I know that the best way to legislate is to have a target. If we have a managers' bill, you'll have something to work upon. If you have five bills, you don't know which one to hit. You'll have one bill to hit. And we invite all of you to study the managers' package and come forth with any modification you wish to make. You will find that most of your concerns have been addressed.

Having said that, I have just one question to ask. It will not be part of this bill, but it is an energy question. It's obvious to me that you cannot develop an automobile in 6 months that will come forth with the golden answer. It's going to take some time to do some research and some development and you don't produce a new vehicle in a year. It takes a little while. I think it's obvious that we will still be dependent upon a foreign source of fuel. Even if we do pass the bill, you'll still be dependent upon foreign energy.

So, my question is, what are your thoughts on ANWR? I realize it's a very contentious, controversial question. But geologists tell us that the oil supply in ANWR is equivalent to that in the oil fields of Saudi Arabia.

Let's go down the line.

[Laughter.]

Mr. REUTHER. Quite frankly, we've had our hands full dealing with the CAFE issue.

[Laughter.]

Mr. REUTHER. I would defer to others on ANWR.

Mr. FRIEDMAN. Senator, there have been studies that have shown that tapping into the Arctic National Wildlife Refuge would, maybe, affect gasoline prices by about a penny.

The CHAIRMAN. You know, we speak of the Arctic Wildlife Refuge, but if the ANWR section is the size of California, the area that had been designated for drilling is less than the size of Los Angeles city. So, we're not talking about all of Alaska.

Admiral ADMIRAL MCGINN. Senator, each day, we consume, as Americans, about 19.5 million barrels of oil, an annual total of about 7 billion barrels. And, given this rate of consumption, if Arctic oil was our Nation's only source, it would last for 6 months. There are not sufficient oil reserves, particularly in ANWR, to justify any type of a long-term policy resting on the assumption that it will be a big part of the solution. It could be, if we were desperate. But I believe there are so many more effective actions that we can take with fuel efficiency, energy efficiency, across the board, for every use of liquid fuel, that would return so much more, that we should put ANWR oil drilling at the very end of the list of available options. There are so many more productive things that we can do with our time and with our resources.

The CHAIRMAN. Admiral Blair?

Admiral BLAIR. Mr. Chairman, we handle lots of very dangerous materials in the Armed Forces of the United States every day, and the way that we do that is to set up very rigid and well-controlled

and -enforced procedures in order to make sure that things that are inherently dangerous get done in a safe way. And I believe that we are to the point where we have to drill for oil in places in the United States that run risks, and we, therefore, need to put in those sorts of tight controls, tight inspections on them, and that we ought to go ahead and do them, including ANWR.

The CHAIRMAN. Mr. Stanton?

Mr. STANTON. Senator, as an association, we have not taken a position on ANWR, but I think ANWR has been around almost as long as CAFE, and is—probably has been just as contentious. I remember the votes, back in the—1990s.

I think it has taken on a symbolism that maybe it doesn't deserve anymore. Today, we all testified about the need to move our country forward, to decouple us with the climate change issues and with the energy security issues. I think it ought to be back on the table, but in a rational way. If we could de-pedestalize it and have a good, honest discussion about whether or not it's necessary, I think that would go a long way.

The CHAIRMAN. Mr. McCurdy?

Mr. MCCURDY. Mr. Chairman, you have a marvelous way of putting people on the spot.

Since I now represent an association, our association, like Mike, has not taken a position on ANWR. But I think you know, sir, that I was a Congressman from an oil state, and so, I probably have less reservation about types of drilling than some, and I'm going to leave it at that.

The CHAIRMAN. Well, I thank all of you. And I hope that we will succeed. As one who represents the State of Hawaii, I'm certain you realize that our gas prices are the highest in the Nation. While you were paying $2, we were paying $3, so we'll reach $4 before you reach $4.

With that in mind, I wish all of you the best. Tomorrow, we'll have a new bill.

The meeting is adjourned.

[Whereupon, at 5:45 p.m., the hearing was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF HON. MARK PRYOR, U.S. SENATOR FROM ARKANSAS

Thank you Chairman Inouye and Vice Chairman Stevens for holding this important hearing on legislation to improve fuel economy standards for American vehicles.

I want to also thank the witnesses for appearing here today to assist the Committee in this effort.

I believe we must move forward quickly in this area for our constituents, our country, and the world we live in.

More fuel efficient vehicles can help reduce our dependence on middle Eastern oil, decrease emissions, and make our country more secure.

For these reasons, I look forward to this hearing as it will allow Congress to continue to make progress in our efforts to get a bill to the President that would make a substantial and committed step forward on this issue.

Throughout this process, I intend to work in a bipartisan manner with my colleagues in the Senate so that we can make measurable progress this year on legislation to improve fuel economy standards and reduce our dependence on petroleum.