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OIL SHOCK: POTENTIAL FOR CRISIS

HEARING

BEFORE THE

SELECT COMMITTEE ON
ENERGY INDEPENDENCE
AND GLOBAL WARMING
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

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OIL SHOCK POTENTIAL FOR CRISIS

WEDNESDAY, NOVEMBER 7, 2007

HOUSE OF REPRESENTATIVES,
SELECT COMMITTEE ON ENERGY INDEPENDENCE
AND GLOBAL WARMING,
Washington, DC.

The committee met, pursuant to call, at 9:05 a.m. in room 2172, Rayburn House Office Building, Hon. Edward J. Markey (chairman of the committee) presiding.

Present: Representatives Markey, Blumenauer, Larson, Solis, Cleaver, Hall, Sensenbrenner, Shadegg and Blackburn.

Staff present: Michal Freedhoff.

The CHAIRMAN. Good morning. This hearing is called to order.

Forty-five percent of the world's oil is located in Iraq, Iran, and Saudi Arabia; and almost two-thirds of known oil reserves are in the Middle East. Events in that part of the world have a dramatic impact on oil prices and on our national security.

In the late 1970s, the oil embargo, Iranian revolution, and Iran/Iraq war sent the price of oil skyrocketing. Yesterday oil surged to a new record of $97 a barrel, amid government predictions of tightening domestic inventories, bombings in Afghanistan and an attack on a Yemeni pipeline that took 155,000 barrels of oil off the markets. And with al Qaeda threatening to attack Saudi Arabia's oil, with our continuing struggles in Iraq, and with yesterday's announcement that Iran now has 3,000 operating centrifuges for enriching uranium, each day carries with it the possibility of major oil supply disruptions, leading to economic recession and political or military unrest.

The United States currently imports more than 60 percent of its oil. Oil has gone up more than $70 a barrel in the last 6 years, from $26 a barrel in 2001. Each minute, the United States sends $500,000 abroad to pay for foreign oil imports. That is $30 million per hour, $5 billion per week.

This analysis only considers oil prices through August. With the record prices of late, these figures will surely grow by year's end.

Much of these funds end up in the pockets of Arab princes and potentates who then funnel the money to al Qaeda, Hezbollah, Hamas and other terrorist groups. With that kind of money at stake, it is no coincidence that we have 165,000 young men and women in Iraq right now, and it is no surprise that much of our foreign policy capital also happens to be spent in the Middle East.

Our energy policy has compromised our economic freedom, and the American people want action because they know that the price has become much too high.

Last week, a group of energy and military experts converged in Washington to conduct an energy security war game. But the truth is the scenario that unfolded didn't really seem at all fictitious. Like today, the scenario began when oil prices had gone up to trade consistently in the $95 per barrel range. Like yesterday's attack on the Yemeni pipeline, the first event leading to crisis involved an attack on the Baku pipeline. And also like today, Iran's nuclear ambitions and U.S. efforts to contain them prove to be a complicated endeavor that requires us to maximize all of our diplomatic military and economic leverage.

The problem is, with oil, we have almost no leverage. The United States is home to less than 3 percent of the world's oil reserves. Sixty percent of the oil that we use each day comes from overseas. Global oil production levels are at about 85 million barrels per day, with excess production capacity at only about 1.65 million barrels per day. Hurricane Katrina alone removed as much as 1.4 million barrels per day from supplies.

The Strategic Petroleum Reserve has just over a month's worth of oil in it. The reality is is that there are no good short-term options to help us deal with oil addiction.

We have, however, at the same time, a piece of legislation which is now pending between the House and the Senate which has the potential to raise the fuel economy standard to 35 miles per gallon, would have 15 percent of our electricity produced from renewable electricity sources, and it would also use cellulosic fuels to substitute for oil which we could import. That bill should be finished if we can work hard on it between the House and the Senate over the next 4 weeks.

I look forward to learning more about Oil Shockwave from our witnesses as well as their views about what Congress can do to address our energy security challenges.

I now turn to recognize the ranking member of the select committee, the gentleman from Wisconsin, Mr. Sensenbrenner.

[The prepared statement of Mr. Markey follows:]

Opening Statement for Edward J. Markey (D-MA)
"Oil Shock – Potential for Crisis"
Select Committee on Energy Independence and Global Warming
November 7, 2007

This hearing is called to order.

45 percent of the world's oil is located in Iraq, Iran and Saudi Arabia – and almost two-thirds of known oil reserves are in the Middle East. Events in that part of the world have a dramatic impact on oil prices and on our national security. In the late 1970s, the Oil Embargo, Iranian Revolution and Iran/Iraq war sent the price of oil skyrocketing. Yesterday, oil surged to a new record of $97 a barrel amid government predictions of tightening domestic inventories, bombings in Afghanistan and an attack on a Yemeni pipeline that took 155,000 barrels a day off the markets. And with Al Qaeda threatening to attack Saudi Arabian oil, with our continuing struggles in Iraq, and with yesterday's announcement that Iran now has 3,000 operating centrifuges for enriching uranium, each day carries with it the possibility of major oil supply disruptions leading to economic recession and political or military unrest.

The United States currently imports more than 60% of its oil. Oil has gone up more than $70 a barrel in the past 6 years, from $26 a barrel in 2001. Each MINUTE, the United States sends $500,000 abroad to pay for foreign oil imports – that's$30 million per hour and $5 billion per week! This analysis only considers oil prices through August. With the record prices of late, these figures will surely grow by year's end. Much of these funds end up in the pockets of Arab princes and potentates - who then funnel the money to Al Qaeda, Hezbollah, Hamas and other terrorist groups.

With that kind of money at stake, it is no coincidence that we have 165,000 young men and women in Iraq right now, and it is no surprise that much of our foreign policy capital also happens to be spent in the Middle East. Our energy policy has compromised our economic freedom, and the American people want action because they know that the price has become much too high.

Last week, a group of energy and military experts converged in Washington to conduct an energy security war-game. But the truth is the scenario that unfolded didn't really seem at all fictitious. Like today, the scenario began when oil prices had gone up to trade consistently in the $95 per barrel range. Like yesterday's attack on a Yemeni pipeline, the first event leading to crisis involved an attack on the Baku pipeline. And, also like today, Iran's nuclear ambitions and U.S. efforts to contain them prove to be a complicated endeavor that requires us to maximize all our diplomatic, military and economic leverage.

The problem is – with oil, we have ALMOST NO leverage:

- The United States is home to less than 3% of the world's oil reserves – but is itself the world's largest consumer and importer of oil. 60% of the oil we use each day comes from overseas.
- Global oil production levels are at about 85 million barrels per day, with excess production capacity at only about 1.65 million barrels per day. Hurricane Katrina alone removed as much as 1.4 million barrels per day from supplies – almost as much as the current excess capacity.
- The Strategic Petroleum Reserve has just over a month's worth of oil in it – enough to address the supply disruption caused by a Hurricane or other temporary event. But if instead of a Hurricane we have a hostile nation deliberately trying to starve us of our needed oil, the Strategic Petroleum Reserve simply won't be enough.

The reality is, there are no good short-term options. To help us deal with our oil addiction, we need to take long-term measures. And luckily, Congress is poised to act on an Energy bill that will put more weapons in our energy independence arsenal.

The single biggest step we can take to curb our oil dependence and remove OPEC's leverage is to raise the fuel economy standards of our automotive fleet. When CAFE was passed in the mid-1970s in response to the first oil crisis, imported oil fell as a percentage of total consumption in the U.S. from 47 percent in 1977 to 27 percent in 1985.

Enhancing energy independence can also be achieved through the use of biofuels such as ethanol made from corn, cellulosic material, or crop wastes – moving our fuels out of the deserts of the Middle East and into the farmland of the Mid-west.

The Energy bill passed by the Senate includes an increase in fuel economy to 35 miles per gallon by 2020. These provisions will save us 1.2 million barrels per day

by 2020 and 2.9 million barrels per day by 2030 (2.5 million barrels per day from cars and light trucks, and an assumption of 0.4 million barrels per day from larger trucks).

The Senate bill also contains a boost in the use of renewable fuels like ethanol to 36 billion gallons by 2022 – saving us 1.6 million barrels of oil a day. By 2030, the fuel economy and biofuels provisions of the Senate Energy bill will save us 4.5 million barrels of oil per day, which is more than twice the amount of oil America currently imports from the Persian Gulf.

In addition, the Senate bill requires the President to adopt a nationwide oil savings plan that will achieve a total savings of 10 million barrels of oil per day by 2031 – over 4 times as much as we now import from the Middle East. We will have to continue to push further efficiency and biofuels improvements forward, as well as technologies such as plug-in hybrids or electric vehicles, in order to reach this goal.

Congress is poised to act – but incredibly, the legislation is facing a veto threat by President Bush because he opposes the repeal of the tax subsidies currently enjoyed by the very same oil companies who are about to charge $100 per barrel! The President says he wants to end our addiction to oil, but apparently now is not a convenient time for him and his oil interests to start moving America along the path towards oil sobriety. I remain hopeful, however, that Congress will prevail and that The President will sign the bill we send him.

I look forward to learning more about Oil Shockwave from our witnesses, as well as on their views about what Congress can do to address our energy security challenges. And now I would like to recognize the Ranking Member of the Committee, the gentleman from Wisconsin, Mr. Sensenbrenner.

Mr. SENSENBRENNER. Thank you very much, Mr. Chairman.

Everyone who stops to fill up at the pump, and that is most people in this country, know firsthand how the United States' dependence on foreign oil affects them. They feel it in their wallet, pennies at a time, as the price of gas creeps up.

And most Americans understand that the price of oil is often influenced by events around the world. I doubt the results of the Oil Shockwave simulations would surprise many Americans. But I bet many Americans don't realize just how vast the energy supplies are in the United States.

Beneath this great Nation there are enough energy reserves to propel us towards energy security; and surely we have the intellectual and scientific capacity to give us the energy security that all of us, Democrats and Republicans, desire.

According to the Interior Department, there are potentially 120 billion—that is with a "b"—barrels of untapped oil in the United States, including offshore reserves in Alaska, the Pacific and Gulf of Mexico. Add to that the potential of 635 trillion—with a "t"—cubic feet of natural gas remains untapped, and we have got what we need to start weaning ourselves off the oil supplies from foreign countries that are hostile to the United States.

But that is just the start. It is estimated that there are 250 billion tons of recoverable coal reserves, which is nearly six times the combined U.S. oil and natural gas reserves. In fact, it is believed that our coal supplies are larger than any single energy source of any single nation, including Saudi Arabia oil. The U.S. coal supply is equivalent to nearly 800 billion barrels of oil, more than three times the energy equivalent of Saudi Arabia's oil.

I will bet many Americans don't know that coal can be converted into a fuel that is comparable to gasoline and can power any automobile. If we use coal to its fullest potential, we can turn our back on the Middle East and never look back.

Right now, the type of scenario laid out in the Oil Shockwave simulation is possible, and this scenario could cause major disruptions to our economy. But there are some indications that it might not have the same impact as that of the 1970s oil crises. For every unit of economic output, the U.S. now uses half the energy it did in 1980. Let me repeat. That for every unit of economic output, the U.S. now uses half the energy it did in 1980. Energy costs are a smaller percentage of household budgets now than they were then, even though some people would find that hard to believe.

Assessing our own natural energy reserves probably couldn't happen as quickly as an Oil Shockwave. We should work to change that. Through research and development of new technologies, we can prepare for the worst.

We have the energy supplies. All we really need is the intellectual energy and the political will to put them to work. And I thank the chairman.

The CHAIRMAN. Now we turn and recognize the gentleman from Oregon, Mr. Blumenauer.

Mr. BLUMENAUER. Thank you.

I, too, appreciate our witnesses spending time with us this morning and sharing their experience.

I have been following the exercises for some time and have been intrigued by the power to be able to demonstrate how perilous we are balanced today on our petroleum dependence. In my community, we had, over a year ago, the city government forming a task force to explore these other entities, and 12 distinguished citizens came back with things that wouldn't surprise our participants, but I think it was an important part in sort of driving where we are going.

I appreciate the comments of the distinguished ranking member, but one of the downsides of what he is describing is that there are no technologies now available that don't make the other part of our charge as a committee fighting against global warming and greenhouse gasses, it will that make it worse.

The simple fact is that we are the largest consumer of petroleum. We have—we are consuming it at a rate 10 times what our share of the world's proven supplies are, and we are depleting our own reserves right now at a very rapid rate. And given our security concerns for the future, those ought to be the last areas that we try and pump as fast as we can, rather than the first or, in the case of the Arctic, the next.

Mr. Chairman, one of the things that I would hope that you would consider, the work that we have done has encouraged us to look far afield, and we all have good ideas about where we should go for a committee hearing and who we turn to next. I know it is a very wide and rich field, and I think you have done a great job of balancing it. But one of the things that might be interesting would be for our committee to spend the better part of a day experiencing the simulation.

Having dealt with the people who've designed it, having watch it from afar, I think that it might shake some of us out of our lethargy if we actually stopped pontificating and actually go through a simulation where we have to make some of these real-life decisions that we, as a Congress, have failed to mitigate.

And if our committee might set the tone, Mr. Chairman, I think it might be—there might be other people on both sides of the aisle who would go through it. And if we could get even 10 percent of the Members of Congress to have to go through this, devoting only half a day, I think it would be a sort of a homework that might put some realism into what too often around here is, I think, rather hallow rhetoric. Because I think all of us ought to have the sense of urgency for the very reasons you said in our opening statement, and I would hope we might consider it because it is too good a model for us to at least not test.

Thank you.

The CHAIRMAN. That is a great idea. I think we will try to do that. We will try to set something up that can give each one of the Members that experience.

The Chair recognizes the gentleman from Missouri, Mr. Cleaver.

Mr. CLEAVER. Thank you, Mr. Chairman.

It is difficult to follow up a powerful sermon like the one that was just delivered by Mr. Blumenauer, which I would say "amen" to what he just said.

As I read this morning a number of newspapers, including Financial Times, about what is going on in Pakistan, I became

alarmed. Not because Pakistan is a supplier of oil but because, if things go further awry, it could completely destabilize the Middle East in ways that Iraq never could. And thinking about what is going on in Iran and hopefully dealing with this concern internally, I could not help to think that conflict in Pakistan, if it ends up in some kind of civil war and if the tribal areas get weapons, there is no telling—or get more weapons, U.S. weapons, there is no telling what could happen.

But it occurred to me that, even in the midst of all of these developments in the Middle East, that we are not, even after the Al Gore film and all of the discussions, we are not retreating from our appetite for oil.

In 1980, the United States imported 27 percent of the oil it uses each day; and today we are importing 60 percent of the oil we use each day. So it is not like all of the awareness is creating some reaction.

It is what Mr. Blumenauer said. You know, we talk about it, and then we just continue to go ahead. We continue to splurge. This is chilling.

And so I am looking forward to hearing your comments and then engaging dialogically, because I am also frustrated that we are not moving, and maybe something will happen after November from next year.

Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

The Chair recognizes the gentlelady from California, Ms. Solis.

Ms. SOLIS. Thank you, Mr. Chairman. I want to welcome our witnesses and look forward to your testimony. I will submit my statement for the record.

The CHAIRMAN. Great.

The CHAIRMAN. The gentlelady's time has expired, and we will move to our witnesses.

Our first witness is Admiral Dennis Blair, who served as Commander in Chief of the U.S. Pacific Command, the largest of the combatant commands. Admiral Blair is a Rhodes scholar; and he currently is a member of the Energy Security Leadership Council, a group of U.S. military and business leaders united to address America's energy and national security crisis.

Whenever you are ready, please begin.

Admiral BLAIR. Ms. Browner was an actual participant in the shockwave process. As a member of the Energy Security Council, I will follow up.

The CHAIRMAN. I would be glad to follow your lead.

Carol Browner, we will begin with you. She was the head of the Environmental Protection Agency. She previously had served as the Secretary of State of Florida's Department of Environmental Regulations. Before that, she was Legislative Director for U.S. Senator Al Gore. She is, without question, one of the leading experts in the world on environmental and energy issues.

We welcome you. Ms. Browner, whenever you are ready, please begin.

STATEMENT OF CAROL P. BROWNER, FORMER ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY AND CURRENT PRINCIPAL OF THE ALBRIGHT GROUP

Ms. BROWNER. Thank you, Mr. Chairman.

You would think I would remember how to do that. I did spend a few years testifying before Congress.

It is a pleasure to be here with all of you today and to share with you the experience we had in Oil Shockwave 2007.

But let me first congratulate you, Mr. Chairman, and all members of the committee for all of the work you are doing on this committee. It is incredibly important, as you all know, to the people of this country. There are very tough issues to be addressed, and I personally appreciate the time and energy you are bringing to bear.

As you heard from the Admiral, I appear today as a participant in the recent Oil Shockwave—Executive Oil Crisis Simulation. It is the second time I have done this. There was one several years earlier that I also participated in, and I think—let me just set the stage for how this scenario unfolds.

First of all, the event was sponsored by Securing America's Future Energy, SAFE, and the Bipartisan Policy Center; and it was designed to show the possible consequences of U.S. oil dependency and the ability of government officials to respond in the event of a global oil crisis.

It is extremely important that you understand this was not a partisan effort. It was bipartisan in every way. The participants were divided between Democrats and Republicans, and the whole point is just, to the best of our ability, to demonstrate to the American people how a problem unfolds and how members of the President's Council and senior staff might respond to that problem.

It provides, I think, a number of important lessons for the Congress as you look at the issues in front of you.

In the scenario that we did most recently last week, three different things happened over a 3-month period. The year is 2009. It is post the election. There is no assumption in the scenario whether a Democrat or a Republican has won the election for President. It is unclear in the conversations, but over a 3-month period, from May to August of 2009, the first thing that happens is that a pipeline in Azerbaijan is temporarily put out of service. The result of that is a loss of one million barrels of oil to the world's market per day, and very quickly there is an upturn in prices.

While this crisis is resolved in the course of the scenario, over the next 3 months, Nigeria takes 400,000 barrels a day off the market; and, in August, Iran and Venezuela cut their combined oil production by 700,000 barrels per day. So by the end of the simulation, the 3-month period, 1.1 million barrels of oil have been taken off the world market; and the price per barrel has shot up to over $160.

Again, it was a simulation, but I don't think any of this is far-fetched. Maybe not these precise things but certainly things like this could happen virtually any day.

As is common in scenarios, each of us play a role. The role that I was assigned was Secretary of Energy, and in this position I was

supposed to suggest a series of short-term steps that could be taken by the American public to reduce oil use.

For example, I raised with my Cabinet in the simulation, which was chaired by Bob Rubin, that we could impose a 55-mile per hour speed limit, which would save 134,000 to approximately 250,000 barrels of oil a day. We could implement year-round daylight savings time, which would save approximately 3,000 barrels per day. We could institute a Sunday driving ban, which would save about 475,000 barrels of oil per day.

Suffice it to say, my colleagues in this event, other Cabinet members, rejected these ideas. They did not think they would be acceptable to the American people.

That turned the discussion to whether or not we should access the Strategic Petroleum Reserve, which, as you know, is under the auspices of the Secretary of Energy; and very quickly a debate ensued over two issues with respect to the SPRO.

The first was, what is the appropriate use of the SPRO? Can you use it to manage price spikes or can you only use it for security matters? And, as Mr. Sensenbrenner pointed out, there are significant barrels there, but the truth of the matter not so significant that if this crisis had played out over a longer term that you could really answer the problem.

The second debate that unfolded under the SPRO went to whose oil is it. And several of the individuals participating in the scenario representing various—I think the Department of State, the Department of Defense raised the issue as to whether or not does the military get first call, as opposed to the American people. And the concern they were focused on was, with growing unrest in the world in this scenario, would they have to deploy additional troops and therefore be in need of additional oil and should they get a first call on it?

I think the real lesson of oil shock and one that we seem, unfortunately, hard-pressed to learn is the need to think ahead, to make real and lasting commitments to a new approach, rather than wait to respond once we are in the thick of it.

Short-term energy conservation is frequently difficult, painful, and I think that was in part why the other participants in the scenario did not want to recommend to the fictional President that we take some of these steps.

As I look at the scenario and move into the issues that confront you as a committee today and the House and the Senate at large, I think the single most important thing would be to embrace CAFE. If there had been a CAFE standards such as being considered and passed by the Senate in effect during this scenario we would not have experienced the kind of problems, potentially could—would not have experienced the kind of problems that were unfolding in the scenario.

The Senate CAFE proposal, if adopted this year, would result in an oil savings of 1.2 million barrels per day by 2020. If you take into account the Senate renewable fuel mandates, the estimated number of barrels of oil saved each day from the Senate passed biofuel expansions would be 1 million. It brings you to a total of 2.2 million. That would be more than twice of the reduction that was needed by the end of Oil Shockwave.

In closing, let me again note this is the second time I have participated in this scenario. I think I was the only person that participated both times, and the lesson was the same. We need to get going. There are things we can be doing today to try and reduce our dependence. CAFE is certainly not the only thing, but I personally think it is an incredibly important thing.

The other thing I would just note to Mr. Blumenauer's point, the scenario did not take into account global warming. As the Secretary of Energy, I tried to insert it into the discussion, but the focus, because it was such an immediate concern, always turned back to where do we get more oil quickly, what do we need to do to solve the problem?

I think certainly as we think about these issues it is absolutely essential that we think about what some of the alternatives may mean in terms of greenhouse gas emissions, in terms of our carbon footprint, in terms of how much more difficult do we make the task of reducing greenhouse gas emissions and carbon emissions.

So I thank you for the opportunity to share with you what I thought was a really tremendous scenario and I think a very enlightening one.

Thank you very much.

The CHAIRMAN. Thank you, Ms. Browner.

[The statement of Ms. Browner follows:]

TESTIMONY OF CAROL M. BROWNER
BEFORE A HEARING OF THE U.S. HOUSE OF REPRESENTATIVES
SELECT COMMITTEE ON ENERGY INDEPEDENCE AND GLOBAL WARMING

November 7, 2007

Thank you, Mr. Chairman and members of the Committee, for the opportunity to testify before you today concerning my involvement with Oil Shockwave 2007.

I would like first to congratulate the Chairman for his work on behalf of the environment and to thank all of the members of this committee for your leadership on these important issues. This committee has been called upon to find solutions to the energy and climate debates - solutions that will be acceptable to all involved, and policies that will be good for the American people and far-reaching enough to make a real difference. This is no small task – but an absolutely essential undertaking.

The recent Oil Shockwave – Executive Oil Crisis Simulation reflects the high priority that energy policy deserves. This event, sponsored by Securing America's Future Energy and the Bipartisan Policy Center, was designed to show the possible consequences of U.S. oil dependence and the ability of government officials to respond in the event of a global oil crisis. The scenario was not partisan in any way, because the events that depicted could realistically happen under any presidency.

The scenario envisioned in the Oil Shockwave simulation provides important lessons. It helps us to understand what our country will need to do in order to avert a real-world catastrophe - a crisis that my co-participant General Abizaid said could at any time, even tomorrow.

In the Oil Shock scenario, three different things happened over a 3 month period, from May to August of 2009. First, the Baku-Tbilisi-Ceyhan pipeline in Azerbaijan was temporarily out of service, resulting in a loss of one million barrels of oil to the world's markets per day, and a very quick upturn in prices. While this crisis was resolved, over the next three months, Nigeria took 400,000 barrels off the market. And in August, Iran and Venezuela cut their combined oil production by 700,000. By the end of the simulation, 1.1 million barrels of oil had been taken off the market, and the price per barrel had shot up to over $160. While this was just a simulation, I think we would all agree that none of the events we dealt with were that far-fetched.

As is common in policy scenarios like this one, everyone had a role – mine was as Secretary of Energy. In this position, I suggested a series of short term steps that could be taken by the American public to reduce oil use. For example, imposing a 55 mph speed limit would save 134,000 to 268,000 barrels of oil per day. Implementing year-round daylight savings time would save 2,900 barrels per day. A Sunday driving ban would save 479,000 barrels per day. Restrictions on gasoline purchases wouldn't necessarily create savings, but would help alleviate demand if our oil supply was cut. To say the least, none of these seemed to be attractive options to my cabinet colleagues in

the simulation. They were much more willing to consider dipping into our Strategic Petroleum Reserve and calculating how long our country could depend on it.

The real lesson of Oil Shock - one that we seem hard pressed to learn in this country - is the need to think ahead, and to make real and lasting commitments to a new approach rather than wait to respond once we are in the thick of it. Short-term energy conservation is difficult and painful - which is why it is so important for us to plan ahead through conservation and renewable energy investments that will save far more oil - and require far less sacrifice - than short-term crisis measures.

I applaud the House for its inclusion of a renewable electricity standard in the House energy bill. Still, to reduce our reliance on foreign oil, it is important that we go beyond the most recent House energy bill, to include increased CAFÉ standards and biofuel provisions in our final energy policy.

As this committee knows, about two-thirds of our oil is used by our transportation sector. The Senate CAFÉ proposal, if adopted this year, will result in an oil savings of around 1.2 billion barrels per day by 2020.

If you take into account the Senate renewable fuel mandates, the estimated number of barrels of oil saved each day under Senate-passed biofuel expansions would be 1 million.

Overall, the daily reduction in barrels of oil consumed as a result of the Senate-passed energy bill would be 3.5 million. This would be 2.4 million more barrels per day than was needed by the end of Oil Shockwave.

A final word - this is the second time I have participated in Oil Shockwave, and each time the lesson has been the same - we should be making decisions sooner rather than later.

The problem in the scenario was so acute because the U.S. had failed to plan ahead, to implement long-term changes that would reduce our dependence on foreign oil.

We should consider ourselves fortunate that this is a scenario we can only imagine at this point, and not one that we have already experienced. There are plenty of things we can do right now to ensure that we never face such a crippling energy crisis. Enacting the Senate provisions is just one of them.

Thank you for your time and attention. Now I would be pleased to answer any questions you might have.

The CHAIRMAN. Admiral Blair, whenever you are ready, please begin.

STATEMENT OF ADMIRAL DENNIS BLAIR, USN (RET.), FORMER COMMANDER IN CHIEF, U.S. PACIFIC COMMAND

Admiral BLAIR. Yes, sir, Mr. Chairman.

First, let me, on behalf of the Securing America's Future Energy Project, accept what I think was a request that we conduct an oil shock simulation, making it available to members of the committee. I think that is wonderful. We will do it. We will bring it here. We can do it somewhere else.

And I think it is just a wonderful thing. Because when you talk to people like Carol Browner who have been in it, they are not the same after they have done it from what they were before. It just brings in an immediacy to this rather theoretical discussion that I think gives you the burn to do something about it. And we will gladly set that up in any way that is convenient for you.

And I see from the opening statements what I am doing is just pouring gasoline on a flame that already exists in terms of the understanding of the issue and the immediacy for it. But let me do that. Because I spent more than three decades in the Armed Forces in the Navy and in joint commands, and I think back over my career, so many times when we sent our young men and women into combat, it was because we hadn't taken prudent smaller action earlier, and we paid later with our treasure and their blood for things that should have been done long before.

And I think this is really what impels those of us who are retired senior military officers who serve on this Energy Security Leadership Council, is that we want to advocate actions which are—they are not easy, but they are doable now in order not to be reduced to the sorts of desperate measures that we saw in the Oil Shockwave.

In fact, the steady militarizing of many volatile and underdeveloped areas of the world that has gone on over the time that I have been in the Armed Forces from the days that we used to handle the Middle East with a couple of ships and a one-star Admiral to now we have an entire unified command, a Central Command. We have hundreds of thousands of troops that are there all the time in an area that is halfway round the world that takes three ships to support every ship that is over there, that take three Marines to support every Marine that is over there—one who is there, one who is traveling, one who is back home cleaning up getting ready to go back again.

So the burn that those of us who are on the Council who served on the Armed Forces is, let us do the smart things now to avoid having to do the dangerous, bloody, expensive things later.

Ms. Browner reviewed the essence of the shockwave simulation that we did last week. Let me just review some of the lessons that I observed from watching it and having been involved in the week of the Council.

As you saw there, we could have oil that is a hundred barrels today, in the simulation that was over 160, with just—with a couple of relatively small things affecting 1 percent of the world oil supply, and these were the lessons I drew from it.

The first is there is really no such thing as foreign oil. Oil is fungible. A change in supply or demand anywhere will affect prices everywhere. So distant places mean real things to Americans.

I sometimes think the Good Lord is laughing looking down at us in the places that he put them in the world. He put them in these faraway places with these very unstable and difficult, volatile situations; and a little tremor there affects all of us at the pump.

And the second is that, because of the tight supply situation now, the oil markets are precariously balanced. Even small disruptions have dramatic effects because of the lack of the buffer. I think we talked about it earlier, that what used to be a $4 million a day Saudi buffer is down. It might be 1.65 million, as you say, Mr. Chairman. It could be less. Hard to tell with the lack of transparency there. But we are just on a—we are on a hair trigger here.

Second, when we have gotten to the point that the supply disruption occurs, there just aren't many short-term options. When I watched Ms. Browner and people like Secretary Rubin, Secretary Armitage, General Abizaid wrestling with questions, there weren't any good short-term options. It was all really ugly, and all of them thought if we had just done something 10 years ago or 5 years ago, we wouldn't have to be doing it. And don't we owe our successors 5, 10 years down the road some efforts now so that they are not put in this terrible position?

The next one is that this Strategic Petroleum Reserve is not the final answer. It doesn't solve the problems. As you saw, real decision—experienced decisionmakers are wrestling with it. Ms. Browner was certainly an advocate for using it. The kind of objections around the table with various people with a series of responsibilities made you realize that this is not a magic wand that we can wave. So we have got to do—we have got to do more.

And, finally, although we didn't explore quite as much as we should have, this is an international problem. We have got to be talking with the Saudi Arabias, the Chinas, the Indias, the suppliers on the one hand, the great consumers on the other hand. And China and India now are not members of the IEA. They are not part of a team that coordinates strategic petroleum and reserve action. They would be affected by it, as would everyone.

And we have—this just drives us to get international groupings together, thinking now, taking prudent American actions so that we are not put in this position.

And it really brings us back to what all of us have thought in this area, is that we need both greater conservation and increased production, both of the petroleum substitutes like coal, of more drilling of the petroleum that we do have, also development of smart synthetic alternatives.

There is not a magic bullet for this thing. We can't have a technological breakthrough out of it through the next term that is going to solve it. We have to do something that is going to affect everything, supply/demand alternatives.

And so there are a lot of lessons from 9/11. One of them is, unless we take action early to put national security on our terms rather than allowing vulnerabilities that other people can do it to us, we really fail in our duties and we really have to have a long-term strategy for reducing America's oil dependence.

It is a grave national and economic security. It demands a bipartisan approach, and it goes beyond the Congress to the administration to the American people who I think are ready to support action on this as long as it is done in a way that has everybody taking the action, that spreads the sacrifices and is clearly directed towards the national interests.

As Ms. Browner said, there is a bill out of the Senate—I testified before the Senate Congress committee earlier this year that works on an important part of the problem—setting the auto efficiency standards goals to increase every year.

I would emphasize that it is a—because it is an attribute-based system, it is a big improvement over the system we put in the 1970s, the one that was in part responsible for the gains that Mr. Sensenbrenner mentioned in which we have our oil intensity of the economy, but this is—this compares like model to like models. So it does not put the Detroit Big Three at a disadvantage.

I am absolutely convinced that smart American engineering and ingenuity and good American workers can, under this proposal, knock the socks off any foreign competitors, sell cars, lots of good cars that will not only be safe and the right performance but will be much less thirsty for oil.

And in addition to that, we need to go on to the other parts of program, smart alternatives, the results of R&D investments in order to bring them on, whether it is cellulosic methanol to complement the ethanol that we are getting from corn, whether it is an energy efficient and environmentally safe use of the coal conversion or the oil sands that already exist.

We have got to continue with this three-part program if we are to avoid the sorts of things that we saw in this shockwave and if we are to do the right thing by our children, our grandchildren and by the men in uniform, men and women in uniform who will have to pay the price someday unless we act now.

Thank you.

The CHAIRMAN. Thank you, Admiral, very much.

[The statement of Admiral Blair follows:]

Admiral Dennis Blair, USN (Ret.)

Written Testimony Before the
House Select Committee on Energy Independence and Global Warming

Hearing entitled
Oil Shock: Potential for Crisis

November 7, 2007

Good morning Chairman Markey and Members of the Committee and thank you for holding this hearing to highlight America's extreme dependence on oil and its vulnerability to the potentially devastating consequences of an oil crisis.

I spent more than three decades in the U.S. Navy. My missions changed but my motivation never did; my driving imperative was to protect the blood and treasure of the American people. When I look at the dangers facing the country now, it is impossible to ignore the looming and worsening menace of oil dependence. Senior officers throughout the military share this concern. They know that increasing dependence on overseas oil is putting a strain on U.S. military forces and saddling them with costly missions for which they were not designed.

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 are 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 the U.S. is 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 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.

No amount of military force can alter the fundamentals of oil dependence. Oil is the life-blood of our economy. We consume more than 20 million barrels of oil per day, a quarter of the world total. More than 60 percent of the oil we use is imported. Nearly 70 percent of our oil consumption goes toward transportation, which relies on oil-based fuels for 97 percent of its delivered energy. In the

event of an oil crisis, the economic consequences will be severe, and they will impact hundreds of millions of average Americans.

It was this state of affairs that caused me to join the Energy Security Leadership Council, a group of business leaders and retired senior military commanders who are committed to reducing U.S. oil dependence in order to improve national security and strengthen the economy. The Council was organized by Securing America's Future Energy, or SAFE, a non-partisan group that is educating the public about the nation's current state of energy insecurity.

On November 1, in partnership with the Bipartisan Policy Center, SAFE conducted *Oil ShockWave*, an executive crisis simulation developed over the last two years to illustrate the strategic dangers of oil dependence. *Oil Shockwave* confronts a mock U.S. cabinet with highly plausible geopolitical crises that trigger sharp increases in oil prices. Participants must grapple with the economic and strategic consequences of this 'oil shock' and formulate a response plan for the nation. Last week's event featured former Treasury Secretary Robert E. Rubin, former Deputy Secretary of State Richard L. Armitage, former CENTCOM Commander General John P. Abizaid (U.S. Army, Ret.), former Secretary of the United States Navy and 9/11 Commission Member John F. Lehman, former White House Press Secretary Mike McCurry, former National Economic Advisor Gene Sperling, former EPA Administrator Carol Browner, 9/11 Commission Executive Director Dr. Philip D. Zelikow, and Pulitzer Prize-winning author Daniel Yergin.

Designed by finance, energy, industry, and national security experts, *Oil ShockWave* cannot be dismissed as sensationalism. The scenario that was played out last week involved violence and unrest in Azerbaijan and Nigeria along with worsening diplomatic relations with Iran. Though set in 2009, these events could have been ripped from today's headlines.

Let me give you a brief synopsis of *Oil ShockWave*. In May of 2009, violence in the Baku, the capital of Azerbaijan, disrupts a major oil pipeline carrying about 1 million barrels per day to the Turkish Mediterranean port of Ceyhan. With spare capacity lacking, markets fear a supply crunch if the pipeline remains out of action. The news causes about a 12 percent spike in oil prices in a single day. Shortly thereafter, unrest in the Niger delta of Africa cuts off an additional increment of oil production. Iranian events compound these problems in subsequent weeks. Faced with the prospect of harsh economic sanctions from the U.S. and the European Union (EU), Iran announces that it will immediately reduce its oil exports by 350,000 barrels per day, and that further reductions are possible unless the U.S. and EU abandon the sanctions process. The move reduces spare capacity below half-a-million barrels per day. Oil prices spike to $145. When Venezuela announces it will join Iran by matching its production cut, oil prices climb to $160. The whole simulation covers four months.

By the end of *Oil ShockWave*, events have disrupted 1 percent of world oil production—hardly an inconceivable shortfall given the threats directed at the world's far-flung oil production and distribution network. As for the geopolitical and economic impacts, they, too, were vetted by experts for realism, but that doesn't make them any less frightening: oil prices reach $160 per barrel. Gas prices soar to over $5.00 per gallon. Double-digit inflation ensues, and the U.S. and world economies teeter on the edge of recession.

I want to stress that *ShockWave* is not a prediction of the future. It is a simulation that demonstrates how an oil crisis could develop. But the scenario is based on facts—and dangers—that are already exist today. This realistic approach is not surprising given the expertise of the people who consulted on different aspects of the simulation:

Bruce Averill, Senior Coordinator, Critical Infrastructure Protection Policy, U.S. Department of State
General Ronald Bath and **Jaime Taylor,** The RJ Bath Group
Kara Baynton, Senior Energy Analyst, ARC Financial
Rand Beers, former Special Assistant to the President and Senior Director for Combating Terrorism
Paul Domjan, Director, John Howell and Company
David Frowd, former Head of Strategy and Planning in Shell's Upstream Headquarters
Richard Haass, President, The Council on Foreign Relations
Randall J. Larson, Director, The Institute for Homeland Security
Dr. Kimberly Marten, Department Chair, Political Science, Barnard College, Columbia University
Ronald E. Minsk, Counsel, Alston & Bird LLP
Daniel Poneman, Principal, The Scowcroft Group
David Sandalow, Senior Fellow, The Brookings Institute
Peter Tertzakian, Senior Energy Economist, ARC Financial
Jeff Werling, Executive Director, Inforum, University of Maryland Department of Economics
Robert F. Wescott, President, Keybridge Research LLC

Lessons of *Oil ShockWave*

It is useful to review some of the key points that I took away from *Oil ShockWave*.

First, there is really no such thing as 'foreign oil.' Oil is a fungible global commodity. Thus, a change in supply or demand *anywhere* will affect prices *everywhere*.

Second, oil markets are currently precariously balanced. As a result, even small disruptions can have dramatic effects. This means that a supply shortfall of approximately 1 percent could cause prices to surge.

Third, the price of crude oil may rise quickly as a result of a supply shock, especially when spare capacity is tight. It will not necessarily take much time to go from $90 to $160.

Fourth, once oil supply disruptions occur, little can be done in the short term to protect the U.S. economy from its impacts. There are few good short-term solutions. For instance, efforts to restrict America's driving habits through speed limits or bans on driving raise difficult questions about enforcement and, even if successful, their impact would be limited. As *Oil ShockWave* makes clear, such measures would be at odds with political calculations that are seemingly ever-present in today's highly partisan Washington atmosphere.

Fifth, there are a number of supply-side and demand-side policy options available that would significantly improve U.S. oil security. Stronger fuel-economy standards, increased domestic oil production, and responsible development of alternative fuels and infrastructure are the most effective steps we can take, but their impact will not be felt for at least a decade.

Sixth, foreign policy and military responses are limited, because oil dependence is major constraint on strategic flexibility. This is true for the U.S. and even more so for many of our major allies.

Seventh, the Strategic Petroleum Reserve (SPR), the emergency supply of federally owned crude oil stored in underground salt caverns, offers only limited protection against a major supply disruption. The *ShockWave* cabinet had to be concerned that any announcement of a release of oil from the SPR could actually contribute to an increase in oil prices by sending the message that U.S. government was declaring the onset of a crisis. Also, the military leaders objected to using the SPR for domestic purposes, arguing that it should be kept in reserve for use by the armed forces.

Finally, the stability of the entire oil-based global economy is currently dependent on Saudi Arabia's ability to increase production dramatically and over a short timeframe. But Saudi spare capacity may be completely absorbed by surging oil demand from countries like China and India. If that happens (and many indicators point in this direction), the global oil market will be especially fragile.

Last Thursday, at the conclusion of the simulation, former Treasury Secretary Robert E. Rubin credited *Oil ShockWave* with demonstrating "the critical importance of preventative action in mitigating the risks of oil dependence." This is a vital lesson. If, or rather, when the U.S. is faced with the next oil crisis, there will be no easy answers. Short-term responses such as tapping the Strategic Petroleum Reserve or implementing emergency demand measures are likely to be insufficient. Long-term policy options such as improving fuel economy, boosting domestic oil production, and promoting alternative fuels will be years away unless we set them in motion today.

Conclusion

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. If we put these measures in place before a crisis hits, we will be less susceptible to being whip-sawed by events. We will not have to be on a hair-trigger for major military involvements. And we will be in a much better 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.

Having witnessed the attacks of September 11, 2001, we know all too well the cost of failing to address national security threats on our own terms, rather than those of our enemies. America's oil dependence threatens the prosperity and safety of the nation. Continued policy paralysis is unacceptable precisely because we can take action to improve our energy security.

The President and Congress must immediately implement a long-term strategy for reducing America's oil dependence. This is a grave national and economic security issue that demands the attention of our leaders from both parties. And responsibility cannot stop there. All Americans must become more aware of the dangers of oil dependence and more involved in efforts to address this vulnerability.

Energy security cannot be purchased with easy answers. Despite the promise of alternatives, America cannot hope to grow enough biofuels to obviate the need for improved fuel economy. Nor can we expect to derive security from vague promises of *leap-ahead* technologies. A new consensus must be forged on the anvil of tough choices using proven policy solutions. To this end, both political parties must move beyond the half-measures that have long stalled the pursuit of real energy security.

To minimize oil dependence and its associated national security risks, both political parties must discard the dogmatic approaches that have long hampered the pursuit of energy security.

Those who oppose further oil exploration in the United States must recognize that the failure to press forward with the environmentally responsible development of domestic energy resources exacerbates the dangers of oil dependence. Refusing to develop secure sources of domestic production leads to an unnecessary over-reliance on imported oil, much of which flows from less stable parts of the globe. Aside from amplifying the potential risk of a supply interruption, the preference for imported oil unnecessarily transfers billions of dollars of the nation's wealth to foreign lands.

Those who oppose vehicle fuel-economy standards must accept that the free market has not—and will not—adequately motivate the investments necessary to protect the nation in the event of an oil crisis. As such, mandating improvements in the fuel economy of our cars and trucks is one critical and unavoidable step that Americans must take if we are to halt our national descent into unmitigated oil dependence.

Congress is now negotiating the contours of a national energy bill in conference. As that bill is finalized, it is important to stress a key point: reforming and strengthening the Corporate Average Fuel Economy (CAFE) system is the single most important step we can take to reduce oil dependence.

To its credit, the Senate has already approved a proposal dramatically improving fuel-economy regulations. Rather than maintaining the one-size-fits-all corporate average that hampers the existing CAFE system and burdens Detroit's Big Three, the Senate voted in favor of flexible standards that will allow each automaker to maximize competitive advantages while ensuring steady increases in the fuel economy of the entire fleet of new vehicles. By raising the fleet-wide fuel economy of new cars and trucks to 35 mpg by 2020, these new standards could save the U.S. one million barrels of oil per day in just over a decade. That's about the same as the oil shortfall that was involved in the *Oil ShockWave* simulation. Oil savings would continue to rise after 2020, perhaps reaching three million barrels per day by 2030. That would mean vastly increased energy security for our children and grandchildren.

This Senate has put forth a sound legislative proposal that will boost energy security for decades to come. Furthermore, the President has already indicated support for reforming fuel-economy standards and increasing them by 4 percent per year, a rate that is actually faster than the one contained in the Senate's proposal. It is time for Congress to approve a comprehensive and meaningful energy bill that the President can sign.

Thank you.

The CHAIRMAN. Let me turn and recognize for an opening round of questions, the gentleman from Oregon, Mr. Blumenauer.

Mr. BLUMENAUER. Thank you very much, Mr. Chairman.

Admiral, I appreciate your willingness to inflict the simulation on us, and I appreciate the chairman's interest in perhaps exploring that as a committee hearing.

We actually did one of these versions in my community a year ago involving campus-based activities. We actually fell short in trying to structure for our governor and some of our community leaders. But, for the committee, could you outline what it would entail? We didn't really get the details in terms of the number, the duration, the roles that were played. Just how would that work for the committee if we were to follow up on your generous offer?

Ms. BROWNER. Maybe we can do it together.

In both of the national simulations that have been done, it is approximately 10 people who participate. You have usually the President's Chief of Staff, who sort of runs the conversation. You have everybody from the Secretary of the Energy Department, Secretary of State, Secretary of Defense, National Security Advisor, sort of a Joints Chiefs of Staff. So there are roles that are assigned and you are, to the best of your ability, asked to play the role and so you are given facts that might be particular to the role that you are playing. You can bring in, you know, sort of personal information or experiences, but you do have to stay within your role.

Bob Rubin, who was sort of the master of ceremonies, if you will, the Chief of Staff for this particular exercise, was very, very good at making sure all of the points—as he was when he served in the last administration—making sure all of the points were put on the table.

You then have briefers who come into the Cabinet room, the simulated Cabinet room or situation room, and start changing the scenario on you. And sometimes they use reports. There is like a CNN-style TV show that has been manufactured that is providing new information or there are simply briefers who are considered to be experts who are adding new facts.

It took us about two and a half hours to do it, and then we had sort of 30 minutes of reflection. We stepped out of our individual roles and sort of reflected from our experiences either in that role or previous.

When I was in the prior administration, this is something that Cabinet members do. In fact, the last simulation that I participated in as a member of President Clinton's Cabinet was in an anthrax scare. I think it was shortly before the 2000 election. Most of us couldn't pronounce the word "anthrax" when we showed up for the simulation. Most of the Americans are now too familiar with it.

But whether it was in the government or in this one, the value of these is really quite significant because, as the Admiral said, what you quickly figure out is, even with all of this power behind you, I mean, the Secretary of Energy had huge amounts of power in this simulation, your choices in terms of immediate action are very, very narrow and even those choices immediately bump up with somebody else's view of the world.

For example, I said, yes, we should access the SPRO. That got complicated in a hurry, because I think it was the Secretary of De-

fense said, well, you know, that is the Navy's. And I actually didn't know this about the history of the SPRO. It actually originates back to the Navy. So suddenly we couldn't find common ground on whether or not to take advantage of this Strategic Petroleum Reserve.

I think for that reason it is worth doing. Things that you think may be sort of automatic and easily done you find out are not so automatic and easily done.

Mr. BLUMENAUER. So in terms of—with the technical help that you folks have developed over the years, there would be a role potentially for every member of the committee and could be conducted in the framework essentially of what a significant hearing would be?

Ms. BROWNER. It would be a large Cabinet.

Admiral BLAIR. Exactly. The time commitment, Mr. Blumenauer, is probably 2 hours, sometimes a day or 2 ahead of time just to be given some basic data and be told how the game works; and we start at 10 o'clock in the morning. You know, Mr. Markey might be playing the National Security Advisor, you might be playing Secretary of Defense, Mr. Sensenbrenner might be playing the Secretary of Energy; and in comes a card that says the President wants a recommendation in 2 hours as to what he is supposed to do because these things have happened.

And then the National Security Advisor and maybe the chairman of the National Economic Committee, as they are, says, okay, what do we think? What are we going to tell the President?

And so you bat that around. It drives you. The time element drives you to have to sharpen your thinking. You can't just do nothing, because time is ticking away. And then you make that recommendation and then say fast forward a week. Now these other things happen. Now what are you going to do, big guy? And the President wants some better options.

And we also had the President's press secretary, and he was wonderful because he said, you are going to have the President do what?

So it is part of that immediacy and responsible people doing tough jobs that live with you, and we would have you all in the role. It would take, as I say, 2 hours ahead of time to be ready and 4 hours on the day.

The CHAIRMAN. The gentleman's time has expired.

The Chair recognizes the gentleman from Wisconsin, the Secretary of Energy, Mr. Sensenbrenner.

Mr. SENSENBRENNER. First of all, I shiver to think of the Chair as National Security Advisor. Put him in another role, please, and I think we will all be happier, in looking at, you know, how we war game the strategy and what we can do ahead of time.

The one question I have is, what is the role of Canadian oil resources and oil shale in the West? I know that you can't turn that spigot on as quickly as we would like, but if we are looking at ways to prevent an oil shock from being extremely severe, that seems to be the most convenient and secure way to get increased oil or replacement oil.

Admiral BLAIR. The position that the Council took in the report that we released almost a year ago was that the Canadian tar sand

resources would be a big part of the problem as soon as they could be done in an energy efficient and environmentally acceptable way.

So we saw that as part of the solution, but our understanding was the technology was not quite there on those two criteria. So we couldn't count on that and that—but that the R&D should be put in to see if it is a viable alternative as an alternative source.

Similarly, R&D should be put into other synthetic fuels in order to make them part of the solution.

So it didn't seem to us, looking across that alternative, as well as ours, that there was one that you say had all of the right attributes to solve the problem. More work was needed.

Ms. BROWNER. An oil shock scenario did not deal with could you explore and find other resources. Because it was a real time. You had to solve the problem that day, that week.

I think SAFE has taken a position on whether or not some of the thoughts you have are viable in the short term, and I share their concerns that in the short term they are probably not.

They may also bring with them some other challenges. For example, we need to understand—this is me personally speaking, as someone who is very concerned about greenhouse gas and global warming—what are the repercussions? Are we adding to our global warming footprint? Are we diminishing it? That is still something that still needs to be better understood.

I think part of the issue is what and where are the technologies that we may end up using, because that may have some bearing on what are the emissions.

Mr. SENSENBRENNER. I yield back the balance of my time.

The CHAIRMAN. The gentleman's time has expired.

The Chair recognizes the gentleman from Missouri, Mr. Cleaver.

Mr. CLEAVER. Thank you, Mr. Chairman.

One of the problems we have, I think, is that we live in a time in our country where everything is politicized. I am frustrated over how we have politicized global warming, how we politicized even the oil crisis. And so it is difficult for us to coalesce and move towards a solution. Because what we say and think reverberates across the land, and if you listen to radio and television talk shows, you can see what has happened. It is ugly out there. And rather than turn down the volume, we continue to turn it up. So this issue has already become muddy because of the way we have—because of the way it is politicized.

Do you have any suggestions on how we might be able to depoliticize the oil dependence issue or independence? Is there something you—some way you can suggest, say, can we write a song? Could we get Mr. Hall to write a hit song? I mean, what do we need to do?

Admiral BLAIR. An Admiral giving advice on politics is like a politician giving advice on maneuvering ships.

Mr. BLUMENAUER. What is your point?

Admiral BLAIR. But what those of us in the Council thought was that what is required here is a compromise between those who have opposed fuel efficiency standards on the grounds that it is interfering with business and those who have opposed further exploration and development of alternatives on the grounds that it

runs environmental risks and it is not pretty to have an oil rig out the back door.

What we strongly recommended a year ago was that in order to provide the political cover for everybody to do what everybody recognizes is in the national interest, is both sides have to give, and it has got to be a comprehensive package so that it is recognized that all participants are doing the right thing for the country. And even though they can be accused of making a compromise with something that they pushed in the past, it is in the common good.

And that is really—it is naive. It is kind of civics 101. I am not a politician, but I think it is sort of a time that we have to give a little to do the right thing for everybody.

So my answer to your question would be to, you know, both sides of that center chair need to give a little bit and let us do more conservation, let us do more domestic production, let us do more alternatives.

We have taken polling data within the country, and the people recognize it. But it is getting that popular support shredded through the filter of individual interests into a bill, which you all know better than I do, is a hard part of this.

But it seems at the end of the day, if it is comprehensive and the people will have felt that their elected representatives, whether they are in the executive branch or on the legislative side, have done the right things for the country—so that is kind of a naive answer, Mr. Cleaver, but that is one I would give.

Ms. BROWNER. I think the simulation actually would be a way in which you might find some common ground.

In the simulation we did, there were—three of us were noted Democrats. Everyone knew we were Democrats. There were three that were well-known Republicans. You would recognize them immediately as Republicans. And then there were some former military brass, and we are never sure what they are. They are very good about that.

But what happened is we were unanimous in our takeaway from the experience. So it didn't matter what our political persuasion was when we came to the scenario. Our experience of the scenario was a shared one, and what we thought needed to be done was remarkably similar across the party lines when we stepped out at the end and resumed our regular identities.

So I think it could go a long ways to perhaps bridging some of the gaps that inevitably exist as you all wrestle with important legislation.

And if that doesn't work, I agree, Mr. Hall should write a song.

The CHAIRMAN. The gentleman's time has expired.

The Chair recognizes the gentleman from Arizona, Mr. Shadegg.

Mr. SHADEGG. I want to thank our witnesses.

I want to apologize for being late. I want to thank you for holding this hearing.

I appreciate the work you are doing in this area; and I share your comments, Ms. Browner, about, you know, you set aside the policy, the partisanship, and we need to be working on the problem.

In that regard, I noticed in your testimony that you applaud the renewable electricity standard in the House energy bill. I do as well, except I have some concern.

Both of you, Admiral Blair and yourself, have talked about the importance of conserving, using less; and, obviously, the more we can rely on renewable fuels, the better off we are.

One of the concerns that I have is that there is this ongoing struggle, unfortunately, I believe, somewhat partisan in nature, over what to value achievements in efficiency. In my State of Arizona, we have some renewables we can use. My friends from the Deep South look at me and say, don't impose renewable standards on us. We can't do it.

In both instances, I hear from the industry that efficiency gains, at least in the short term, hold great potential. I know, for example, that I pay the Shadegg family electricity bill, and I found myself out on the stepladder pulling out the incandescent bulbs and putting in the fluorescent ones everywhere I can, and I am happy to save myself money.

Do you think that legislation strikes the right balance, or do you think we should go further in rewarding, at least in the short term—and maybe it is just in the short term—to educate Americans and incentivize them to use more efficient appliances, lighting, consumption of energy in every way?

You talked about CAFE standards. Obviously, that is a big and a critical one, particularly in the fuel and in the oil area where, for transportation purposes, oil is where we are excessively dependent now.

But just my question is how about, I guess, do you think we have struck the right balance on rewarding efficiency saving in the renewable legislation that we passed?

Ms. BROWNER. I think it is absolutely essential that the country gets on to making a commitment to a national standard. The States are doing it. They are figuring out how to make it happen. We have got 20 States now that have embraced some sort of renewable electricity standards. Obviously, electricity is different than oil.

One thing, in terms of the right balance, I will just be pragmatic. It is the right balance if you can pass it. We are down to sort of it is time to get this passed. I mean, it is unfortunate that we haven't been able to do it thus far, and I understand everyone is working hard, but it is time to get it done.

One thing that I have become increasingly interested in is how do you reward utilities for efficiency. You know, right now, if I am running a utility, I make money when I sell electricity. It is that simple. Now a few States—California has looked at something called decoupling, but people like Jim Rogers, who runs one of the biggest east coast utilities, is talking to the North Carolina PUC about allowing him to make money when his utility conserves, rewarding conservation by the utility.

And that may be a way of getting at what you are suggesting. How you get at it on an individual consumer, obviously, there are tax credits that could be brought to bear.

But, you know, I am not wedded to one particular answer. What I am wedded to is let us get a real standard. Let us send the mes-

sage to the marketplace that people who make appliances, the people who use large amounts of utility are going to have to start thinking differently about what they are doing.

One of the things I learned in 8 years as a regulator is that once you set that standard, whatever it is, whether it is a pollution standard, air, water, allowing some flexibility so that businesses can find the most common-sense, cost-effective way to get there inevitably gets you a better answer than government sort of trying to dictate each sort of tiny piece of the puzzle. Sometimes we need to dictate some of those, because not everyone is going to follow the path.

But in most instances, if you were to figure out a way, I think, reward utilities for efficiency, you would be very, very pleased with the response you would get.

Mr. SHADEGG. There are two major public utilities in the Phoenix metropolitan area. One is an investor owned, and one is public owned. The public ones have come to see me, and they have very innovative programs. And they are arguing, yeah, we have renewable resources we can use here in Arizona, but we would also like to get rewarded for efficiency. Because they understand the system incentivizes them to sell.

Admiral Blair, your comments on that point.

Admiral BLAIR. Yes, sir. I haven't looked at the entire interconnected energy picture. I am really most concerned about the amount of petroleum from unstable places, which brings me to the transportation sector, which brings me to production of the petroleum and petroleum substitutes and imports.

Mr. SHADEGG. I just ran out of time.

The CHAIRMAN. The gentleman's time has expired.

The Chair recognizes the gentlelady from California, Ms. Solis.

Ms. SOLIS. Thank you. And, again, welcome to our witnesses.

In your scenario, Shockwave, I know you mentioned that you really didn't have time to do long-term planning. But given diplomatic or lack of diplomatic efforts, could you shed some light on that? Because you mentioned in the scenario that Iran and Venezuela could cut off supplies. What, in your opinion, can we do to help maybe prepare for these kinds of disasters that may occur and what steps can we take? Was there anyone talking about that at all in this role playing?

Ms. BROWNER. Yeah. At the end—remember, we are doing "presented with facts". We don't necessarily have an explanation for why the particular fact has unfolded. It is just presented as a fact. We are given the fact that Iran and Venezuela were doing X, and we had to then quickly respond so the President could respond to the American people.

When we stepped out of our roles, I think a number of people from sort of the military side talked about the fact that how we build relationships, how we maintain relationships with various regions of the world with various leaders is absolutely essential. There is no—again, not a single problem we confronted in this scenario had a perfect answer or a single answer. All of it was about things you do over a period of time—in some instances, a very long period of time.

Admiral BLAIR. I think, Ms. Solis, I draw a contrast between the way we deal with countries that really don't have our economic interests in their hand and those who do. And when I was a commander in the Pacific, we could deal with countries in southeast Asia, Indonesia, Malaysia, some other problem countries, and we weren't completely dependent on them for oil supplies, so we could be a little sophisticated in our dealing with them. We didn't have to turn to big, expensive, hair-trigger military options right off the bat.

By way of contrast, when we are dealing with countries who are controlling important parts of the world oil supply, we are—we militarize our policy almost by default.

What we feel, if we can drop the oil intensity of the United States economy, that is the amount of oil to produce every dollar of GDP and, as Mr. Sensenbrenner said, we dropped that between—after the first oil problems in the 1970s and the 1980s, but then it leveled out, and we are as dependent, as we all know, now.

If we can do a combination of conservation and domestic alternatives, get that down again, then we are not as subject to being jacked around by these events and by these countries.

So it really is a case of lowering our dependence on this as an economy to give these people who are in these shockwave events a little more flexibility so that they can have time to round up international support, so that they can use other maneuvers.

It is just getting them on that hair trigger by the increased demand and the increased dependence that makes it so brutal when you come to one of these crisis situations like a pipeline that pops. So it is really that dependence that we need to work on.

Ms. SOLIS. I raise that issue because we see a lot of climatic changes in Latin America, and I want to talk specifically about Mexico because we do import a lot of petroleum from Mexico.

There was a very bad flood that occurred in Tabasco where they have a really large refinery. And I am wondering, things like that that occur we may not feel immediately, but they will have an impact a couple of months down the line. And I just would hope that our leaders, our policymakers would start thinking about how we can start providing assistance to our friends, democratically elected governments, that we should be helping to nurture and doing things in a manner that conserves, is energy efficient, that has a less negative footprint on the environment. And I want to throw that out there.

CAFE standards. I had a meeting with some folks from the Automobile Alliance, and they were trying to explain to me that really it is about the demand out there, the consumers' thirst for these pickup trucks. And I just wanted to ask if you could comment on that, Ms. Browner.

Ms. BROWNER. I just wanted to remind everybody that the EPA, which I had the opportunity to run for 8 years, does not handle CAFE. So I am not familiar about the program from a regulator perspective but obviously have studied it. It is handled by the Department of Transportation.

I think the Admiral, as he said earlier, what is important about a CAFE proposal is that it is car to car. It is not manufacturer to

manufacturer. And so the opportunity for the American public to continue to look at the vehicles they want is preserved.

Having said that, again, my experience as a regulator does tell me that you set the standard, and you know what, good old American innovation and ingenuity rises to the challenge.

When Congress in 1990 banned chlorofluorocarbons, CFCs, widely used in refrigeration, people in this body and in the Senate said, oh, my God. What are we going to do? We are going to have to drive our cars without air-conditioning. We are not going to have sort of life as we know it.

Well, guess what? Once Congress said on a date certain, a company saw an opportunity, brought a technology to the market for less money, faster than anyone envisioned.

When I set the tailpipe emission standards for diesel engines—it was one of the last things I did when I was in office—one of the things we could require was not just clean sulfur fuel but also there be a catalytic converter put on big diesel trucks and diesel cars.

Ms. BROWNER. It did not exist. The scientists and engineers were still figuring it out. Once they knew there was a guaranteed market on a date certain, they figured it out pretty darn quickly. So I never, ever want to underestimate American innovation and ingenuity. We have a long history of rising to the challenge.

Ms. SOLIS. Good point. Thank you very much.

The CHAIRMAN. Would you like to add to that, Admiral Blair?

Admiral BLAIR. Yes, just one thing.

I agree completely with Ms. Browner. I have heard these—I have talked to the same car companies, and they are saying that American people do not want more efficient cars; they want more powerful cars with more cup holders. Therefore, we have to give it to them. I think, as Ms. Browner says, they are underestimating what they can produce. I think they are way underestimating the American public, who understands that we all need to have cars that are more fuel efficient, even if we have to sacrifice that top-end performance that we have, but they need to be told let's all do it together. Let us set a standard that applies to everybody rather than to one that is uneven.

I also, frankly, I do not have a lot of sympathy for these car companies, because the price of that oil that we are using does not reflect the full price of the American troops who are doing all of this business around the world. If you factored in the real price of that oil, it would be huge, and frankly, I am sorry. It is not up to the car companies to make that judgment. It is up to the leaders of the American people to make that judgment.

The CHAIRMAN. Thank you.

The gentlelady's time has expired.

The Chair recognizes the gentlelady from Tennessee, Mrs. Blackburn.

Mrs. BLACKBURN. Thank you, Mr. Chairman.

I thank both of you for being here, and I am listening with interest to your comments about automobiles and the engineers who are bringing those forward. As you know, in my district in Tennessee, the 7th District of Tennessee, we have a good bit of auto manufacturing both within the district and on the fringes of the district. I

have done a little car shopping lately, and I have been amazed at how safe cars have become and the safety features that are included in those cars. I agree with both of you, and I think that, when our auto engineers in this country, who are the best in the world, put their minds to it, they will be able to solve some of these efficiency problems.

Admiral Blair, as you were saying, the market needs to tell—the American people need to say this is something that we are looking for and that we want. I remember the gas crisis of the 1970s and what we went through there. I was a new mom with a new baby, and I remember what we were dealing with with those gas lines. So let me ask each of you:

How do you think the American public would respond to rationing if we were to go through an oil crisis? We are looking at back to the first of the year where we had $2.29 a gallon, and now the average price in the country, I think, was at $3.01 this morning. We have watched a barrel of oil since the first of the year go from $55 to this morning when, I think, the Asian markets opened at $98 a barrel. So you are looking at a 75 percent increase in the cost of a barrel. You are looking at a 34 percent increase at the pump.

So, if we were to move to rationing, in your opinion, how do you think the American people would respond to that? Likewise, what do you think would happen with our domestic supplies if we only used our supplies and those of our close allies like Mexico and Canada, who are our two largest oil trading partners?

Ms. BROWNER. Well, if you only use our supplies and Mexico's and Canada's, you would be in oil rationing. You would not have a choice. You would be there.

Mrs. BLACKBURN. How do you think the American people would respond?

Ms. BROWNER. I will be honest with you. I do not think, at this point in time, particularly well, and I think that is because, while individual families and Americans, in my experience, are always prepared to do their part to solve a problem, they want to know that the companies that make the products are also doing their part. You know, I think there is a frustration that the American people have that they cannot get more fuel-efficient cars.

Having said that, several manufacturers are now bringing to market the clean diesel engines which can get in a mid to—I do not know how you size cars—but in a sedan, I mean, a sedan that seats comfortably four and five people. You can get 32 to 38 miles per gallon in a sedan with a clean diesel fuel, and those are becoming more and more attractive to people. So, when offered a more efficient car within a class, people are looking at them and are starting—you know, they are expensive right now. They will come down. They are only in certain high-end cars, but I think Ford is going to bring one to market in the not too distant future.

So, you know, my experience is that, as people become better educated and as there are more options, they will gravitate toward things that they think are good for their families, are good for their families' pocketbooks and for the environment of their communities.

Mrs. BLACKBURN. Admiral Blair.

Admiral BLAIR. Yes.

I think the American people have two reactions to that scenario that you have sketched out.

Number 1, they would be angry, frustrated and looking for what got them into that fix. Number 2, they would roll up their sleeves, and they would do what had to be done to make it better, to work their way out of it.

I guess my feeling is, since we know that now, why don't we take the actions now to avoid that crisis because we know it would be so much harder on us if we brought it to that point.

Mrs. BLACKBURN. You are right, and changed habits is a big part of that and looking at changed habits. Let me ask you something in regard to that changing of habits.

You know, right now, we do a lot of transport by truck across our Nation's highways, and I was reading something the other day about the efficiencies of rail.

Do you all see any—and I am about out of time, but I would love to hear what your thoughts are about moving more of our movement of goods and commodities to rail and taking it off the highways. Any thoughts there?

Ms. BROWNER. I, certainly, think it is something that needs to be considered, and the rail industry has been out there promoting what they can do.

The one note I would just add to it is, you know, again, we are thinking here today about sort of a short-term oil shock, but we should always be thinking about what else could happen. So, for example, in a shift from one form of transportation to another, what does that do in terms of greenhouse gas emissions? What does that do in terms of conventional pollutants? I am not suggesting that rail creates a problem. I do not know the answer. It would be something worth understanding.

Admiral BLAIR. Part of our proposals were that fuel-efficiency standards should be applied to trucks as well as to cars, and we should make the trucks that we have more efficient also by applying the same sort of technology to them as we do to cars, and we should raise the fuel efficiency standard of our trucks as well as to our cars.

Mrs. BLACKBURN. Rail, do you see that as an option?

Admiral BLAIR. I think then that the market would make the right adjustments, but I think we should work on the truck sector as well.

Mrs. BLACKBURN. Thank you.

I yield back.

The CHAIRMAN. The gentlelady's time has expired.

The Chair recognizes the gentleman from New York, Mr. Hall.

Mr. HALL. Thank you, Mr. Chairman, and thank you for holding this hearing.

Thank you to both of our excellent witnesses.

I did, actually, write that song in 1978 that started out "just give me the warm power of the sun; give me the restless power of the wind," et cetera.

I also wish that we, as a country, had started doing those things, including conservation and all the renewables that were available then, and we would be in a much different position today.

Admiral, you talked about being "jacked around" by countries that we used to have a freer hand to deal with. You know, it seems to me that our options diplomatically or economically had been limited in terms of how we deal, for instance, with Saudi Arabia on one hand and China on the other hand.

Is that what you would call a "loss of sovereignty"?

Admiral BLAIR. Absolutely. The more you are constrained because of your dependence on another country, the more sovereignty you have lost.

Mr. HALL. Yes. It seems to me like we are going down a road where residents of this country, where citizens of the United States, have never understood what it is like to be in a position like Brazil was in in the 1970s, for instance, where the world financial markets dictated to them certain things they had to do or else they would not get their next round of debt floated. So I think we need to be aware of that, that oil and our consumption of oil, is putting us in that position.

Admiral BLAIR. I think that is absolutely right.

Some of that came up in these simulations when the Secretary of State said in the simulation, "Well, I went to country X, and asked them if they would increase their amount of oil, and country X said, 'Yes, I can do that, but there are a couple of things I want from you, United States. I want you to lay off hitting me on this policy that I am doing. I want you to make this concession.'" So it puts us in the position of having to spend some of our blue chips to get some of theirs, and we would just as soon not be there.

Mr. HALL. Sir, my point is—and I think you are agreeing with me, and I am agreeing with both of you here—that what your simulation showed is, in fact, happening already, tangibly, that we are in a national security and sovereignty emergency, that we are only recognizing, unfortunately, the public end, you know, and that perhaps our political leaders are only starting to get a handle on how fragile our situation is.

Admiral, you talked about oil being a fungible commodity. Would you agree that, to a large extent, conservation is also fungible but that saving energy anywhere frees up other energy somewhere else, I mean, understanding that liquid fuels are different from electricity to the extent that hybrids or plug-in hybrids or biofuels or the conservation of any of the above will free up more oil?

Admiral BLAIR. It is not completely fungible. Turning down your thermostat does not mean you import less oil automatically.

Mr. HALL. Unless you are burning oil at home.

Admiral BLAIR. What we are mainly concerned about, as I say, is the oil sector, but it is headed in the same direction.

Mr. HALL. Okay. Good.

Regarding demand, my colleague from Tennessee was talking about demand, and her point is good. I just wanted to add to that my observations, from watching what little hours of television I have time to watch, that the advertising—and I have experience in the advertising industry as well. I have had songs used for advertisements, and I have always watched them, you know, with that sort of professional eye.

It seems to me that Detroit is advertising power and speed and style and is not advertising efficiency. Take notes, and just make

it a project one night to sit in front of the TV, and every time a car ad comes on, make a note of what kind of car is being advertised and whether they are touting efficiency and reliability or whether they are touting sexiness and speed and 340 horsepower to leap out at the stop sign or at the merge ramp.

I am driving by choice. Although I could have gone with an import and could have gotten 20 more miles per gallon, I am driving a—my own personal car is a Detroit-made, union-built hybrid, full-time, four-wheel drive SUV, which is rated at 33 miles per gallon and would get better than that if you would drive it at 55 miles per gallon and stay in the right lane and let people whiz by you and take it easy going out from the stop signs or from the stoplights. If you step on it and drive angrily, you are getting into the 20's.

So I just wanted to throw that in and say your suggestion of a possible national speed limit again is something that I believe, you know, we should be considering, but it is going to take—basically what you are talking about is leadership, I mean as I hear it, that everybody needs to feel that the sacrifice is shared, and the only way that that is likely to happen is to have it come from a strong statement of the leadership of our country that we are now all approaching this together and are sharing the burden.

I am sorry to talk so much and ask so few questions.

My time has expired. Mr. Chairman, I yield.

The CHAIRMAN. The gentleman's time has expired.

The Chair recognizes the gentleman from Connecticut, Mr. Larson.

Mr. LARSON. Thank you, Mr. Chairman.

I want to thank both the Admiral and Ms. Browner for being here.

Let me go on record as saying that I think that the scenarios can be very useful and instructive, but I want to acknowledge right from the outset that, because of his Martin Sheen-like qualities, I think Ed Markey should be cast as President of the United States as a role befitting the chairman of the committee. Now, some may say isn't that a patently suckup move? Yes, it is, and so I hope that my legislation will be considered in order when the day arrives.

Admiral, you mentioned something very interesting in the scenarios as it was laid out and, as I understand it, with the consequences confronting you with the potential shutoff of supplies from Iran and Venezuela. Here is my question.

In a situation such as that, you said that, by virtue of the fact that we are dealing with unfriendly States, that it almost becomes a de facto military situation. So the question is: In the scenario, where would the military deem to strike, if necessary, to recapture supplies—in this hemisphere or in the Middle East?

Then bringing it to reality because, I think, that is what makes these useful, should Americans be concerned when we have, yet, another battle group doing maneuvers in the Persian Gulf?

Admiral BLAIR. I think the connection between the military force and oil supplies is a little more subtle than that. We do not go in and take over oil fields and sort of run them with soldiers and with contractors. That is not really the point. I do not think we invaded Iraq to get their oil.

What I am saying is the fact that that region supplies a commodity, which is so fundamentally important to the United States, means that the United States is intellectively involved in the affairs of that region and will have to have a much deeper involvement in them so that, when one State threatens another or invades another as Iraq invaded Kuwait back in 1991, an issue in which military force clearly has an application, we will do it; we will use military force there.

The military situations that clearly call for a military response in that part of the world are threatening to and closing the Strait of Hormuz, the scenario that we had in the tanker wars in the mid-1980s when both Iraq and Iran were attacking oil tankers, and we ended up reflagging and escorting them.

So it is not so much that, militarily, we go in and take over oil fields, which is not a very useful alternative. It is that we are in the region, and when military force is used, the United States has got to consider what we do with our forces, and we kind of get sucked into it the way that we have over time.

What I think is going on here is that, if the United States has a very great vulnerability of short-term interruptions in countries like Venezuela and Iran, who are no friends of this country, they can sort of throttle back for a while. It does not hurt them very badly. It hurts us. It gives them advantages across the board in dealing with their interests as opposed to ours, which result in change.

Mr. LARSON. So these maneuvers in the Persian Gulf should be viewed as saber rattling to assist in diplomacy or are they concerns that Members of Congress in any scenario should be very much aware of?

Admiral BLAIR. I took the uniform off 5 years ago. It was not my area, and we have got good people who took our places there, and I think you need to talk to them.

Mr. LARSON. And you said you were not a good politician.

Ms. BROWNER. If I might just note, in this scenario, one of the things that did unfold from, I think it was, the Secretary of Defense was a question for the President.

Should we change the Selective Service registration requirements to capture women? Secondly, should we begin thinking about some form of a draft? Because the concern in the scenario that he was bringing to the table is that the military is stretched very, very thin.

I might also note that, in this scenario, the President is not in the room. There is sort of an Oz-esque figure behind a curtain, so Mr. Markey would have to peek in occasionally, but you would be a great Secretary of Treasury.

The CHAIRMAN. Well, I was thinking of letting him, Mr. Larson, be Vice President so then it could reflect the real power in the United States anyway.

The gentleman's time has expired.

So the Chair recognizes himself for a round of questions.

Under your scenario, only 1 percent of the world's oil supply is taken off the market. It leads to $160-a-barrel oil. It leads to the collapse of the economy.

What is it that has led to having the oil markets become so tight that they can have such a profound impact in such a short period of time?

Ms. BROWNER. Well, I think, in that scenario, it is a combination of factors, but certainly, the failure of efficiency, the failure to drive down the amount of oil we use on a daily basis becomes pretty important because while the actual number—it ends up at about 1 billion barrels a day. That is not an amount that cannot be addressed through some prudent steps taken, you know, sooner rather than later.

Admiral BLAIR. On that, I agree with you, Mr. Chairman. That was sort of a surprising effect. You would think, on a percentage basis, it would not be that big. The gameplay for that result was done by a highly-respected, Canadian energy consulting company that we fed the information to and then asked them "Okay. What did that do to the price of barrels?" They ran their quantitative models, in their judgment.

What I think was at play there was that, with the oil market so tight in the future primarily because of the increases in non-U.S. production, India and China are leading it. You find that non-U.S. oil demand goes up 38 percent over, maybe, the next 5 years; whereas, U.S. demand goes up about 24 percent. That is just making the oil market so tight that the power of expectations comes to play, and even relatively small tremors make people worry about the future. Therefore, they want to ensure their own supplies, and they bid up prices. So you are just in this trigger in which a relatively small rock in the pond has pretty big ripples.

The CHAIRMAN. So you talk in your testimony, Admiral, about our ever-growing military presence in the Middle East.

Could you give us some sense of how you feel, for example, as to how this growing dependence upon oil affects our relationship with Saudi Arabia?

Admiral BLAIR. I think it gives Saudi Arabia much greater leverage in its dealings with us, and it is no secret that there are a lot of aspects of Saudi Arabia in the future that we have real concerns about, and when you are that much—when a country with those sorts of challenges has that much of a thumb on you, it causes concern. So it is not a whole lot more complicated than that, Mr. Chairman.

The CHAIRMAN. So the language that you both made reference to, the 35 miles per gallon by 2020, actually backs out the equivalent of all of the oil that we import from the Persian Gulf on a daily basis by 2020.

How important is that, Admiral?

Admiral BLAIR. I think that would just put us in a lot better position to be able to deal in a more balanced manner with Saudi Arabia. I think it would have made the position of those people in the shockwave much, much easier.

The CHAIRMAN. Ms. Browner, can you talk to this issue of the 35-mile-per-gallon standard by 2020 and how important you think it is for the Congress to pass that this year?

Ms. BROWNER. It is absolutely essential. We have got to get on with doing this. As I said in my opening statement, this is the second time I have participated in one of these. The last was several

years ago. The message from both of them was identical, that taking steps sooner rather than later is key to these problems.

In the case of CAFE and the proposal that the Senate has passed, it would have solved the problem that we were confronting. It was not as if this scenario was designed to then conclude, well, you should have passed CAFE. It was just the fact of, when you go back and look at how it unfolded, that is one of the easiest ways, actually, to have solved the problem.

The CHAIRMAN. Admiral, are you convinced that we can improve the efficiency without compromising the safety of the American people in terms of the vehicles which they drive?

Admiral BLAIR. Yes, sir, I am.

I tell you the strongest technical support for that judgment was our updating of a study done back in 2002 by the National Academy of Sciences, which looked at existing—we, the Securing America's Future Energy Project asked the office to update it to about 2000, 2005.

Are there available technologies which can influence and which can improve sufficiency without sacrificing safety? The answer from these technical experts was, unambiguously, yes, it could. That was even without considering hybrids and some other, more recent technologies. So I think the technical answer is, yes, it can be done, and it should be done.

Another part of our proposal was that what if we are wrong? What if this is resulting in unsafe vehicles? We provided in our recommendations that the National Highway Traffic Safety Administration have the authority to be able to waive standards based on sound technical arguments having to do with safety and with the economy, but we think the burden of proof ought to be put on people saying why they cannot do it rather than why they can, which is sort of where it is now. What you hear from the auto companies, you know, is American consumers do not want it, you know, blah, blah, blah. So we think we ought to shift the burden in the other direction.

The CHAIRMAN. Ms. Browner.

Ms. BROWNER. You know, at the EPA, I, obviously, got the chance to regulate the automotive industry, and they always said no, no, no, no, no. Then they always turned around and did it. I think, you know, Mr. Chairman, with your leadership on CAFE and with your proposal on CAFE and with the Senate proposal, there is no doubt in my mind that they can do it. They will complain loudly, but they will end up being able to do it.

The CHAIRMAN. So my time has expired.

Let us do this. I apologize to you. President Sarkozy of France is about to address the House, and that is why the Members have been leaving, because he is going to come out onto the House floor in the next 15 to 20 minutes, so the Members have been leaving for that purpose, and we had to move the hearing up in order to accommodate that as well.

So what I would like from each of you is if you could give us your take-away message, what it is that you want us to remember over these next 4 weeks, especially as we consider this energy bill, which is pending before the House and the Senate, as we have this opportunity to pass the largest and the most important energy bill

in the last 30 years in the United States Congress and as the world convenes in Bali in 1 month to talk about the relationship between energy and climate, and as Al Gore also goes to receive the Nobel Peace Prize. The world is speaking to the United States in a lot of ways through that prize.

Could you each give us your take-away message for the Congress as we reach this final 4 weeks?

Admiral Blair.

Admiral BLAIR. Yes, sir.

My take-away message would be to pass this bill with conservation members, to pop your champagne, but please do not stop there. Go on to the other aspects of a comprehensive solution having to do with supply, having to do with alternatives, and keep on with steady pressure to have a comprehensive strategy, but nail down that first step, which is passing this bill which the Senate has passed.

The CHAIRMAN. Okay. Ms. Browner.

Ms. BROWNER. Please, I ask you to please pass the bill. You know, this is a great, important moment, I think, in our history. I agree with the Admiral. It is a first step. There will be other steps we need to take, but it is an absolutely essential step. We need to get started. We need to get started on more fuel-efficient cars. We need to get started on renewable electricity standards.

Mr. Chairman, the leadership that you and the members of this committee have brought to this debate is remarkable, and I feel like we are just sort of sitting on the edge of something really great that is beginning. There will be a lot more to do. Obviously, greenhouse gas emissions and carbon are going to be important, but if we could get this done and if we could say to the American people, you know, our leaders want to do something and they want to work with you for a better future, it would be wonderful.

The CHAIRMAN. Thank you, Ms. Browner.

This issue really is reaching the point of decision. Speaker Pelosi, in January of this year, created this Select Committee on Energy Independence and Global Warming as her only select committee during the 2 years that she will be in her first term as Speaker.

So, clearly, this is something that is very important to her. It is now, as each day goes by, becoming increasingly important to the American economy as well in addition to the security of our country and of the climate.

On Monday of this week, we had 5,500 young people—young leaders—from across the country come to Washington. They were presidents of their senior class, the heads of their environmental movements on campus. We had that hearing in the Ways and Means main committee room. 700 young people were packing that room with thousands of others surrounding the Longworth Building as they were testifying about the responsibility that this generation has to their generation, the green generation, to solve this problem. So we need to play our part in passing this first step and in beginning the process of reversing this dependence upon imported oil and fossil fuels.

We thank you both for your leadership on this issue.

With that, this hearing is adjourned.

[Whereupon, at 10:35 a.m., the committee was adjourned.]

THE SELECT COMMITTEE ON
ENERGY INDEPENDENCE AND GLOBAL WARMING

December 10, 2007

Dear Ms. Browner,
Following your appearance in front of the Select Committee on Energy Independence and Global Warming, members of the committee submitted additional questions for your attention. I have attached the document with those questions to this email. Please respond at your earliest convenience, or within 2 weeks. Responses may be submitted in electronic form, back to me at aliya.brodsky@mail.house.gov. Please call with any questions or concerns.

Thank you,
Ali Brodsky
Chief Clerk
Select Committee on Energy Independence and Global Warming

1) While considering long-term national security concerns, do you support the use of coal-to-liquids as an alternative to traditional petroleum? If not, why not? As a follow up, wouldn't the use of coal-to-liquids significantly increase our domestic supply of fuel?

   Coal-to-liquids (CTL) technology presents several challenges, including the fact that CTL fuel releases approximately twice the greenhouse gas emissions of traditional petroleum fuels.

2) Do you support increased offshore drilling and opening more areas for drilling in Alaska?

   No.

3) How much bio-fuel and ethanol do you think should be included as substitutes for traditional petroleum?

   The Renewable Fuel Standard included in the Energy Bill that President Bush has signed calls for 36 billion gallons of renewable fuels by 2022, with at least 21 billion to come from advanced bio-fuels including those that use cellulosic material as a feedstock. Ethanol will certainly contribute to achieving the requirements of the new standard.

4) Did you reach any conclusions about the amount of petroleum we should keep in the strategic petroleum reserve and what the price of oil needs to be to trigger using it?

No.

5) While I appreciate that simulations can provide some insight into possible options, wouldn't you agree that any simulation is highly subjective based on both initial assumptions and whom you choose to play various roles? For example, a Secretary of Energy Carol Browner would certainly make different decisions than say a Secretary Joe Barton.

I believe that simulations can be very valuable in helping decision makers better understand what might be required in responding to evolving situations. Many government departments and administrations regularly use simulation exercises. I participated in multiple simulations during my EPA tenure.

The *Oil ShockWave* 'cabinet members' who conducted the November 1, 2007, simulation were former Deputy Secretary of State Richard Armitage; former Secretary of the Navy John Lehman; former U.S. CENTCOM Commander General John Abizaid, USA (Ret.); Executive Director of the 9-11 Commission Dr. Philip Zelikow; and former Secretary of the Treasury Robert E. Rubin. This bipartisan group came to the conclusion that America's leaders must act now to implement meaningful and long-term policies to improve the nation's energy security.

This is not the first *Oil ShockWave* simulation that I have taken part in. In 2005, I was part of a *Shockwave* cabinet that included current Secretary of Defense Robert Gates, Council on Foreign Relations President Richard Haass; former Director of Central Intelligence James Woolsey; 28th Commandant of the Marine Corp, General P.X. Kelley, USMC (Ret.); Senator Don Nickles; and Governor Pete Wilson. This group also reached broad consensus on the importance of increased energy security and long-term energy planning.

6) Have the underlying assumptions of your simulation been verified by an independent party? In addition to that, how have you measured the likelihood of these scenarios playing out? I note that in your scenario there was "unseasonably cold weather across the Northern Hemisphere," which would seem to be at odds with the global warming scenario that has been laid out by the IPCC.

Oil ShockWave is produced and conducted by Securing America's Future Energy (SAFE). SAFE ensures that the scenarios in the simulation are vetted by exceptionally qualified, independent outside parties. These independent advisors include retired

military officials, national security experts, career experts in global energy infrastructure, economists, and energy analysts.

The pricing model used in this year's simulation was developed by a team of oil industry veterans, including the former Head of Shell's Upstream Production Headquarters. SAFE used data from the International Energy Agency (IEA) through 2007 and made assumptions about developments affecting oil markets and the global economy for 2008 and 2009. SAFE's assumptions for the global economy conformed with International Monetary Fund (IMF) assumptions. All scenarios were audited and approved by an independent financial services group. As you can see, all the scenarios presented in *Oil ShockWave* are based on plausible, reputable data sources and assumptions. As my fellow participant, General John Abizaid, said at the end of the simulation, "This scenario could start tomorrow."

Cold weather did not play any role in *Oil ShockWave 2007*. In 2005, a version of the simulation was conducted that included limited assumptions about cold weather.

7) What are your thoughts on the potential for hydrogen fuel cell development and their ability to move us away from using oil?

Hydrogen fuel cell technology could one day prove to be a useful part of our portfolio of energy sources, but for now the infrastructure costs associated with hydrogen fuel cell vehicles limit their potential for a commercial-scale solution to our transportation needs.

8) Since one source of electricity is natural gas, which is another depleting resource, and you seem to promote the use of plug-in hybrids to cut down on the use of oil, would you support the inclusion of more nuclear energy in our energy portfolio?

I believe that we can develop a cleaner, more diversified energy portfolio for electricity production. I believe that natural gas, cleaner coal plants with carbon capture and sequestration, and an increased reliance on renewable energy sources are the most important components of a secure, low-carbon electricity supply. Nuclear energy could one day be a useful part of that portfolio, if some of the key safety and waste storage issues are resolved.

9) In your testimony you applaud the renewable electricity standard in the House energy bill, yet only 3% of electricity is being generated by oil. As we try to address our dependence on foreign oil, isn't this "applause" misplaced?

In addition to reducing our dependence on foreign oil, I believe that a renewable electricity standard is an important part of a comprehensive energy plan.

10) What obstacles do you see from reaching the Senate-passed output of biofuels? How do you think policy should address those obstacles?

I am confident that with smart policies and ongoing technological innovations, we can achieve the goals of the new biofuels standard. Ethanol and biodiesel will be key components in this effort to replace 36 billion gallons of gasoline consumption with renewable fuels by 2022.

11) As you know, since oil is a fungible commodity, increased domestic production is not a viable long-term solution. Yet, you claim that the Senate-passed energy bill would reduce U.S. demand by 3.5 million barrels per day by 2020. Wouldn't the decreased demand be applied worldwide and thus have a more negligible affect on world oil markets, particularly as India and China's insatiable appetite for oil continues to increase?

I believe that reduced U.S. oil consumption would enhance our nation's energy security by making us less reliant on oil from other nations.

Experts have estimated that the Senate energy bill would save 3.5 million barrels per day by 2030, not 2020.

12) You repeatedly say that we need to make decisions "sooner rather than later." How did EPAct of 2005 contribute to long-term energy policy solutions?

The Energy Policy Act of 2005 was certainly a step in the right direction but did not go far enough. I firmly believe that to really make a difference, we must do more to reduce our demand on oil, starting with fuel economy standards. The new energy bill is an important step in constructing a far-sighted energy policy that will enhance energy security, reduce greenhouse gas emissions, and even provide savings for consumers.

THE SELECT COMMITTEE ON
ENERGY INDEPENDENCE AND GLOBAL WARMING

December 10, 2007

Dear Admiral Blair,
Following your appearance in front of the Select Committee on Energy Independence and Global Warming, members of the committee submitted additional questions for your attention. I have attached the document with those questions to this email. Please respond at your earliest convenience, or within 2 weeks. Responses may be submitted in electronic form, back to me at aliya.brodsky@mail.house.gov. Please call with any questions or concerns.

Thank you,
Ali Brodsky
Chief Clerk
Select Committee on Energy Independence and Global Warming

1) While considering long-term national security concerns, do you support the use of coal-to-liquids as an alternative to traditional petroleum. If not, why not? As a follow up, wouldn't the use of coal-to-liquids significantly increase our domestic supply of fuel? While the nation's coal reserves are ample, coal-to-liquids (CTL) production could strand valuable capital and thus actually impair national security. From production to use, CTL fuel releases as much as twice the carbon emissions of conventional oil-based fuels. If carbon mitigation policies are instituted in the future, CTL production might not be economically viable. Given this potential, the Energy Security Leadership Council (ESLC) is not in favor of directing taxpayer dollars toward deployment of CTL at this time. Instead, the ESLC recommends that government funds be devoted to researching, developing, and commercializing the carbon sequestration technologies that will likely be necessary components of sustainable large-scale unconventional oil production. The ESLC does not recommend restrictions on private capital seeking to invest in CTL.

2) Do you support increased offshore drilling and opening more areas for drilling in Alaska? The ESLC has repeatedly called for expanded domestic production of oil and natural gas

in conjunction with strengthened environmental protections. Many of the nation's untapped oil and gas resources are not available for production under current law. Most of these are believed to be located offshore, but important quantities have been identified in Alaska. The ESLC supports the development of these resources in order to boost national security, create domestic jobs, and preserve America's wealth.

3) How much bio-fuel and ethanol do you think should be included as substitutes for traditional petroleum? The ESLC has called for the annual production of 30 billion gallons of renewable bio-fuels, with at least half this amount coming from advanced technology fuels that do not rely on corn as a feedstock. The "Energy Independence and Security Act" signed into law on December 19, 2007 mandates bio-fuels production at levels that are fully consistent with the ESLC's recommendation. Ideally, future bio-fuels legislation will also incorporate 'smart subsidies'. When ethanol production facilities are profitable without subsidies (as is the case for amortized corn ethanol plants at current oil price levels), subsidy dollars should be redirected to other, more deserving efforts to boost energy security.

4) Did you reach any conclusions about the amount of petroleum we should keep in the strategic petroleum reserve and what the price of oil needs to be to trigger using it? The U.S. maintains the world's largest strategic petroleum reserve (SPR). While every effort should be made to maintain current levels of protection, the ESLC does not recommend a major expansion of the SPR. The U.S. should work, however, to ensure that other nations develop their own strategic reserves. These national reserves should be coordinated within a robust framework for international crisis management. Rising consuming nations in Asia (China and India in particular) must play a major role in this global strategic reserves system.

5) While I appreciate that simulations can provide some insight into possible options, wouldn't you agree that any simulation is highly subjective based on both initial assumptions and whom you choose to play various roles? For example, a Secretary of Energy Carol Browner would certainly make different decisions than say a Secretary Joe

Barton. Since Ms. Browner has participated in two *Oil Shockwave* events with very diverse 'cabinets', I will leave it to her to reflect on how personalities impact the effectiveness of the simulations. But, in my experience as an observer of *Shockwave*, certain key conclusions tend to emerge regardless of who play the various roles: 1) the market for oil is global; 2) small disruptions anywhere in the world can have a big impact on oil prices everywhere; 3) there are no adequate short-term solutions for addressing the dangers of oil dependence; and 4) the U.S. must act now to create long-term energy security.

6) Have the underlying assumptions of your simulation been verified by an independent party? In addition to that, how have you measured the likelihood of these scenarios playing out? I note that in your scenario there was "unseasonably cold weather across the Northern Hemisphere," which would seem to be at odds with the global warming scenario that has been laid out by the IPCC. The underlying assumptions of the simulations were rigorously vetted by experts with experience in national security affairs, economics, finance, oil trading, and oil production.

   I am not an expert on global warming, but I understand that the concept denotes an upward trend in average temperatures that in no way signals the end of intermittent cold-weather episodes. In any event, the most recent Shockwave simulation conducted on November 1, 2007, did not involve a cold-weather scenario.

7) What are your thoughts on the potential for hydrogen fuel cell development and their ability to move us away from using oil? Along with the entire membership of the ESLC, I have great confidence in the ability of this country to produce game changing technologies in the future. Hydrogen fuel cells may one day transform the fundamentals of oil dependence, but that future is still uncertain. In the meantime, the U.S. can enact measures to reduce oil dependence that possess a higher degree of certainty and cost effectiveness. Ideally, these would serve as a bridge to next-generation technologies, perhaps even a full-fledged hydrogen economy.

8) Since one source of electricity is natural gas, which is another depleting resource, and you seem to promote the use of plug-in hybrids to cut down on the use of oil, would you support the inclusion of more nuclear energy in our energy portfolio? The ESLC has not taken a collective position on nuclear energy. For my own part, and given my experience in the U.S. Navy, I believe that nuclear power can be used safely to provide energy for our nation.

9) You state, "those who oppose vehicle fuel-economy standards must accept that the free market has not-and will not-adequately motivate the investments necessary to protect the nation in the event of an oil crisis." Why do you think this is the case? Do you agree that consumer choice regarding which vehicles are purchased in the marketplace are primarily decided by performance and safety? I am not an expert on the economics of consumer choice, but I am convinced that the car buying experience is often confusing for customers. This confusion tends to make it difficult for buyers to separate their product preferences into discrete categories such as performance, safety, or fuel economy. Moreover, there is no guarantee of consistent price signals where gasoline is concerned, because there is no free market for oil; on the contrary, national oil companies and cartels can manipulate the global price of this essential commodity by altering production levels. For all these reasons, I strongly support more effective consumer education, especially in the area of fuel economy.

10) How do you balance the need to protect jobs in the auto industry with an increase in CAFÉ standards? Do you acknowledge the negative economic impacts of raising fuel economy too quickly? 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 preserve 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, I 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 U.S.-based car companies have made to our national security. 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.

According to numerous experts, the fuel-economy improvements mandated by the "Energy Independence and Security Act" will not damage the economic viability of automakers that sell in the U.S. market. On the contrary, the decision to require attributes-based standards will allow automakers to avoid many of the economically irrational production decision that were forced on them by the old CAFE system

The mileage gains required by the Act are less than the historical annual gains that were achieved when the nation last committed itself to fuel economy. Indeed, between 1975 and 1985, the miles-per-gallon (mpg) performance of passenger cars in the U.S. increased 5.5% per year. The figures for light trucks rose 4.2% per year over the same period.

In its 2002 study of CAFE's effectiveness, 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 to increase the efficiency of engines and transmissions. 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.

The NAS study was very conservative. The authors assumed only existing and emerging technologies and applied a gasoline price of only $1.50 per gallon. A retail gasoline price of $2.50 per gallon raises the expected cost-effective fuel economy of the entire fleet to 33.9 mpg. At $3.55 per gallon, the figure rises to 37.6 mpg, which equates to annual fuel economy increases of approximately 4.6 percent year for 10 years.

Significantly, the NAS study "gave little consideration" to the fuel-economy benefits of hybrids and advanced diesels.[1] Within the last five years, however, these technologies have dramatically raised the near-term bar on fuel economy. For example, Toyota's Prius gasoline-electric hybrid averages 46 mpg (2008 EPA combined mileage), giving it a fuel-economy rating that is 59 percent higher than its conventional sister-model, the Toyota Corolla.[2]

And another wave of technological innovation is on the way. Diesel-hybrid concept cars—not compacts, but full-size family sedans—have been rated at 70 to 80 mpg.[3] Cutting-edge materials such as carbon fiber were developed for national defense, but they can also trim vehicle weight without compromising strength or safety and boost fuel economy to over 100 mpg.

11) Admiral Blair, I know the military has a number of programs to reduce their own oil consumption and promote use of bio-fuels such as bio-diesel and coal-to-liquid technology. What do you think are the most promising things that the military is looking at for their energy security? My colleagues on active service are in far better position than I am to evaluate on-going military programs.

12) On Page 4 of your testimony you note that "oil dependence is a major constraint on strategic flexibility. This is true for the US and even more so for many of our major allies." Which allies? And how are their policies similar to or different from ours? The European Union's reliance on Middle Eastern oil and Russian gas continues to complicate U.S. foreign policy efforts, especially with regard to stopping Iran from developing nuclear weapons. China, with its rapidly growing dependence on foreign oil, also blocks U.S. diplomatic initiatives in order to strengthen its own ties with oil

[1] Statement of Paul R. Portney, Chairman of the CAFE Committee Board on Energy and Environmental Systems and Transportation Research Board, National Research Council, before the House Science Committee (9 February 2005).
[2] See www.fueleconomy.gov.
[3] Amory B. Lovins, E. Kyle Datta, Odd-Even Bustnes, Jonathan G. Koomey, and Nathan J. Glasgow, *Winning the Oil Endgame: innovation for profits, jobs, and security* (Snowmass, CO: Rocky Mountain Institute, 2005), 50 ff.

exporters. Chinese opposition has helped thwart U.N. Security Council sanctions against Iran and prevented significant intervention in the Darfur region of Sudan.

13) You note on Page 5 of your testimony that President Bush has already proposed an increase in CAFÉ standards by 4% a year, which he can do administratively. So what would be the compelling reason to rush through the Senate energy bill when there is no boost for domestic production included? Since this question was posed, a bipartisan majority in both houses of Congress approved the "Energy Independence and Security Act," and President Bush signed this legislation. This new law will raise fuel-economy standards and increase renewable fuels production and lead to substantial and much needed improvements in the nation's energy security. These are historic achievements, and they certainly compelled my support for the bill.

14) I note in Admiral Blair's written statement that his first conclusion is "improved security will require greater conservation as well as increased production of petroleum and alternatives here at home." As you may know, the energy bill that passed the House has no focus on increased production (and in fact has some disincentives); could you comment on the need to increase production and what that will require? The "Energy Independence and Security Act" now signed into law removed the disincentives referred to in the question. Nevertheless, as already indicated in my answer to question #2, I believe strongly in the need for vigorous efforts to maintain and expand domestic production of oil and natural gas, in particular through opening of restricted areas on the Outer Continental Shelf.