S. HRG. 112–273

# ENERGY EFFICIENCY AND ALTERNATIVE FUEL VEHICLES

## HEARING

BEFORE THE

## COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

ON

**S. 963**
**S. 1000**
**S. 1001**

JUNE 9, 2011

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# ENERGY EFFICIENCY AND ALTERNATIVE FUEL VEHICLES

**THURSDAY, JUNE 9, 2011**

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
*Washington, DC.*

The committee met, pursuant to notice, at 9:34 a.m. in room SD–366, Dirksen Senate Office Building, Hon. Jeff Bingaman, chairman, presiding.

## OPENING STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

The CHAIRMAN. We'll go ahead and get started. Senator Murkowski is on her way, but asked us to proceed.

Our hearing today will relate to 3 bills. The bills are the Reducing Federal Energy Dollars Act of 2011, that's introduced by Senator Carper, S. 963; the Energy Savings and Industrial Competitiveness Act of 2011, introduced by Senator Shaheen and Senator Portman, this is S. 1000; and the Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011, S. 1001, introduced by Senator Wyden.

S. 963 focuses on improving energy efficiency within the Federal Government. S. 1000 is a multi-title efficiency bill, includes strengthening building codes, energy efficiency financing options for buildings and for manufacturers, as well as business-oriented energy initiatives from the 111th Congress, such as the Supply Star program.

S. 1001 consists of several proposals to help address some of the challenges with bringing alternative fuel vehicles to the wider market. We've worked aspects of this problem in the past. I hope the testimony today will help guide us as we work to integrate these bills into a complete policy.

One point I'd like to raise early on is that I do have concerns about the proposal to sell oil from the Strategic Petroleum Reserve to fund other projects, even when those are worthwhile projects. So, that's a subject we'll undoubtedly get a chance to debate and discuss.

We look forward to hearing the testimony. Why don't we go ahead.

We have 2 panels today, and let me introduce the first panel, and we will hear from them, and then have questions for them. Then we will move to the second panel after that.

On the first panel, Ms. Kathleen Hogan, who is the deputy assistant secretary in the Office of Energy Efficiency and Renewable Energy in the Department of Energy.

Thank you for being here again today. We appreciate it—you are a regular and welcome testifier to our committee.

Kateri Callahan is the President of the Alliance to Save Energy. Thank you very much for being here.

Mr. Tony Crasi is the President of Crasi, the Crasi Company in Cuyahoga Falls, Ohio. Thank you for being here. Did I foul-up your name? Was it OK?

Mr. CRASI. No, the name's good.

The CHAIRMAN. OK. I mispronounced the town.

[Laughter.]

The CHAIRMAN. Tell me the right pronunciation.

Mr. CRASI. Cuyahoga Falls.

The CHAIRMAN. Cuyahoga. It's not spelled Cuyahoga though.

[Laughter.]

The CHAIRMAN. OK. All right.

Mr. Damiano, Philip Damiano is the Chief Operating Officer with Velcro USA in Manchester, New Hampshire. Thank you very much for being here.

Mr. Jay Scripter is Vice President for Sustainability with Owens-Illinois in Perrysburg, Ohio. Thank you very much for being here.

So, why don't we start and have each of you take about 5 minutes and give us your views on these bills, or whatever else you think we need to understand, and we will include your entire statement in the record as if read.

Dr. Hogan, why don't you go ahead?

**STATEMENT OF KATHLEEN HOGAN, DEPUTY ASSISTANT SECRETARY FOR ENERGY EFFICIENCY, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY**

Ms. HOGAN. OK. Good morning, Chairman Bingaman, Ranking Member Murkowski, and members of the committee. Thank you for the opportunity to discuss the Department of Energy's energy efficiency and advanced vehicle program.

The administration is still reviewing the draft legislation for this hearing, and does not have a position at this time, so my statement will really provide you with information on the DOE programs and opportunities to spur investment in efficiency and advanced vehicles.

As we know, energy efficiency is the fruit already on the ground—a fast, low-risk, economical way to address climate change and energy security concerns, build domestic jobs that cannot be exported, and help businesses and homeowners save money. We also know we need to aggressively pursue advanced clean energy technologies and advanced manufacturing to meet these objectives and enhance U.S. global competitiveness.

Ensuring the Federal Government leads in clean energy is important to this effort. Due to its sheer size, the Federal Government offers taxpayers significant savings in energy bills through greater efficiency, as well as a test bed for advanced technologies.

The Federal Government has made substantial progress against sustainability goals mandated in EPAct 2005, EISA 2007, and the Executive Order 13514 as signed by President Obama in October 2009. For example, the Federal Government has reported meeting its 15 percent statutory goal for improving facility energy intensity, and surpassing its 5 percent goal for renewable electric energy production. So, we continue to work toward a 30 percent intensity goal by 2015, and a 7.5 percent renewable energy goal by 2013, as well as other goals.

To meet these goals, energy service performance contracts will be highly critical, even given the very good year we had in fiscal year 2010, with contracts totaling more than $560 million.

In addition, allowing non-electric renewable energy, thermal energy, to count toward the renewable goal would let the Federal Government count some of the most cost-effective means to displace fossil energy as they make progress.

Building codes also provide energy bill savings. Taxpayers locking in the best in cost-effective energy efficiency at the time of building construction lowers the overall cost of home or building ownership. Critical to effective building codes is sound analysis of code proposals, timely adoption practices, effective training and compliance. DOE is working in each of these areas, including with a number of states and other jurisdictions, developing model training and compliance programs to improve overall savings from codes.

Energy-conserving appliance standards are another important step the administration has taken to save energy in homes and businesses. Since 2009, January, the DOE has finalized new efficiency standards for more than 20 household and commercial products which are projected to cumulatively save consumers between $250 billion and $300 billion over the next 20 years.

S. 1000 sets product standards for a number of product categories. Some are based on consensus agreements—agreements among manufacturers and a diverse set of other stakeholders. These consensus standards can be a very effective way to provide for greater consumer savings while reducing litigation risk and giving manufacturers certainty for planning their investments. We've already issued direct final rules for 2 rulemakings covering five products in S. 1000 based on these agreements. The bill sets product standards for 3 more such product categories. While not commenting on the particular product categories in S. 1000, our analyses do show that proposed rules for standards we have examined offer significant benefits to consumers.

Improving industrial energy efficiency is also important for saving energy, money, creating jobs, and enhancing U.S. competitiveness. DOE has a balanced industrial portfolio offering technical assistance to save industry money today as well as developing advanced manufacturing processes and materials with a focus on U.S. competitiveness and a clean energy future.

We know that in the manufacturing area—particularly where manufacturing overlaps with advanced transportation efforts—breakthroughs are particularly important due to our transportation sector accounting for two-thirds of the United States oil consump-

tion and contributing one-third of the Nation's greenhouse gas emissions.

Alternative fuel vehicles do hold great promise for reducing our dependence on oil, and an important step is meeting the President's goal to have the U.S. become the first country with a million electric vehicles on the road by 2015. S. 1001 provides many ways to break the dependence on oil and move toward a clean energy future.

In conclusion, I want to thank the committee for the opportunity to provide these comments. As we complete our review of these bills, we may have technical suggestions, and we would look forward to sharing them with the Congress and working on these issues. I'm happy to answer any questions committee members may have.

[The prepared statement of Ms. Hogan follows:]

PREPARED STATEMENT OF KATHLEEN HOGAN, DEPUTY ASSISTANT SECRETARY FOR ENERGY EFFICIENCY, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Chairman Bingaman, Ranking Member Murkowski and Members of the Committee, thank you for the opportunity to discuss the Department of Energy's (DOE's) energy efficiency and Advanced Vehicles Technology Programs. The Administration is still reviewing the Reducing Federal Energy Dollars Act of 2011 (S. 963), the Energy Savings and Industrial Competitiveness Act of 2011 (S. 1000), and the Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011 (S. 1001). While the Administration does not take a position at this time, my statement will provide you with information on work DOE is already doing to create jobs, build a new clean energy economy, and help save consumers and businesses money through improved energy efficiency.

At EERE, we work to remove the barriers to the rapid conversion of innovative research into commercial products, manufacturing, and jobs. And we work with other federal, state, and local governments to speed the adoption of these American innovations. The new businesses in clean energy production, installation, and operation are playing a key role driving economic growth and job creation.

The market for clean energy technology is growing quickly and many countries have mounted aggressive national efforts to capture market share. China, for example, has moved quickly to dominate the development of next generation clean energy products through low-cost production and investments in research infrastructure. As the President said, "this is our generation's Sputnik moment." To show his clear commitment to our future, he has asked for a significant increase in funding for energy efficiency and renewable energy in the FY12 budget proposal, even in a budget which moves overall domestic discretionary spending to the lowest levels in a generation.

To win the future, we have to be a nation that makes, creates, and innovates. Across the country, we are seeing strong evidence that the out-build and out-innovate pillars the Administration has put forward are paying off. In October of last year, for example, manufacturing posted its first twelve-month gain in more than ten years, and has added close to 250,000 jobs since the December 2009 low. The Administration continues to be optimistic about the prospects for manufacturing in the recovery.

Manufacturing remains one of the most globally competitive economic sectors we have. It also is one of the most visible economic sectors we have, with middle-class Americans clearly understanding the impact that strengthened manufacturing has on their lives and their communities.

The challenges we face mean that we need to move with unprecedented speed and scale. Success is measured by private innovation and investment but can begin with well-crafted federal programs that will help achieve a number of important goals:

- A vigorous and profitable residential and commercial building retrofit industry, costeffectively saving 30-50 percent of the energy used in existing buildings;
- Solar energy, offshore wind energy, and geothermal plants fully competitive with conventional sources of electricity;

- Fuels that can be drop-in replacements for gasoline, diesel fuel, or jet fuel priced competitively with products produced from petroleum;
- Large fleets of electric and hybrid cars supported by a network of charging stations to support them; and
- Trucks with over 50% improvement in fuel economy.

Small federal investments have led to major breakthroughs like the invention of the internet and Global Positioning Systems or "GPS" found in most cellular devices today. Similarly, EERE investments past, present, and future are critical to achieving these goals. As one example, in 2009, the U.S. had only two, relatively small, factories manufacturing advanced vehicle batteries, and produced less than two percent of the world's hybrid vehicle batteries.[1] But over the next few years, thanks to investments from the American Recovery and Reinvestment Act of 2009 (Recovery Act) in battery and electric drive component manufacturing, and electric drive demonstration and infrastructure, the U.S. will be able to produce enough batteries and components to support 500,000 plug-in and electric vehicles per year. High volume manufacturing, coupled with battery technology advances, design optimization, and material cost reductions, could lead to a drop in battery costs of 50 percent by 2013 compared to 2009, which will lower the cost of electric vehicles, making them accessible to more consumers.

These kinds of breakthroughs are especially important in the transportation sector, which alone accounts for approximately two-thirds of the United States' oil consumption and contributes to one-third of the Nation's greenhouse gas (GHG) emissions.[2] After housing, transportation is the second biggest monthly expense for most American families.[3] As the President said in his recent energy speech, "In an economy that relies so heavily on oil, rising prices at the pump affect everybody." Emphasizing that "there are no quick fixes," the President outlined a portfolio of actions which, taken together, could cut U.S. oil imports by a third by 2025.

The draft legislation being addressed today focuses on three areas:

- Clean energy in the Federal sector
- Energy efficiency in the industrial sector and building codes
- Alternative fuel vehicles

General comments are provided on each of these three areas, but the Department has no comments on the specific content of the legislation, as these bills are currently under review by the Administration.

CLEAN ENERGY IN THE FEDERAL SECTOR

Constructing and operating Federal facilities in a sustainable manner has numerous welldocumented benefits, including:

- Saving taxpayer dollars through optimized life-cycle cost-effective actions;
- Enhancing employee productivity through the provision of safe, healthy and environmentally appealing workplaces;
- Reducing environmental impacts through decreased energy, water, and materials use; and
- Moving the overall market conditions toward higher performance, through the Federal demand for sustainable facilities.

These benefits are sizable, in part, due to the size of the Federal Government. The Federal Government is estimated to use about 1.6 percent of the Nation's total energy, occupy nearly 500,000 buildings, operate more than 600,000 vehicles, and purchase more than $500 billion per year in goods and services.

The Federal government is making substantial progress toward its sustainability goals mandated in EPAct 2005, EISA 2007, and Executive Order 13514, signed by President Obama in October, 2009. For example, in FY 2010, the Federal Government reported a 15 percent decrease in site-delivered Btu per square foot compared with baseline year 2003. This meets the EISA statutory reduction goal for FY 2010.

FY 2010 was also the highest level year to date for the use of Energy Savings Performance Contracting with these contacts totaling more than $560 million in investment in Federal facilities. This type of performance-based contracting is extremely important to meeting the Federal sustainability goals due to the pressures on Federal appropriations and increasing goals for reduced energy intensity, energy savings goals that increase to 30% by 2015.

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[1] http://www.whitehouse.gov/sites/default/files/blueprint__secure__energy__future.pdf
[2] http://www1.eere.energy.gov/vehiclesandfuels/pdfs/vehicles__fs.pdf
[3] http://www.bls.gov/news.release/cesan.nr0.htm

In FY 2010, Federal agencies also reported purchasing or producing renewable electric energy representing 5.2 percent of the Federal Government's electricity use, achieving the EPAct 2005 goal of five percent. This more than doubled renewable energy use as a percentage of total facility electricity use since 2003. The five percent goal remains in place until FY 2013, when it will increase to 7.5 percent under current statute. Not counted in this metric is the significant amount of non-electric renewable energy produced and purchased by the Government that displaces the need for additional electric generation. This includes thermal energy, such as solar hot water and space heating, geothermal energy, steam from biomass, and landfill methane.

DOE is also making progress to improve the transparency of Federal building energy efficiency, as required under EISA 2007, Section 432. DOE expects to have a web-based system that provides information on the energy efficiency of metered buildings and on the cost-effective improvement opportunities that exist in Federal facilities publicly available by Fall 2011.

ENERGY EFFICIENCY IN THE INDUSTRIAL SECTOR AND BUILDING CODES

The Energy Savings and Industrial Competitiveness Act (S.1000) outlines new provisions for building codes, appliance standards, and industrial energy efficiency among other areas.

Energy-conserving appliance standards are one of the significant steps the Administration has taken to save energy in homes and businesses nationwide, and pave the way toward a clean energy future for our country.[4] Since January 2009, the Department of Energy has finalized new efficiency standards for more than twenty household and commercial products, which are projected to cumulatively save consumers between $250 billion and $300 billion over the next 20 years.[5] These standards can provide an immediate and economically responsible way to increase the nation's energy security while protecting the environment. Improvements in energy efficiency can be made today to yield significant near-term and long-term economic and environmental benefits for the nation.[6]

In 2007, Congress recognized the importance of negotiated consensus standards, amending the Energy Policy and Conservation Act (EPCA) to allow for an expedited rulemaking process in the event a representative group of stakeholders could reach agreement. Several DOE rules currently under development and review overlap with the proposed consensus standards. Although the agency cannot presuppose the level of the final standards, it is seriously considering these consensus recommendations. The agency's preliminary analyses accompanying the proposed rules for these standards suggest that the potential net benefits from these recommended levels could yield tens of billions of dollars in fuel savings and lower greenhouse gas emissions.

U.S. industry accounts for about one-third of U.S. energy use while contributing to about 12% of U.S. Gross Domestic Product[7]. Improving industrial energy efficiency will result in saving money and enhancing U.S. competitiveness in the world's manufacturing sector. By partnering with the private sector, DOE has already managed to save more than 9.3 quadrillion Btu of energy and reduced carbon emissions by over 206 million metric tons.

Supply chain energy efforts can make an important contribution to overall industrial efficiency and the competitive position of domestic suppliers. Analysis suggests that a large part of the carbon footprint for many consumer products can be attributed to the supply chain—from raw materials, transport, and packaging to the energy consumed in manufacturing processes—on the order of 40 to 60 percent. DOE and the Environmental Protection Agency (EPA) both have existing initiatives that address supply chain efficiency, such as Save Energy Now® at DOE and ENERGY STAR. For example, through its national Save Energy Now® initiative, DOE encourages manufacturing companies to engage their supply chains in energy and carbon management, while at EPA, ENERGY STAR has engaged whole industries to support their customers and supply chains in building effective energy management programs. Specifically, DOE and EPA develop processes and resources to assist companies in promoting energy management to their industrial suppliers and customers. Save Energy Now® LEADER Companies make a voluntary commitment to reduce their energy intensity by 25 percent in 10 years. Many of these companies

[4] http://www.whitehouse.gov/issues/energy-and-environment

[5] http://www.energy.gov/news/9582.htm

[6] See, for example: McKinsey and Company (2007). Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost? (http://www.epa.gov/cleanenergy/documents/suca/cost-effectiveness.pdf) and Lazard Associates. Feb. 2009. Levelized Cost of Energy Analysis Version 3.0.

[7] http://www1.eere.energy.gov/industry/about/pdfs/itp__program__fact__sheet.pdf

are interested in improving the efficiency of their supply chains as well. ENERGY STAR boasts a growing group of corporations that have used ENERGY STAR to influence key suppliers to effectively manage energy.

DOE is also working with Superior Energy Performance (SEP), a voluntary certification program helping to provide industrial facilities with a roadmap for achieving continual improvement in energy efficiency while maintaining competitiveness. A central element of SEP is implementation of the International Organization for Standardization (ISO) 50001 energy management standard, with additional requirements to achieve and document energy intensity improvements. DOE is working through SEP to bring ISO 50001 to the U.S. Upon its publication this American National Standards Institute-accredited program is anticipated to provide companies with a framework for fostering energy efficiency at the plant level and a consistent methodology for measuring and validating energy efficiency and intensity improvements. This new framework has the opportunity to be an important tool to integrate into supply chain efforts.

ALTERNATIVE FUEL VEHICLES

Few technologies hold greater promise for reducing our dependence on oil than alternative fuel vehicles. The Administration has set a goal to have the United States become the first country with a million electric vehicles on the road. Meeting this goal will help the United States become a leader in the clean energy economy, while capitalizing on the ingenuity of American industry. Manufacturing products needed for the clean energy economy will generate long term economic strength in the U.S., creating jobs across the country while reducing air pollution and greenhouse gas emissions. The Administration supports the goal of utilizing alternative fuel technologies to break our dependence on oil and to move toward a clean energy future. The DOE looks forward to working with Congress to achieve these objectives.

DOE's Vehicle Technologies Program is helping the Nation lead the way in alternative fuel vehicle innovation. DOE has helped reduce the cost of PHEV Lithium Ion batteries to $650 per kilowatt-hour, a 35% reduction from the 2008 baseline of $1,000 per kilowatt-hour. This is making oil alternatives competitive in general while specifically increasing U.S. competitiveness in the global market.

CONCLUSION

In conclusion, the Department of Energy thanks the Subcommittee for the opportunity to comment on these proposed initiatives. We look forward to working with Congress to develop strong, effective clean energy policy to ensure U.S. leadership on these global issues and in the clean energy economy. I am happy to answer any questions Committee Members may have.

The CHAIRMAN. Thank you very much.

Kateri Callahan, go right ahead.

## STATEMENT OF KATERI CALLAHAN, PRESIDENT, ALLIANCE TO SAVE ENERGY

Ms. CALLAHAN. Great. Thank you very much for having me here to testify this morning.

I represent the Alliance to Save Energy, which is a nonprofit coalition of businesses, consumers, and government and environmental leaders who have all come together to advance energy efficiency worldwide.

We are privileged and honored to have Senator Shaheen leading our organization as an honorary chair, and to have had the long-term participation and leadership of Senator Bingaman, and also the Ranking Member Senator Murkowski, and Senator Udall, who is not here today, serve as congressional vice chairs to the alliance.

The 2 energy efficiency bills that are before the committee today are needed urgently by American consumers who are struggling with the rising cost of energy. Our estimates show that the average household in America is going to pay $5,700 this year to fuel their cars and their homes, which is up 17 percent from just a year ago.

Deployment of off-the-shelf energy efficient products and practices is a proven and a cost-effective way of reducing these energy costs. For example, our study showed that over the course of the last 4 decades, because of the improvements in efficiency, we are now able to offset the need for 50 quads of energy in our economy. That's about half of our annual energy use. In doing that, we are saving Americans $500 billion a year.

But notwithstanding these gains, there is more that we can do and we must do. I think this committee is well aware that the U.S. is expected to grow its energy demand by about 20 percent over the next 2 decades. If fully implemented, energy efficiency can meet all of this new demand while ensuring that America remains competitive in the global marketplace.

There's a problem, though. Due to market barriers, these savings won't happen without strong and effective government policies, like those that are contained in the Shaheen-Portman bill.

S. 1000 truly represents, I believe, the people's voice in national policies, as the senators worked with businesses, with our groups, with other associations and advocates from across the country to develop smart and cost-effective policies that make up this bill.

The number of diverse businesses and organizations lining up behind the bill is phenomenal. We topped 100 yesterday, and the endorsements are continuing to roll in.

So why is there this broad support? It's because the bill has a variety of practical provisions that help American manufacturers, that help American businesses, government agencies, and homeowners. For example, it establishes a revolving loan program to help manufacturers retool, to reduce their waste, and become more competitive. It expands the Department of Energy's Loan Guarantee Program to cover energy efficiency upgrades that will help reduce the cost of operating commercial and municipal buildings, while creating construction jobs. It creates a rural energy efficiency loan program that's going to allow rural electric coops to offer microloans, which will open up opportunities for energy improvements to homeowners and small businesses around the country.

But by far the greatest potential impact of this bill is from the provision on building energy codes. If we achieve the goals of this provision by 2030, we will save about the total amount of energy used in Florida every year, and which, in turn, will save tens of billions of dollars.

But, why energy building codes? Homeowners, tenants, and building owners can't walk through a building and know its efficiency. They have to trust that the buildings they buy and lease are built to a minimum level of efficiency that won't expose them to outrageous energy costs, just like they trust that these buildings are built to minimum standards to protect their health and safety. Survey after survey by consumer groups, the NAHB, and the National Association of Realtors, among others, show that Americans want energy-efficient homes and that they're willing to pay a premium for them. Consumers are smart in this regard.

We've done studies through an affiliated group, BCAP, showing that building new homes to meet the current best practice energy code do add some costs—about $800 on average up-front. But they delivered $240 on average in energy savings every single year. So,

a typical homeowner, then, would, through the savings, pay back the out-of-pocket costs after just 10 months, which is really a blip in a typical 30-year mortgage.

We have a sampling of 28 States where we've done this, but I took a couple from the committee. So, Senator, in your home State of New Mexico, the payback period is only 8 months, and a homeowner saves $200 each and every year. In North Dakota, the homeowner also comes out ahead after 8 months, but the annual savings are greater—at $340. The list goes on. Even in Idaho and Michigan, the break-even point is less than a year. We think this is a pretty good deal for consumers.

Before closing, I also want to highlight the Federal energy management provisions both in S. 1000 and in Senator Carper's bill.

The U.S. Government is the Nation's largest energy consumer, accounting for about 1.6 percent of our total energy use, and that costs taxpayers money—a lot—$24.5 billion annually. Cost-effective energy efficiency improvements can save taxpayer dollars and improve the reliability and security of achieving Federal missions, including our defense missions.

The alliance supports the objectives of these provisions, but we hope to work with the authors to ensure that these provisions work practically with the other executive orders and laws that are in place, and do not overwhelm or overburden agencies.

In conclusion, the 2 energy efficiency bills before the committee today make use of America's most abundant energy resource—energy efficiency; they cost-effectively address the critical economic challenges that we face of high energy bills and the need to create jobs; and, very importantly, particularly to me, is that the Shaheen-Portman bill demonstrates that energy efficiency policy can transcend partisan politics, and that it can be a key, and a first pillar, in sound national policy.

On behalf of the Alliance to Save Energy, I strongly encourage this committee to act swiftly on both of these important bills before you today.

Thank you for your time, and I look forward to your questions.

[The prepared statement of Ms. Callahan follows:]

PREPARED STATEMENT OF KATERI CALLAHAN, PRESIDENT, ALLIANCE TO SAVE ENERGY

Good morning, Mr. Chairman, my name is Kateri Callahan and I am the President of the Alliance to Save Energy. I am delighted to be here today to testify in support of S. 1000, the Energy Savings and Industrial Competitiveness Act of 2011, and S. 963, the Reducing Federal Energy Dollars Act of 2011.

The Alliance to Save Energy ("the Alliance") is a bipartisan, nonprofit coalition of business, government, environmental, and consumer leaders committed to promoting energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security. The Alliance, founded in 1977 by Senators Charles Percy and Hubert Humphrey, currently enjoys the leadership of Senator Jeanne Shaheen, one of the principal authors of S. 1000, as Honorary Chairman. Former Pacific Gas and Electric Corporation President, Chairman and CEO Peter Darbee serves as our Co-Chairman, and Senators Jeff Bingaman, Lisa Murkowski, Mark Udall, Susan Collins, Richard Lugar, and Mark Warner, and Representatives Ralph Hall, Steve Israel, Ed Markey, Paul Tonko, and Michael Burgess, serve as Honorary Vice-Chairs. We are deeply honored that both the Chairman and the Ranking Minority Member of this Committee serve as Honorary Board members of the Alliance. More than 170 companies and organizations support the Alliance as Associates.

On behalf of the Alliance Board, Associates and staff, I commend Senators Shaheen and Portman for their partnership on this important legislation, which is the product of many months of hard work and cooperation. S. 1000 truly represents the "people's voice" in calling for sound energy policy. Businesses, trade associations, consumers, environmentalists, state and city officials, advocates for low-income families, energy efficiency experts, and others have come together, working with the bill's authors, to find ways for the government to help all of us through energy efficiency through this legislation. A letter of support for S. 1000 from over 75 businesses and organizations including the U.S. Conference of Mayors and the American Institute of Architects, to mention but two, is attached.

Most importantly, the Senators have crafted legislation that can draw the strong bipartisan support necessary to achieve its enactment into law, which in turn will deliver huge energy cost savings to American consumers and businesses, and will benefit our economy and national energy security.

Energy efficiency is America's most abundant energy resource, and one with a 40-year, demonstrated history of being the cheapest, quickest and cleanest way to extend our nation's energy supplies. Energy efficiency currently contributes more toward meeting our country's energy needs than any other single resource, including oil, natural gas, coal, and nuclear power. Without the energy efficiency improvements we've made since 1973, we would need about 50 percent more energy to power today's economy than we are currently using (see figure below)*. Effective public policy—like that embodied in S. 1000 —has allowed America to tap into the energy efficiency resource. For example, much of the hundreds of billions of dollars in savings over the past 40 years has been due to public policies on appliance efficiency standards, building energy codes, consumer information and incentive programs, and technology development and deployment—many of the policy tools that comprise S. 1000.

Notwithstanding the past efficiency gains, energy demand in the United States is still expected to grow approximately 20 percent by the year 2035. If fully implemented, energy efficiency can meet this new demand while ensuring that America remains competitive in the global marketplace. A 2009 report by McKinsey and Company, for example, estimated that a $500 billion investment in unlocking energy efficiency's potential could yield gross energy savings of $1.2 trillion and a reduction in projected non-transportation energy use of 23 percent in 2020.

Energy efficiency is the best assistance we can provide to consumers struggling to pay high energy bills. In 2011, we project the average American household will spend a combined $5,700 a year on residential and transportation energy use, a cost which has grown 17 percent since 2010 and 24 percent since 2009. Besides reducing bills directly for those who implement efficiency measures, energy efficiency, by reducing demand, reduces energy price pressure across the board, and does so more quickly and cost-effectively than any other option. Energy efficiency also reduces the amount of oil we import, reduces air pollution, strengthens the economy by freeing consumer dollars for other purposes, lessens stress on the electric grid and on energy and water infrastructure, and forestalls the need for costly new investments in electricity generating capacity.

Further, energy efficiency is a major U.S. industry with continuing untapped potential. The American Council for an Energy-Efficient Economy (ACEEE) claims that in 2004 some $43 billion was spent on efficient equipment and services, supporting 1.6 million jobs. With the right policies, the energy efficiency services sector is expected see a 2- to 4-fold increase in jobs between now and 2020.

ENERGY SAVINGS AND INDUSTRIAL COMPETITIVENESS ACT

The Energy Savings and Industrial Competitiveness Act (S. 1000) uses a variety of low-cost tools to reduce barriers for private sector energy users and to drive adoption of off-the-shelf efficiency technologies. These tools include loans for building efficiency upgrades, assistance for manufacturers, updates to building codes and appliance standards, and energy-saving practices within the federal government.

S. 1000 has great potential for energy savings and job creation. According to ACEEE selected provisions of the bill could save almost six quadrillion Btu of energy annually by 2030, worth tens of billions of dollars. S. 1000 would create a wealth of economic opportunities. Through financial and technical support, as well as provisions to overcome existing market barriers, S. 1000 enables the advancement of an energy efficient economy with investment at home that will create jobs and improve American competitiveness globally. This bill supports American businesses and protects the bottom line.

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*Figure has been retained in committee files.

BUILDING ENERGY CODES

By far the greatest potential impact of S. 1000 is from Section 101 on building energy codes. ACEEE estimates that this provision, if it meets its goal of zero-net-energy buildings by 2030, could save 4.4 quadrillion Btu of energy per year, about the total annual energy use today in the state of Florida, and would save consumers tens of billions of dollars. Besides saving homeowners money, more efficient buildings due to this provision will increase home comfort, improve local air quality, reduce our dependence on foreign oil, help the economy by putting money into the hands of consumers, and reduce stress on the power grid and natural gas supplies.

Building energy codes set a minimum level of energy efficiency for new buildings and building alterations that protects consumers and businesses from high utility costs. Builders do not pay a home's utility bills, so they do not have a direct incentive to invest in energy efficiency. Homeowners, tenants, and building owners typically do not have the information or the expertise needed to make informed decisions. For example, few of us know the R-value of the insulation in our walls or the Seasonal Energy Efficiency Ratio of our air conditioners—and if we did, we would not know whether they were good or bad. We need to be able to trust that the buildings we buy and lease meet a minimum standard that protects us from outrageous energy bills, just as we trust these buildings are built to minimum standards to protect our health and safety.

Importantly, codes make American homes more affordable. The Building Codes Assistance Project (BCAP), affiliated with the Alliance to Save Energy, recently looked at the added building cost and energy savings of meeting the current 2009 International Energy Conservation Code (IECC) model energy code for homes in the most obvious way possible, i.e., without using any of the opportunities for smarter design that a good architect or builder would employ. In every instance studied, the payback period for the additional investment required to meet the code was less than two years—and then the homeowner would continue, for years and years, to reap the benefits of the energy cost savings. We sampled some of the home states of Senators on the Energy and Natural Resources Committees. In New Mexico, the savings pay back the out-of-pocket costs after just 8 months, and the homeowner saves a net $200 each year after that. In North Dakota, the homeowner comes out ahead after 8 months, and the annual savings are $340.00. In Louisiana, the annual savings are $190, so the homeowner breaks even in 9 months. In Idaho and Michigan, the break-even point is 11 months. The national average is $840 added cost and $240 annual savings with break-even in 10 months. A chart is attached listing costs and savings in the 28 states that BCAP examined.

Thus, it should be no surprise that consumers want more efficient homes. In a recent national survey by Consumers Union and BCAP of over 5,000 consumers, 82 percent agreed that homeowners have a right to a home that meets minimum efficiency standards. 74 percent believe that energy codes help ensure that homeowner and taxpayer dollars are used wisely and efficiently by requiring that new homes will be "built right the first time." A survey by the National Association of Home Builders found that just over half of consumers would be willing to pay up to $11,000 more for a new home that saved $1000 a year in energy bills. The National Association of Realtors found that energy efficiency is an important consideration in choosing a home for 90 percent of home buyers. Codes provide the best guarantee of those energy savings.

Several programs, such as Energy Star and the U.S. Green Building Council's LEED program, have proven successful and established public support in the market for energy efficiency at levels above code. However, these programs capture only a minority of the market. There are more than one million Energy Star homes now, but more than one hundred million are not. We need strong codes to build minimum efficiency into all new buildings to reap the economic, environmental, security, and consumer benefits of energy efficiency.

The proposal in S. 1000 would not federalize building codes. It uses the existing codes infrastructure, increases regulatory transparency, and takes cost-effectiveness into account, while guiding codes toward better, more efficient buildings.

The S. 1000 provision would:

- Direct DOE to set national energy savings targets for residential and commercial codes and to ensure model codes are available that meet the targets,
- Set targets for improved building compliance with the codes, as well as for state adoption, and
- Authorize increased financial and technical assistance to the states, local governments, and national model code-setting bodies.

Similar codes legislation that passed the Energy and Natural Resources Committee in the last Congress received support from manufacturers, utilities, natural gas consumers, environmental groups, consumer advocates, efficiency experts, states, and others.

Homes and commercial buildings are the largest energy-using sector of the economy, responsible for 40 percent of both energy use and carbon dioxide emissions, and for 70 percent of all electricity use. Inadequate codes lock inefficiency into buildings that will last for several decades. If we do not implement more effective building energy codes now, we will not be able to implement a sensible energy policy, and homeowners will see money fly out their windows and doors, for many years to come.

APPLIANCE STANDARDS

The appliance standards provisions in Subtitle B of S. 1000 reflect consensus standards for appliances and equipment that have already been reported out by this committee in the Implementation of National Consensus Appliance Agreements Act (S. 398). The consensus provisions will save consumers an additional $43 billion through 2030 according to ACEEE. While some of the standards can be issued by DOE, others require legislative action.

Very importantly, the standards contained in S. 1000 do not have any scoring or budgetary impact. Additionally and also importantly, federal efficiency appliance standards have a long and rich history of Republican as well as Democratic support. The first federal energy efficiency standards for appliances were enacted in 1987 under President Reagan. The National Appliance Energy Conservation Act of 1987 (NAECA), followed by additional legislation signed by Presidents Reagan, George H.W. Bush, and George W. Bush in 1988, 1992, 2005 and 2007, set national standards for residential and commercial appliances and equipment. ACEEE estimates that these bipartisan standards have reduced U.S. energy use by 3.6 percent (3.6 quadrillion Btu per year, greater than the total annual energy consumption of Louisiana), saved taxpayers more than $300 billion in energy bills, created a net 340,000 American jobs, and reduced energy-sector pollution nationwide.

The standards create regulatory certainty for manufacturers, allowing for long term investment and job creation. Ever since legislation enacted in 1987, Congress has only adopted specific standards when there is a consensus among all the interested stakeholders, including manufacturers, efficiency advocates, consumer groups, and states, as is the case with the provisions contained in this bill.

Energy efficiency standards prohibit the production and import of energy-consuming products less efficient than the minimum requirements. Covered products include furnaces, air conditioners, water heaters, refrigerators and freezers, washers, dryers, motors, lamps, and other residential and commercial products. These standards keep low quality appliances—whose competitive sticker prices conceal high operating costs—out of the marketplace, while still providing consumers with a broad array of product sizes and features. Because of these standards, a typical refrigerator sold today uses 70 percent less energy than those sold in the 1970s.

In short, federal standards have been tremendously successful in reducing energy use and air pollution, saving consumers money, creating jobs, lessening strain on the electric grid, and minimizing regulatory burden. These standards are very much a part of a comprehensive approach to energy efficiency, and I urge the Committee to continue to support these standards until enactment.

INDUSTRIAL ENERGY EFFICIENCY

One area where S. 1000 directly helps businesses is in the industrial efficiency provisions. The United States has lagged behind other industrialized countries in industrial energy efficiency, harming our global competitiveness by increasing costs. S. 1000 contains a number of important provisions that will support and promote greater industrial energy efficiency, including:

1) Manufacturing Revolving Loan Funds (Sec. 301): The bill directs the Department of Energy to provide funding to eligible lenders for a revolving loan program to help commercial and industrial manufacturers implement clean energy technologies and processes for reducing industrial energy intensity and improving competitiveness. To be eligible, community and economic development lenders must lead a partnership that includes a state government agency and a private financial institution. Federal funds must be cost-matched by non-federal funds at least dollar for dollar. The program is designed to accelerate the implementation of industrial and commercial applications of technologies and processes to improve energy efficiency, power factor or load management, and to enhance industrial competitiveness. ACEEE estimates this provision could

save about 550 trillion Btu of energy in 2030, one of the most significant provisions in the bill.

2) Technical Assistance and Technology Assessment (Sec. 302-308): Many industrial firms, especially small and medium-sized manufacturers, have limited means to keep up with and implement best practices. The bill would strengthen technical assistance to improve the competitiveness, energy efficiency, and environmental performance of American industry. The Future of Industry Program would enhance the nation's network of Industrial Assessment Centers (IACs) and coordinate their work with the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP), the Small Business Administration, and other regional, state, local and utility programs to deliver technical assistance. Further, the bill would support industrial energy efficiency and competitiveness through technology assessments and road maps of energy-intensive industries (such as steel, aluminum, forest products, chemicals, food processing, metal casting, and information technology), and a National Academy of Sciences study on advanced energy technology manufacturing. These studies would provide valuable information to both the private and public sectors on opportunities, challenges, and potential for research, technical assistance, and commercialization support to strengthen competitiveness and economic opportunity while improving energy and environmental performance. The Sustainable Manufacturing Initiative would provide onsite technical assessments and advice to manufacturers in coordination with other private and public sector organizations.

3) Electric Motor Rebate Program (Sec. 321): The bill authorizes a program to incentivize the use of more energy efficient motors. According to DOE, motors account for more than 25 percent of electricity in the United States, and many of them operate inefficiently.

4) Supply Star program (Sec. 311): Tackling efficiency throughout the supply chain, including product sourcing, development, distribution, use and disposal, provides much needed relief to businesses' bottom line. Many companies take active advantage of this, such as Wal-Mart, which saves hundreds of thousands of dollars annually through its Supplier Energy Efficiency Program. However, many smaller businesses cannot dedicate the staff or resources to discover their energy saving potential. The Supply Star program would provide assistance to businesses of all sizes to help them achieve significant savings.

Supply Star, which would be undertaken by DOE, would be designed to identify and promote practices, recognize companies, and recognize products that use highly efficient supply chains in a manner that conserves energy, water and other resources. In addition to promoting existing efficient supply chain practices, this program would collect and disseminate data on supply chain energy resource consumption, develop and disseminate metrics for evaluating supply chain energy resource use, and develop sector-level guidance for improving supply chain efficiency. DOE would also be directed to work with industry and small business to improve supply chain efficiency through sharing best practices, providing benchmarking opportunities, and supporting professional training. This provision is from Senator Bingaman's bill in the 111th Congress, S. 3396, which was reported favorably by this committee in the last Congress.

Collectively, these provisions will enable the United States to be more energy efficient in industry and manufacturing and increase our global competitiveness.

ENERGY EFFICIENCY FINANCING

A major barrier to greater efficiency is a lack of capital. While energy efficiency measures save money over time by reducing energy bills, they often require an upfront investment. One of the most significant approaches in the bill would help to provide the financing necessary for implementing energy efficiency projects. Among the financing provisions in the bill are the following:

Energy Efficiency Upgrades for Existing Buildings (Sec. 202): The bill expands the DOE Title XVII Loan Guarantee Program to include commercial, industrial and MUSH (municipal, university, schools and hospitals) building efficiency upgrades. This should help overcome a key barrier to making efficiency upgrades to these buildings by making access to capital easier through the DOE loan guarantee program. This provision was originally part of S. 3780, The Recovery Through Building Renovation Act, introduced by Sens. Shaheen and Landrieu in the 111th Congress. $400 million is authorized for period of ten years for a range of financing mechanisms including loans, power purchase agreements, energy service agreements (ESCOs), property assessed clean en-

ergy bonds or similar tax assessment based programs, aggregate on-meter assessments, and other mechanisms deemed appropriate by DOE.

A 2009 McKinsey & Company study found that an investment of $73 billion by the private sector in making existing commercial buildings more energy efficient would provide net present value savings of $104 billion and save $11 billion annually by the year 2020.

Rural Energy Savings Program (Sec. 201): Another equally important provision that would provide valuable support to customers of rural electric utilities is the Rural Energy Savings Program. This provision would direct the U.S. Department of Agriculture to make zerO–Interest loans to rural public utilities and electric cooperatives to support low-interest, small loans for energy-efficiency upgrades to their rural small business and residential customers. Rural utility customers could use the loans to improve the efficiency of their homes through upgrades to the building envelopes, heating and cooling equipment, and manufactured homes. They could pay back the loans through an addition to their utility bills (on-bill financing). These low-interest loans would pay for themselves through the energy savings generated, resulting in a lower overall bill. The bill authorizes sufficient appropriations to leverage $2 billion in loans to electric co-ops. Because these loans remove the up-front cost for many customers who do not have the necessary capital, they unlock huge savings potential for rural Americans.

In addition to energy savings generated by the program, which ACEEE estimates at 60 trillion Btu annually by 2020, these projects would also create thousands of jobs for home contractors to perform these energy upgrades, and would help small utilities, many with aging power infrastructure, manage their loads.

FEDERAL ENERGY MANAGEMENT

In addition to our support of S.1000, the Alliance commends Senator Carper for his leadership in federal energy management, including his introduction of S. 963, the Reducing Federal Energy Dollars Act of 2011, several provisions of which are mirrored in S. 1000. The United States government is the nation's largest energy consumer, accounting for 1.6 quadrillion Btus (quads) or about 1.6 percent of the nation's energy use in FY 2008. Federal energy consumption cost $24.5 billion in that year. Cost-effective energy efficiency improvements in Federal buildings, equipment, and vehicles would save taxpayer dollars, reduce foreign oil dependency, and improve the reliability and security of achieving federal agency missions, including in national defense. The federal government should lead by example in energy efficiency, helping to bring new technologies and ideas into widespread use and showing what is possible. Many agencies and managers are trying to do this, but there is still much room for improvement.

S. 963 is intended to:

- Enhance reporting requirements related to individual buildings and to agency energy and water use (Sec. 3),
- Strengthen energy efficiency standards and update designs for new federal buildings (Sec. 4, 10),
- Require smart meters and sub-meters in applicable federal buildings (Sec. 6),
- Require improved energy management in agency computers (Sec. 7),
- Enhance commissioning (that is, the calibration of buildings systems to meet design specifications and improve performance) and recommissioning of Federal buildings (Sec. 11),
- Expand the scope of energy savings performance contracts (ESPCs) to include vehicles and certain other equipment, include leased facilities, and add hydroelectric generation at federal dams (Sec. 9),
- Require a survey of renewable energy potential at Federal facilities (Sec. 5),
- Count renewable thermal energy use at federal facilities and renewable energy generation on Federal and Indian lands toward meeting federal renewable energy purchase obligations (Sec. 8), and
- Call on GAO to audit and report on progress in federal energy management (Sec. 12).

Some of these measures also appear in Title IV of S. 1000, including the adoption of computer power saving techniques (Sec. 401), updating federal building designs (Sec. 402); and the inclusion of thermal energy in federal renewable energy purchasing requirements (Sec. 406). Complementing S. 963, S. 1000 includes a smart metering provision focused on identifying and reporting best practices (Sec. 403), a federal energy management data collection provision (Sec. 404), a provision to allow

electric vehicle infrastructure (not the vehicles) in ESPC financing (Sec. 405), and a report on federal data center consolidation (Sec. 407).

The Alliance supports these objectives. We are especially pleased to see attention to federal building recommissioning and ongoing energy management in S. 963, as well as to more capital-intensive retrofits. We note the General Services Administration's (GSA) interest in commissioning and a workshop we organized last year for GSA on the topic. In the workshop various federal agencies, builders, designers, property managers, commissioning professionals, and other experts provided valuable insights and suggestions that could be used to strengthen the bill's commissioning provisions.

We do have a concern with the potential impact of some of the requirements in the bill on agencies that already are required to meet existing law and executive orders regarding energy management, and we look forward to working with Senator Carper and the Committee to make certain that the provisions of the bill ultimately will build on existing law and executive orders in practical, effective ways. For example, mandated DOE federal energy management reports are now a few years delayed, and web-based building-level reporting required in the Energy Independence and Security Act of 2007 has not yet been implemented. It is important that new reporting requirements not overwhelm DOE and other agencies, but instead ensure the most useful, actionable information in a timely manner. It also is important that federal building energy efficiency standards work effectively with the building code process that is the subject of Section 101 of S. 1000. In that regard, federal building standards are now applied only to new federal buildings even though the model codes and standards they reference also apply to alterations and retrofits. Federal standards for building alterations should be at least as stringent as those that we call on states to apply to private sector buildings.

## CONCLUSION

The Energy Savings and Industrial Competitiveness Act of 2011 will increase the use of energy efficiency technologies in the residential, commercial and industrial sectors of our economy. This bipartisan legislation uses a variety of low cost tools to reduce barriers to the implementation of energy efficiency projects and drive the adoption of off-the-shelf technologies that will save businesses and consumers money, help reduce American dependence on imported oil, and reduce pollution, while also fostering job creation. The authors of the legislation—and the myriad of businesses, consumers, state and local agencies, and environmental and efficiency advocates who worked with the authors to craft this important bill—understand that efficiency technologies are available today, that they can be fully deployed in every state in the Union, that they pay for themselves through energy savings relatively quickly, and most importantly, that sound and cost-effective public policies are the key to unleashing this abundant, clean and quickly deployable national resource.

The important energy efficiency provisions in S. 1000 and S. 963 will help to speed the transition to a more energy-efficient economy, increasing both our economic competiveness and our energy security for generations to come. The Alliance looks forward to working with senators and staff to help enhance these bills and the energy savings, cost savings, and energy reliability and security they can help achieve.

On behalf of the Alliance to Save Energy, I strongly urge the Committee to approve S. 1000, and I hope the Committee will work with the Senate leadership to bring this legislation to the Senate floor as soon as possible.

But while the Shaheen-Portman bill will go a long way, at relatively low cost to the government, to tapping into the country's energy efficiency resource, and is already comprehensive in nature, touching many segments of the economy and consumers across the country, I note that if the Congress adopted not only S. 1000 and S. 963 but also a few other bills, the impact on energy demand—and therefore on energy costs to consumers and business, U.S. global competitiveness, the environment, and our national energy security—would be even more immense.

Therefore, I take this opportunity to mention a few other efficiency proposals worthy of bipartisan support that could work synergistically with the provisions in S. 1000 and S. 963. In particular I would highlight a proposal on which Sen. Bennet is working to consider energy efficiency in mortgage underwriting so that the consumer value of efficiency can be reflected in home purchases and loans. Improvement and extension of the tax incentives for energy efficiency in new and existing homes, commercial buildings, industry, and vehicles, on which Sen. Bingaman has taken the lead along with Sen. Snowe, also will effectively complement the policies in S. 1000. And I hope this committee will take up the need for disclosure to con-

sumers of their energy usage information, as addressed in Sen. Udall and Sen. Brown's e-KNOW bill.

Thank you Mr. Chairman and Members of the Committee for your time and attention, and I would be glad to respond to any questions you may have.

ATTACHMENTS

*Incremental Cost Analysis*

One of the major barriers to adopting the latest model energy code is the concern that it would be expensive. To address this issue, BCAP quantified the incremental construction cost of upgrading to the 2009 IECC in each state where such an analysis was feasible.

*The True Cost of Building a New Home*

Updating from current practice to the 2009 IECC would result in a weighted average incremental cost of $840.77 per new home. However, the average annual energy savings would be $243.37.

When amortized over a thirty year loan with a 20 percent down payment, the additional upfront cost on a mortgage would be significantly lower. In fact, when factoring in energy savings, the homeowner would see net savings within the first year! Please see the other side for state-specific information.

| State | Weighted Average Incremental Cost | Median Energy Savings | Mortgage Payback (Months) |
|---|---|---|---|
| Alabama | $668.76 | $205.00 | 10 |
| Arizona | $570.38 | $217.00 | 8 |
| Colorado | $922.73 | $239.50 | 12 |
| Connecticut | $897.42 | $235.00 | 12 |
| Georgia | $675.36 | $206.00 | 10 |
| Idaho | $872.81 | $235.50 | 11 |
| Iowa | $863.69 | $260.50 | 10 |
| Kansas | $1,403.96 | $468.50 | 9 |
| Kentucky | $773.92 | $336.00 | 7 |
| Louisiana | $572.43 | $188.50 | 9 |
| Massachusetts | $910.99 | $200.50 | 10 |
| Mississippi | $699.54 | $211.50 | 10 |
| Michigan | $965.19 | $274.00 | 11 |
| Minnesota | $1,873.00 | $315.00 | 21 |
| Missouri | $1,607.74 | $459.00 | 11 |
| Nevada | $777.15 | $228.50 | 10 |
| New Mexico | $619.18 | $233.50 | 8 |
| New York | $835.82 | $259.00 | 10 |
| North Carolina | $1,129.93 | $221.50 | 17 |
| North Dakota | $903.79 | $343.00 | 8 |
| Ohio | $803.04 | $229.00 | 11 |

| State | Weighted Average Incremental Cost | Median Energy Savings | Mortgage Payback (Months) |
|---|---|---|---|
| Pennsylvania | $697.79 | $240.50 | 9 |
| South Carolina | $546.37 | $207.00 | 8 |
| South Dakota | $1,331.27 | $405.00 | 10 |
| Utah | $825.20 | $242.00 | 10 |
| Virginia | $582.07 | $225.00 | 8 |
| Wisconsin | $556.18 | $220.00 | 7 |
| Weighted Incremental Cost | $840.77 | $243.37 | Avg: 10.25 months |

We believe these cost estimates are conservative and represent an upper bound on incremental cost, as they utilize only traditional building techniques and do not take advantage of certain technologies or performance trade-offs that would lower these costs further and improve energy performance.

For more detailed cost data on all of the states listed above, as well as information on the methodology used, please review BCAP's complete incremental cost analysis model and report (http://bcap-ocean.org/resource/incremental-cost-analysis).

The Building Codes Assistance Project—June 2011

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*June 9, 2011.*

Hon. JEANNE SHAHEEN,
*520 Hart Senate Office Building, Washington, DC.*

Hon. ROB PORTMAN,
*B40D Dirksen Senate Office Building, Washington, DC.*

DEAR SENATOR SHAHEEN AND SENATOR PORTMAN,

We the undersigned represent a broad-based coalition of energy efficiency and environmental organizations, small and large businesses, public interest organizations and faith organizations.

We commend your work on the Energy Savings and Industrial Competitiveness Act of 2011, which was introduced on May 12, 2011. Your bill will help to deploy energy efficiency across all sectors of our economy; save consumers and businesses money, help make us more competitive globally and reduce our dependence on imported sources of energy at a critical time. We look forward to working with you in the coming months to see that this important legislation is enacted into law.

We specifically commend those provisions in your bill that will help to drive job creation. For example, the Energy Savings and Industrial Competitiveness Act will include a state partnership manufacturing revolving loan fund to finance investments in manufacturing process equipment though the issuance of federal bonds. With this fund, domestic manufacturers can fine-tune their equipment, reduce utility related overheads, and strengthen their bottom-line.

Your legislation would also advance targets for national model building energy codes. Buildings currently consume 40% of all energy used in the United States. The Energy Savings and Industrial Competitiveness Act would support regular updates to the existing national model building codes. Building codes help investors overcome the market barriers that impede energy savings in this sector, and reduce energy costs for businesses.

Similarly, appliance standards provisions contained within the Energy Savings and Industrial Competitiveness Act will cut home energy costs to consumers by $43 billion through 2030.[1] Existing federal appliance standards have saved taxpayers

[1] American Council for an Energy-Efficient Economy & Appliance Standards Awareness Project, Appliance and Equipment Efficiency Standards: A Money Maker and Job Creator. January 2011. http://www.standardsasap.org/documents/A111.pdf

more than $300 billion in energy bills and reduced national energy use by 3.6% annually. This provision is identical to S. 398, which was recently reported by the Senate Energy and Natural Resources Committee with a bipartisan 18-4 vote.

The Energy Savings and Industrial Competitiveness Act also contains a provision based on the Rural Star legislation which was passed by the House of Representatives last year. This program would create a loan program through rural public utilities and electric cooperatives to finance energy efficiency improvements for rural utility customers. Sponsors of the original bill estimate that it will create 20,000 to 40,000 jobs to conduct and implement these energy improvements.

Another important bill from last session, Supply Star, is also included in the Energy Savings and Industrial Competitiveness Act. This bill was reported favorably by the Senate Energy and Natural Resources Committee. Supply Star would promote energy efficiency improvements throughout the supply chain, including savings from product sourcing, development, distribution, use and disposal. This bill would provide crucial support to small businesses in reducing unnecessary energy expenditures.

As the nation's largest energy consumer, it is critically important that the federal government lead by example. The Energy Savings and Industrial Competitiveness Act contains several provisions which will improve the energy efficiency of federal agencies. Rather than squandering taxpayer's dollars on needless energy costs, the Energy Savings and Industrial Competitiveness Act implements practical, cost effective measures to tackle federal energy consumption. These provisions include personal computer power saving techniques, advanced metering, building upgrades and more.

By fully deploying the power of energy efficiency, we can help create new jobs, save energy, save money, and reduce carbon emissions. Energy efficiency takes effect faster than other policies designed to address our energy needs. Well designed programs such as those contained in the Energy Savings and Industrial Competitiveness Act will help those American families and businesses who are struggling today to lower their energy costs. Moreover, energy efficiency policies offer Americans protection from rising energy costs caused by political instability abroad, and moves us towards energy independence. We again commend your leadership in developing this comprehensive package, and offer our support in helping to advance this important bill toward enactment by the 112th Congress.

Sincerely,*

AMERICAN INSTITUTE OF ARCHITECTS.
U.S. CONFERENCE OF MAYORS.

The CHAIRMAN. Thank you very much.

Mr. Crasi, go, go right ahead.

## STATEMENT OF MR. TONY CRASI, PRESIDENT, THE CRASI COMPANY, INC., CUYAHOGA FALLS, OH

Mr. CRASI. Good morning, Chairman Bingaman, Ranking Member Murkowski, and members of the committee.

My name is Tony Crasi. I am a builder, remodeler, a graduate architect, a licensed energy rater, and an energy advocate from Ohio. I'm pleased to testify today on behalf of the National Association of Home Builders on energy efficiency in buildings and Senate Bill 1000.

My expertise is single family home design, building, and renovation, but NAHB also represents thousands of construction professionals, suppliers, and others in the real estate sector, including commercial builders and remodelers.

Our industry has suffered an extreme decline in the past few years from which a recovery is yet to begin. Falling from a height of over 2 million homes in 2006, the industry recorded the lowest-ever rate of building permits for single family and multi-family construction, of 534,000 in February 2011. Poor sales performance, foreclosures, appraisal issues, and lack of access credit have further

*Full list of signatures has been retained in committee files.

stalled our industry's recovery. In sum, we're just simply not building as many homes as we used to.

We believe that efforts to retrofit nearly 130 million existing homes, accomplished through a variety of incentive programs, is a more effective national policy approach to improve building efficiency. Not only are fewer homes being built today, but the vast increases in efficiency in new housing documented by EIA shows that the top of the line homes are already saving substantial amounts of energy. Additional requirements for the most energy-efficient homes and buildings will not deliver the most meaningful energy savings, and only serve to increase costs for new construction.

U.S. Census data shows that over 94 million homes were built before 1990 without modern energy codes. The information I have provided in my testimony demonstrates that retrofitting 12 million of the oldest stock pre-1940 homes could save consumers over $18 billion a year in energy costs, while repaying the up-front cost in less than 7 years. We fully support efforts to provide retrofit incentives to millions of American families in existing homes, which consume most of the energy in our sector. This is truly an effective way to dramatically improve energy performance on the broadest scale.

Energy code requirements for new homes have increased substantially over the last few years. The upcoming addition of the residential code is over 30 percent more efficient than the 2006 version. Bestowing additional authority to the DOE to implement even greater efficiency requirements, including setting goals of a net-zero, is financially unrealistic.

We also have a serious concern about DOE's role in code activities, since we were sidelined on a specific Freedom of Information Act request for technical information on DOE's calculation of a 30 percent increase in code stringency. A detailed explanation is included in my written report.

NAHB is an ardent supporter of energy efficiency in both new and existing housing. But an effective energy policy must direct limited Federal resources at the largest part of the problem—that is, older homes and buildings. This is why we support sections 201 and 202 of Senate Bill 1000. Both of these provisions are aimed at improving the efficiency of existing stock.

Regarding section 101 and greater efficiency in building codes, NAHB looks forward to working with Senators Portman, Shaheen, and Coons to make additional refinements to address our concerns with the unique economic dynamics of requiring net-zero energy goals, and improving basis-determining metrics—determination metrics.

That said, NAHB supports provisions in section 101 to require DOE to consider the economic impact of setting code standards to encourage greater transparency at DOE, and that efficiency gains in appliances and other building components be considered when developing future efficiency targets. These changes vastly improve the bill, and NAHB supports the changes.

In conclusion, we urge the committee to consider—carefully consider—the role of DOE in the development of model energy codes before granting authority and resources. Rather, we hope the committee could direct resources to consumers to incentivize retro-

fitting older homes and buildings, save money for American families, create jobs in a hard-hit industry.

I appreciate the opportunity to testify today, and I look forward to answer questions. Thank you.

[The prepared statement of Mr. Crasi follows:]

PREPARED STATEMENT OF TONY CRASI, PRESIDENT, THE CRASI COMPANY, INC., CUYAHOGA FALLS, OH

On behalf of the 160,000 members of the National Association of Home Builders (NAHB), I am pleased to testify today on S. 1000—The Energy Savings and Industrial Competitiveness Act of 2011 (ESICA). My name is Tony Crasi, I am owner and founder of The Crasi Company and I have been designing and building custom homes in the surrounding Akron, Ohio area for the past 24 years. I am a builder, remodeler, graduate architect, and licensed energy rating professional. NAHB represents the single and multifamily home construction and development, light commercial construction, remodeling, and building supply chain industries. In 2010, less than 10% of NAHB's total membership had more than $15 million in gross receipts with 96% of NAHB's builder members falling below that threshold. NAHB is a true representative of small business interests and I appreciate the opportunity to provide input on the impact of this legislation on the thousands of small businesses in our industry and the millions of consumers they serve.

On the heels of the worst economic downturn since the Great Depression, the housing industry is still reeling with staggering unemployment of 18% in April 2011, weak recovery, and a total loss of 1.4 million jobs in the industry since peak employment. Dropping from a height of two million new homes constructed in 2006, new home sales were approximately 370,000 in 2009. The decline in housing was significantly greater and more profound than those experienced by a number of other industry sectors. Also during this time of decline, the housing industry has had to face a remarkable increase the number of regulatory actions and implementation of new requirements for construction that have the potential to further forestall a housing recovery once the demand for new housing returns.

Despite the downturn and sluggish recovery, the housing industry has made outstanding strides by initiating, encouraging, and promoting energy-efficient, green, and sustainable design and construction of new homes and buildings throughout the nation. Data from the Department of Energy (DOE) shows dramatic declines in the amount of energy consumed by new homes in the last few decades and it is a testament to new home builders' commitment to the goals of efficiency and to saving money for consumers.

With substantial amounts of energy lost in the nearly 130 million existing homes in the current stock, it is incredibly important to develop an effective national energy policy that is not punitive to consumers who benefit from the most-efficient new homes. Rather, the policy must promote an effective retrofit plan for older, less-efficient housing that allows builders and remodelers to apply the benefits of energy efficiency for all housing.

I. HOUSING INDUSTRY BACKGROUND

The entire housing industry was hit hard by the economic downturn. Sales of both new and existing homes fell sharply, followed by a precipitous decline in home values, increased foreclosures, and an inability for the market to absorb the influx of inventory that flooded the market following the collapse. The market for new homes has lagged far behind far longer than most expected. In order to understand the impact of these market dynamics on energy policy, it is incredibly important to consider the substantial absence of newer, more-energy efficient homes that were supposed to exist, but simply do not. This absence is often not factored into the majority of studies, research, and estimations on "building" energy consumption, often used to justify specific policy approaches. This is a significantly important qualifier because many policy proposals that espouse a set number of energy savings are often subject to and dependent upon the existence of one million (or more) new homes per year—-a number which is, unfortunately, not a reality in the current housing market—see Figures 1a and 1b.*

The early months of 2011 have also not provided any positive news for housing. Housing construction has reflected poor sales performance as total building permits in 2011 have been the lowest on record since 1960. Single family housing starts are

*Figures 1–3 have been retained in committee files.

currently at the lowest ever recorded despite low mortgage rates and generally high affordability indices. An additional constraint in the current housing market that further depresses new home construction is the lack of reliable and adequate credit. Credit is the life blood of the housing sector and many NAHB members are experiencing serious problems trying to access Acquisition, Construction and Development loans to build new homes. The loss of these new homes that should have been built to replace older stock, coupled with the ongoing uncertainty about a housing recovery, means that fewer new and more energy-efficient homes will be available for homeowners that may then be relegated to staying in older, less-efficient housing longer than expected.

## II. COMMERCIAL BUILDINGS

As an umbrella trade association, NAHB represents a variety of members that not only construct single family and multifamily homes, but also commercial buildings. NAHB also represents building owners and managers, remodelers, realtors, and a host of professionals affiliated with the housing and commercial construction industry, including many building supply companies and trade associations. Thereby, NAHB is similarly concerned, as are other commercial real estate organizations, about the impacts of additional energy requirements on new commercial construction. Because commercial construction varies greatly in operational use and composition—i.e., warehouses, multifamily buildings, mixed-use buildings, etc.—the energy profiles of commercial buildings tend to vary more widely, as do costs for installing (or retrofitting) energy efficiency features in such buildings. Financing options for commercial buildings are also much different than individual homeowners seeking a residential mortgage, and in many cases, lenders are reluctant to provide capital without a demonstrated return on investment (ROI) that fits a specific economic timeframe (e.g., 10 years). These financing restrictions sometimes make it very difficult to effectively accommodate upfront costs, specifically when some features—including aggressive efficiency requirements—do not have a ROI that falls within a lender's specified range.

## III. ENERGY PERFORMANCE OF NEW HOMES AND EXISTING BUILDINGS

Over the last two decades, NAHB has led the way in developing, promoting, and encouraging the growth of residential green—and energy-efficient—construction. Since the early 1990s, NAHB members have been pioneers in sustainability, long before the trendy moniker "green" became mainstream. In 2009, NAHB, along with many stakeholders, commended the approval of the ICC-700 National Green Building Standard ("the Standard"), the first and only residential green construction standard approved by the American National Standards Institute (ANSI)—www.nahbgreen.org. Setting a high bar for single family and multifamily home construction, remodeling, and land development, the Standard is an affordable, rigorous, and legally-defensible benchmark for residential green throughout the nation. Unlike privately-developed green rating systems, the Standard carries the approval of ANSI which makes it compliant with relevant federal laws—National Technology Transfer Act (P.L. 104-113)—and directives that instruct federal agencies to utilize public and consensus-based industry standards in lieu of privately-developed or government-crafted criteria, (see OMB Circular A-119A (revised, February 1998)).

With the growth of green building, the introduction of the Standard, and substantial increases in energy efficiency requirements and rigorous energy codes, energy performance in new homes has skyrocketed delivering tremendous savings. According to the Energy Information Administration (EIA), there were 76.6 million occupied housing units in the United States in 1978, using a total of 6.96 quads for space heating. Although the number of homes increased 45% to 111.1 million by 2005, the homes used significantly less energy for heating—just 4.30 quads. The EIA attributes the decline largely to improved energy efficiency of heating equipment, better window design, and insulation to more effectively seal homes.[1]

To be sure, significant improvements in appliance efficiency have also helped reduce energy loss, although some of the gains in envelope improvements and appliance efficiency have been offset by a substantial increase in electronics usage. For example, EIA reports that in 2009, the average household had an average of 2.5 televisions with a screen size of 37-inches or larger, 76% of U.S. homes had a personal computer, 79% of homes had a DVD player, 43% of homes had a DVR, and at least one-third of all households had at least four electronic devices plugged in

[1] EIA, Residential Energy Consumption Survey (RECS), 2009. http://www.eia.gov/consumption/residential/reports/electronics.cfm (accessed 6/2/11)

and charging at home.[2] As much energy as builders might be able to save in envelope improvements and appliance efficiencies, it is impossible for builders to control the fundamentals of consumer choice that, as EIA confirms, significantly affect the energy profile of a home, even one constructed to the strictest standards.

Nonetheless, new home builders have done a lot within in the structure of a home to improve energy performance. The introduction of modern energy codes in the early 1990s has significantly improved the efficiency of new construction. In fact, the EIA reports that homes built between 1991 and 2001 consumed 2.5% of total energy in the U.S.—see Figure 2. Thus, if all the new homes built between 1991 and 2001 consumed zero energy, it would have saved only 2.5%.

Older, existing homes consume virtually all of the energy in the residential sector. Homes constructed prior to the introduction of modern energy codes comprise the vast majority of the homes in the stock today, meaning the most inefficient housing is the most plentiful—see Figure 3.

NAHB fully supports efforts to incentivize retrofitting the oldest, least-efficient stock. As a national energy policy priority, any efforts to improve the efficiency of residential and commercial buildings in the U.S. must include provisions that seek to save the energy lost in older homes and buildings. As described above, newer homes are the most energy efficient that they have ever been and with sizeable jumps in stringency from the last iteration of the national model code to the next (of more than 30%), additional requirements to further increase the efficiency will not deliver the most meaningful savings. Rather, layering on additional efficiency requirements on the most-efficient housing will only increase the cost for these "hybrid" homes.

Representing over 10,000 remodelers, NAHB has consistently championed incentives for consumers to upgrade older housing, including ongoing support for incentives under Sections 25C and 25D of the Internal Revenue Code. NAHB has lobbied alongside many efficiency and environmental organizations for extensions of a variety of tax incentives that improve building efficiency in both residential and commercial buildings. Currently, NAHB is working diligently to promote a retrofit incentive for commercial buildings that has garnered the support of more than 80 organizations—corporate entities, environmental advocates, efficiency groups, trade associations, etc. (see attached letter dated May 5, 2011). The most effective national energy policy is going to be that which directs federal resources at the largest part of the problem and NAHB is proud of its supportive advocacy on this critical issue.

## IV. ENERGY IMPACT OF RENOVATIONS ON OLDER HOUSING

In order to demonstrate energy savings and cost impacts for efficiency improvements in a variety of housing, we have provided specific examples of various levels of code compliance and the resultant savings and cost paybacks for certain features. Using the REM Design Software, energy usage calculations and resulting savings from various retrofit measures or code features can be demonstrated. Based on a 1,400 square-foot home—one story, three bedrooms, attached garage and full basement—in the Akron, Ohio (Zone 5) climate, the table in Figure 4 demonstrates the energy profiles and cost for a pre-1940 home, a pre-1940 home with a retrofit, a 2009 IECC-compliant home, and a net-zero energy home.

[2] Ibid.

Figure 4.—Energy Features and Cost/Savings Calculations

| | Pre-1940 Home | Pre-1940 Home w/Retrofit | 2009 IECC Home | Net-Zero Energy Home |
|---|---|---|---|---|
| Features | | | | |
| Ceiling Insulation | R-0 | R-50 | R-38 | R-60 |
| Above-Grade Wall Insulation | R-0 | R-15 | R-21 | R-31 |
| Foundation Wall Insulation | R-0 | R-10 | R-10 | R-20 |
| Windows (10) | U-0 | U-0.29 | U-0.35 | U-0.29 |
| Air Infiltration Rate | 30 ACH | 7 ACH | 7 ACH | 1.5 ACH |
| Heating Equipment | 80% AFUE, 110 BTU | 95% AFUE, 60 BTU | 90% AFUE, 60 BTU | 95% AFUE, 40 BTU |
| Cooling Equipment | None | 13 SEER, 1.5 Ton | 13 SEER, 1.5 Ton | 14 SEER, 1.5 Ton |
| Hot Water Heater | 40 Gal, 0.56 EF Gas | 40 Gal, 0.62 EF Gas | 40 Gal, 0.62 EF Gas | 40 Gal, 0.62 EF Gas |
| Refrigerator | Pre 1986, 1,700 Kw/Yr | Energy Star, 500 Kw/Yr | Energy Star, 500 Kw/Yr | Energy Star, 500 Kw/Yr |
| | | | | |
| Annual Energy Cost/Year | $2,580.00 | $1,085.00 | $860.00 | $0.00 |
| Upfront Costs | | $10,405.00 | | $40,038.00 |
| Annual Energy Savings | | $1,522.00 | | $0.00 |
| Payback to Consumer | | 6.83 Years | | 46.56 Years |

AASource: REM Design Software; Calculations and Methodology by Tony Crasi, June 2011.

The data shows that upgrading an older, less-efficient, pre-1940 home can save over $1,500 per year in energy costs with an upfront cost of $10,405.00. More importantly, however, is that the energy-savings payback to the consumer is only 6.83 years for this investment. In less than a decade, the family that lives in the retrofitted home could recoup their costs in energy savings. On the other hand, making a newer home—compliant with the 2009 IECC—into a net-zero energy structure would cost a little more than $40,000. While having no energy bill is certainly a feature that most homeowners would likely enjoy, very few consumers, if any, would probably be able to finance an additional $40,000 upfront into their mortgage product or property taxes and insurance. Furthermore, the future homebuyer would also have to wait nearly five decades to recoup these upfront costs.

The good news is that there is ample opportunity to save substantially more energy by improving older homes, with much more meaningful energy savings paybacks to consumers. According to the American Community Survey, in 2009, there were 18,266,689 pre-1940 homes in the United States. Improving 12 million pre-1940 homes to save $1,522 per year in energy costs would result in more than $18 billion per year for consumers. Additionally, the REM Design software also calculates that a retrofit of this scale would similarly save 240 million tons of carbon dioxide per year.

Not only would such a retrofit program save energy for consumers and reduce carbon dioxide emissions, but it can also create jobs in our struggling industry. For example, NAHB estimates from economic data shows that the direct impacts of remodeling at the national level, which includes the number of jobs and income created, as well as the amount of government revenue generated (based on national averages to capture impacts on the aggregate economy), was 1.11 jobs and $30,217 in taxes from every $100,000 spent on residential remodeling in 2008.[3] A national policy approach to provide incentives for retrofits to the oldest, least-efficient stock would reap tremendous energy savings, reduce greenhouse gas emissions, and create jobs in the construction industry. NAHB strongly encourages the Committee to consider a retrofit plan that is equally-accessible to all qualified contractors, encourages retrofits in all parts of the U.S., and that is consumer-focused rather than providing more money and authority to DOE to layer energy requirements on newer housing.

## V. AN APPROPRIATE ROLE FOR DOE IN NATIONAL MODEL CODES

The national model codes development process is an arduous and complicated way to convene stakeholders interested in the health, life, safety, structural soundness—and more recently—energy efficiency of homes and buildings to set minimum standards for new construction. The national model codes organizations—International Code Council (ICC) and ASHRAE—coordinate and publish the final editions of codes and standards for single family and multifamily/commercial buildings, as established through a lengthy process involving several meetings of thousands of building code officials, builders, efficiency advocates, State and local governments, product suppliers, etc. At these hearings, stakeholders vote on proposals to incorporate changes to existing codes and once published, State and local governments are encouraged to adopt the new codes, or adopt a modified-code that can address State-specific or geographic needs without impacting the stringency of the newly-minted national models.

Energy codes are developed on three-year cycles (next edition is 2012 International Energy Conservation Code (IECC) for residential, 2013 for ASHRAE) and NAHB, as well as the DOE and many others, have participated in the development of the national model energy codes for several years. By proposing modifications that improve efficiency, yet remain cost-effective, NAHB has supported a number of code changes to vastly increase the efficiency of newer codes. For example, any stakeholders, including DOE, attended the last cycle of code hearings for the 2012 IECC (held during Fall 2009) with proposals supporting a 30% increase in stringency over the 2006 edition. NAHB's 30% proposal was voted down, but the DOE's 30% proposal was approved by the ICC. Because many things can comprise a 30% increase in stringency, NAHB informally sought information from DOE on how it calculated its 30% jump, but our request was ignored.

To be sure, the DOE carries a heavy weight in the codes development process and at the code hearings and many are extremely deferential to the preferences of DOE. Nonetheless, NAHB feels strongly that DOE should not be allowed to withhold information from a regulated industry group that is attempting to figure out how to comply with a DOE-developed code change. Thus, in April 2010, NAHB submitted

[3] Housing Economics.com, http://www.nahb.org/generic.aspx?sectionID=734&genericContentID=103543&channelID=311, accessed June 7, 2011

a formal Freedom of Information Act (FOIA) request to DOE to seek the calculation methodology used to determine the DOE's 30% increase in energy savings for the 2012 IECC. The initial response from DOE came from Deputy Assistant Secretary Kathleen Hogan in June 2010 and stated that "no responsive documents were found"—see attached letter dated June 7, 2010. Because DOE had already given public presentations indicating that the "new code" was "30.6%" above the 2006 edition, NAHB understood that DOE definitely had the information available on its calculations, so we appealed the FOIA response.

Thankfully, some Members of this Committee helped facilitate a more constructive response from DOE. After more than a year of back-and-forth with DOE and one of its national labs, NAHB received a communication on June 2, 2011, indicating that DOE can provide some of the information on its calculations, following a review by its FOIA Officer. A detailed timeline (Appendix A)* is attached to this statement demonstrating NAHB's efforts to obtain this information and DOE's responses to our requests for the mathematical and technical calculations behind its 30% code increase. NAHB has tried unsuccessfully for over a year to simply discover how the federal agency in charge of calculating and determining code efficiencies was doing the job it is already assigned to do under existing law.

In light of this experience, NAHB is extremely concerned that this Committee could bestow additional authority on DOE to become even more engaged in national model codes, to establish code targets that are based on even greater stringencies, loftier goals, and even more complicated calculations and analyses. The inability to obtain technical information from DOE in a timely manner, or even at all, is of great concern to NAHB. Thus, it is critical that the Committee examines the most appropriate role for DOE in the codes process before granting additional authority, and more importantly, providing more federal resources for DOE.

VI. S. 1000—THE ENERGY SAVINGS AND INDUSTRIAL COMPETITIVENESS ACT (ESICA)

NAHB is pleased to have contributed as a stakeholder in the process of developing the ESICA legislation and looks forward to continuing to provide additional input as it is considered by the Committee. The ambitious legislation seeks to provide incentives for retrofitting older homes for consumers in rural areas by addressing energy inefficiencies in existing housing. Although NAHB still has some concerns about the practical implementation of provisions that set goals for new residential and commercial buildings to be "net zero energy" by 2030, NAHB is encouraged that additional work to further refine and streamline the path to higher efficiencies, while carefully considering the cost impacts on new building, will be examined.

*Section 101—Greater Energy Efficiency in Building Codes*

Although NAHB disagrees with the underlying premise for including a provision to substantially increase energy code stringency in new construction, for the many reasons identified above, NAHB does support important additions in this section that seek to shine a greater light on the activities of DOE as it relates to the development of national model codes and standards. Ultimately, NAHB would prefer to rework this section to clarify the role of DOE, including more clearly defining its intended job as a technical advisor. As proven, the model codes and standards development process continues to deliver substantial increases in efficiency stringency, a trend that is not expected to stop. NAHB and others in the real estate community deserve access to the technical expertise and resources of DOE to help achieve these demanding goals for new buildings. Thus, NAHB strongly encourages the Committee to consider the appropriate role for DOE and how it can more effectively serve the groups that will ultimately have to finance, construct, own, lease, and manage the most energy-efficient buildings ever built.

NAHB fully supports the inclusion of provisions in this section that seek to address the existing lack of consideration of any economic impact of code requirements, the lack of transparency regarding technical requests for information from DOE, and the removal of arbitrary percentage-based targets that have consistently existed in previous versions of legislation on this topic. NAHB applauds efforts to allow DOE to consider the energy efficiency of other features in a home when making determinations on code targets—e.g., lighting, appliances, renewable energy systems, etc., as these traditionally rest outside the jurisdiction of the codes and have been unable to be effectively evaluated when determining overall efficiency gains. NAHB also supports efforts to allow public comment and compliance with the Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 601; P.L. 104-121) when establishing targets, as this will provide greater opportunities to evaluate and ex-

*Attachment has been retained in committee files.

pose real cost impacts on small businesses and offer an additional layer of transparency in any instance where DOE is engaged.

Areas of concern that NAHB hopes to continue to work on include establishing the "net zero energy" goal for all new homes and buildings by 2030, a basis determination of the 2009 IECC, and the inclusion of "life-cycle cost effective" indices that are current parameters in the legislation for creating code targets. In both residential and commercial, the practical reality of having a "net zero energy" building is financially unrealistic. In a home, it may likely be easier to construct a "net zero energy" structure, albeit a very expensive one, but "net zero energy" commercial buildings are essentially impossible to finance and build, particularly within the confines of the current financing and investment structure facing commercial real estate.

Indeed, NAHB understands that "net zero energy" building is an aspirational goal and that the DOE may have the flexibility to adjust it along the way, but we remained concerned that the target date would be codified legislatively. As NAHB has come to learn first-hand, specified targets and dates in federal legislation can often be espoused as tacit mandates for the many outside Washington that must deal with the implementation of codes and standards at the State and local levels. NAHB is pleased to continue to work with the Committee to find an appropriate path forward to support voluntary advanced codes that more adequately consider the unique dynamics of financing residential and commercial construction projects during this fragile period of recovery.

*Section 201—Rural Energy Savings Program*

NAHB supports Section 201 to provide low interest loans to consumers to install energy efficient technologies that will save energy for American families, create jobs, and reap environmental rewards. NAHB supports provisions to establish demonstration programs that help implement measurement and verification approaches to energy audits and investments in energy performance improvements with measurable results. NAHB believes that tracking energy savings improvements in older, less-efficient homes is important to demonstrate voluntary efforts already underway to reduce overall energy use in the building sector. Without meaningful incentives to retrofit the millions of less-efficient existing homes, true energy savings in the residential sector will never materialize.

*Section 202—Building Energy Retrofit Loan Credit Support Program*

NAHB supports the goals of Section 202, but hopes for additional refinements to make such a loan guarantee program meaningful for real estate. As with any loan guarantee authorization, section 202 must be crafted to allow for fiscally austere measures that limit DOE's exposure to financial risks in the event of a borrower's default on a government-backed retrofit obligation. In this regard, "guidelines" required by section 202 to implement the new loan guarantee program should include assessments of a borrower's creditworthiness, the building's loan to value ratio, and the building's history and expectations in generating rental and other income, among other factors. Additionally, the guidelines could carve-out retrofit "performance risks" not to be borne by DOE. A prerequisite to project qualification should be guaranteed energy savings arising from the retrofit, such as through energy service performance contracts and other mechanisms. Third-party contractors responsible for the retrofit like DOE-approved energy services companies should bear risks that installed energy efficiency measures will perform as designed, not DOE. In this way, the transaction can be structured so as to amortize retrofit financing through energy savings, and energy performance will be measured and verified so that the project is a safer bet and DOE's guarantee is limited to covering the "default risk" of the borrower.

While managing DOE's risks, refinements are also needed to make the retrofit loan guarantee program meaningful for and usable by real estate owners, managers and financiers. Currently, there are provisions in existing law requiring debt obligations backed by federal guarantees not to be subordinate to other financing.[4] When these provisions were adopted in 2005 with nuclear plants, wind farms and large-scale solar projects in mind, Congress did not consider the effect on the proper functioning of traditional commercial and residential mortgages (such as the sale of mortgages on secondary markets).

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[4] See 22 U.S.C. 16512(d)(3) ("The obligation shall be subject to the condition that the obligation is not subordinate to other financing"); id. § 16512(g)(2)(B) ("The rights of the [Energy] Secretary, with respect to any property acquired pursuant to a guarantee or related agreements, shall be superior to the rights of any other person with respect to the property")

A fundamental tenet of real estate finance is that, in the event of a property owner's default on the mortgage and/or foreclosure, the lender (or "mortgagee") will receive payments outstanding on the loan before sums are paid to any other secondary security interest in the property. In other words, the first mortgagee has a superior lien taking precedence over secondary security interests in the collateral. This principle of "mortgage superiority" is an industry standard written into deeds of trust and other mortgage documents, including Fannie Mae's uniform security instruments. Borrowers would likely be in breach of contract if they allowed a secondary lender (such as one extending a loan to finance the retrofit of a commercial building) to occupy a more favorable lien position on the asset, to the detriment of the bank providing a mortgage loan in the first instance.

As NAHB understands, there is some confusion over the application of requirements in the existing law if applied to a loan guarantee for building retrofits, potentially putting DOE's interests in conflict with the rights of first lenders in mortgaged properties. Building owners considering retrofits and contemplating loan guarantee financing for efficiency upgrade projects will find themselves in untenable positions. Such borrowers could not simultaneously respect their contractual obligations to allow mortgagees to maintain a higher interest in the collateral, while also ensuring that a government-backed retrofit loan is "not subordinate to other financing" or that the DOE has superior interests compared to the "rights of any other person" in the property.[5]

Thus, it is critical to get this lien priority issue right, so that real estate ownership and lending communities can avail themselves to any new retrofit loan guarantee products in a market transformative manner. Accordingly, NAHB supports changes to refine this provision to amend the Energy Policy Act by adding a new §1706 which, among other things, would direct DOE to develop guidelines to implement the credit support program for building retrofits. These guidelines must include "any lien priority requirements that the Secretary determines to be necessary." (§1706(c)(2)(E), p. 156 lines 17-18.) NAHB understands this to mean that DOE may, through its guidelines, establish new principles to address the first mortgagee lien issue discussed above and provide that the federal obligation may be subordinate to prior mortgages on an eligible building. NAHB suggests that the statutory language needs to be more direct and Congress should direct DOE to consider how the superior rights of first-in-time mortgagees can be maintained while minimizing the federal government's exposure to default on the underlying obligation to underwrite the retrofit.

Similarly, NAHB supports refinements offered and supported by groups like The Real Estate Roundtable to more clearly define eligible projects and buildings and defining minimum energy savings when establishing the loan guarantee program. The most effective way to develop a retrofit policy and approach is to allow for the most flexibility and the most participation. Access to the program is critical, as is not limiting projects by scope or benchmarking requirements. Because commercial retrofit programs are often extremely expensive, yet can be the most transformative in terms of energy savings, it is important to make the parameters of the program open-ended and to include as much input from the real estate community as possible during development of guidelines, criteria documents, and other administrative processes.

## CONCLUSION

Despite facing the worst economic downturn since the Great Depression, the housing industry is ready to work to improve the energy efficiency and performance of new and existing homes and buildings throughout the U.S. New homes have dramatically changed the energy performance of "buildings" with substantial efficiency gains over the last few decades. The growth of green building has also helped further the strides in improving new home performance and NAHB is pleased to have contributed to the initiation of the first and only ANSI-approved residential green construction standard. NAHB continues to be a leader in promoting energy-efficiency in all facets of the industry—single family, multifamily, light commercial, and remodeling.

Even with low mortgage rates and relatively high housing affordability, the housing market has not seen the turn around that many expected. With access to credit a major concern, coupled with foreclosure, appraisal and inventory issues, builders are facing substantial challenges building new homes in today's market, leaving fewer, more-efficient homes available for consumers. NAHB is concerned with the changing dynamics of energy requirements for new housing because it has the po-

[5] 22 U.S.C. §§ 16512(d)(3), (g)(2)(B).

tential to make the newest, highest-performing homes unaffordable for the average family. Rather, NAHB encourages a national policy that directs limited federal resources at the biggest source of energy loss in the real estate sector: older homes and buildings.

NAHB is pleased to have contributed to the legislative process up to this point, and we hope to continue to do so as the Committee moves forward and considers the legislation. Our industry has faced substantial changes over the last few years and will have to deal with an entirely new regulatory and housing finance landscape in the next few. NAHB supports energy efficiency and wants to encourage support for programs that help put our members back to work retrofitting older, less-efficient homes and buildings. With over 160,000 members, NAHB looks forward to being a key partner in developing an effective national energy policy.

The CHAIRMAN. Thank you very much.

Mr. Damiano.

**STATEMENT OF PHILIP DAMIANO, CHIEF OPERATING OFFICER, VELCRO USA, MANCHESTER, NH**

Mr. DAMIANO. Thank you, Chairman Bingaman, Ranking Member Murkowski, and members of the committee for the opportunity to testify today.

My name is Philip Damiano. I am the Chief Operating Officer for Velcro Group Corporation. I'd like to thank Senator Shaheen for inviting me to testify today and putting forward a bill to help domestic manufacturers remain competitive amid high and increasing energy costs, which is a serious concern for all of us.

As I'm sure, you know New England has some of the highest energy costs in the Nation.

Velcro Group Corporation is a global corporation with multiple entities. Our products go far beyond the standard hook-and-loop fastener that most everyone is familiar with. In fact, we provide very advanced fastening systems to the government, to the military, automotive, personal care, and medical industries, as well as a wide range of retail products.

I'd just like to share with you a couple of experiences of our domestic U.S. company, Velcro USA. Velcro USA is based in Manchester, New Hampshire. We employ about 750 people in New Hampshire, Michigan, and Arizona. The company is about 50 years old. We have a long history of manufacturing in the United States. In fact, our 2 largest facilities in the world are in the State of New Hampshire, and recently, over the last 10 years, we have committed to continue our commitment to manufacturing by building a whole new facility in Somersworth, New Hampshire, which is 450,000 square feet.

When we built that facility we were careful to design the building envelope—the components, the finishes, the mechanical and electrical systems—to be very low-cost energy consumption, and we also employed an energy consultant to engage and compare and evaluate alternative technologies.

Velcro is proud of being a strong manufacturer. We are committed to employment in New Hampshire, and we are also committed to minimizing our commitment to environmental impacts. To support that, in our Manchester facility, which is a 26-acre facility, we spent over $6 million on a cogeneration system. That system completely provides all of our electricity and thermal energy. As a result, we are completely off the grid in Manchester. Depend-

ing on certain seasonal loads, that system has an efficiency of over 80 percent, which is typically twice that of a public utility.

This type of initiative allows us to stay competitive with our offshore suppliers—which is a major issue for us—and also helps us create more jobs in New Hampshire. Now, in order to maintain our competitive edge, we're now considering a similar system in our Somersworth facility in New Hampshire.

Consistent with that, we've also implemented an environmental management system. The EMS system enables us to manage continuous improvement activities for all environmental aspects and impacts, which, energy conservation and reduction measures are a key element to that program. For example, we've implemented a heat recovery program for our die processes; we've incorporated high-efficiency technologies in our HVAC, lighting, compressed air systems; and all new and replacement motors for our production equipment are specified as premium efficiency. So, we actually can see how very directly the electric motor rebate program in Senator Shaheen's bill would be very meaningful to us.

Energy efficiency and conservation is critical to our success and our competitiveness. By enabling industry-led partnerships to develop specific road maps to energy consumption, we believe the Energy Savings and Industrial Competitive Act will continue to keep Velcro competitive and create opportunities for additional employment.

I'd like to thank the members of the committee for allowing me to share the experience of our company with regards to energy efficiency, and thank Senator Shaheen for an invitation, and sponsoring this bipartisan bill. I'm sure that with congressional support, many more corporations will take the view that we have and modify their business practices to increase their energy efficiency.

Thank you.

[The prepared statement of Mr. Damiano follows:]

PREPARED STATEMENT OF PHILIP DAMIANO, CHIEF OPERATING OFFICER, VELCRO USA, MANCHESTER, NH

Thank you Chairman Bingaman, Ranking Member Murkowski, and members of the committee for the opportunity to testify today. My name is Philip Damiano, Chief Operating Officer of Velcro Group Corporation. Prior to joining the Velcro Companies, I was CEO of Idea Paint, President of DYMO, a Newell Rubbermaid Company, and co-founded of several start-up companies. I would like to share with you what our company has experienced while striving to improve our energy efficiencies.

I would also like to thank Senator Shaheen for inviting me to testify today and for putting forth a bill striving to help domestic manufacturers remain competitive amid high energy costs in New England.

Velcro Group Corporation is a global corporation with numerous entities. The experience that I would like to share with you is that of our domestic company Velcro USA Inc. (Velcro). Velcro is over 50 years old and employs over 750 people at its locations in New Hampshire, Michigan, and Arizona. The company is headquartered in Manchester, NH with manufacturing facilities in Manchester and Somersworth, NH. These two locations produce vast quantities of fastening systems that are used in a multitude of markets. Some of our key markets include medical, government and military, personal care, transportation, and retail. Our identity as a domestic manufacturer is very important to us and our culture reflects this pride. This desire to maintain domestic manufacturing jobs has been a key factor in our decision to invest and pursue increasing environmentally sound and energy efficient practices.

Three motivators are the driving forces in the decision to head in this direction.

- Rising costs of manufacturing
- Maintain competitiveness while committing to domestic manufacturing jobs

- Act as an environmental steward and do our part to keep our natural resources as minimally impacted as possible

Most textile manufacturing left the area a long time ago due to higher labor and overhead costs. High cost of energy in New England is a big factor. However, it has always been important to the Velcro Companies to maintain manufacturing in New Hampshire. The fastening market is highly competitive and we are routinely challenged by non-domestic products that enter the market at a lower price point. Therefore, cost management is essential.

Over 20 years ago, Velcro recognized the need to address the rising cost of electricity in NH and implemented a small-scale cogeneration system to power the textile manufacturing operation. With increased pressure to reduce operating costs and the emerging need to reduce environmental impacts, energy efficiency and conservation became a priority within the organization. In the late 1990's and the midst of electric utility deregulation, the need and complexity to manage energy cost was a growing concern to Velcro. In 1998 Velcro hired a full time energy professional to focus on energy management for the US operation. In 2000, a full-scale natural gas fired cogeneration system was placed in service at the Manchester location. Since this time, Velcro has identified and implemented countless energy efficiency and conservation measures that have yielded substantial operational cost savings to the business as well as considerable reductions in environmental impacts. Consistent with a focus on energy efficiency, Velcro implemented an Environmental Management System (EMS) and achieved registration to the ISO 14001 standard in 2003. The EMS enables the business to manage continuous improvement activities for all environmental aspects and impacts, with energy conservation and reduction measures being key elements of this program. As you can see, the attention to energy and our environment is not a fleeting fad, but has been "woven" into our business. The following is a brief description of our NH facilities and an outline of some of the key measures that have been implemented.

MANCHESTER FACILITY

Established in the 1960's, our Manchester Facility includes approximately 450,000 sq. ft of building space on a 26 acre campus. This location supports Textile and Plastic manufacturing operations and is also the hub of the Velcro Companies Innovation and Technology Center (R&D). Key measures include:

- Co-generation Plant provides 100% electric and thermal energy to Manchester campus. Dependent on seasonal loads, system efficiencies have exceeded 80%, twice the efficiencies of public utilities.

  —Natural gas fired combustion turbine outfitted with Low NOx combustion technology provides electric power while minimizing NOx pollutants
  —The turbine is coupled with a Heat Recovery Steam Generator that recovers the waste heat from the turbine and converts this energy into useful steam. This steam is utilized for

  - Thermal process loads (dyeing, coating).
  - Domestic hot water
  - Snow melt system for campus sidewalks
  - Space heating
  - Space cooling for textile plant: a 500 Ton Steam Fired Absorption Chiller was installed in 2007. Prior to this system being installed, an electric chiller was utilized and it only produced 250 tons of chiller water. The result of this installation is a net reduction in electrical use during the summer cooling season and an increased overall cycle efficiency of the co-gen plant. Basically, the chiller water is produced by heat from the exhaust that was previously released to the atmosphere.

- Dye process.—process water and heat recovery. Noncontact cooling water utilized to "cool down" dye process is captured in storage tank and re-used for next "fill" cycle. Heat from dye process wastewater effluent is recovered through a heat exchanger to pre-heat city water supply to dye house.
- HVAC Systems.—textile plant: retrofit central systems with new technology. All new and retrofit systems utilize economizer feature, variable frequency drives and digital controls.
- Lighting.—All areas are outfitted with high efficiency lighting and are continuously being updated to take advantage of the latest technology including dimmable ballasts, daylight harvesting, etc. The majority of break rooms, conference rooms and restrooms lighting is controlled by occupancy sensors.

- Premium Efficiency Motors.—All new and replacement motors for production and facility equipment and systems are specified to be premium efficiency.
- Variable Frequency Drives.—VFD's are utilized for the majority of new and retrofitted equipment. Most production equipment utilizes VFD's for process control as well as all fans and pumps for HVAC systems.
- Compressed air systems.—upgraded to include new high efficiency air compressors with VFD's and demand management controls and metering.
- Roofing.—All roofing systems replace with white reflective TPO membranes to minimize heat gain.

SOMERSWORTH FACILITY

Our Somersworth Facility includes approximately 430,000 sq. ft of building space on 242 acres. This location supports Textile, Plastic and Non-Woven manufacturing operations. The original facility was built in 2000 and an expansion project completed in 2009 doubled the size of the factory to accommodate business growth plans. The design of the building expansion considered total cost of ownership. Building envelope, components, finishes as well as mechanical and electrical systems were all evaluated and selected with energy and operational costs considerations. An energy consultant was engaged to compare and evaluate alternate technologies and decisions were made based on ROI. Some of the key elements include:

- Lighting:
  - —Original building: All lighting fixtures installed in original building were replaced with High Efficiency lighting (T-5) fixtures (30% reduction in electricity used for lighting)
  - —Daylight harvesting: Skylights have been installed in specific locations to take advantage of natural light. High Efficiency Lighting is controlled based on available daylight.
  - —Occupancy sensors are utilized where appropriate such as conference rooms, common areas, and restrooms
- Dye process.—same water and heat recovery as Manchester plant. Also Somersworth dye operation utilizes a High Efficiency Direct Contact Hot Water Heater (90%+ efficiency) to heat process water to desired temperature.
- Central Chilled Water.—HVAC: The new building addition is air conditioned to maintain a stable process environment. High Efficiency Centrifugal Chillers with VFD's are the heart of the system. All fans and pumps are driven with VFD's to minimize energy use. A "free cooling" heat exchanger was also incorporated into the design to eliminate the need to run the electric chillers when the outside air temperature is below a certain point (winter use).
- Central Chilled Water and Glycol.—Process: Plastics molding process lines are serviced by a central chilled water and glycol system instead of individual units for each line. Lower operational cost and system redundancy are key benefits.
- Roofing.—All roofs include high reflective white TPO membrane to minimize heat gain.

Consistent with a focus on energy efficiency, Velcro implemented an Environmental Management System (EMS) and achieved registration to the ISO 14001 standard in 2003. The EMS enables the business to manage continuous improvement activities for all environmental aspects and impacts, with energy conservation and reduction measures being key elements of this program.

- Once "low hanging fruit" (lighting, motors, drives, etc.) has been addressed, more effort is required to pursue specific measures. Opportunities to reduce energy use in the manufacturing process require a higher level of engineering and expertise. These efforts are usually more costly with expectations of shorter payback periods as compared to a building solution. Incentives from public utilities and/or other sources can sometimes help to close the financial gap and make unattainable projects a reality.
- Resources are focused on operation and production vs. energy opportunities. Energy is a significant part of COGS. Assistance from subject matter experts that can help us develop and implement solutions is equally important.
- Most public programs / technologies are focused on commercial solutions vs. industrial/manufacturing.
- Rising Cost of Electricity (NH) / Volatile Energy Market (NG, Oil)

CURRENT PROJECTS

- Continued lighting projects—office space, Manchester warehouse

• Cogeneration Opportunity at Somersworth Plant—evaluating opportunity
• Comprehensive Energy Audits completed in August 2010 for US locations. Audits funded by the New Hampshire Department of Resources and Economic Development's Business Resource Center as an account of work sponsored by an agency of the United States Government (ARRA funding).

—Opportunities identified covered a broad range, but most require additional investigation. Estimated payback periods ranged from 1 year to over 30 years, with the overall average above 12 years.
—Opportunities worth being pursued include:

• Alternate Plastic Resin drying technology (3-4 year payback)
• Boiler controls / efficiency improvements at Somersworth Plant (3-4 year payback)

Members of the committee, as you can see Velcro has taken an active role in increasing our energy efficiencies in an effort to maintain our competitiveness through cost reduction to maintain manufacturing jobs in NH. Included are continuous improvements of manufacturing and facilities equipment and incorporating the latest technology in environmental and lighting control. When we expanded our capacity, we used those lessons learned and made the decision to incorporate cutting edge technology. We see this as not only the path forward to mitigate the rising costs of energy but also a way to stay connected with the interests of our workforce, continue our commitment to domestic manufacturing, and to decrease our impact on the environment. Legislation similar to that proposed could act as a catalyst to move forward with many energy savings projects.

I would like to thank all members of the committee for allowing me to share the experiences that our company has had in regards to energy efficiency efforts and again thank Senator Shaheen for the invitation and sponsoring this bipartisan bill. I am sure that with congressional support many more corporations would take the view that we have and modify the appropriate business practices.

The CHAIRMAN. Thank you very much.

Mr. Scripter, go right ahead.

**STATEMENT OF JAY SCRIPTER, VICE PRESIDENT, SUSTAINABILITY, OWENS-ILLINOIS, PERRYSBURG, OH**

Mr. SCRIPTER. Thank you.

Mr. Chairman, Ranking Member Murkowski, and members of the committee, my name is Jay Scripter, and I'm the Vice President of Sustainability at Owens-Illinois.

O–I, with revenues of $6.6 billion, is the world's largest glass container manufacturer, and is the preferred partner of many of the world's leading food and beverage brands. The company is headquartered in Perrysburg, Ohio, and employs more than 24,000 people in 80 plants in 21 countries. O–I delivers safe, effective, and sustainable glass packaging solutions to a growing global marketplace.

I greatly appreciate the opportunity to testify today. I commend the committee for its consideration of each of these important bills and, in particular, I commend Senators Portman, as well as Shaheen, for their work on S. 1000, the Energy Savings and Industrial Competitiveness Act of 2011. It is bipartisan and sensible, and, among other things, it provides opportunities for America's energy-intensive industries, such as glass manufacturing, to work cooperatively with government to increase energy efficiency.

Before offering a few particular observations about the bill, however, let me briefly describe our company's approach and commitment to energy efficiency and sustainability. In March 2009 we announced the most aggressive sustainability goals in the company's 100-plus-year history. Using 2007 as a baseline, the goals span 10 years to 2017, and are the following: a 50—that's five-zero—percent

reduction in energy consumed, a 65 percent reduction in $CO_2$ emissions, and almost doubling our usage of post-consumer recycled material—from roughly 30 percent worldwide to 60 percent.

O–I has realigned a significant amount of our engineering and technical resources to upgrade our systems today with new more energy-efficient technology, such as advanced furnace control systems.

Equally important, development of out-of-the-box new manufacturing processes are also critical to our strategy. These new processes include high efficiency melting technologies, heat recovery and utilization, and new innovative approaches to obtaining and processing more post-consumer glass for recycling.

Through many of these devices contemplated in the proposed legislation, such as well-conceived partnerships, strategically targeted collaboration, best practices promulgation, and revolving-fund financing assistance, the Government can accelerate and spread the efficiency revolution, making it an engine for American competitiveness and job creation.

Turning more specifically to S. 1000, I want to highlight just 3 of the most promising provisions from our point of view. First, section 302—coordination of research and development of energy-efficient technology for industry. We are particularly encouraged by section 302, with its objective of using the capabilities of, and learning from, DOE's Industrial Technologies Program to create industry-government collaborative research and development partnerships involving IN THE PROCEEDINGS and other DOE entities.

O–I has experience with this process. We are currently working on an IN THE PROCEEDINGS energy efficiency project with the Battelle Institute that involves using waste heat from our furnaces. The initial installation would be in our Zanesville, Ohio plant. If the concept can be successfully developed and implemented industry-wide, we could significantly reduce glass industry energy consumption, and increase the financial competitiveness of the U.S. glass manufacturing.

In our view, this kind of partnership helps assure that projects meet both governmental needs, and they aid energy efficiency, that they are practical, and they are immediate.

Second, section 303—energy efficient technologies assessment. This provision would create a collaborative government-industry process to study the special needs of energy-intensive industries, including glass, steel, aluminum, forest and paper products, food processing, metal casting, chemicals, petrochemical refinery, cement, and information and communication technologies. Among its goals would be recommendations on cost-competitive commercial energy technologies, programs and structures to promote investments in energy efficiency, and international comparisons aimed at borrowing the best ideas from elsewhere. If done right, this process could be an excellent opportunity for industry and government to put their heads together and come up with ways to make our energy-intensive industries more competitive, as well as more energy-efficient.

Third, subsection 303(b)(6), which provides a part of the broader study referred to as the assessment of energy savings available

from increased use of recycled materials. We believe this is critical. Recycled materials represent a huge potential energy and emission savings. It is wasteful to think that energy-intensive materials made from raw materials can be made from remelting existing recycled products as an alternative. We need to find ways, however, to increase the quality and availability of these recycled materials.

This being considered, however, recycling in the United States is inadequate. It's served by an inadequate government infrastructure, and lags far behind many developed countries. We in the glass industry cannot nearly get enough recycled bottles, and are engaged in multi-front efforts to improve supply. We greatly welcome the initiative represented by subsection 303(b)(6).

To close, I want to again thank and express my gratitude for the opportunity to share O–I's enthusiasm for this legislation, and our willingness to help it succeed in any way we can.

Thank you.

[The prepared statement of Mr. Scripter follows:]

PREPARED STATEMENT OF JAY SCRIPTER, VICE PRESIDENT, SUSTAINABILITY, OWENS-ILLINOIS, PERRYSBURG, OH

Mr. Chairman, Ranking Member Murkowski and members of the Committee, my name is Jay Scripter and I am Vice President, Sustainability of Owens-Illinois.

O–I, with revenues of $6.6 billion, is the world's largest glass container manufacturer and the preferred partner for many of the world's leading food and beverage brands. The company is headquartered in Perrysburg, Ohio, and employs more than 24,000 people at 80 plants in 21 countries. O–I delivers safe, effective and sustainable glass packing solutions to a growing global marketplace.

I greatly appreciate the opportunity to testify today. I commend the Committee for its consideration of each of these important bills, and, in particular, I commend Senators Portman and Shaheen for their work on S.1000, the Energy Savings and Industrial Competitiveness Act of 2011. It is bipartisan and sensible—and, among other things, it provides opportunities for America's energy-intensive industries, such as glass manufacturing, to work cooperatively with government to increase energy efficiency. Before offering a few particular observations about the bill, however, let me briefly describe our company's approach—and commitment—to energy efficiency and sustainability.

In March of 2009, we announced the most aggressive sustainability goals the company has created in its 100+ year history. Using 2007 as the baseline, the goals span 10 years to 2017 and are the following:

- A 50% reduction in energy consumed
- A 65% reduction in CO2 emissions
- Almost double our usage of post-consumer recycled material from roughly 30% worldwide to 60%.

O–I has realigned a significant amount of our engineering and technical resources to upgrade our systems today with new more energy efficient technology such as advanced furnace control systems. Equally important, development of out-of-the-box new manufacturing processes are also critical to our strategy. These new processes include high efficiency melting technologies, heat recovery and utilization, and new innovative approaches to obtaining and processing more post-consumer glass for recycling.

Through many of the devices contemplated in the proposed legislation, such as well conceived partnerships, strategically targeted collaboration, best-practices promulgation, and revolving-fund financing assistance, the government can accelerate and spread the efficiency revolution, making it an engine for American competitiveness and job creation.

Turning more specifically to to S.1000, I want to highlight just three of the most promising provisions, from our point of view.

First, Section 302—Coordination of Research and Development of Energy Efficient Technology for Industry. We are particularly encouraged by Section 302, with its objective of using the capabilities of, and learning from, DOE's Industrial Technologies Program to create industry-government collaborative research and development partnerships involving ITP and other DOE entities.

O–I has experience with this process. We are currently working on an ITP energy-efficiency project with the Battelle Institute that involves using waste heat from our furnaces. The initial installation would be in our Zanesville, Ohio plant. If the concept can be successfully developed and implemented industry-wide, we could reduce significantly glass-industry energy consumption and increase the financial competitiveness of U.S. glass manufacturing.

In our view, this kind of partnership helps assure that projects meet both governmental and industry needs—that they aid energy efficiency and that they are practical and immediate.

Second, Section 303—Energy Efficient Technologies Assessment. This provision would create a collaborative government-industry process to study the special needs of energy-intensive industries, including, explicitly, glass, steel, aluminum, forest and paper products, food processing, metal casting, chemicals, petroleum refining, cement, and information and communication technologies. Among its goals would be recommendations on cost-competitive commercial energy efficiency technologies, programs and structures to promote investments in energy efficiency, and international comparisons aimed at borrowing the best ideas from elsewhere. If done right, this process could be an excellent opportunity for industry and government to put their heads together and come up with ways to make our energy-intensive industries more competitive as well as more energy efficient.

Third, Subsection 303(b)(6), which provides, as part of the broader study referred to above, "an assessment of energy savings available from increased use of recycled material in energy-intensive manufacturing processes." We believe this is critical. Recycled materials represent huge potential energy and emissions savings. It is wasteful to make energy-intensive materials from raw materials when they can be made from re-melting existing, recycled products. We need to find ways, however, to increase the quality and availability of recycled materials.

In the glass industry, for instance, a plant's energy usage drops 2-3% for every additional 10% increment in usage of recycled glass. Similarly, the plant's greenhouse-gas emission levels are reduced 4-10% for every additional 10% of recycled material. According to EPA, in 2009, recycling activities saved the equivalent of 5% of the entire U.S. carbon inventory, and the equivalent of the electricity used by 19 million homes.

However, recycling in the United States is inadequate, is served by an inadequate governmental infrastructure and lags far behind many developed countries. We in the glass industry cannot get nearly enough recycled bottles and are engaged in multi-front efforts to improve supply. We greatly welcome the initiative represented by Subsection 303(b)(6).

To close, I want to again express my gratitude for the opportunity to share O–I's enthusiasm for this legislation and our willingness to help it succeed in any way we can.

The CHAIRMAN. Thank you very much.

Before we go to questions, let me just defer first to Senator Murkowski for any opening comments she has.Then Senator Shaheen also indicated she'd like to make a few opening comments. If Senator Portman wanted to, that would be fine, too, or any of the rest of the members here. Then we will have questions.

Senator Murkowski.

## STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

Senator MURKOWSKI. Mr. Chairman, in the interest of time, recognizing that we have another full panel after this one, and in deference to the bill sponsors, I will just submit my opening comments for the record. Thank you.

Just, welcome to all the panelists here this morning.

[The prepared statement of Senator Murkowski follows:]

PREPARED STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

Good morning, Mr. Chairman, and thank you for convening this hearing. As you mentioned, we have a couple of different bills to discuss this morning.

I'd first like to commend Senators Shaheen and Portman for coming together and beginning work on a comprehensive energy efficiency bill. I believe that efficiency

is part of an all-of-the-above energy plan, and this is an important first step that we are taking here today. I understand that Senator Carper's bill contains several ways for the federal government to be more energy efficient and save money, and I look forward to hearing more about these ideas, because it's important to lead by example.

Anyone who has been following our Committee lately knows that we've had some spirited debates about new authorizations. We're in a period of unprecedented national debt, and while it's important to continue with our legislative business, we also need to be mindful of the context. I know our staff is working not only to find offsets for new spending, but also to identify any overlap between the programs proposed in these bills and existing authorizations.

Moving on to the third bill we're here to consider, I'd like to thank Senators Wyden and Stabenow for their efforts. I appreciate the emphasis on technology neutrality and the explicit cost-share provision within this bill. As I said a few weeks ago, with oil prices remaining near $100 a barrel, vehicle technologies are an area this committee should be focusing on.

I'm also glad we have several witnesses on our second panel that can help us understand what's happening with the Advanced Technology Vehicle Manufacturing program. Just five loans have been provided under that program over the past three years, so before we consider a significant expansion, it's appropriate to make sure it's working as Congress intended.

Finally, I appreciate the effort to pay for this legislation, but I have serious concerns about selling oil from the Strategic Petroleum Reserve. That's our insurance policy to protect against serious supply disruptions, and any decision to reduce its capacity needs to be very carefully considered. For a number of reasons, including the events of the past few months, I'm simply not able to support the offset envisioned by S. 1001.

As we do seek to pay for the legislation that comes before us—whether these bills or others—I continue to believe that our best path forward is to produce more of our own abundant resources and then to put the resulting federal revenues to good use. Right now Alaska alone has about 40 billion barrels of oil that are effectively off-limits. If we harness those resources, and more of the resources in the Gulf of Mexico and the Rocky Mountain West, we'd dramatically increase our energy security. We'd create thousands of new jobs. And we'd generate billions and billions of dollars, year after year, that could be applied to both deficit reduction and advanced vehicle technologies.

Again, Mr. Chairman, I'd like to thank you for scheduling this hearing, and our witnesses for joining us today.

The CHAIRMAN. Very well.

Senator Shaheen.

## STATEMENT OF HON. JEANNE SHAHEEN, U.S. SENATOR FROM NEW HAMPSHIRE

Senator SHAHEEN. Thank you, Mr. Chairman and Ranking Member Murkowski, for holding this hearing this morning, and thank you to all of the panelists for being here. I will submit my full statement for the record in the interest of time, but I do want to make a few remarks.

First, I want to credit both Senator Bingaman and Senator Murkowski for the work that you've done previously on the issue of energy efficiency, as well as the Alliance to Save Energy, and all of your businesses who have worked so hard on energy efficiency over the years.

Many of the provisions in the legislation that Senator Portman and I have been working on have been introduced in previous Congresses—many by members of this committee, and so they have proven bipartisan support. I think that will be important as we try and advance this legislation.

One of the things that I think is so important about energy efficiency, that some of our panelists have alluded to, is that this is something that spans regions of the country; it's something that is

important regardless of what energy source you support; and it's the cheapest, fastest way to address our energy needs. The bill is designed to take a number of these provisions that have been worked on and have been successful in the private sector, to try and see if we can leverage some of those private sector dollars with public support to encourage this kind of energy efficiency.

I think an important corollary of the legislation is the potential for job creation that is part of what's the offset of many of these provisions. Mr. Crasi spoke very eloquently to the potential for building retrofits to create jobs, and other members of the panel have talked about the jobs that are created as the result of their energy efficiency efforts. So, I think that's very important—particularly now at a time when the economy is still struggling.

The other important aspect of it is that these are technologies that are already available. We don't have to wait on some magic new technology. We can take advantage of them now.

So, I look forward to continuing to work with the committee, and to see if we can advance this legislation on the Floor, and just want to recognize, also, Phil Damiano from Velcro USA in Manchester, New Hampshire. It's very nice to have you here this morning.

[The prepared statement of Senator Shaheen follows:]

PREPARED STATEMENT OF HON. JEANNE SHAHEEN, U.S. SENATOR FROM NEW HAMPSHIRE

Thank you Chairman Bingaman and Ranking Member Murkowski for holding a hearing today on S. 1000, the Energy Savings and Industrial Competitiveness Act, legislation that I developed with Sen. Rob Portman.

A national energy efficiency strategy, like the one Senator Portman and I have introduced, can have an immediate impact on job growth in this country. It can make our economy more competitive and start addressing our nation's energy challenges.

We have heard from business after business that there is a pent-up demand for energy efficiency. Companies and homeowners want to invest in more efficient buildings and equipment. These investments pay for themselves, but the up-front costs remain a barrier for many. This is a big part of what our bill does—lowering barriers to private investment through smart leveraging of federal dollars. By increasing private sector investment, we can grow jobs while reducing our energy consumption.

These are off-the-shelf technologies that are available now, such as better insulation and better lighting. They aren't radical new solutions and they are universal—there's not a state in this country that can't utilize the energy efficiency technologies promoted in this bill.

Let me be clear—I do not think energy efficiency solves all of our energy problems. But efficiency remains the fastest, cheapest way to start meeting our energy challenges.

Our legislation addresses some of the largest energy users in our economy—buildings, industry and the federal government. By expanding existing programs, such as the DOE's loan guarantee program, and through other cost-effective tools, such as revolving loan funds for manufacturers, it promotes efficiencies that will save our economy billions of dollars a year.

Our bill enjoys the support of a diverse coalition of over 100 businesses, electric utilities, and efficiency advocates who recognize the importance of energy efficiency. The Dow Chemical Company, Knauf Insulation, United Technologies, and Honeywell are just a few.

I am also pleased that we are joined today by Philip Damiano of Velcro USA, which is headquartered in Manchester, New Hampshire. I recently visited with Velcro USA and came away greatly impressed with their efforts and commitment to energy efficiency. They recognize that investing in efficiency can reduce their costs and position them for growth.

I look forward to our witness' testimony today and working with Members of the Committee to take up and pass this important, bipartisan piece of legislation.

I would be remiss if I didn't thank Sen. Coons for his cosponsorship of our bill and Sen. Landrieu for her contributions to our provision that expands the DOE Loan Guarantee program to cover building retrofits.

The CHAIRMAN. Senator Portman, did you wish to make any comments?

**STATEMENT OF HON. ROB PORTMAN, U.S. SENATOR FROM OHIO**

Senator PORTMAN. I would, Mr. Chairman.

First of all, thank you, and Senator Murkowski, for not just your support of efficiency legislation over the years and giving us most of our good ideas that are in our bill, but also for your willingness to have this hearing today, and help promote this legislation. I also appreciate my 2 other colleagues who are here, Senator Coons and Senator Wyden, both of whom have expressed interest in this bill. I think Senator Coons is a cosponsor already. So, we look forward to working with you and members of our side of the aisle as well.

I think we've already heard, Mr. Chairman, from our panelists as to why this makes sense. I mean, this is a pretty common sense idea to both save energy and make our economy more efficient, and therefore more productive, and therefore more competitive. So, I think it speaks for itself.

I'll give you a couple data points that we've been able to derive from various sources. One is that by 2030, if this legislation were enacted, we believe that the energy savings could equal up to 5.8 quads—which is, by the way, the equivalent of taking about 37 million homes off the grid. By 2020, so, 8 or 9 years from now, 1.6 quads, which happens to be the total energy use of the State of Oklahoma. So this is part of, from my point of view, an effort that is sensible in terms of energy policy to both find more energy—and Senator Murkowski has been articulate about that in this committee as have others, and we need to do that—but also use less. By doing so, we'll be able to address the energy challenge that we face as a country, as our energy needs will increase.

Discussion today was about a 20 percent increase in energy projected over the next decade. If done right, energy efficiency can help to address some, or some would say—including Ms. Callahan—all of that increased energy need.

So, I think it's a common sense approach that incentivizes residential, commercial, industrial customers to use energy more wisely and more efficiently. It makes a lot of sense. It does have an impact on our economy. It will create jobs. Our analysis is that it will create many jobs not just through the retrofits—which are important, as Mr. Crasi has said, being a wise Ohioan that he is—but also, again, by making our economy more efficient, as Mr. Scripter—another wise Ohioan—has pointed out. So that we can, indeed, continue to have great companies like Owens-Illinois headquartered in the United States of America, and be a global leader in manufacturing.

So again, thank you very much. I look forward to having a dialog with the witnesses today, and our next panel as well.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Do any the rest of the Senators feel an obligation to make a statement here before we get going?

**STATEMENT OF HON. CHRISTOPHER A. COONS, U.S. SENATOR FROM DELAWARE**

Senator COONS. Senator Bingaman, if I might.

The CHAIRMAN. Go right ahead.

Senator COONS. I'll just briefly say, as someone who worked for a highly energy-efficient manufacturing company in Delaware for 8 years before running for office, I was thrilled to hear the details from Mr. Scripter, Mr. Damiano, Mr. Crasi, of the work that you've done.

The homebuilding and commercial real estate industry has been a long, actively engaged in energy efficiency. I had no idea how much O–I is doing. Those are very ambitious targets and impressive. I am going to dig in and learn more about Velcro that, it sounds as if, as has often been the case, the private sector is leading the way on energy efficiency and has some of the most important insights.

So, I just want to thank Senator Shaheen and Senator Portman for bringing to the panel today some really compelling exemplars of what energy efficiency can do. The Alliance and the Department, I think, have done a great job of partnering with industry in a collaborative way. That's what produces bipartisanship; it produces legislation that can move through this body; and it makes progress for our country. So, if you'll forgive me, there's another committee hearing that several, I know, other members of this committee are already at. But, I simply wanted to thank the members of the panel and the 2 leads on this bill today for your great work in putting together a sensible bipartisan bill that I think will move.

Thank you very much.

The CHAIRMAN. Thank you very much.

Let me start with a few questions. Let me mention that I've distributed to all members of the committee a reprint of this article that's in the morning New York Times entitled, "U.S. is Falling Behind in the Business of Green." I think it's got some information in there that's directly relevant to the hearing we're having this morning.

Let me ask you, Dr. Hogan, to begin with—One of the statements in this article is, "The Energy Department has pressed hard for a new home energy score program that would rate homes for energy efficiency just as cars are rated for gas mileage, and that rating would be available to potential buyers." Could you describe a little more what you're trying to do there and what the status of that is?

Ms. HOGAN. Certainly. We are working to develop a home energy score program that would be a simple scale, 0 to 10, to help people understand if their home is not very efficient, medium efficient, or very highly efficient. But it's not just a score alone. It is also providing the top number, a top set of recommendations for the homeowner to take to improve the efficiency of that home, and show the homeowner the cost savings they would get if they took those actions.

One of the reasons people aren't improving their homes is they just don't have sufficient information about their home, its current efficiency, and the things that they could undertake to get a significant savings. So, we have been working on this. As you can imagine, this is putting together a fair amount of technical information in a way that it really works to give credible information to the homeowner on what they can do. So, we've been working on this for over a year at this point to do the technical side of it. we're now fielding it in ten pilots around the country. We're collecting the data as assessors go, and provide these ratings for homes. We will collect all that data, figure out what we need to do to improve this model, and then we hope to roll it out with partners in the fall.

The CHAIRMAN. Does this just apply to new homes, or does this apply to existing homes as well?

Ms. HOGAN. No, this is really focused on primarily existing homes, because there is an existing rating system for new homes called the Home Energy Rating System, HERS, which works when you've got the blueprint in front of you, and a lot of the measurements about a new home, that you don't have when you're doing an existing home. They each have their own quirks. We need to figure out a low-cost way to pull all the information together and talk about the efficiency of the home. This will allow us to consider the air infiltration issues of an older home, the unevenness in the insulation of the older home, to really help people understand the low-cost improvements they could make to greatly reduce their energy bills.

The CHAIRMAN. OK.

Let me ask Kateri Callahan about the Supply Star Program that is talked about in here. Tell me how that would work as you envision it, and what benefits would derive from that?

Ms. CALLAHAN. What we like about that program is that it will provide information, best practices, examples, and help those companies to green their supply chain, as much as Wal-Mart is doing currently.

There is so much lack of information, I think, in the marketplace now on the benefits of driving energy efficiency into business operations and practices, and we've got some exemplars here today of folks that are doing that. But we need to get a much more widespread ability to go across the economy and across the business sector. I think that the Supply Star is a great start for that and brings the Department of Energy in to build the partnerships, to identify the best practices, the best companies, and to provide the tools that allow this to be spread again throughout the economy.

So, we are very, very supportive of this type of activity and think it's a great provision in the bill. I think you may have introduced it in the last Congress, Senator, so thank you for that.

The CHAIRMAN. I'm glad it's still alive and well.

Mr. Damiano, you talked about your cogeneration operation there in your plant. Is this something in doing. in putting this in, was your electricity provider supportive of this effort? Or was it a problem getting their support? Or how did that factor in? Were there other barriers that you encountered in trying to shift to this cogeneration?

Mr. DAMIANO. Obviously, our public utility's not necessarily thrilled that we're off the grid there, and we are using natural gas as, to fire our co-gen plant. What we also did was, we had to have a complete backup system, and in our backup system, we are currently using a diesel-based solution. Now we're looking and actually seeing it might be better to do that differently and work with the public utility.

So, I think it can be in coordination with the public utility. But again, if you look at just the overall efficiency, the big difference is that with a public utility, you lose half of the generating power because you transmit it, and you can't recapture the heat and reuse that as we do. So, it's just a much more efficient way, and it's very difficult to do that through a public utility.

The CHAIRMAN. All right. My time is up.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Thank you all.

As I was looking through the bills that we have today, you always are looking to see whether or not the provisions are duplicative, whether there's any overlap within existing programs. Dr. Hogan, I would direct this to you—In your review of the legislation, do we have any duplication now with other programs that are already in existence? Further, do we have existing authorities that are in place that perhaps would be part of what we're discussing here this morning?

Ms. HOGAN. We are still doing our review of these bills, but we will be looking at those issues very closely, and we'll be happy to get back to you with those answers.

Senator MURKOWSKI. I would ask you to do that. As you know, here in the committee, there's been a great deal of discussion about just how we provide for the "pay-fors" for legislation that comes out the committee—a very important aspect of it—and a review of existing authorities that are currently in place and just understanding what is really out there. So, I would ask you within the department to provide us with a list of those programs that are submitted within your budget, give us the authority that's cited to fund it, and the amount, so that as we are looking at this, we've got some frame of reference, and we kind of know where we're going.

Ms. Callahan, I would ask your assistance, as well, to work with the committee, to work with DOE, to develop a list of the existing statutes that are out there that address energy efficiency, and then the authorization within those statutes. I think that that would be helpful for us.

Ms. CALLAHAN. We'd be very happy to do that.

[The information referred to follows:]

EERE's programs have long been authorized through the Energy Policy and Conservation Act, and more recently through the Energy Policy Act of 2005 and Energy Independence and Security Act of 2007 (EISA 2007)[1]. All programs within SERE, as submitted in the FY 12 budget request, cite EISA 2007 as their funding authority, for the entirety of their request.

[1] http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110__cong__bills&docid=f:h6enr.txt.pdf

| Office of Energy Efficiency and Renewable Energy Overview | |
|---|---|
| Program | Authority |
| Hydrogen & Fuel Cell Technologies | EISA 2007[1] |
| Biomass Technologies | EISA 2007[1] |
| Solar Energy | EISA 2007[1] |
| Wind Energy | EISA 2007[1] |
| Geothermal Technology | EISA 2007[1] |
| Water Power | EISA 2007[1] |
| Vehicle Technologies | EISA 2007[1] |
| Building Technologies | EISA 2007[1] |
| Industrial Technologies | EISA 2007[1] |
| Federal Energy Management Program | EISA 2007[1] |
| Facilities and Infrastructure | EISA 2007[1] |
| Weatherization and Intergovernmental Activities | EISA 2007[1] |
| Program Direction | EISA 2007[1] |
| Strategic Programs | EISA 2007[1] |

[1] http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110__cong__bills&docid=f:h6enr.txt.pdf

Attached, please find a spreadsheet* listing all of the EERE provisions in the three bills considered during this hearing, S. 963, S. 1000, S. 1001. The spreadsheet also indicates whether there is existing pre-existing authority to carry out programs that could potentially be duplicative with the provisions of these bills.

Senator MURKOWSKI. Ms. Callahan, as you have reviewed this, do you think that any of the provisions that are referenced in the bills that we're looking at here today could be done under existing laws?

Ms. CALLAHAN. I think that if, the one that would come to mind is, we do have authorities on the building energy code provisions. But what this bill, I think, very smartly does is refreshes, updates those authorities, and expands them to make sure that DOE has the guidance to be transparent in the building energy codes, to match those building energy codes up with our national energy needs.

So, in short, what it will do is ensure that the Department of Energy, as it works its way through the codes process, as it currently does, that the will of the Congress is brought to the fore in terms of driving those energy codes, cost-effectively, to reduce energy waste.

So, yes, there are authorities there. We just think that this makes it better, and makes sure that the voice of Congress is brought to the table in the codes processes that currently exist today.

* Spreadsheet has been retained in committee files.

Senator MURKOWSKI. I appreciate that. You had mentioned in your comments that you've got some potential impact within the provisions of the Carper bill on agencies. They're already required to meet certain conditions under existing laws and executive orders regarding energy management. Again, we're trying to understand and make sure that we're not duplicating, overlapping. We want some——

Ms. CALLAHAN. Right.

Senator MURKOWSKI [continuing]. Efficiencies within how we——

Ms. CALLAHAN. Right.

Senator MURKOWSKI [continuing]. Administer the programs as well, so——

Ms. CALLAHAN. Senator, I appreciate that, because that is an area of concern that I raised in the testimony. You know, the agencies are struggling now to catch up with reporting requirements. The Department of Energy has a requirement under the Energy Independence and Security Act to put together a web, data base reporting. That's not done yet. So, to continue to layer requirements on, if it's not done carefully and if it's not synced, we do think that there's a chance that you overwhelm these agencies. You know, it's, for the sake of great data, we get none, because we keep asking for more and more. So, I think that is really an area we need to work on.

Senator MURKOWSKI. OK. I appreciate your commitment to do that, and then would look forward to this information from both the department and the alliance.

Mr. Crasi, in your testimony you stated that the housing industry faces some pretty considerable challenges. You've got an increase in the number of regulatory actions and implementation of new requirements that could have an impact, a negative impact, as we're trying to deal with the struggling housing industry. Can you elaborate a little bit more on this point? What are you facing in terms of these regulations?

Mr. CRASI. What's relevant to our conversation today would be the increased amount of insulation being required by code. I think—because I am the front line. I'm actually selling this every day. This is what I do. What we're experiencing is a homeowner who is somewhat reluctant to go beyond where it becomes little less practical for them to be able to afford it and real pay-backs.

When we get to the 2009 code—which is a good code. OK? I think that is a very stringent code. I do the energy rating as well. I'm a HERS rater, and so I understand how this interacts. At the same time, I'm a builder, and I know what the real costs are in my area. I think once you start to go beyond that area, there is a point of diminishing returns, and it starts to get to be a little too expensive a step at a time. I think at 2009 we have a good code.

Senator Portman, in our, in Ohio we were asked—and part of the Ohio homebuilders as well—we, in a collaborative effort, actually worked with the environmentalist to come up with a better code from the 2009. We actually came up working with the folks out of Chicago from Meeya, we actually improved on the 2009. We came up with a code that was more stringent, but, yes—but yet, less expensive to implement than the 2006 version. But at that point,

going beyond, you hit a wall. At some point, you can only put so much insulation in the wall before it starts to get expensive.

That's one of the impediments we see right now, is, layering on additional costs that don't see any real payback immediately for homeowners. That's what I'm just seeing myself in the field.

Senator MURKOWSKI. I appreciate that.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

Senator Wyden.

Senator WYDEN. Thank you, Mr. Chairman.

This panel is the energy efficiency panel, and I think what Senator Shaheen and Senator Portman have done is a very laudable proposal. I'm certainly planning to support it.

I just wanted to say, Ms. Hogan, that I can't pass up the opportunity, because at your office you also run most of the Department of Energy alternative vehicles programs, to just ask you for a minute or 2 about a piece of legislation that Senator Stabenow and I have introduced.

What my question essentially involves—because there's a lot of good work that's being done. My colleague from Oregon, Senator Merkley, and Senator Alexander have a fine bill as it relates to electric vehicles—is, we're seeing that when it comes to technology, what works for an 80,000-pound tractor trailer may not work for the family car, and a fuel that is economically competitive in one region of the country may not be competitive in all parts of the country.

So, what we have generally said is, let's try to find a way—if we're going to get millions and millions of these alternative fuel vehicles out on our roads—is to come up with a way that is technologically neutral, geographically neutral, fuel neutral and vehicle neutral, so as to have the broadest and most comprehensive effort possible.

Do you generally think that that philosophy makes sense?

Ms. HOGAN. Yes. At the Department of Energy, we're very supportive of a fuel-neutral approach to addressing our issues in the transportation sector.

Actually, if you look at the work that we are doing at the Department, it's perhaps the electric vehicle area that gets the most discussion. But we've got a balanced research portfolio. We're doing a lot with advancing the efficiency of long-haul trucks in addition to cars, and we're not really pursuing an electric agenda for the long-haul trucks as we pursue 50 percent improvements in that research area. We are supportive of a fuel-neutral approach.

Senator WYDEN. I appreciate that.

Let me ask it another way as well. What Senator Stabenow and I are seeking to do is to help the vehicle manufacturers and the suppliers and providers remove the barriers to deployment, and tool up the economy for, as I say, a variety of different alternative fuel vehicles and fuel infrastructure.

Is it fair to say that we are at the point—because you all have done important, you know, work as it relates to research and development—that a variety of these technologies are now ready for market? That we're now in a position to say that the past efforts have really paid off, and a variety of technologies are essentially

ready for a more aggressive focus on deployment? Would that be fair to say?

Ms. HOGAN. Yes. I think we, based on the research that's been done to date, are at a point where we can see the great expansion in these technologies in the marketplace.

That's not to say that all of the questions have been answered. For example, our goal of 1 million electric vehicles on the road by 2015 is an important milestone. However, it's not the end game, and we need to keep driving down costs. But we're in that period of time when we can both look for increasing prevalence of these technologies in the marketplace while continuing to work on some of the important research questions.

Senator WYDEN. Thank you.

To the panel members, you all have done good work on energy efficiency. I'm sure you didn't expect me to piggyback on, on Secretary Hogan's expertise in alternative fuels. I'm supporting your work as well.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Portman.

Senator PORTMAN. Thank you, Mr. Chairman.

Again, I appreciate all the panelists', the great input we've gotten on the various legislative proposals—particularly on our efficiency bill.

If I could, Tony Crasi, let me just focus in on your issues, and the homebuilder's issues. First, of course, I couldn't agree with you more about retrofits. Senator Shaheen shares that concern, as do other members of the committee, and I think that's because that's where the obvious savings are going to be. This article that the Chairman just sent around only confirms that.

So, as you know, the legislation does have a number of good retrofit provisions. The Rural Energy Savings Program, that loan program is for retrofits, because it lets electric coops help pay for efficiency retrofits. The Federal Loan Guarantee Program is amended to allow for commercial and industrial efficiency projects of existing buildings. I know you all support those, both those provisions, and we appreciate that.

I was a little surprised, as you know, about some of the concerns that were raised about the building codes, because I thought we'd made a lot of progress there—not so much in your testimony today, but in other meetings that I've had, since we completed the process, working with the national and, housing folks, and others in the building community. So, let's just review that quickly.

This is what we did to change the legislation that passed out of this committee in 2009 on a bipartisan basis. It was done because there were concerns raised by builders when we worked with builders on these. One, it requires DOE to establish all these energy targets, determinations and everything, through public notice and comment. By the way, the last piece of legislation—and some people in this panel still support this—said there is a statutory mandate that the codes had to achieve greater efficiencies by 50 percent over the ASHRAE–IEC baselines. It's not in this legislation. It was taken out.

We incorporate economic and cost considerations from the perspective of building owners and tenants as these model codes are developed, including this return on investment analysis you talked about earlier, which I agree on. That's in here. It wasn't in the other bill. It subjects DOE model codes to small business impact review analysis. It has an interesting provision that says when you're measuring energy efficiency of buildings, you've got to take into account the habits of those who'll be using the building. So, basically, it says that energy efficiency isn't just achieved through better building practices, but also how you use the building, which I think is important. That's something that you all encouraged us to put in, and we worked with you on that.

Finally, to your point on transparency, it makes transparent the methodology and data used by DOE to determine whether and by how much the subsequent code iteration provides energy efficiency compared to its predecessor. So, that goes to the issue of getting the information you need.

I would just remind the committee today and our panelists—these building codes are not what they're sometimes described as. Again, some of the panelists are not happy about this. But it encourages, as an end result, net-zero energy buildings by the year 2030—meaning buildings that produce as much energy as they use. It's not a mandate. There is not a mandate in the bill for that. There's no enforcement mechanism, no requirement for DOE to accomplish it. It's an aspiration. That's how it's written. I think some groups are concerned DOE may push the code-making bodies into achieving this goal without properly considering the economic consequences on new home buyers, and that's, you know, why we have some of these other provisions we've put in the legislation. So, you know, I just wanted to make that clear.

Then, to throw it back to you, Mr. Crasi. Any suggestions of how we should rework this language to address any continuing concerns that homebuilders might have, or others?

Mr. CRASI. Having been exposed a little bit in the last couple of weeks to the previous version of the bill, I understand exactly what you're saying. This is a huge improvement as to what it could have been. I think our concern is, going forward—and I'm going to tell you, I absolutely agree that, I think a net-zero energy home is a great aspiration, and it's a wonderful goal, and I think we should all get there. But I think it should be market-driven.

Senator PORTMAN. OK.

Mr. CRASI. To have a code that dictates that you need to be net-zero energy, or, have a net-zero home, it starts to put an undue burden on a homeowner. Because, I think, if you look back at my, I included some calculations in here. Now, I'm coming from an affordable housing experience. I sit on 2 inner-city housing boards, and I'm a builder trustee on one, and I chair another. The one program—we build homes for $92,000. I would tell you, 8, about 80 percent of the people who come who are customers are single moms who have rebuilt their credit, rebuilt their lives. We review every single application coming through the door. The pre-approval letters make it for about a $1,000, maybe $1,500.

My concern is, if we get to the point where we have a code that prescribes that we have to have a net-zero energy home—if you

look at the analysis that I did, I took a 2009 home. It cost about $860 a year for energy cost in it. Senator, you're right. It has everything to do with how people live. That's just an academic number, but it's something we need to start with, which, everybody here uses the same technology.

What happens, though, to get to the net-zero, OK, to eliminate $860 costs about $40,000. You need photovoltaics. You need to do a lot more insulating. You need to get the air infiltration down, which now you need some type of a recovery system or mechanical system for ventilation. If you factor in the cost of money over the course of 30 years—because nobody comes to the table with $40,000 in our market, that particular market—you're actually adding about $2,800 a year in mortgage costs to save $860. That just wipes out my entire market. I mean, it just, it's gone. Nobody can afford that, unless we find a way to pay for it.

While the aspirations of a net-zero were wonderful, and I—as a matter of fact, I used to be a homebuilder. Now I'm a remodeler, because we're just not building homes anymore. What's keeping me in business is exactly what we're talking about here. I'm retrofitting old homes with energy efficiency.

But my clients come to me, and they want to know—what is a reasonable pay-back? I give them the real numbers, based on current costs that I have to pay for things. So, this bill is a huge step in the right direction. But, our concerns are, how do we go forward and keep this, the American dream, attainable for everybody?

Senator PORTMAN. Yes. First of all, my time is up so I need to be quick here, and maybe we can come back again. But, I'm really glad the committee's considering and hearing what you're saying, because I think on absolutely right. Just making the point again—it is aspirational. It's not a mandate, as you say.

Second is, it's about an aspiration 20 years from now——

Mr. CRASI. Right.

Senator PORTMAN [continuing]. We all know the technology's going to change during that time period. We hope it will improve significantly on energy efficiency. It sure better because the rest of the world will be doing that. We want to be sure, as the chairman has talked about, to be ahead of that curve.

So, I think what you and your group representing the national homebuilders here today have done is improve the legislation, in my view, and made it more practical for those homeowners, particularly low-income homeowners. We want to continue to work with you with the hope that, again, we can make progress on the technology, and this aspiration can be met, not by a mandate, but by market forces, as you say.

Mr. CRASI. Senator, we really appreciate the opportunity for your open door, to work with us to help shape this, very much so.

Senator PORTMAN. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Shaheen.

Senator SHAHEEN. Thank you, Mr. Chairman.

I would just reiterate what Senator Portman has said about the building code provision in the legislation. It is voluntary. It's not a mandate. I certainly appreciate the concerns, particularly at this difficult time, for the construction industry.

But I also visited one of 2 Platinum LEED buildings in New Hampshire earlier this week. It wasn't a residential home, it was a business. But I was talking to the builder who told me that it's already paid for itself in 2 years, and they are now realizing the significant savings as the result of the efficiency that was built into the building. There was also a building inspector there from the community, and he was lamenting that the challenges is that not enough homeowners know what's available, what's out there, what can be done. It speaks to the concerns that have been raised already about, how do we get information to people.

I know, Ms. Callahan, that in your written testimony you talked about the Building Codes Assistance Project and the Consumers Union recent survey about how consumers feel about energy efficiency in their new homes. I wonder if you could elaborate on that a little bit.

Ms. CALLAHAN. Sure, I can, and I appreciate the opportunity because I would like to make 3 quick points to Mr. Crasi's comments.

The study that was done by the Building Codes Assistance Project and the Consumers Union show that 82 percent of the people that were surveyed support strong building energy codes. A couple of things that I want to make certain everyone is aware of—part of the reason that we have this existing building stock that is so huge, and so much potential, is because a lot of those homes were built before we started putting in place building energy codes. So, we are building better, and the codes are having an impact.

The second piece of it is that building energy codes are very important to the retrofit market, because when you update your home or your office building, you have to meet the new codes. So, they are very, very important for the retrofit, as well as the, as well as the new market.

The other thing that I want to say, that, costs when you get to net-zero energy homes can be very high. If you put the photovoltaics on, if you put in the renewable resources that you need to fuel the small bits of the home. This code and this aspiration doesn't say that you have to do those things. It just reduces the energy use in the home down to a level where, if you can afford and want to put the renewable energy onto the home, you can do it. So, the cost, you know, I think there's differences of opinion on the cost there.

But the work that we have done, the work actually that the National Association of Realtors and Homebuilders have done, show that homeowners are willing to pay $11,000 more for a home that saves, that can be shown to save a $1,000 a year. So, he's out talking to consumers, but we're talking to them, too, and we're hearing a slightly different story.

Senator SHAHEEN. Thank you.

Mr. Damiano, thank you again so much for being here. I was very impressed when I toured Velcro USA with all of the energy efficiency changes you made in the business. I wonder if you could elaborate a little bit on what you said in your testimony about what those energy efficiency improvements have done to save jobs in New Hampshire.

Mr. DAMIANO. Certainly. I think probably the key thing is that it keeps us competitive in a global market. We develop our prod-

ucts, well, first off, we like being able to say that it's a U.S.-made product. It certainly helps us to sell to the military and the Government through the Berry Amendment, so it's critical for us to be here. But if we cannot compete with—the majority of our competitors, frankly, are in the Far East. You don't see products like ours generally being made as often as we make it here in the United States, and we are, the vast majority of what we make is made in New Hampshire.

So, again, I think that the cost we save to be able to keep employed and keep the business in New Hampshire is very much driven by some of our energy policies. As I said, I think probably we just have to continue to do what we have, a continuous improvement program, and we see that having impact. Probably the next big step would be for us to take the Somersworth facility and go with a similar off-the-grid solution.

Fortunately, I'm happy to report that over the last 2 years Velcro's been actually growing extremely well, and we are continuing to employ in New Hampshire. So, it's working for us. We don't ever intend to be the lowest-cost supplier. It's just not our position. Our position is actually, be the highest-quality supplier, and so we can afford to be a little bit more expensive. But it's a global economy, and we have to be competitive.

Senator SHAHEEN. Thank you.

Can I just ask one follow-up question, Mr. Chairman?

In terms of the retrofits that have been done in the building, can you speak to how much of that equipment and technology was done in the U.S., and, the people who came in and did that work? Can you talk to where they were from and the kind of effort that put people to work doing that?

Mr. DAMIANO. A good question. In fact, I may have to ask someone to help me with that. I do know, particularly, the co-gen system, which was our largest investment, was entirely U.S.-based. Was it not? Yes, it was entirely U.S.-based, in terms of where the equipment was produced, the people who installed it. Of course, now the system's been in since 2000, so our ongoing maintenance of the system is also generating, you know, local jobs.

Senator SHAHEEN. Thank you.

The CHAIRMAN. Senator Stabenow.

Senator STABENOW. Thank you very much, Mr. Chairman, for a very, very important hearing.

I think that what Senator Shaheen and Senator Portman have been providing to us in terms of this legislation is very important, so congratulations to both of you.

Also coming from, obviously, a State where I spend a lot of time on industrial efficiencies and auto efficiencies and so on, I think it's important to note that there is more energy use and more carbon emitted from buildings than from transportation. So we do a lot of focus on transportation, very important. I support it. But, this is a critical piece if we're going to really tackle energy efficiency. So, I want to talk about those efficiencies, and for our second panel, talk more about automobiles. My good friend, Ron Wyden and I are focusing on that, along with Jeff Merkley and Lamar Alexander.

But let me talk from an industrial efficiency standpoint because, obviously, buildings, obviously, homes, commercial building is very

important. But we also have a very important piece of this as it relates to the efficiencies of operations, industrial plants.

I also, Mr. Damiano, I want to welcome you. I know you have a presence in Michigan, most of it's in New Hampshire. We'd welcome more of it in Michigan, by the way, and——

[Laughter.]

Senator SHAHEEN. Not a chance.

Senator STABENOW. Not—but, I do want to note you're in Troy, Michigan, and I know that, and so, we appreciate that very much.

But there is an—this is to Dr. Hogan and Ms. Callahan. We do have something already called the Industrial Technologies Program, and this legislation in front of us really adds to that, I think works with that very well. But we've had other discussions in committee about whether that should be removed from that program, used for other purposes, and so on. I do want to note that that particular program has commercialized 220 technologies, given over 33,000 industrial plants technical help to create efficiencies, saving over $270 million a year and reducing carbon emissions by 206 million tons. So, this is an important piece of it.

So, I wonder if you might describe how the Energy Savings and Industrial Competitiveness Act will build upon what is being done through the Industrial Technologies Program.

Ms. HOGAN. Yes. At the department, through the Industrial Technologies Program, we have a portfolio of efforts underway, which ranges from our industrial assessment centers that go and help small and medium-sized business better understand and take advantage of energy savings opportunities. We have regional application centers that are really focused on working with companies within their territories around combined heat and power. Additionally we have a program called Save Our Energy Now which partners with businesses that want to lead in putting energy savings practices into place, I believe it's the savings from some of these programs to which you were referring.

In addition to that, we have an R&D portfolio that seeks to improve the efficiencies of technologies like combined heat and power. The program also endeavors to improve manufacturing practices, fabrication practices, and look at other highly energy-intensive processes so that we can bring those costs down and improve competitiveness.

As you look at the provisions of the legislation before us, it touches on many of those areas and looks to build upon what we're doing and taking them further. I understand one of the included efforts seeks to expand and enhance some of the Industrial Assessment Centers, as well as bring new financing opportunities to the table around the revolving loan fund, as well as the funding behind motors. So, clearly, this builds upon what we are doing.

But, before going any further, we should really go back and do this detailed look that Senator Murkowski asked us to do, which we will.

Ms. CALLAHAN. I would just add to that. I, Dr. Hogan has really done a good job of outlining it. The way I kind of look at it is, it puts that program on steroids, if you will. It adds money into the system to make loans to have folks be able to make the upgrades.

I think 2 very important aspects that she did not touch upon is the creation of a steering committee that would include folks from trade associations and from the business to help DOE look at what they need to do within that program to be most useful. There is also a road mapping exercise that is required in the legislation that I think is very important, as well, to look at, where do we go from here? Finally, to look outside the United States. Because we don't know it all here, unfortunately. But we don't. So it would require DOE to inventory the technologies, the practices that are used outside of the United States, and to publish that and make that available to our American businesses.

So, again, I wrap it up and say, it puts them on steroids.

Senator STABENOW. Thank you.

Mr. Chairman, I think this is a very important part of the legislation, because we do have energy-intensive manufacturing facilities that have really benefited, and can benefit more, from and not only saving energy, but helping them to be competitive internationally. So I think this is an important piece of it, and I thank my colleagues for including it.

The CHAIRMAN. I agree with that very much.

We have 4 additional witnesses on the second panel, but before we go to that, let me see if there are other questions that anyone—Senator Murkowski, did you have a question?

Senator Portman, did you have a question? Go ahead.

Senator PORTMAN. Mr. Chairman, I'll be brief. Two quick questions I was not able to ask earlier, given the time constraints.

One is to Mr. Scripter, first, thanking him for coming from the Toledo area—Perrysburg, Ohio. You talked a little about your support of section 302 and 303—302, specifically, about coordinating the industrial tech program at DOE. You also said that you have worked with DOE on energy efficiency.

My question is, is, do you think that the expertise the agency offers currently is well-aligned for your industry's need, and could that be improved?

Mr. SCRIPTER. Absolutely. It's very effective. As, I would add to what Senator Shaheen said, as well. There are technologies that we can put in place today that are highly effective. We don't need to invent anything so to speak of.

The example in the glass industry, for instance, is—a plant's energy usage can drop 2 to 3 percent for every additional 10 percent increment in usage of recycled glass. This is a reality in some global regions. Similarly, the plant's greenhouse gas emission levels are reduced 4 to 10 percent for every additional 10 percent of recycled material.

According to the EPA, in 2009 recycling activities saved the equivalent of 5 percent of the entire U.S. carbon inventory and the equivalent of the electricity used in 19 million homes. So, I think it's going to be a balance between these various initiatives that will drive us forward.

Senator PORTMAN. Could DOE be better aligned to help you more as an energy-intensive industry?

Mr. SCRIPTER. Absolutely. We see many industries and businesses inventing their own wheel, so to speak. If we could get col-

laboration and accelerate that, it would also accelerate job creation, and more efficient and highly competitive solutions for the U.S.

Senator PORTMAN. Great.

Just a quick question, Ms. Callahan. First of all, totally agreeing with Senator Murkowski, working closely with her staff, committee staff, and make sure we're not duplicating anything on the Federal agency side. But let's remind ourselves—the biggest user of energy in the country, the single biggest user, is the Federal Government, using in 2008, 1.6 quads.

So, a question for you again, if you'd be willing to work with us to help with DOE working on avoiding duplication. But, do you think the department, departments and agencies in the Federal Government can do more in terms of energy efficiency?

Ms. CALLAHAN. Thank you, Senator Portman. Yes, we do. The alliance has been watching and working with the Federal Government since, I think, 1989 or 1992. We put out the first report, "Leading by Example," to showcase the energy use of the Federal Government and make recommendations. So, we have been working very closely with the agencies, with the Department of Energy's FEMP, the Federal Energy Management Program and the CEQ, to look out ways that we can drive energy efficiency even further.

I think it's worth noting, though, that the Federal Government is doing a good job of leading by example. You know, they don't often get kudos for that. But, they have significantly reduced the energy use in their facilities. You have leading agencies—and within the military, which is the biggest user of efficiency—that really are putting very creative programs and policies in place, and are driving efficiency. So, our hesitation with these bills and the provisions is not that we shouldn't ask more of the Federal Government, but that in the asking, we don't overburden the agencies, because there is such a rich body of executive orders and legislation already in place.

Senator PORTMAN. It sounds like we can improve what's already there and streamline it, but we're not going to let them off the hook, right?

Ms. CALLAHAN. I don't think we should let them off the hook at all. I'm paying that $24.5 billion a year energy bill, and so are you.

Senator PORTMAN. That's the point.

Thank you, Mr. Chairman.

The CHAIRMAN. Yes, any additional questions? Senator Shaheen? Senator Coons has not had a chance to ask any questions. So, should we ask, why don't you go ahead first? Then we're going to try to finish up on this panel as quickly as we can so we can move to the second panel.

But, go ahead, Senator Coons.

Senator COONS. Thank you, Mr. Chairman, and thank you for accommodating me.

I'd just like, if I could, to ask Dr. Hogan about energy savings performance contracts, something with which I had experience in both the private sector and local government.

I understand the Department's been considering a directive, or some communication, to all Federal agencies regarding increasing the use of ESPCs, and I'd be interested in whether that is, in fact, forthcoming. Then, I'm interested in following up on how CBO

scores ESPCs and their use throughout government, because of, at least my understanding of how they work—if the savings don't materialize, the Government doesn't pay. But CBO scores them up front regardless of outcome, which I think then reduces our ability to make effective use of them in the Government sector.

Then with the indulgence of the chair, if the private sector folks have any comment for me about how we might incentivize and make better use of energy savings procurement contracts in the private space, that would be of real interest to me.

Thank you.

Ms. HOGAN. Energy Savings Performance Contracts are a critical tool for the Federal Government, and we believe they'll be even more critical going forward—particularly with the pressures on appropriations, which would be the other place to get money for investing in Federal facilities. There's already been a number of improvements in the ESPC process, thankfully, because of something the Congress did at the end of the last session, where they altered the competitiveness rules that were actually stifling some of the ESPC activity.

So, with that provision included in the Defense Authorization Act around Christmas, we've moved quickly to put those modifications into the contracts for the ESPCs, and are now working with the ESPC service companies so that they can be work as aggressively as possible to scope out projects and put them into place. Because we do know how important this money is to meeting the Federal goals. So, we are doing all of that. We really wanted to have that process all in place—just a good working system—before there would be any type of additional directive back to the Federal agencies to really give ESPCs another really strong look. So, we are continuing to have that conversation as well, to encourage the Federal agencies to go back. We are hoping there will be some more communication about that soon.

On the scoring side, that's a conversation that we should all just keep having to figure out how we can do that well.

Senator COONS. I'm on the Budget Committee as well, and eager to continue that conversation, because I think some of our budget scoring rules are preventing us from being as fully engaged in using these valuable tools as we could be.

ESPCs have been very effective in the public sector. I didn't know if any of the members of the panel wanted to comment briefly on how we might incentivize their broader use in the private sector.

Ms. CALLAHAN. I'll just make one quick comment, and that is that the energy efficiency legislation before us today actually would expand the use of ESPCs to include electric vehicle infrastructure facilities. I think that's a very creative and innovative expansion of that financing mechanism.

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

The CHAIRMAN. Thank you.

Senator Shaheen.

Senator SHAHEEN. I don't have any questions, Mr. Chairman. But, we've had, as Ms. Callahan stated, a number of businesses who have indicated their support for this legislation, and I would just ask that those letters be introduced and included in the record.

The CHAIRMAN. We'll be glad to include those letters, and the list of over 100 organizations, I think you indicated?

Ms. CALLAHAN. I did. We're so excited. 101 as of last night, and the team is probably going to tell me it's growing.

The CHAIRMAN. Terrific. We'll include a list of all of them in the record.

I thank all of you very much for your testimony. This has been very useful. Why don't we dismiss you now and allow the second panel to come forward?

OK. Why don't we get started with the second panel? Let me introduce the folks on the second panel.

Mr. Shane Karr is Vice President of Federal Government Affairs with the Alliance of Automobile Manufacturers.

Mr. Frank Rusco is the Director of Natural Resources and Environment with the U.S. Government Accountability Office.

Mr. Kevin Book is Managing Director of Research with ClearView Energy Partners, LLC.

Mr. Jonathan Silver, who is a frequent testifier before our committee, is the Executive Director of the Loan Program Office with the Department of Energy.

Thank you all very much for being here.

If you could all give us about 5 minutes of the main points that we need to understand, we will include your full statement in the record, and then we'll have some questions.

Mr. Karr, why don't we start with you?

**STATEMENT OF SHANE KARR, VICE PRESIDENT, FEDERAL GOVERNMENT AFFAIRS, ALLIANCE OF AUTOMOBILE MANUFACTURERS**

Mr. KARR. Terrific. Thank you, Mr. Chairman, Ranking Member Murkowski, other members of the committee. I'll be brief, because I know our time is short.

I am here today on behalf of the Alliance of Automobile Manufacturers. We are a trade association that represents 12 car and light truck manufacturers, roughly 75 percent of the U.S. market based on annual sales. On behalf of the alliance, I appreciate the opportunity to offer our views on S. 1001, and the role that automakers can help play in addressing our Nation's energy security and environmental concerns.

First, I want to start by saying that we are fully engaged in developing vehicles and advanced technologies to improve fuel efficiency and reduce emissions, including greenhouse gas emissions. We are committed to improving the average fuel economy of the new car fleet to 30 miles—35 miles per gallon by 2016, 4 years earlier than the Energy Independence and Security Act of 2007 required. This will represent a 40 percent increase in fuel economy and it will save 1.8 billion barrels of oil over the lifetime of those vehicles.

Bringing more fuel-efficient vehicles to market is a capital-intensive process requiring substantial investments at the front end on research, design, development, testing and certification before any vehicle can go into production. Advanced technologies can carry significantly higher costs, at least initially, as they are developed and refined.

To give you an idea of the kinds of numbers that we're talking about, the Government estimates that manufacturers will need to spend more than $50 billion to meet that 35-mile-per-gallon target by 2016. That's why alliance members are supportive of Senators Wyden and Stabenow for crafting a bill that builds on existing programs, that make capital available to support a broad array of fuel-efficient vehicle technologies and alternative fueling infrastructure.

The future vehicle fleet is likely to include many advanced technology vehicles that are being developed and introduced today, but we must expect, and accept, that some will not succeed. Automakers believe that effective energy policy must allow the market to weigh variables like cost, quality, reliability, and risk—some of the other variables that Senator Wyden mentioned in the first panel.

The real strength of S. 1001, from our perspective, is that it refrains from picking technology winners and losers, and allows consumers to be the ultimate arbiters of the transportation solutions that work best for them.

So, while the capital markets are beginning to reopen, once again, the fact is that access to capital, especially for medium and smaller manufacturers and suppliers, remains a significant hurdle.

The alliance supports section 102's expansion of the AVTM program, which will help manufacturers of all sizes obtain loans to accelerate the production and deployment of a wide range of advanced technologies. Extending the existing authorization also provides DOE sufficient time to review and issue new loans.

The alliance also appreciates and supports the expansion of the definition of alternative fuel vehicles in section 2, to include electric vehicles, plug-in hybrids, compressed natural gas, and hydrogen vehicles. We also believe that section 101 appropriately expands DOE's existing 1703 loan guarantee program to include additional alternative fuel production and distribution infrastructure.

We also support section 104's efforts to provide State and local government's technical assistance to help with the deployment of vehicles and infrastructure. We believe that the cost share and the means to provide such assistance will encourage public-private partnerships with State and local governments to work on these efforts.

Two minor suggestions with regards to section 105, which provides grants for work force training: We have been working with the first responder community, and we would recommend that first responder programs for alternative, certain alternative fuel should be eligible for these grants. We would also recommend that hydrogen be included in section 107. Hydrogen is a viable fuel that my members believe offers the opportunity to achieve long-term and widespread oil and greenhouse gas reductions.

So, in closing, we support enhancing energy security, promoting fuel diversity, and increasing fuel efficiency by accelerating the availability of advanced technology and alternative fuel vehicles in the market. We believe S. 1001 accomplishes that goal. We commend Senators Wyden and Stabenow for their leadership in promoting a technology-neutral approach to reducing oil consumption in the vehicle fleet.

I'd be happy to answer any questions.

[The prepared statement of Mr. Karr follows:]

PREPARED STATEMENT OF SHANE KARR, VICE PRESIDENT, FEDERAL GOVERNMENT AFFAIRS, ALLIANCE OF AUTOMOBILE MANUFACTURERS

Thank you, Chairman Bingaman, Ranking Member Murkowski and members of the Committee. My name is Shane Karr and I am Vice President for Federal Government Affairs at the Alliance of Automobile Manufacturers (Alliance). The Alliance is a trade association of twelve car and light truck manufacturers including BMW Group, Chrysler Group LLC, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche Cars, Toyota Motors, Volkswagen Group and Volvo Cars. Together, Alliance members account for nearly 75% of annual motor vehicle sales in the U.S. Auto manufacturing is a cornerstone of the U.S. economy, supporting 8 million private-sector jobs, $500 billion in annual compensation, and $70 billion in personal income tax revenues. On behalf of the Alliance, I appreciate the opportunity to offer our views on the role advanced technology and alternative fuel vehicles can play in helping address our nation's energy security and environmental concerns.

This hearing comes at a pivotal time—more and more Americans are now feeling pain at the pump. With gasoline prices exceeding four dollars per gallon in many cities across the country, this hearing provides a forum to highlight critical steps our nation can take to break its dependence on foreign oil. And automakers stand ready to help.

Automakers are fully engaged in the development of vehicles and advanced technologies to improve fuel efficiency and reduce emissions, including greenhouse gas emissions. We have demonstrated this commitment through our support of aggressive fuel economy and GHG emissions standards for 2012-2016 model year (MY) light-duty vehicles. These standards will result in a 40% increase in fuel economy, saving 1.8 billion barrels of oil over the lifetime of the vehicles. Today, consumers have more than 160 models that get over 30 miles per gallon—and we are working on a variety of additional technologies that will also dramatically reduce gasoline consumption. However, there is no silver bullet or single technology that will solve the challenges of achieving energy independence and reducing greenhouse gas emissions.

We commend Senators Wyden and Stabenow for crafting legislation that promotes a broad universe of alternative fuel vehicles and refueling infrastructure to support them. While the future vehicle fleet is likely to include many advanced technology vehicles that are being developed and introduced today, we must expect—and accept—that some will not succeed. The Alliance appreciates the expansion of the definition of alternative fuel vehicles in Section 2 to encompass electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), compressed natural gas (CNG) and hydrogen. Automakers believe that effective energy policy must be based on broad, market-oriented principles with all regions participating, not just a select few. The market should be allowed to weigh variables like cost, quality, reliability, and risk. S. 1001 supports this sound policy directive by refraining from picking technology winners and losers. Ultimately, consumers will decide which transportation solutions work best for them.

Introducing any new model vehicle is a capital intensive process. Automakers and suppliers must make substantial investments at the front end on research, design, development, testing and certification before a vehicle enters production. New technologies carry significantly higher costs, at least initially, as they are developed and refined for use on the various types of vehicles needed by American consumers. For example, the government estimates that complying with the 2012-2016 fuel economy standards will require an upfront investment of more than $50 billion. The Alliance supports Section 102's expansion of the Advanced Vehicle Technology Manufacturing Incentive Program, which will help manufacturers and suppliers—large and small—obtain access to the capital needed to help accelerate the production and deployment of these advanced technologies. Extending the existing authorization from 2012 to 2016 will provide the Department of Energy (DOE) a sufficient amount of time to review and issue loans for deserving projects.

Automakers support the efforts in Section 101 to expand DOE's existing Section 1703 loan guarantee program to include alternative fuel production and distribution infrastructure. As I mentioned, Alliance members are investing in diverse vehicle technologies and fuels. These investments will rely on expanding the existing infrastructure or, in the case of hydrogen and CNG, creating a new refueling infrastructure. Also of critical importance are efforts to provide state and local governments technical assistance to help with the deployment of these vehicles and infrastruc-

ture. Section 104 provides an effective means to provide such assistance and would encourage public-private partnerships with governments to work on these efforts.

Additionally, the Alliance supports Section 105, which would provide grants for programs to train workers in various aspects of design, manufacture, maintenance and installation of alternative fuel vehicles and refueling infrastructure. Automakers have also begun working with first responders to develop training programs to respond to accidents involving advanced technology vehicles, particularly as it relates to EVs and CNGs. The Alliance recommends that first responder programs be eligible for Section 105 funds.

Finally, the Alliance supports efforts in Section 107 to identify and eliminate barriers to alternative fuel deployment in existing distribution systems, and we recommend hydrogen be included as well. Hydrogen is viable fuel that automakers believe offers the opportunity to achieve long-term and widespread oil and greenhouse gas emission reductions. Hydrogen infrastructure has been successfully built and operated, including delivery via pipeline. Economic modeling has demonstrated that efficient, central hydrogen reforming with regional and local distribution by pipelines can offer economic advantages over other hydrogen delivery methods. Its inclusion in Section 107 will provide industry with the opportunity and resources to continue to make these investments in the public's interest and in support of Federal and State policies.

Automakers support enhancing energy security, promoting fuel diversity, and increasing fuel efficiency through accelerating the availability of advanced technology and alternative fuel vehicles in the market. These diverse technologies and fuels will help our nation address the concerns about U.S. gasoline consumption and oil imports. We commend Senators Wyden and Stabenow for their leadership in promoting a technology neutral approach in S. 1001. The Alliance looks forward to working with them and the Committee on further improvements that can be made to accelerate the deployment of these vehicles and the related infrastructure. Thank you for the opportunity to offer our views on S. 1001 and I will be happy to answer any questions.

The CHAIRMAN. Thank you very much.

Mr. Rusco, go right ahead.

**STATEMENT OF FRANK RUSCO, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, GOVERNMENT ACCOUNTABILITY OFFICE**

Mr. RUSCO. Thank you, Chairman Bingaman, Ranking Member Murkowski, and members of the committee.

I'm happy to speak today about GAO's work on DOE's advanced technology and vehicle manufacturing program in the context of the bills being discussed today. I can also answer questions related to our work on DOE's Title XVII Loan Guarantee Program for Innovative Energy Technologies.

Federal loan guarantees confer large benefits to loan recipients, because they give these recipients access to very low interest rates. In addition, as is the case for the ATVM program, the cost of guaranteeing these loans is sometimes paid for by the Federal Government, and therefore, ultimately, by taxpayers. This cost is commonly referred to as the credit subsidy cost of the loan guarantee, and is roughly equal to the probability that a loan will default, multiplied by the costs associated with that default. The ATVM program is currently authorized to make up to $25 billion of loan guarantees at an expected cost to taxpayers of $7.5 billion.

Because loan guarantee programs confer benefits to loan recipients and the cost of these loans are borne by the public, it is important that Federal loan guarantee programs can demonstrate that they are providing public benefits commensurate with these costs. Benefits are more likely to exceed costs if it is clear that it is desirable to stimulate the industry being provided the loan guarantees and that the loans are not crowding out private investment.

In the case of the initial round of ATVM loan guarantees to Ford Motor Company, Nissan North America, Fisker Automotive Inc., and Tesla, global financial markets were in disarray and the economy was in deep recession. Further, North American automobile sales were in sharp decline. Under these conditions, the case was made by Congress and the administration for stimulating the auto industry.

Using borrower information provided during the application process, the ATVM program estimated that these loans would be used for projects in 17 factories in 8 States. The program also estimated that the loans would create or preserve a total of 37,800 jobs.

The vehicles and components produced in these factories were expected to lead to significant improvements in fuel economy of the U.S. passenger car fleet and lead to other benefits, including reduced petroleum consumption and lower emissions of greenhouse gases. It is important to note that these are estimates gleaned from information provided by applicants—not observations of what has actually occurred.

ATVM loan guarantees made to date have used up about a third of the authorized $25 billion of loan authority, and at a credit subsidy cost of about $3.3 billion. Now that these loans have been made and public costs incurred, it is important that the program be able to realistically measure the actual benefits of the program.

In our February 2011 report on the ATVM program, we found that DOE did not have adequate plans and procedures in place to measure these actual benefits, and we recommended that they fix this problem. Unfortunately, DOE does not agree with GAO's recommendations and says that measuring performance would expand the scope of the program without creating any benefits.

We strongly disagree with DOE's position on this. Measuring the performance of a program is a fundamental tenet of good government, and providing verification that the public is getting good value for money is itself a benefit. Without such measures, DOE cannot provide Congress or taxpayers with a reasonable assurance that the program is delivering the benefits it promises, including significant improvements in fuel economy of the U.S. passenger fleet, advancements in innovative automotive technologies, and protection of the financial interest of taxpayers.

Measuring the actual performance of the ATVM program is important for the loan guarantees already awarded, and it will become even more so if the program follows through on its plans to make additional loans. Further, the economy is recovering from the recession, and the country now faces tight budgets and fiscal constraints. In this environment it is essential that all Federal programs be able to demonstrate that public money is being spent efficiently and to good effect, and that programs that seek to stimulate specific sectors of the economy are not crowding out private investment.

Therefore, we hope that DOE will reconsider its position on measuring and reporting on the performance of the ATVM program, so that Congress can make informed decisions about where to put scarce public funds.

Thank you. This concludes my prepared statement. I will be happy to answer any questions you may have.

[The prepared statement of Mr. Rusco follows:]

PREPARED STATEMENT OF FRANK RUSCO, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, GOVERNMENT ACCOUNTABILITY OFFICE

ADVANCED TECHNOLOGY VEHICLE LOAN PROGRAM NEEDS ENHANCED OVERSIGHT AND PERFORMANCE MEASURES

*Why GAO Did This Study*

In the Energy Independence and Security Act of 2007, Congress mandated higher vehicle fuel economy by model year 2020 and established the Advanced Technology Vehicles Manufacturing (ATVM) loan program in the Department of Energy (DOE). ATVM is to provide up to $25 billion in loans for more fuel-efficient vehicles and components. Congress also provided $7.5 billion to pay the required credit subsidy costs—the government's estimated net long-term cost, in present value terms, of the loans.

This testimony is based on GAO's February 2011 report on the ATVM loan program (GAO-11-145). It discusses (1) steps DOE has taken to implement the program, (2) progress in awarding loans, (3) how the program is overseeing the loans, and (4) the extent to which DOE can assess progress toward its goals.

*What GAO Recommends*

GAO is making no new recommendations at this time. In the February report, GAO recommended that DOE (1) accelerate efforts to engage engineering expertise and (2) develop sufficient, quantifiable performance measures. DOE disagreed with the recommendations, stating that such expertise had not yet been needed and that performance measures would expand the scope of the program. GAO continues to believe that these recommendations are needed to help ensure that DOE is achieving its goals and is accountable to Congress.

*What GAO Found*

DOE has taken several steps to implement the ATVM program. First, it set three program goals: increase the fuel economy of U.S. passenger vehicles as a whole, advance U.S. automotive technology, and protect taxpayers' financial interests. DOE also set technical, financial, and environmental eligibility requirements for applicants. In addition, DOE established criteria for judging the technical and financial merits of applicants and projects deemed eligible, and policy factors to consider, such as a project's potential for supporting jobs. DOE established procedures for ATVM staff, aided by experts from within and outside DOE, to score applicants and projects. Finally, the Credit Review Board, composed of senior DOE officials, uses the scores and other information to recommend loan decisions to the Secretary of Energy.

The ATVM program, as of May 2011, had made $8.4 billion in loans that DOE expects to yield fuel economy improvements in the near term along with greater advances, through newer technologies, in years to come. Although the loans represent about a third of the $25 billion authorized by law, the program has used 44 percent of the $7.5 billion allocated to pay credit subsidy costs, which is more than was initially anticipated. These higher credit subsidy costs were, in part, a reflection of the risky financial situation of the automotive industry at the time the loans were made. As a result of the higher credit subsidy costs, the program may be unable to loan the full $25 billion allowed by statute.

The ATVM program has set procedures for overseeing the financial and technical performance of borrowers and has begun oversight, but at the time of our February report it had not yet engaged engineering expertise needed for technical oversight as called for by its procedures. To oversee financial performance, staff review data submitted by borrowers on their financial health to identify challenges to repaying the loans. Staff also rely on outside auditors to confirm whether funds have been used for allowable expenses. To oversee technical performance, ATVM staff are to analyze information borrowers report on their technical progress and are to use outside engineering expertise to supplement their analysis, as needed. According to our review, projects needing additional technical oversight are under way, and the ATVM staff lack the engineering expertise called for by the program's procedures for adequately overseeing technical aspects of the projects. However, the program had not yet engaged such expertise. As a result, DOE cannot be adequately assured that the projects will be delivered as agreed.

DOE has not developed sufficient performance measures that would enable it to fully assess progress toward achieving its three program goals. For example, DOE has a measure for assessing the fuel economy gains for the vehicles produced under

the program, but the measure falls short because it does not account for, among other things, the fuel economy improvements that would have occurred if consumers purchased more fuel-efficient vehicles not covered by the program. Principles of good governance call for performance measures tied to goals as a means of assessing the extent to which goals have been achieved. View GAO-11-745T or key components.

Chairman Bingaman, Ranking Member Murkowski, and Members of the Committee:

In recent years, questions have arisen about fluctuations in gasoline prices and the environmental impact of petroleum use. In addition, gasolinefueled passenger vehicles are a major source of greenhouse gas emissions.

In 2007, Congress enacted the Energy Independence and Security Act (EISA) which, among other things, increased corporate average fuel economy (CAFE) standards, requiring that the nation's automobile manufacturers' new vehicle fleets attain at least an average of 35 miles per gallon by 2020. In May 2009 the Administration announced its National Fuel Efficiency Policy, which, to implement the increase in fuel economy required by EISA, called for higher CAFE standards for model years 2012 through 2016 for passenger cars and light-duty trucks—surpassing those standards EISA required by 2020. On April 1, 2010, the National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) made final the rule putting the more stringent CAFE standards in place.[1]

In addition to increasing CAFE standards, EISA also authorized, but did not provide funding for, the Advanced Technology Vehicles Manufacturing (ATVM) loan program to provide up to $25 billion in loans to support projects to produce more fuel-efficient passenger vehicles and components. Loans made under the program are to, among other things, have an interest rate equal to the government's cost of funds[2] and be in force for no more than 25 years.

In addition to the negative effect that rising fuel prices had on domestic automobile sales, the economic recession that began in late 2007 particularly affected the three major domestic automakers—Chrysler Group LLC, Ford Motor Company, and General Motors Corporation, or the Detroit 3. Rising fuel prices had negatively affected the sales of domestic automakers as consumers shifted to smaller, more fuel-efficient vehicles and away from less fuel-efficient light trucks and sport utility vehicles. At the end of 2008, several economic indicators, including economic growth and the unemployment rate, worsened while credit markets tightened and dampened consumers' demands for new passenger vehicles. Sales of new vehicles had been trending downward since 2006, but the decrease was markedly sharper in 2008 and 2009. For example, U.S. sales for the Detroit 3 dropped by 49 percent from February 2008 through February 2009, whereas U.S. sales for American Honda Motor Co., Inc.; Nissan North America, Inc.; and Toyota Motor North America, Inc., dropped 39 percent during this period. Additionally, the Detroit 3 had been losing U.S. market share to foreign automakers for several years. For instance, General Motor's U.S. market share for total light vehicle retail sales—including passenger cars and light-duty trucks—fell from 27.2 percent in 2004 to 22.1 percent in 2008, while the market share of Japanese auto manufacturers grew from 29.8 percent to 38.9 percent during the same period. Furthermore, since the 1980s, the Detroit 3 have relied heavily on sales of light-duty trucks and sport utility vehicles, which were more profitable than passenger cars but had relatively low fuel economy ratings. As a result of this reliance, the Detroit 3 faced more difficulty in achieving substantial improvements in fuel economy than most foreign-based manufacturers, which historically had produced and sold more fuelefficient vehicles. When proposing the new, more stringent CAFE standards, NHTSA estimated that the Detroit 3 would face significantly higher costs to meet revised standards than the major Japanese automakers.

In September of 2008, the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act provided $7.5 billion to DOE to pay the credit subsidy costs of up to $25 billion in ATVM loans.[3] Credit subsidy costs are the estimated net long-term costs to the government, in present value terms, of loans over the entire period the loans are outstanding.[4] Congress also provided $10 million to DOE

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[1] EPA is responsible for developing and executing CAFE testing and calculation procedures. NHTSA uses EPA data to determine if a manufacturer's fleet is in compliance for a given model year. The final rule was published in the Federal Register on May 7, 2010.

[2] The government's cost of funds is the interest cost that the federal government must pay for the use of the money it lends to ATVM borrowers—that is, the interest rate on Treasury notes at the time the funds are disbursed.

[3] The Federal Credit Reform Act of 1990 requires that the credit subsidy costs of federal loan programs be paid; for the ATVM program, they are paid by congressional appropriations.

[4] Credit subsidy costs exclude administrative costs and any incidental effects on governmental receipts or outlays. Present value is the worth of the future stream of returns or costs in terms

to administer the ATVM loan program and required that DOE issue an interim final rule to establish regulations necessary to implement the program. DOE issued an interim final rule for implementing the program in November of 2008.

In February 2011 we reported on DOE's implementation of the ATVM loan program. My testimony today is based on that report,[5] updated with recent information from DOE on ATVM loans made, additional loan amounts requested by applicants, and the subsidy costs DOE expects to need in order to provide loans to those applicants. My testimony addresses (1) the steps DOE has taken to implement the ATVM loan program, (2) the ATVM loan program's progress in awarding loans, (3) how the program is overseeing the loans, and (4) the extent to which DOE can assess its progress toward meeting program goals. A detailed description of our scope and methodology can be found in the February report. We conducted this work in accordance with generally accepted government auditing standards.

## DOE ESTABLISHED PROGRAM GOALS AND SET CRITERIA FOR APPLICANT AND PROJECT ELIGIBILITY AND MERIT

DOE has taken several steps to implement the ATVM program. First, it set three goals for the program: increase the fuel economy of U.S. passenger vehicles as a whole, advance U.S. automotive technology, and protect taxpayers' financial interests. In that regard, EISA calls for the program to make loans to provide funding to automobile manufacturers and component suppliers for projects that re-equip, expand, or establish U.S. facilities that are to build more fuel-efficient passenger cars and light-duty trucks. According to DOE, the program's goals also support the agency's goals of building a competitive, low-carbon economy by, among other things, funding vehicles that reduce the use of petroleum-derived fuels and accelerating growth in advanced automotive technology manufacturing, and protecting U.S. taxpayers' financial interests.

DOE, in its interim final rule, also set technical, financial, and environmental requirements that vehicle and components manufacturers must meet to qualify to receive a loan under the program. For example, an established vehicle manufacturer—one that was manufacturing vehicles in 2005—must demonstrate that the adjusted average fuel economy of the fleet of vehicles it produced in its most recent model year was at least equal to that of the fleet of vehicles it produced in model year 2005.

Similarly, a manufacturer that was not producing vehicles in 2005 must show that its proposed vehicles' adjusted average fuel economy will at least equal that of established manufacturers for a similar classs of vehicles for model year 2005. For applicants deemed eligible, DOE also uses statutorily based technical criteria to determine which projects are eligible. For example, proposed vehicles must achieve at least 125 percent of the average fuel economy achieved by all manufacturers' vehicles with substantially similar attributes in 2005.

In addition, DOE established criteria for ATVM staff, aided by experts from within and outside DOE, to judge and score the technical and financial merits of applicants and projects deemed eligible, along with policy factors to consider, such as a project's potential for supporting jobs and whether a project is likely to advance automotive technology. Finally, the Credit Review Board, composed of senior DOE officials, uses the merit scores and other information, including Office of Management and Budget's approved subsidy cost estimates for projects, to recommend loan decisions to the Secretary of Energy.

## THE ATVM PROGRAM HAS AWARDED $8.4 BILLION IN LOANS THAT LARGELY ENHANCE CONVENTIONAL VEHICLE TECHNOLOGY, BUT THE PROGRAM MAY BE UNABLE TO LEND THE FULL AUTHORIZED AMOUNT

To date the ATVM program has made about $8.4 billion in loans: $5.9 billion to the Ford Motor Company; $1.4 billion to Nissan North America; $529 million to Fisker Automotive, Inc.; $465 million to Tesla Motors, Inc.; and $50 million to The Vehicle Production Group LLC.[6] About 62 percent of the funds loaned—$5.2 billion—are for projects that largely enhance the technologies of conventional vehicles powered by gasoline-fueled internal combustion engines. These projects include such

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of money paid immediately. In calculating present value, prevailing interest rates provide the basis for converting future amounts into their "money now" equivalents.

[5] GAO, Department of Energy: Advanced Technology Vehicle Loan Program Implementation Is Under Way, but Enhanced Technical Oversight and Performance Measures Are Needed, GAO-11-145 (Washington, D.C., Feb. 28, 2011).

[6] Loan amounts awarded to each company do not add up to the total loan amount the ATVM program has awarded to date because of rounding.

fuel-saving improvements as adding assisted direct start technology to conventional vehicles, which reduces fuel consumption by shutting off the engine when the vehicle is idling (e.g., while at traffic lights) and automatically restarting it with direct fuel injection when the driver releases the brake. According to DOE's analysis, the projects will result in vehicles with improved fuel economy that will contribute in the near term to improving the fuel economy of the passenger vehicles in use in the United States as a whole because the conventional vehicles are to be produced on a large scale relatively quickly and offered at a price that is competitive with other vehicles being offered for sale.

DOE used data from the borrowers to estimate the fuel economy in miles per gallon (mpg) of the enhanced conventional vehicles that were considered for ATVM loans. According to our calculations using DOE's estimates of fuel economy, these projects are expected to result in vehicles with improved fuel economy that exceed both the program's eligibility requirements and the CAFE targets that will be in place at the time the vehicles are produced [7]—by, on average, 14 and 21 percent, respectively.

The remaining 38 percent of the funds loaned—about $3.1 billion—support projects for vehicles and components with newer technologies. Fisker's loan is for two plug-in hybrid sedan projects—the Karma and the Nina. Tesla's loan is for an all-electric sedan, the Model S, and Nissan's loan is for the LEAF, an all-electric vehicle classified by DOE as a small wagon. The Vehicle Production Group's loan is for a wheelchair-accessible vehicle that will run on compressed natural gas. Finally, a portion of the Ford loan supports projects for manufacturing hybrid and all-electric vehicles. In addition, there are two advanced technology components projects: Nissan's, to build a manufacturing facility to produce batteries for the LEAF and potentially other vehicles; and Tesla's, to build a manufacturing facility to produce electric battery packs, electric motors, and electric components for the Tesla Roadster and vehicles from other manufacturers. In contrast to the projects supporting enhancements to conventional vehicles, DOE's and the borrowers' analyses indicate that the projects with newer technologies will result in vehicles with far greater fuel economy gains per vehicle but that these vehicles will be sold in smaller volumes, thereby having a less immediate impact on the fuel economy of total U.S. passenger vehicles.

According to our calculations using DOE's fuel economy estimates, the projects for vehicles with newer technologies, like the projects for enhanced conventional vehicles, are expected to result in improved fuel economy that exceeds both the program's eligibility requirements and CAFE targets—by about 125 percent and about 161 percent respectively.[8]

The loans made to date represent about a third of the $25 billion authorized by law, but the program has used 44 percent of the $7.5 billion allocated to pay credit subsidy costs, which is more than was initially anticipated. The $7.5 billion Congress appropriated was based on the Congressional Budget Office's September 2008 estimated average credit subsidy rate of 30 percent per loan ($7.5 billion divided by $25 billion equals 30 percent). However, the average credit subsidy rate for the $8.4 billion in loans awarded to date is 39 percent—a total of roughly $3.3 billion in credit subsidy costs. At this rate, the $4.2 billion remaining to be used to pay credit subsidy costs will not be sufficient to enable DOE to loan the full $25 billion in loan authority. These higher credit subsidy costs were, in part, a reflection of the risky financial situation of the automotive industry at the time the loans were made. For DOE to make loans that use all of the remaining $16.6 billion in loan authority, the credit subsidy rate for the loans would have to average no more than 25 percent ($4.2 billion divided by $16.6 billion). As a result, the program may be unable to loan the full $25 billion allowed by statute. As of May 9, 2011, DOE reported that 16 projects seeking a total of $9.3 billion in loans—representing $3.5 billion in credit subsidy costs—were under consideration.

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[7] The CAFE standards for 2012-2016 will subject passenger cars and light trucks to target levels of fuel efficiency based on the vehicles' "footprints." A vehicle's footprint is a measure of its size calculated by multiplying its wheelbase (the distance from the center of the front wheels to the center of the rear wheels) by its average track width (the average of the width between the two front wheels and the width between the two rear wheels). The vehicle-level mpg targets generally become more stringent with each new model year.

[8] This does not include DOE's fuel economy estimates for the vehicle to be produced under the loan to The Vehicle Production Group, which was finalized after our February report.

THE ATVM PROGRAM HAS BEGUN OVERSEEING LOANS TO ENSURE BORROWERS COMPLY WITH FINANCIAL AND TECHNICAL REQUIREMENTS BUT HAS NOT ENGAGED ENGINEERING EXPERTISE THAT WOULD HELP ENSURE THAT PROJECTS ARE DELIVERED AS AGREED

The ATVM program has set procedures for overseeing the financial and technical performance of borrowers and has begun oversight, but at the time of our February report the agency had not yet engaged engineering expertise for technical oversight as called for by the procedures. To oversee financial performance, staff are to review data submitted by borrowers on their financial health to identify challenges to repaying the loans. Staff also rely on outside auditors to confirm whether funds have been used for allowable expenses. As of February 2011, the auditors had reported instances in which three of the four borrowers did not spend funds as required. According to ATVM officials, these instances were minor—the amounts were small relative to the total value of the loans—and the inappropriate use of funds and the borrowers' practices have been corrected.

The ATVM program's procedures also specify technical oversight duties, a primary purpose of which is to confirm that borrowers have made sufficient technical progress before the program disburses additional funds. To oversee technical performance, ATVM staff are to analyze information borrowers report on their technical progress and are to use outside engineering expertise to supplement their analysis once borrowers have begun constructing or retrofitting facilities or are performing engineering integration—that is, designing and building vehicle and component production lines. According to our review, several projects needing additional technical oversight are under way but the program, as of February of 2011, had not brought in additional technical oversight expertise to supplement program staffs' oversight. For example, ATVM officials identified one borrower with projects at a stage requiring heightened technical monitoring; however, ATVM program staff alone had monitored the technical progress of the project. ATVM officials told us that the manufacturer has experience with bringing vehicles from concept to production so additional technical oversight expertise has not been needed, despite the procedures' calling for it. Further, according to documents we reviewed, at the time of our report, four borrowers—rather than the single one identified by ATVM—had one or more projects that, according to the program's procedures, had already reached the stage requiring heightened technical monitoring. Because ATVM staff, whose expertise is largely financial rather than technical, had so far provided technical oversight of the loans without the assistance of independent engineering expertise, we found that the program may be at risk of not identifying critical deficiencies as they occur and DOE cannot be adequately assured that the projects will be delivered as agreed. At the time of our report, according to ATVM staff, they were in the process of evaluating one consultant's proposal to provide engineering expertise and were working with DOE's Loan Guarantee Program to make that program's manufacturing consultants available to assist the ATVM program.

DOE LACKS THE PERFORMANCE MEASURES TO ENABLE IT TO FULLY ASSESS THE ATVM PROGRAM'S PROGRESS TOWARD ACHIEVING ITS GOALS

DOE has not developed sufficient performance measures that would enable it to fully assess whether the ATVM program is achieving its three goals. Principles of good governance indicate that agencies should establish quantifiable performance measures to demonstrate how they intend to achieve their program goals and measure the extent to which they have done so.[9] These performance measures should allow agencies to compare their programs' actual results with desired results and should be linked to program goals.

Although the ATVM program has established performance measures for assessing the performance of ATVM-funded vehicles relative to the performance of similar vehicles in model year 2005, the measures stop short of enabling DOE to fully determine the extent to which it has accomplished its overall goal of improving the fuel economy of all passenger vehicles in use in the United States. The measures stop short because they do not isolate the impact of the program on improving U.S. fuel economy from fuel economy improvements that might have occurred in the absence of the program—by consumers investing in more fuel efficient vehicles not covered by the program in response to high gasoline prices, for example. In addition, the ATVM program lacks performance measures that will enable DOE to assess the ex-

[9] GAO, Agencies' Annual Performance Plans under the Results Act: An Assessment Guide to Facilitate Congressional Decisionmaking, GAO/GGD/AIMD-10.1.18 (Washington, D.C.: February 1998, ver. 1.) and GAO, The Results Act: An Evaluator's Guide to Assessing Agency Annual Performance Plans, GAO/GGD-10.1.20 (Washington, D.C.: April 1998, ver. 1).

tent to which it has achieved the other two goals of the program—advancing automotive technology and protecting taxpayers' financial interests.

In our February 2011 report, to help ensure the effectiveness and accountability of the ATVM program, we recommended that the Secretary of Energy direct the ATVM program to (1) accelerate efforts to engage sufficient engineering expertise to verify that borrowers are delivering projects as agreed and to (2) develop sufficient and quantifiable performance measures for its three goals. DOE's Loan Programs Executive Director disagreed with the first recommendation, saying that the projects were in the very early stages of engineering integration and such expertise had not yet been needed for monitoring. However, at that time, three of the four loans had projects that had been in engineering integration for at least 10 months, and the fourth loan had at least one project that was under construction. We maintained that DOE needed technical expertise engaged in monitoring the loans so that it could become adequately informed about technical progress of the projects. DOE's Loan Programs Executive Director also disagreed with the second recommendation. He said that DOE would not create new performance measures for the agency's three goals, saying that performance measures would expand the program and did not appear to be the intent of Congress. We maintained that by not setting appropriate performance measures for its program goals, DOE was not able to assess its progress in achieving what it set out to do through the program; furthermore, it could not provide Congress with information on whether the program was achieving its goals and warranted continued support.

Chairman Bingaman, this concludes my prepared statement. I would be pleased to answer any questions that you, Ranking Member Murkowski, or other Members of the Committee may have at this time.

The CHAIRMAN. Thank you very much.

Mr. Book, go right ahead, please.

**STATEMENT OF KEVIN BOOK, MANAGING DIRECTOR, RESEARCH, CLEARVIEW ENERGY PARTNERS, LLC**

Mr. BOOK. Thank you, Mr. Chairman, Ranking Member Murkowski, and distinguished members of the committee, for the opportunity to contribute to your discussion today.

My name's Kevin Book, and I head the Research team at ClearView Energy Partners, a DC-based research and consulting firm that serves financial and corporate investors in energy.

It's with some humility that I am going to begin my opening remarks with a correction to my written statement. There is a math error which happened as I was writing this in haste on the train. If I could ask you just—we've already corrected it with your staff, and it should be out soon, the formal copy—but, on page 5 in the first paragraph under "sales volume," the correct number is $14.8 billion to $16.2 billion, and not $148 and $162 billion, respectively. That is a big mistake. I recognize that, and I apologize.

Accordingly, on page 6 there's a statement that says something about the "better safe than sorry," third sentence. Instead of 3 times, it should read "one-third the cost basis of the full reserve." Again, I apologize, and I'll put all this in context in a second.

But, basically, I want to begin by thanking you for pursuing this whole topic at a time when the Nation is in such a dire fiscal crisis. I think it's extremely important to look at the idea of how we're going to subsidize the innovation and efficiency agenda for energy, particularly now. There's a certain counter-cyclicality to investment you strive for, which is that when things are cheap you should buy them, and when they're expensive you should sell them. That's part of what I'll deal with in my testimony as it refers to the strategic reserve.

But, as it stands right now, one of the consequences of weak demand is that it deters a lot of private investment in needed tech-

nologies, and this is very important. So, one of the things that I also would contribute just is, generally speaking, efficiency tends to be a pretty good investment. The IEA did a paper in 2000 that said basically, you have a rebound demand, using more because things get cheaper, which is a relatively small on efficiency. So, if you're trying to find ways that are consistent with energy security and financial prudence, efficiency investments are usually good ones, and debt subsidies generally tend to be better than equity subsidies when it comes to financing big projects, too.

But, what I'm addressing in my testimony is the question of how the relevant agencies will get the money, and this is obviously very much an open question. Financing efficiency retrofits with new oil and gas production might be a fiscally prudent way to pay for it, provided that spending does not get ahead of the leasing and permitting activities that generate revenues.

On the other hand, selling oil out of the strategic petroleum reserve to pay for efficiency gains and alternative fuels could seriously diminish U.S. energy security, without necessarily delivering financial benefits.

The thrust of the, page 2 of the testimony is to show that we actually had a significant demand contraction in our gasoline and distillate fuels during the great recession and the ensuing recovery. There is a couple of takeaways that are not, I think, well appreciated: That 1.9 million barrels per day that fell out of demand at the maximum peak to trough change between the top and bottom of our consumption is a major impact on global markets. It matters to producers in a way that smaller numbers often do not.

What's happening around the world, I think, is now well understood. OPEC demand—I'm sorry. Sorry. Non-OECD demand is growing rapidly. As a result, you have about a million barrels per day per year of demand that shows up no matter what, because the developing world is emerging into an energy-thirsty adolescence. This is something that will eventually make our demand changes less relevant. When you get to the whole question of whether or not good customers get treated better, in most business contexts, it would generally behoove you, if you're not the biggest customer, to have other strategies in play—diplomatic strategies, for example, when buying from exporters; or, better still, a very good insurance policy. The strategic reserve is that. I think it's very prudent.

On page 4 I address the issue of, insurance is something that you should review from time to time. The strategic reserve is such a policy. It's appropriate to ask, is this the right coverage for this point in time? I think it's a very good question that deserves a serious answer.

The answer that I've come up with is that, probably, yes. It is a very good policy at this point in time. The of question whether you should size the reserve on the basis of non-NAFTA import cover, which is the proposal embedded in section 202(a) of S. 1001, is one that I think is, it's, again, a reasonable way to approach the problem. But, if you were to look back at the last 20 years and ask, assuming that we needed the oil this would eliminate, would it have cost the Government money, or saved the Government money, to have pared it down at that point in time—each time you fell below the non-NAFTA import demand implied by the formula in

section 202(a)? The answer is, it would have lost money. On average, it's a money-losing proposition. It's about a $9 billion hole in your pocket if you were to do it as a formula.

The second thing, though, is that the strategic reserve is pretty economic when you think about what it costs to put oil in and what it's worth. This is where the correction on page 5 does come into question, and page 6. You're going to raise between $14.8 billion and $16.2 billion in the proposed sale in section 202(a), which is obviously a nontrivial and important way to fund the green agenda and retrofits. But, it is also expensive relative to what that oil cost.

On the surface, you might say you bought low and on selling high. After all, the entire strategic reserve, in real dollars, to fill it costs about $48.8 billion. If you can get $16 billion for selling 22 percent of it, that's going to be a pretty winning trade ordinarily.

The problem is that we can't displace 22 percent of our energy demand for transportation that easily—not anytime soon. So you have, effectively, a high cost relative to what it would cost to replace it in a hurry. Canadian and Mexican production is more secure, but the risk that you might have to buy the oil back from Canada and Mexico at market prices defined by the rest of the world, again, is probably fiscally disadvantageous.

Finally, just on the fiscal front, the volumetric ethanol excise tax credit—leaving all other ethanol subsidies and related costs aside—is about twice as expensive on an annual barrel displacement basis as the reserve.

So, 2 concluding points very quickly. One, there is also a negotiating value to having a strategic reserve of this size, and the bigger, the better, which is that, if the producer nations in the world have a choice, and that choice is between selling oil into a tight market to help their formerly best and hopefully still very well-favored customers, or not, and capturing the proceeds, the threat of opening that reserve—even if you never do it—is a very powerful tool. This has been conveyed by discussions I've had with folks who use to run these decisions.

So, in conclusion, I would say that the most important thing here is to recognize that we're using oil not because we love oil or because oil is an ideological choice, but because of physics and economics. There's been 152 years of efforts to try to find something else, and they're still going on. I think it's right to diversify. Those efforts should continue, and I applaud the efforts to try to find new efficiency and fuels diversity, and I think those are noble and especially, countercyclically important goals. But I don't think they should come at the expense of America's well conceived energy security insurance policy.

This concludes my remarks. Thank you. I look forward to questions.

[The prepared statement of Mr. Book follows:]

PREPARED STATEMENT OF KEVIN BOOK, MANAGING DIRECTOR, RESEARCH, CLEARVIEW ENERGY PARTNERS, LLC

Chairman Bingaman, Ranking Member Murkowski and distinguished Members of this Committee, thank you for the privilege of contributing to your discussion today. My name is Kevin Book and I lead the research team at ClearView Energy Partners, LLC, an independent research and consulting firm here in Washington, D.C. that serves institutional and corporate energy investors.

ENERGY SECURITY AND FINANCIAL PRUDENCE

Mr. Chairman, I am encouraged that this Committee continues to explore policies to promote efficiency gains and alternative fuels amid the dire fiscal circumstances that confront our nation. My clients—the investors who may capitalize some of the policies you are discussing today—frequently ask how tough decisions and stark reductions might shift energy policy priorities. Many of our clients share my view[1] that subsidizing or assuring loans can, in many cases, promote diffusion of innovative technologies at lower taxpayer cost than paying out cash grants or "tax equity".

Either way, I would suggest that energy subsidies that do not set a glide path towards unsubsidized profitability are unlikely to meet the explicit goal of reducing federal spending. In my experience, when governments give net financial rewards to the consumers or producers of otherwise non-economic energy resources, the payees take as much as they can[2]. Academic research suggests this is less true of energy efficiency subsidies: "rebound demand" (using more because each unit is cheaper) tends to erode only a small portion of energy savings[3]. In this context, "government-first" policies that target the considerable energy consumption by state and federal buildings and fleets offer two potential benefits: (1) reducing government spending, provided that fuels and technologies track towards unsubsidized profitability; and (2) creating a sales opportunity large enough to promote competition among producers so that they might achieve scale economies, potentially bringing down costs for industrial, business and residential customers.

Accelerating behavior change and infrastructure turnover to promote energy security has a financial cost, but energy security and fiscal prudence are different goals. Some policy choices may combine energy security with fiscal prudence better than others. For example, government loans that enable automakers to successfully retool for greater fuel economy could deliver financial returns if the loans are repaid, paying energy security dividends with every new vehicle mile driven between the showroom and the scrap heap. Alternatively, diversifying and increasing energy supplies by subsidizing production or consumption of alternative fuels may have strategic importance that overshadows the associated financial costs.

The open question appears to be how the relevant U.S. federal agencies should offset the costs of explicit subsidies and source the working capital with which to make or guarantee loans. Financing efficiency retrofits and alternative fuels with proceeds from new oil and gas production could be a fiscally prudent way to do it, provided that spending does not get ahead of the leasing and permitting activities that generate revenues. On the other hand, selling oil out of the Strategic Petroleum Reserve (SPR) to pay for efficiency gains and alternative fuels could seriously diminish U.S. energy security without necessarily delivering financial benefits. The remainder of my testimony today addresses this topic.

DEMAND CHANGES COULD CHANGE PRODUCER PRIORITIES

For the moment, the U.S. remains the world's top oil consumer and its primary destination market for exports. More importantly, changes in U.S. domestic consumption can still outstrip demand growth from fast-growing, non-OECD nations. Both of these things are likely to imminently change.

The shaded "ranges" in Figure 1* present maximum and minimum weekly U.S. gasoline and distillate fuels consumption between 2006 and 2010, as computed by the U.S. Energy Information Administration (EIA). The blue and red lines trace gasoline and distillate consumption, respectively, through the first 21 weeks of 2011. Taken together, the shaded regions represent the 1.9 MM bbl/d of peak-to-trough "swing" demand contraction that emerged as the Great Recession deepened. Averaging across all 52 weeks and five years implies about 1.05 MM bbl/d of U.S. end-user demand headroom.

Changing demand dynamics.—Figure 1 shows that U.S. consumption has been trending towards the low end of the five-year range for gasoline and distillates, despite a possible early indication that demand rose in response to falling gasoline

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[1] Testimony of Kevin Book before the U.S. Senate Committee on Energy and Natural Resources, February 12, 2009. http://www.cvenergy.com/public—testimony/2009-02-12-Kevin__Book-ENR__Testimony.pdf.

[2] The repeated revisions and rescissions of European feed-in tariffs for alternative power technologies are well known, but examples abound here in the U.S., too. For example, see Maykuth, A., "Solar Energy Output is Outpacing Pennsylvania Mandate", Philadelphia Inquirer, June 5, 2011, http://articles.philly.com/2011-06-05/business/29623348__1__solar-advocates-solar-industry-solar-markets.

[3] Schipper, L. and M. Grubb. "On the Rebound? Feedback between Energy Intensities and Energy Uses in IEA Countries". Energy Policy: Volume 28, Issues 6-7, June 2000, Pages 367-388.

* Figure has been retained in committee files.

prices. Leaving aside short-run demand volatility, much of which can be linked to data resolution[4], Figure 1 depicts one side of a story that is now widely understood: global petroleum demand changed dramatically during the last decade. Consumption patterns flattened out within industrialized economies at the same time that oil products demand from non-OECD nations grew by an average of about 3.3% per year between 2001 and 2010, according to International Energy Agency (IEA) data. This represented an average annual increase of about 1.086 MM bbl/d—in other words, annual growth within emerging economies may be theoretically sufficient to offset a maximum "average" U.S. demand contraction. Moreover, the pace of this non-OECD growth has been accelerating at an average rate of about 8.3%/Y[2]; had it not been for the global economic slowdown, the slope of the trend would probably have been much steeper.

Price implications.—The implications of this change for oil prices are relatively easy to interpret, despite disheartening recent data that suggest slowing growth here at home. Nominal and currency-adjusted crude oil prices have risen because global demand growth has largely outpaced global supply growth. Supply is catching up, but production from new marginal and unconventional sources is more costly than the oil already in production.

Energy security implications.—The implications for energy security may be less obvious, however. The U.S. is losing its importance as a source of marginal petroleum demand. The moment may soon arrive—possibly as soon as 2013—when a U.S. demand decline could be wholly offset at the margin by growth from emerging economies, without any significant global price weakness.[5]

Why does this matter? Because the biggest customers usually get the best treatment in any business context. A large part of U.S. energy security comes from our strong commercial ties with our suppliers. Strategic alliances provide another tier of assurance. To extend the metaphor: if one cannot be the biggest customer, friendships and favors can go a long way towards securing favorable terms. And what if friendships break down? Getting fair treatment from a neutral or hostile supplier who sells to a highly competitive customer base would probably require something else: a big stick.

Thanks to the foresight and diligence of this and prior Congresses, we have one: the SPR.

FINANCIAL CONSIDERATIONS: THE RISKS OF GAMBLING WITH INSURANCE MONEY

First and foremost, the SPR is America's insurance policy against a serious petroleum supply interruption. As with individual policyholders, it seems appropriate for national purchasers of insurance to periodically re-examine their coverage options in light of any changes in their physical and financial circumstances. Accordingly, Section 202(a) of the Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011 (S. 1001) includes the following language:

> (a)—Section 154(a) of the Energy Policy and Conservation Act (42 U.S.C. 6234(a)) is amended by striking "1 billion barrels of petroleum products" and inserting "the quantity of crude oil and petroleum fuels imported into the United States each year from countries that are not signatories to North American Free Trade Agreement during an average 90-day period during the most recent calendar year for which data are available.

Figure 2 presents my interpretation of this provision using latest-available EIA data.

[4] Four week "moving averages" smooth out some of this jaggedness, but the jaggedness can be analytically interesting as an early indication of a changing trend, so I used weekly data for Figure 1. Both are available on the EIA website.

[5] A slow recovery from the Great Recession or a "double-dip" may obscure the extent of this change because emerging economies' energy demand is still strongly linked to the financial circumstances of their export markets.

**Figure 2 – Nominal and Real Net Proceeds from "Balancing" Strategic Petroleum Reserve Crude at Target Levels Implied by S.1001 Sec. 202**

| Year | Net Imports from Canada (000 bbl/d) | Net Imports from Mexico (000 bbl/d) | Net Imports, Total World (000 bbl/d) | 90 Days of Non-NAFTA Net Imports (MM bbl) | Year-End SPR (MM bbl) | Nominal Annual Average Refiner Acquisition Cost ($/bbl) | Nominal Cost or (Benefit) of Balancing SPR Inventory ($ MM) | CPI-U Inflator (2010$=100) | Real Cost or (Benefit) of Balancing SPR Inventory ($ MM) |
|---|---|---|---|---|---|---|---|---|---|
| 1976 | 571 | 53 | 7,090 | 582 | | $10.89 | $6,337 | 3.897 | $24,698 |
| 1977 | 446 | 155 | 8,565 | 717 | 7 | $11.96 | $8,486 | 3.704 | $31,434 |
| 1978 | 359 | 291 | 8,002 | 662 | 69 | $12.46 | $7,391 | 3.467 | $25,625 |
| 1979 | 438 | 418 | 7,985 | 642 | 92 | $17.72 | $9,744 | 3.173 | $30,915 |
| 1980 | 347 | 506 | 6,366 | 496 | 108 | $28.07 | $10,899 | 2.785 | $30,356 |
| 1981 | 358 | 497 | 5,401 | 409 | 230 | $35.24 | $6,302 | 2.491 | $15,697 |
| 1982 | 397 | 632 | 4,296 | 294 | 294 | $31.87 | $13 | 2.298 | $30 |
| 1983 | 471 | 802 | 4,312 | 274 | 379 | $28.99 | ($3,061) | 2.216 | ($6,782) |
| 1984 | 547 | 714 | 4,715 | 311 | 451 | $28.63 | ($3,998) | 2.126 | ($8,501) |
| 1985 | 696 | 755 | 4,286 | 255 | 493 | $26.75 | ($6,371) | 2.054 | ($13,084) |
| 1986 | 721 | 642 | 5,439 | 367 | 512 | $14.55 | ($2,106) | 1.977 | ($4,164) |
| 1987 | 765 | 585 | 5,914 | 411 | 541 | $17.90 | ($2,324) | 1.949 | ($4,529) |
| 1988 | 916 | 677 | 6,587 | 449 | 560 | $14.67 | ($1,614) | 1.873 | ($3,023) |
| 1989 | 839 | 678 | 7,202 | 512 | 580 | $17.97 | ($1,226) | 1.789 | ($2,195) |
| 1990 | 843 | 666 | 7,161 | 509 | 586 | $22.22 | ($1,711) | 1.701 | ($2,911) |
| 1991 | 963 | 707 | 6,626 | 446 | 568 | $19.06 | ($2,334) | 1.610 | ($3,758) |
| 1992 | 1,005 | 706 | 6,938 | 470 | 575 | $18.43 | ($1,922) | 1.569 | ($3,015) |
| 1993 | 1,109 | 809 | 7,618 | 513 | 587 | $16.41 | ($1,216) | 1.520 | ($1,848) |
| 1994 | 1,194 | 860 | 8,054 | 540 | 592 | $15.59 | ($806) | 1.482 | ($1,195) |
| 1995 | 1,260 | 943 | 7,886 | 511 | 592 | $17.23 | ($1,381) | 1.442 | ($1,990) |
| 1996 | 1,330 | 1,101 | 8,498 | 546 | 566 | $20.71 | ($409) | 1.403 | ($575) |
| 1997 | 1,444 | 1,178 | 9,158 | 588 | 563 | $19.04 | $473 | 1.362 | $644 |
| 1998 | 1,451 | 1,116 | 9,764 | 648 | 561 | $12.52 | $1,085 | 1.341 | $1,454 |
| 1999 | 1,421 | 1,063 | 9,912 | 669 | 567 | $17.51 | $1,776 | 1.319 | $2,344 |
| 2000 | 1,697 | 1,015 | 10,419 | 694 | 541 | $28.26 | $4,322 | 1.284 | $5,548 |
| 2001 | 1,717 | 1,166 | 10,900 | 722 | 550 | $22.95 | $3,932 | 1.238 | $4,866 |
| 2002 | 1,864 | 1,292 | 10,546 | 665 | 599 | $24.10 | $1,591 | 1.224 | $1,946 |
| 2003 | 1,932 | 1,395 | 11,238 | 712 | 638 | $28.53 | $2,100 | 1.193 | $2,504 |
| 2004 | 1,980 | 1,456 | 12,097 | 779 | 676 | $36.98 | $3,842 | 1.170 | $4,495 |
| 2005 | 2,001 | 1,394 | 12,549 | 824 | 685 | $50.24 | $7,001 | 1.136 | $7,956 |
| 2006 | 2,194 | 1,450 | 12,390 | 787 | 689 | $60.24 | $5,936 | 1.093 | $6,486 |
| 2007 | 2,266 | 1,254 | 12,036 | 766 | 697 | $67.94 | $4,725 | 1.071 | $5,058 |
| 2008 | 2,229 | 969 | 11,114 | 712 | 702 | $94.74 | $1,008 | 1.027 | $1,035 |
| 2009 | 2,241 | 912 | 9,700 | 589 | 727 | $59.29 | ($8,145) | 1.026 | ($8,359) |
| 2010 | 2,320 | 833 | 9,440 | 566 | 727 | $76.69 | ($12,329) | 1.000 | ($12,329) |
| Cumulative Nominal Net Cost or (Benefit), 1991-2010 | | | | | | | $9,249 | | |
| Cumulative Real Net Cost or (Benefit), 1991-2010 | | | | | | | | | $11,268 |

*Source: ClearView Energy Partners, LLC using data from EIA, DOE (SPR Annual Report) and BLS*

Sales volume.—By my estimate, fulfilling the directive within 202(a) would require a sale of approximately 161 MM bbl of crude oil from the SPR, reducing it from 726.6 MM bbl to 565.8 MM bbl. Using our internal CY2011 WTI price projection of $92/bbl, this sale would theoretically yield approximately $148 billion towards alternative fuels and vehicle efficiency spending! At prevailing WTI front-month futures prices of $100.85/bbl, the sale would theoretically generate approximately $162 billion! In practice, both projections are probably more than what an actual sale might bring in.

Price impacts.—The mere act of declaring a sale this large is likely to be very disruptive to oil prices, at least the first time it happens. It's hard to know precisely how events might unfold, but the crude futures curve would probably steepen. Near-term contracts might sell at a deep discount as highly leveraged commercial buyers rushed to close their long positions and unravel their hedges at the same time that speculators established short positions in near months. Meanwhile, commercial and noncommercial players might also have reasons to stake out long positions in the out months on the expectation that OPEC would respond to the sale by cutting production.

Market dynamics.—This calls into question the very premise for the sale in the first place—the notion that NAFTA production can be netted out of U.S. strategic assets because it faces differentially lower disruption risk. Although disruption risk is considerably lower in Canada and Mexico, Canadian and Mexican crude oil are sold at prices that reflect global supply-demand dynamics. Selling 161 MM bbl at today's market price leaves the U.S. vulnerable to having to buy them back at market price premiums in the event of a disruption tomorrow. More ironically, if the initial Section 202(a) sale were to send the crude strip into a steep contango (long-dated contract prices higher than near-term contract prices), selling today could actually cause a higher acquisition cost for U.S. refiners tomorrow.

Replacement costs.—It is hard, if not impossible, to accurately quantify how future prices might rise or fall in response to geopolitical events, but it seems fair to assume that any major future disruption that impairs capacity of the global production system would probably raise prices and draw on inventories, increasing the vul-

nerability of U.S. refiners to further disruptions and raising odds for an SPR draw or exchange. On a nominal basis, purchasing oil to replace the oil drawn out of the SPR in this scenario would probably cost more tomorrow than the government might earn by selling it today. On the other hand, the real cost could be lower if the sale happens far enough in the future or, as in 2008, a recession creates a buying opportunity for governments looking to fill their strategic reserves.

Back-test.—It is very easy, however, to look backward and ask whether excluding NAFTA from SPR assets in this fashion would have been cost-effective. My answer is no. Figure 2 also includes a simplified "gaming out" of the twenty-year interval from 1991-2010 if the U.S. government had sold the actual SPR whenever it exceeded the levels dictated by Section 202(a): on a nominal basis, the U.S. would have lost a theoretical $9.3 billion playing that game. Using the CPI-U with 2010 as a base year to capture inflation implies a theoretical loss of about $11.3 billion. This illustrates another point: when oil prices are rising faster than producer or consumer prices in general, it pays to hold onto the oil and sell high.

Figure 3 presents an estimate of the nominal and real costs of buying oil to fill the SPR.

**Figure 3 – Approximate Gross Total and Per-Barrel Crude Cost of Strategic Petroleum Reserve (Nominal and Real, Using 2010$=100)**

| Year | Nominal Oil Account Appropriations ($ MM) | Nominal Foregone DOI Revenue for Royalty-in-Kind Oil ($ MM) | Real Oil Account Appropriations ($ MM) | Real Foregone DOI Revenue for Royalty-in-Kind Oil ($ MM) |
|---|---|---|---|---|
| 1976 | $0 | | $0 | |
| 1977 | $440 | | $1,630 | |
| 1978 | $2,703 | | $9,373 | |
| 1979 | $2,356 | | $7,476 | |
| 1980 | ($2,022) | | ($5,632) | |
| 1981 | $3,205 | | $7,983 | |
| 1982 | $3,680 | | $8,455 | |
| 1983 | $2,074 | | $4,595 | |
| 1984 | $650 | | $1,382 | |
| 1985 | $2,050 | | $4,210 | |
| 1986 | ($13) | | ($26) | |
| 1987 | $0 | | $0 | |
| 1988 | $439 | | $822 | |
| 1989 | $242 | | $433 | |
| 1990 | $372 | | $633 | |
| 1991 | $586 | | $912 | |
| 1992 | $88 | | $139 | |
| 1993 | ($1) | | ($1) | |
| 1994 | $0 | | $0 | |
| 1995 | ($108) | | ($155) | |
| 1996 | ($511) | | ($717) | |
| 1997 | ($220) | | ($300) | |
| 1998 | $0 | | $0 | |
| 1999 | $0 | | $0 | |
| 2000 | $0 | $561 | $0 | $720 |
| 2001 | $0 | $62 | $0 | $76 |
| 2002 | $0 | $263 | $0 | $321 |
| 2003 | $2 | $1,044 | $2 | $1,245 |
| 2004 | $0 | $1,191 | $0 | $1,394 |
| 2005 | $43 | $1,195 | $49 | $1,357 |
| 2006 | ($43) | $0 | ($47) | $0 |
| 2007 | $0 | $306 | $0 | $326 |
| 2008 | $0 | $1,600 | $0 | $1,643 |
| 2009 | ($22) | $289 | ($22) | $276 |
| 2010 | $0 | $0 | $0 | $0 |
| | $15,971 | $6,490 | $41,192 | $7,360 |
| Approximate Gross Total Cost ($ MM) | $22,461 | | $48,552 | |
| Approximate Gross Average Cost ($/bbl) | $30.91 | | $66.82 | |

*Source: ClearView Energy Partners, LLC using data from EIA, DOE (SPR Annual Report) and BLS*

Better safe than sorry.—The nominal total presented in Figure 3 of about $22.5 billion implies a gross average cost of oil to fill the SPR of about $31/bbl. Using the CPI-U as an inflator implies a total real cost of about $48.6 billion and a corresponding gross average cost of about $67/bbl. On the surface, selling 22% of the SPR for more than three times its real cost basis seems like a winning trade. So what's the problem? The nation is not yet technologically capable of transitioning 22% of its transportation energy demand to non-petroleum sources. In other words, although it doesn't make economic sense to buy insurance one no longer needs, it makes even less economic sense to give up insurance one still requires only to buy it back later at a higher price. And, as I noted in the first section of my testimony, supply risks may be increasing as the commercial importance of U.S. import demand decreases; it seems a more appropriate time to be expanding our insurance coverage—including new domestic production, greater fuel economy and broader fuels diversification—rather than reducing it.

As insurance goes, the SPR is pretty cheap.—Figure 4 presents a simplified accounting of the subsidy costs associated with increasing annual U.S. ethanol consumption from 83 MM gal/Y in 1981 to 13.5 B gal/Y in 2010. Unlike many of the polemical efforts to "fully account" for ethanol subsidy costs, Figure 4 counts only the notional tax revenue lost due to the Volumetric Ethanol Excise Tax Credit (VEETC).

**Figure 4 – Price and Payout of U.S. Ethanol Subsidies (VEETC Only)**

| Year | Ethanol Volume (MM gal/Y) | VEETC ($/gal) | Nominal Cost ($MM/Y) | Real Cost (MM 2010$/Y) |
|---|---|---|---|---|
| 1981 | 83 | $0.40 | $33 | $83 |
| 1982 | 225 | $0.50 | $113 | $259 |
| 1983 | 415 | $0.50 | $208 | $460 |
| 1984 | 510 | $0.50 | $255 | $542 |
| 1985 | 617 | $0.60 | $370 | $760 |
| 1986 | 712 | $0.60 | $427 | $845 |
| 1987 | 819 | $0.60 | $491 | $958 |
| 1988 | 831 | $0.60 | $499 | $934 |
| 1989 | 843 | $0.60 | $506 | $905 |
| 1990 | 748 | $0.60 | $449 | $763 |
| 1991 | 866 | $0.54 | $468 | $753 |
| 1992 | 985 | $0.54 | $532 | $835 |
| 1993 | 1,151 | $0.54 | $622 | $944 |
| 1994 | 1,289 | $0.54 | $696 | $1,032 |
| 1995 | 1,383 | $0.54 | $747 | $1,077 |
| 1996 | 992 | $0.54 | $536 | $752 |
| 1997 | 1,256 | $0.54 | $678 | $924 |
| 1998 | 1,388 | $0.54 | $750 | $1,005 |
| 1999 | 1,443 | $0.54 | $779 | $1,028 |
| 2000 | 1,653 | $0.54 | $893 | $1,146 |
| 2001 | 1,741 | $0.53 | $923 | $1,142 |
| 2002 | 2,073 | $0.53 | $1,099 | $1,344 |
| 2003 | 2,826 | $0.52 | $1,470 | $1,752 |
| 2004 | 3,552 | $0.52 | $1,847 | $2,161 |
| 2005 | 4,059 | $0.51 | $2,070 | $2,352 |
| 2006 | 5,481 | $0.51 | $2,795 | $3,054 |
| 2007 | 6,886 | $0.51 | $3,512 | $3,759 |
| 2008 | 9,683 | $0.51 | $4,938 | $5,070 |
| 2009 | 10,847 | $0.45 | $4,881 | $5,009 |
| 2010 | 13,508 | $0.45 | $6,079 | $6,079 |
| Total | | | $39,663 | $47,725 |
| Per-Barrel Cost ($/bbl/Y) | | | $123.32 | $148.39 |

*Source: ClearView Energy Partners, LLC using data from EIA, BLS and the Renewable Fuels Association*

This cursory assessment implies that the last thirty years of ethanol subsidies added up to a nominal total cost of about $40 B and a real total cost of about $47.7 B—approximately the same on a real dollar basis as the cumulative acquisition cost of oil for the SPR. Counting ethanol gallon-for-gallon as a gasoline replacement (rather than prorating it for energy content, a frequent convention), this implies a nominal petroleum displacement cost of about $123/bbl and a real petroleum displacement cost of about $148/bbl—more than twice the displacement cost of the oil in the SPR[6].

The proposal in Section 202(a) has historical precedent. In 1996, DOE also conducted three SPR sales for fundraising purposes. It seems unlikely that those sales, a total of 27.1 MM bbl, seriously impaired U.S. energy security. On the other hand, as I noted earlier, that was then. Not only do differentially tighter global market conditions and increasingly volatile geopolitical circumstances inject new risks, but the differentially greater size of today's SPR means that selling it without a strategic catalyst may leave a powerful implicit asset on the table: negotiating power.

THE OTHER STRATEGIC VALUE OF THE PETROLEUM RESERVE: AN INCONVENIENT TRUCE

Signposts to the SPR.—Most histories of the petroleum industry highlight the concession granted to Standard Oil Company of California by Saudi Arabia to explore Hasa Province on May 29, 1933 as the beginning of U.S. reliance on foreign oil, even though exploration throughout the Persian Gulf and Arabian Peninsula began decades earlier. In a similar vein, most accounts of U.S. policy responses to oil shocks center around the October 17, 1973 Arab Oil Embargo, despite the many smaller policy actions taken in anticipation of, or response to, the complications U.S. producers encountered during the four prior decades of producer-led efforts to secure

[6] This is not a perfect comparison because it does not capture the recurring nature of ethanol supplies (for an incremental cost, of course) relative to the finite nature of the SPR. Even so, the terminal value of ongoing ethanol supply would be far outweighed by a less-generous accounting of ethanol energy security per gallon, too. Most of the published efforts I have seen incorporate related and supporting subsidies for corn and ethanol infrastructure and the aforementioned energy-content-prorating.

the market power OPEC enjoys today. Surprisingly, I have encountered very little (beyond the DOE website) written about another critical moment within the same narrative: November 18, 1985, the date of the SPR's 967,000 bbl "test" sale, a moment which may have been equal parts proof of concept and détente.

The defensive "oil weapon".—Recent conversations with former senior U.S. and international energy security officials have reinforced my suspicion that the SPR may have served, on several occasions, as far more than an insurance policy against a supply interruption, but also as a negotiating tool to persuade producers to respond to market dislocations by ramping up production instead of banking scarcity premiums. Just as weapons tests during the Cold War gave credibility to nuclear détente, the 1985 test sale and 13 other catalyst-driven sales and exchanges since 1985 may have helped to reinforce petroleum détente. Based on my conversations with producers, the DOE projection that a maximum SPR draw could deliver 4.4 MM bbl/d into the market for 90 days is widely accepted as credible and realistic.

Payload.—As defensive "weapons" go, 4.4 MM bbl/d is a non-trivial payload: that volume is approximately equal to estimated OPEC spare capacity during 1Q2009, when the price of oil plummeted below $40/bbl. Although OPEC producers could ultimately outlast price pressures during a full drawdown of the world's strategic reserves (the SPR plus the other IEA nations' combined crude and products reserves), doing so might prove to be a very costly choice. Not only might the ensuing price shock motivate unprecedented OECD investment flows into petroleum alternatives, but it's not clear how well OPEC itself would cohere during an all-out "oil war". Given the choice between selling incremental barrels into a tight market and facing off against IEA reserves, low-cost producers might prefer to share the gains associated with a coordinated increase in production rather than either (a) reducing revenues and potentially taking losses by undercutting SPR-mitigated market prices; or (b) ceding market share to competing, higher-cost producers who might choose to opportunistically defect from the cartel.

CONCLUSION

As I have testified in the past, petroleum fuels about 95% of global demand for transportation energy because of economic and physical realities, not ideological preferences[7]. Oil is energy dense, broadly available, physically stable and readily shipped. During the 152 years since the Drake well in Titusville, Pennsylvania inaugurated commercial petroleum production, generations of scientists, engineers and political leaders have rigorously assayed a wide universe of alternatives. No fuel or technology has emerged as an economically viable, scalable or sustainable long-term substitute.

Although a "drop-in" or "plug-in" replacement for petroleum is unlikely to emerge anytime soon, we won't find one—or even a better way to improve supply diversity—if we don't look for it, and we won't look if we don't spend money on it.

I strongly support this Committee's continuing efforts to encourage greater vehicle efficiency and to explore fuel and vehicle technology alternatives, but not at the expense of this nation's well-conceived and highly effective energy security insurance policy.

This concludes my prepared testimony. I will look forward to any questions at the appropriate time.

The CHAIRMAN. Thank you very much.

Mr. Silver, thank you for being here.

## STATEMENT OF JONATHAN SILVER, EXECUTIVE DIRECTOR, LOAN PROGRAM OFFICE, DEPARTMENT OF ENERGY

Mr. SILVER. Thank you, sir.

Chairman Bingaman, Ranking Member Murkowski, members of the committee, thank you for the opportunity to testify today.

My name, as you know, is Jonathan Silver, and I'm the Executive Director of the Loan Programs Office at the Department of Energy.

DOE's loan programs provide critical support for the commercial deployment of clean energy and the jobs and economic growth that

[7] Testimony of Kevin Book before the U.S. Senate Committee on Energy and Natural Resources, April 3, 2008. http://energy.senate.gov/public/__files/BookTestimony04308.pdf.

come with it. I welcome the opportunity to discuss the ATVM program with you and to highlight our accomplishments.

ATVM loans finance the domestic manufacturing of advanced technology vehicles and components. In general, the program works to increase the overall fuel economy of U.S. passenger vehicles, advance U.S. automotive technology, and protects taxpayer financial interest.

More specifically, we provide loans to auto and auto parts manufacturers to re-equip, expand, or establish manufacturing facilities, and for related engineering integration.

Although established in 2007, the program did not begin processing applications until 2009. We've now issued 5 loans for more than $8.3 billion and have a number of other large projects in advanced stages of due diligence. The projects we have funded support advanced vehicle manufacturing in 9 States and will create or save almost 40,000 jobs. Between them, there will be work going on at 19 different factories.

ATVM loans now support 3 of the world's first electric car factories. In aggregate, the ATVM projects will save approximately 282 million gallons of petroleum annually—roughly the same as removing 545,000 passenger vehicles from the road, or more than all the cars in Idaho.

ATVM loans also support the redevelopment of the U.S. automotive supply chain and service network. As examples, more than 65 percent of the parts for Fisker's Karma vehicle are expected to come from U.S. manufacturers, and VPG's compressed natural gas facility should support about 800 sales, service, parts, and supplier professionals.

Now that the program is successfully up and running, minor changes could dramatically improve performance. Let me offer one example.

In contrast to the title XVII programs, the ATVM program does not charge fees, and as a result there is a substantial cost that could be, but are not, borne by applicants. Since the application process is essentially free, some sponsors have submitted projects that were basically concept papers, often lacking capital, suppliers, assembly operations, distribution channels, and more. The requirement that we review all eligible applications equally means that program staff must complete time-consuming and costly reviews of these projects, diverting resources for more robust applications. If the program charged fees, it could develop a fee structure that would help pay for the reviews, and focus work on projects that were likely to succeed.

Let me also take a moment to respond a bit to the GAO report on the program that was recently issued, and whose commentary you heard earlier. The GAO completed its audit in February of this year after an investigation lasting a year and a half.

In the report, the report notes that we have taken numerous steps to successfully implement the program, including establishing rigorous technical, financial and environmental eligibility requirements. It also acknowledges that the program has developed effective policies and procedures for overseeing the financial and technical performance of borrowers. The report did make 2 basic rec-

ommendations: that we need to engage more engineering expertise earlier, and that we needed better performance metrics.

Time does not permit a complete response, but I do want to point out that on all our transactions we have worked closely with the technical experts in the Office of Energy Efficiency and Renewable Energy at DOE to review and score each application and, when needed, hired the country's leading independent engineering firms as consultants. We disagree with the conclusion that an engineering analysis is required at every stage of development, and believe that standardized approaches do not work well in reviewing unique, complex transactions. Beginning engineering evaluations while designs are still being formulated is costly and of limited value.

With respect to the need for better performance metrics, we strongly support the use of solid metrics, and we use many, including net present value calculations, debt-to-equity ratios, debt service coverage ratios, technical scoring metrics, and more, but believe that creating hypothetical metrics, such as what might have happened had an OEM and/or its consumers made different choices from among the number of changing variables, is unproductive.

That said, we will continue to try to develop policies, procedures, and metrics that are best in class, and which will improve the program's performance.

Let me now comment briefly on the language in S. 1001 that addresses the auto loan program. While the administration has not yet taken a position on the bill, we generally support expanding the scope of the program in ways which benefit our current pool of applicants.

The proposed definition of "qualifying components" in section 102 is more expansive than the definition of the same term in the current legislation. It would cover not only components, but systems and groups of subsystems, making it easier to finance more complex solutions to reduce fuel consumption in vehicles.

The proposed definition would also significantly ease the nexus test in the existing legislation. Currently, as you know, a component must be both designed for, and installed in, an ATV. The new language requires only that a component contribute measurably to the overall improved fuel use of an ATV. By not requiring it to be designed in, the legislation significantly expands the pool of potentially eligible components. The basic assessment as to whether it improves overall mileage is also easier for us to ascertain.

I would suggest revisiting the definition of the term "measurably." Presumably, the word is used to mean "meaningful," as opposed to, "an improvement capable of being measured," but it is not completely clear from the proposal.

The proposal also adds a new class of qualifying components—those designed to improve fuel economy, or the substitution of conventional fuel with alternative fuels and advanced biofuels. This addition would also be relevant to our applicants and is helpful.

While the bill does not specify other ways in which the program might be enhanced, it might also be worth exploring how ATVM might also support materials and advanced vehicle infrastructure manufacturing. For example, the ATVM program could support factories that produce materials for advanced vehicles, which could

help the emerging U.S. battery industry expand upstream in the supply chain and help establish U.S. leadership in lightweight materials.

The ATVM program could also support factories that manufacture advanced vehicle infrastructure. This would include plug-in vehicle chargers and natural gas pumps, and ensure U.S. factories are not just producing tomorrow's vehicles, but also the infrastructure needed to support them.

Quickly, let me turn to the language in S. 1000 that creates a new section 1706 under Title XVII to finance energy efficiency upgrades to existing buildings. While the administration hereto has not yet taken a position on the bill, it should be noted that the President's 2012 budget requested $100 million for loan guarantee subsidy costs to support up to $2 billion in loan guarantees for similar energy efficiency retrofits of universities, schools, and hospitals. We should together perhaps explore what kind of financing tools are best suited to support those goals.

In less than 2 years, the Loan Programs Office has begun to meet the expectations Congress had in creating and funding the program it administers. We've made a meaningful contribution to our national clean energy goals, while creating new and permanent jobs, and the ATVM program has been instrumental to that effort. We look forward to continuing our progress and to working with you to ensure that these programs work effectively.

Thank you again for inviting me here today, and I look forward to responding to your questions.

[The prepared statement of Mr. Silver follows:]

PREPARED STATEMENT OF JONATHAN SILVER, EXECUTIVE DIRECTOR, LOAN PROGRAM OFFICE, DEPARTMENT OF ENERGY

INTRODUCTION

Chairman Bingaman, Ranking Member Murkowski, and members of the Committee, thank you for the opportunity to testify today. My name is Jonathan Silver, and I am the Executive Director of the Department of Energy's (DOE) Loan Programs Office (LPO). DOE's loan programs provide critical support for the nation's commercial deployment of clean energy technologies, and the jobs and economic growth that come with them. I welcome the opportunity to discuss the Advanced Technology Vehicles Manufacturing (ATVM) Loan Program with you and to highlight our significant accomplishments.

BACKGROUND OF THE ATVM LOAN PROGRAM

As you know, the Loan Programs Office administers three separate programs: the ATVM Loan Program and the Title XVII Section 1703 and Section 1705 loan guarantee programs. The ATVM Loan Program was established by Section 136 of the Energy Independence and Security Act of 2007, and provides direct loans to support the manufacturing of advanced technology vehicles and qualifying components in the United States. As noted by GAO in their most recent report, although the authorizing statute does not specifically identify goals for the Program, ATVM Program staff have established clear goals and performance metrics to measure the program's success. In achieving these goals, the Program helps create next-generation jobs in the automotive and component manufacturing industries.

The Program provides loans to automobile and automobile parts manufacturers for the cost of reequipping, expanding, or establishing manufacturing facilities in the United States to produce advanced technology vehicles or qualified components, and for associated engineering integration costs. In 2010, Section 136 was amended to include ultra-efficient vehicles within the definition of advanced technology vehicles.

The FY 2009 Continuing Resolution (CR), which was enacted on September 30, 2008, appropriated $7.5 billion in credit subsidy to support up to $25 billion in loans

under the ATVM Loan program. The FY 2009 CR also provided DOE with $10 million to administer the Program. On November 5, 2008, DOE issued the Interim Final Rule for the Program. DOE accomplished this effort in approximately half of the 60-day timeframe mandated by Congress. The program began receiving applications on December 2, 2008.

The ATVM Program has received numerous applications from both automobile original equipment manufacturers (OEMs) and component manufacturers.

VALUE OF ATVM LOAN PROGRAM

ATVM funding has played a critical role in the development of plug-in hybrid and electric vehicles by providing long-term capital when private financing was not available. It is important to remember that the ATVM Loan Program is not a grant program; loans must be repaid. We review projects on a competitive basis, and we do not fund every eligible project. We ensure that the loans we support meet our statutory requirement of having a reasonable prospect of repayment. Every project that receives financing must first go through a rigorous financial, legal and technical review process—similar to, and in some ways more comprehensive than, what a private sector lender would conduct—before a single dollar of taxpayer money is put to work.

Moreover, the programs can efficiently and effectively leverage government resources to spur private-sector investment. The financing provided by the loan programs is "additive." It is intended to finance projects that—because they would have difficulty accessing conventional debt markets—might otherwise not get built. A relatively small amount of appropriated credit subsidy can support large amounts of new private sector investment. When a loan is fully repaid, the nation will have benefited from the incentivized private sector investment at relatively little cost to taxpayers.

The potential benefits of the Program are great. In addition to improvements in fuel economy, ATVM Loan Program projects promote economic growth and job creation. They create construction and permanent operating jobs in manufacturing communities where job growth has long been stagnant. In addition, these projects contribute to the build-out of the domestic supply chain and manufacturing base that we will need to "win" the clean energy future.

To date, DOE has issued five ATVM loans totaling $8.3 billion. These funds will support advanced vehicle projects in nine states and the companies supported estimate these projects will preserve or create almost 38,000 manufacturing or permanent jobs. The Program also provides substantial support to the US automotive supply chain. According to information received from the companies, more than 65 percent of the parts for Fisker's Karma vehicle are expected to come from US manufacturers, and the VPG facility alone is estimated to support approximately 800 sales, service, parts and supplier professionals. In an economic downturn that threatened the entire domestic auto industry, the Program helped re-establish US leadership across multiple automotive technologies including plug-in, high-efficiency gasoline, and natural gas vehicles.

ATVM loans support three of the world's first electric car factories in Delaware, Tennessee and California, as well as the only factory-built light-duty vehicle to date that meets or exceeds accessibility guidelines of the Americans with Disabilities Act. In total, our projects will save approximately 282 million gallons of gasoline annually—roughly the same as removing 545,000 passenger vehicles from the roads.

S. 1000 AND S. 1001

The Administration is continuing to review these bills and does not have a position on them at this time. My comments will be limited to Section 202 of S.1000 and Sections 101 and 102 of S.1001 as they address issues that would fall under the Loan Program Office at the Department of Energy.

S.1000 would expand Title XVII to finance energy efficiency upgrades to existing buildings. The new program would target certain building types, including commercial, industrial, municipal, university, school, and hospital facilities. The President's 2012 budget requests $100 million for loan guarantee subsidy costs to support up to $2 billion in loan guarantees for energy efficiency retrofits of universities, schools, and hospitals. However, as noted above the Administration is continuing to review the specifics of this bill.

S.1001 would add two new categories of vehicles to those now eligible for a loan under the ATVM Program. Vehicles currently eligible for ATVM loans include certain light duty and ultra-efficient vehicles. The proposed bill would add medium and heavy-duty trucks, bus and rail vehicles, as well as alternative fuel vehicles. These vehicles would need to satisfy certain loan eligibility requirements set out in the

proposed bill, including reducing the consumption of conventional motor fuel. The proposed bill would also expand the scope of components that are eligible for a loan under the ATVM program.

The bill would also amend the Title XVII loan guarantee program to include, as part of the 1703 program's mandate, the reduction of oil imports through alternative fuel projects. It would also make projects that produce and distribute alternative fuel and advanced biofuels eligible for 1703 loan guarantees.

ADDRESSING THE GAO FINDINGS

As you are aware, the US Government Accountability Office (GAO) completed its audit of the ATVM Loan Program in February of this year. The stated objectives of the audit were to (1) identify the steps DOE has taken to implement the ATVM loan program, (2) examine the ATVM program's progress in awarding loans, (3) assess how the program is overseeing the loans, and (4) evaluate the extent to which DOE can assess its progress toward meeting program goals. The auditors made only two recommendations: (i) that the Program accelerate its efforts to engage the engineering expertise needed for effective technical oversight of loan recipients, and (ii) that the Program develop sufficient, quantifiable performance measures for its three program goals.

The GAO report noted that DOE had taken numerous steps to successfully implement the ATVM Program. In addition to setting out Program goals for increasing U.S. fuel economy as a whole, advancing U.S. automotive technology, and protecting taxpayers' financial interests, the Program also established rigorous technical, financial, and environmental eligibility requirements for applicants.

The GAO also acknowledged that the Program has successfully set procedures for overseeing the financial and technical performance of borrowers, but asserted that it did not engage engineering expertise in a timely matter for certain projects that need additional technical oversight. First, because of their technical expertise, the Program leverages staff in DOE's Office of Energy Efficiency and Renewable Energy (EERE) to determine whether applicants and proposed projects meet the Program's technical eligibility criteria. EERE performs most of the technical eligibility analysis for the ATVM Loan Program, and uses a model from the Argonne National Laboratory to analyze certain applicant-provided technical data. Second, as we related in our response to the GAO report, the ATVM Loan Program—consistent with its procedures—has regularly engaged both internal and external expertise to help oversee borrowers' compliance with the loans' technical requirements. In addition to experienced engineers on staff, we have—contracted with the country's leading independent engineering firms to ensure that the projects are being delivered as agreed. These large, private sector firms have decades of experience in monitoring and overseeing complex vehicle and technology projects—and thousands of specialized experts.

We also disagree with GAO's recommendations on the appropriate phase to begin close technical scrutiny of certain large projects. GAO suggested, for example, a detailed review of the engineering integration stage, which is typically software-based design, scheduling, and logistics. A formal engineering assessment at this very preliminary stage would increase transaction costs but would not yield insights that would increase effectiveness of the ATVM program.

For every project supported by ATVM loans, DOE utilizes engineering expertise on a regular basis during vehicle assembly and component manufacturing facility construction. Given the wide variation in ATVM projects, however, it is neither possible nor prudent to subject them all to an identical engineering review. The Program tailors the review for each project to deploy engineering expertise when and where it is most needed in order to achieve the highest confidence in the quality of the project and its ability to repay the loan.

Additionally, the Loan Program's Portfolio Management Division continuously monitors both a borrower's adherence to the technical specifications in its approved business plan, and its financial performance relative to the terms and conditions of the loan agreement. Program engineers attend quarterly progress meetings with the borrowers and participate in on-site inspections of assembly plants and construction sites. Financial covenants are specifically crafted to provide timely warnings to DOE prior to a borrower developing financial issues that may impact the project. This level of attention gives DOE the ability to closely monitor both the technical performance and financial health of each borrower for the life of the loan.

The Department also disagrees with GAO's second stated concern, that the Program has not developed sufficiently robust performance metrics. To support this position, GAO expressed concern that external auditors reported instances in which three of the four borrowers did not spend funds as required. The Program has been

successful in verifying that loan funds are spent by the borrowers as intended by the ATVM Loan Program. As GAO reported, the ATVM program uses external auditors to oversee borrowers' financial performance. Out of $3.5 billion in loan disbursements over fifteen months, DOE's auditors have identified less than $1 million in total funds that were problematic. The largest of the overages, in dollars, represented less than 1/100th of one percent of the relevant loan. Each problem that has been identified was corrected immediately, and procedures were quickly put in place to ensure that the errors did not occur again. GAO also recommended that the ATVM Loan Program develop quantifiable performance measures for ATVM Program goals. DOE believes that the ATVM Loan Program has established clear performance measures and operated in a manner consistent with its authorizing statute and implementing regulations. DOE believes the analyses suggested by GAO go well beyond the statutory requirement set out under Section 136.

CONCLUSION

In the past two years, the ATVM loan program has shown great success. We are making a meaningful contribution to our national clean energy goals while creating new and permanent jobs. We will continue to administer all of the DOE loan programs, including the ATVM program, in the most effective and efficient way possible—while appropriately protecting taxpayer funds.

Thank you again for inviting me here today. I look forward to responding to your questions.

The CHAIRMAN. Thank you very much.

Thank you all for your excellent testimony.

I think many of the points that you made, Mr. Silver, about the ATVM program and improvements that are possible, changes that could be made in the law governing that program that would be beneficial, I don't see those in your comments that were submitted. Those would be very valuable for us to get in writing, if you could give us any specific changes that you think would help in the administration of that program.

Mr. SILVER. I'd be happy to share that with you.

[The information referred to follows:]

There are several potential changes that could aid in administering the program and potentially allow it to support more transactions involving smaller companies or new entrants.

DOE has supported a broad range of companies, including large mature companies and start up ventures, and a broad set of projects, including advanced technology vehicle manufacturers and suppliers. DOE is committed to administering the program as effectively and efficiently as possible and continuously looks for ways to improve the execution of the ATVM program as with all of its programs. A number of bills introduced in Congress contain proposals for amending the ATVM program. The Administration has not yet taken a position on these bills, but is currently reviewing the various proposals.

The CHAIRMAN. Let me just ask, Mr. Book—I guess your, the main point you're making is that keeping the SPRO the way it is is a better bet, considering all the risks and economics involved, than using some of it to pay the bills for some of these good purposes. Is that basically the message that you're giving us today? That was——

Mr. BOOK. Yes.

The CHAIRMAN [continuing]. What I understood.

We currently have in law a requirement that SPRO increase to a billion barrels. You think that should be maintained as well?

Mr. BOOK. I think that seems appropriate as well—not just from the genuine risk that presents itself with regard to supply, but also, again, from that second order effect. As we become less relevant as a customer for producer nations, it's probably better to

have a more powerful defensive negotiating strategy, and a bigger SPRO would help.

The CHAIRMAN. OK. Now, in order to get to that bigger SPRO, we've got to do a few things around here. We've got to spend some more money, as I understand it. Is that your understanding as well?

Mr. BOOK. That is my understanding.

The CHAIRMAN. But, you think it's worthwhile for us to continue pursuing that and to commit those funds?

Mr. BOOK. As long as energy security is considered a first or high priority, this is one of the easiest and cheapest ways to buy it. It should not eliminate other energy security spending, and it may not need to be first. Whether it needs to be expanded today—unclear. Selling it today, though, certainly seems like a bad idea.

The CHAIRMAN. OK.

Let me defer to Senator Murkowski for her questions.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Mr. Book, let me continue on with discussion about the SPRO. I concur with your statements that, when we're talking about energy security, a more positive approach or path to take would be to produce more. I agree that looking to sell off significant quantities of SPRO oil is ill-advised, and have said so on many, many occasions. But, I look at how we can advance good ideas, whether it is the legislation that Senators Stabenow and Wyden have been working on, whether it's how we advance energy efficiency programs. Our reality is, we've got to figure out a way to pay for them. have suggested that one of the ways that we can pay for them is to increase our domestic production, take some of those royalties, take some of those revenues, and direct them toward these new technologies.

If we want to talk about energy security, that not only allows us the resource that we need; it helps in not sending the billions of dollars overseas, and it increases our economic security through additional jobs. So, I would hope that we don't look to a quick fix, which I think tapping the SPRO would be.

But, let me ask you whether you're aware of any other efforts, whether congressional or administrative, to sell off the SPRO oil to offset the costs of new technologies. It has been discussed. We want to tap into it to lower the price potentially at the pump. But has it ever been considered to be used for offsetting the costs of your technologies?

Mr. BOOK. I'm not aware of any. I went and looked back at the past sales that were for non-catalyst reasons, and there were some deficit reduction sales, 3 of them, in 1996, none targeted toward new technologies.

If I might, to your first point, the notion that you can fund new technologies with offshore drilling, without the math error this time, to put some numbers to it, there was a company that announced a $700-million-barrel find 250 miles south of New Orleans.

Senator MURKOWSKI. That was just announced yesterday.

Mr. BOOK. Yesterday. So, after the testimony was prepared, and after I could put the math error in to cover this too. But, at about a 40 percent recoverability and $100 of barrel, and a 16 ⅔ percent royalty, that's $4.6 billion. So, it's not an insignificant amount of

money relative to the 14 to 16 we're talking about from the sale. It actually adds to our energy security to have the new volumes of oil, plus, we're getting money, as the Federal Government and as a taxpayer, from the producer of, and operator of, that well. That means that the average cost of whatever new technology you're spending per barrel of imported oil replaced is actually going to be lowered, because there's a negative number averaging with a positive number. So, it doesn't just give you energy security. It makes the new spending, on an average basis, cheaper.

Senator MURKOWSKI. Incredibly important. Of course, you're just referring to one——

Mr. BOOK. Just one.

Senator MURKOWSKI [continuing]. New sale.

Mr. BOOK. One that is, in fact, was in processing and was held up, unfortunately, for a little while, that is very successful.

Senator MURKOWSKI. Yes.

Mr. Silver, you did not mentioned in your testimony any reference to the pay-for through the sale of SPRO oil. Does the Department of Energy have a position on this proposal?

Mr. SILVER. Senator, I don't want to respond for the department in that regard because that's not my area of expertise, but I'll be sure the Department comes back to you with an answer.

Senator MURKOWSKI. OK. I would appreciate that.

Let me ask about the ATVM loans. We hear a lot of frustration out there from companies that have applied for, but haven't received, any loans from the program. It's my understanding that just a couple of years ago ATVM had received more than 75 applications seeking more than $38 million in loans. Now, 2 years later, just over $8 billion has been provided through just 5 loans.

What's happening? Why are these loans so slow to get out the door? Is it a lack of viable projects? Is there some other hurdle or impediment? This is to both Mr. Silver and Mr. Rusco.

Mr. SILVER. We have certainly, I think, worked diligently to move forward as many projects as we can in as timely a fashion as we can. Indeed, I am cautiously optimistic that another several will be coming forward shortly. But, it is true——

Senator MURKOWSKI. Do you think that 5 loans over a 2-year period is timely enough? Are you satisfied with that?

Mr. SILVER. We would certainly like to be able to do as many as we can as quickly as we can, Senator. That goes without saying. I will say, as I referred to in my testimony, that using project finance as the sole financing tool available to the program, which, at its most basic, requires the matching of cash-flows to repayment streams, and therefore, by extension, clarity into the multi-year loan and where the receipts will come from, is, does take a considerable amount of time—particularly with early stage or startup projects who have yet to identify exactly where their markets will be, and how they will distribute to those markets.

We have made very significant loans among those 5. I acknowledge that 5 is not a large absolute number. But there are very important energy technologies embedded in those transactions. As I said, I expect we'll be able to issue a few more slowly—shortly.

The other feature that I mentioned—and this refers specifically to components, rather than to OEMs—is that the language in the

current legislation requires that a component not only be designed for, but also be installed in, an advanced technology vehicle. That dramatically limits the number of components that actually can qualify, since the business ecosystem in which the auto parts manufacturers operate doesn't really work like that. In other words, you're putting technology into platforms or chassis which are going to be produced 3 and 4 years down the road.

Senator MURKOWSKI. Let me ask—I don't mean to cut you off. But I am well over my time, and I wanted Mr. Rusco to comment on this—whether or not we really are moving the loans through in a manner that we feel is sufficient.

Mr. RUSCO. I think it's very difficult for us to comment on that. We, when we looked at the program, we focused on the loans that had been issued primarily, and then on the processes of the program in terms of meeting its goals and measuring its performance.

Senator MURKOWSKI. Mr. Rusco, you have asked for some level of measurement, and there's a little bit of a dispute here between GAO and DOE on this. Wouldn't one of those metrics be how many loans were getting out the door? Whether or not we're meeting the need that is out there?

Mr. RUSCO. Absolutely. The speed at which those can be gotten out the door, and compared to some sort of criteria that is reasonable. Maybe project finance in the private sector is not the right metric, but it may be one that's worth looking at. I do think that any program that's spending this kind of money should have those sorts of measures. It should be responsive exactly to the potential loan recipients and applicants, because those companies are spending a great deal of resources and time applying for the loans, and they should be considered, as well, in this.

Senator MURKOWSKI. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Wyden.

Senator WYDEN. Thank you, Mr. Chairman.

Let me just spend a couple of minutes with you, Mr. Karr, talking about the legislation, and then I want to get into this question of the offset. Obviously, for colleagues, it's hard to follow some of this math and we're going to be working with all of you.

The first point I want to make clear is, Mr. Karr, you all support the legislation. You support S. 1001. That's correct?

Mr. KARR. Correct.

Senator WYDEN. OK. Let me read you a sentence from a very good article in the Congressional Quarterly about alternative fuel vehicles and see if you would agree. I think you would. It says, and I quote, "Energy and transportation experts predict that the long-term race is unlikely to have a single winner. Future drivers may use a variety of technologies, natural gas for trucks and fleet cars, all-electric vehicles for in-town passenger vehicles, hybrid or fuel-cell vehicles for longer trips, and advanced biofuels to lower the oil content in conventional gasoline."

My sense is, by and large, that's right, and that's why Senator Stabenow and I have laid out that we want to get away from this picking winners and losers, because this sets the broadest base for the future. Would you generally agree with what I just read?

Mr. KARR. I think that's absolutely right, yes.

Senator WYDEN. OK. That's the key point. So, I want it understood that as we start this, this legislation has the support of America's automobile manufacturers, and that there's a reason for it, and that is that this is consistent with what experts say we're going to need to do to get millions of vehicles out on the roads of this country in the future. I think we all want to do that, and that's why the legislation has been drafted.

So, let me go now to this question of the pay-for, and obviously, we're going to work with colleagues. I'm going to ask unanimous consent—the chair is out of the room—to put into the record a spreadsheet that we got from the Congressional Research Service that dramatically differs with your math on this, Mr. Book. I'm just going to kind of walk, you know, through it.

Our cap is based on total imports, not net imports, so it actually requires more oil to stay in the strategic petroleum reserve than your calculations. Now, we're going to obviously have to sort that out, and I know colleagues are going to want to look at that. But, I just want to kind of walk people through what the Congressional Research Service found for us on this. They estimated that the new non-NAFTA import requirement would free up about 12 million barrels of oil that could be sold off. At $100 a barrel, that's $1.2 billion that can be reinvested in reducing our need for oil each day through the use of alternative fuels. Twelve million barrels out of a total inventory of 727 million barrels is just 1.6 percent of the reserve, or roughly the amount of oil sold from the reserve following Hurricane Katrina to offset supply disruptions in the Gulf, which was 11 million barrels.

So, I only bring this up by way of saying 2 things. First, for colleagues that are interested, we're going to be working closely with you. Obviously, there are differences on math, and Mr. Book has not seen the analysis in the Congressional Research Service spreadsheet. We're happy to make that available. I know my friend from Louisiana has great interest in these issues as well.

I think what's important here is, first, to hear Mr. Karr's strong support for a fresh approach in terms of alternative fuel vehicles. So, when you get the legislation, first you have to see, does the policy that underlies it make sense? I think we have clearly shown that there's growing support for this kind of approach.

Then we've got to figure out, like everything else around here, how to pay for it. There is a sharp difference of opinion between the Congressional Research Service spreadsheet, what you've said, Mr. Book. I want colleagues to know I'm anxious to work with them on this issue. I'm sure Senator Stabenow is as well. People have different opinions on these kinds of things, and that's what's important here. But, I do think that we ought to be looking at ways that are a little bit more creative in tough fiscal times to find a way to do the important work that our country needs.

As we thought about it, we said, look, here's a chance to not hurt domestic production. A number of colleagues feel strongly about that. We know that our real target in energy policy is shaking free from our dependence on foreign oil—just like Canada and Mexico we've been concerned about it, and that's why we've looked at it. I just want our colleagues to know, because time is short—I've got to go to a budget meeting and may not be able to stay that much

longer—that there is a very different set of numbers out there done for the Congressional, done for us by the Congressional Research Service, than you all at your firm have proposed.

Mr. Book, you obviously would like to make a comment, and you're welcome to.

Mr. BOOK. If I may.

I appreciate the comment, and I, again, I realize I'm standing, given how I started by opening remarks, on very fragile ground. But, with regard to the rest of the math, our interpretation is based on our interpretation. Having guidance from you on how to interpret it differently would be very helpful. All I had was a version of the law publicly circulated and no access, by any means, to the Congressional Research Service.

The interpretation, the way we read it, is that you're talking about 90 days on an annualized basis. So it's also, I think, for a lot of us who are not privy to a lot of the inside discussions, when we're trying to model these things, the obscurity, we're left to fill them in on our own. So, it's always helpful to have a guideline, and I'm very grateful for that opportunity.

Senator WYDEN. I have no grievance at all with your having a chance to, you know, come on up. I just wanted to make clear for colleagues that the cap is based on total imports, not net imports, so it actually requires more oil to stay in the reserve than the kind of approach that you've been talking about. That's important to me.

I heard the ranking minority member, she and I have worked on a lot of bills together. I'm certain my friend from Louisiana may have some questions about this. She and I have worked together on many bills. We'll share this analysis with you.

What we've established today, though, is that the car companies of this country, who have been watching these rollercoaster approaches that the Federal Government has taken over the years to alternative fuel vehicles, they have said that what Senator Stabenow and I are advocating is a winning policy for the future, so we can get millions of alternative fuel vehicles out on the roads of this country.

Now, we'll be happy to share the analysis with you, get your reaction to it and.

Of course, Mr. Chairman, work with you, Senator Murkowski, Senator Landrieu, and others on a pay-for. I continue to feel that on the basis of the past, we've made a lot of headway in putting together those kinds of approaches, and somehow we'll figure out a way to do it again.

I thank you for the time, Mr. Chairman, and also for scheduling the hearing.

The CHAIRMAN. Thank you very much.

Senator Stabenow.

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

Thank you to my friend, Senator Wyden. It's always a pleasure to work with him..

Welcome to all of you.

Let me first say, Mr. Chairman, that as we are broadly, in our legislation, focused on a technology-neutral approach, I also believe very strongly in our efforts to promote electric vehicles. So, I don't want that to be in any way viewed as in conflict, because I think

the goal of a million new electric vehicles on the road is a very, very important one.

I think we've made a very critical investment that's for billions of dollars in the private sector around advanced battery manufacturing technology that is a very important part of our future. Building that infrastructure is also very, very important. So I'm supportive of, I guess, all of the above moving forward because I think they're real opportunities.

Even though, I would also just say, even though, we talk about it in terms of small vehicles—and by the way, we would love everyone to buy a new Chevy Volt and a Ford Focus electric and all the new vehicles coming out. We have very exciting work going on for medium and heavy-duty trucks, as well and batteries and hybrids. So it's, that's very important as well.

I want to talk specifically, Mr. Silver, it's no surprise to you, about how we can do more in terms of moving project approval along. You and I have had many conversations on this.

Let me also then back up, though, before asking you this, just to say that, as we put this into the 2007 energy bill, we have seen very important impacts that we desired in terms of helping our vehicle manufacturers retool for the future. We added new regulations in the 2007 energy bill around fuel efficiency, CAFE standards, and then part of that, something I was extremely involved in championing, was to make sure that the incentives were there and the support was there so the jobs would be here.

I just want go on the record, Mr. Chairman, on one example I think I've shared with you before. Ford Motor Company was one of the early recipients of this. They have retooled a large, a truck plant in Michigan, the Wayne truck plant now do make the Ford Focus electric and a variety of small vehicles.

As a result of what they are doing with the batteries related to that, we are literally bringing jobs back from Mexico. I don't know very many examples right now, Mr. Chairman, of being able to bring jobs back from overseas, and that has happened as a result of section 136 and this program. So, I put in a plug for that.

But, Mr. Silver, let me talk about how we are able to move these projects along more quickly. I mean, clearly, there are a number of issues, you raised a number, I was very interested in your ideas.

I want to follow up with you on charging fees. I mean, we right now have a lot of different applications. You have to look at each of them equally and so on. More broadly looking at materials, infrastructures and so on, I think are very important. But, we are in a situation where these projects are extremely complicated and detailed. There are a number of issues around level of risk, which I think is something we really have to look at.

Right now, this program is required to consider separately the issue of risk per project, rather than looking at a balance of risk more broadly across a portfolio of projects, so that keeps the program from really focusing on higher-risk projects that could have a major impact on clean energy savings and efficiencies down the road.

So, I wonder if you might talk about what the department can do in terms of improving this application process. This is about jobs. We have a lot of, I think, really important projects in the

pipeline that could create jobs right now if we were able to move them forward. In terms of project review, how do we move it forward, and how do we look more broadly at the issues of risk.

Mr. SILVER. Senator, first, thank you for your ongoing support and leadership in this area. It's been essential to the work that we're trying to do. As you noted, you know, I have talked a number of times on this. No one wants this to work more efficiently and effectively than we do at the Department of Energy and within the administration.

I alluded to some of the challenges in my oral testimony, and you've certainly touched on several additional ones.

One of the other things I would point out is that, perfectly appropriately and quite understandably, applicants working on new technologies often evolve and change their business plans as they go along and as one would expect them to. I certainly, in my prior life, as a venture capitalist, saw that repeatedly.

We are required as a matter of good practice, if nothing else, to essentially re-start our analysis every time there is a significant change to a business plan. Volumes change, approaches change, distribution networks change and the like, and all of those have impacts on the financial structure and viability of the project, and by extension on the work that we need to do to analyze it and to de-risk these projects. So, we have certainly done the things, I think, you would expect us to do. We run much of our analysis concurrently instead of sequentially. We actually have brought our credit and origination teams together to work in partnership on these transactions, rather than review these projects ad seriatim and the like.

But, the bottom line is that it takes a considerable amount of time to pull together the, all the consultant work, the background financial work, and the project development work that the companies are doing in order for us to complete our work.

I expect, as I said in my, in my earlier remarks, that I'm cautiously optimistic that we'll be announcing several transactions relatively shortly. I believe we've made good progress on them. Obviously, as you know, I can't speak to any specific application.

But, as we work our way through each of these issues, they become not only easier within the project itself, but easier across projects. So given the items you've identified just now, the things I think I made a reference to, those would all be helpful, indeed instrumental in streamlining the process further.

Senator STABENOW. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Landrieu.

Senator LANDRIEU. Thank you, Mr. Chairman. I appreciate you calling this hearing this morning on several important topics. I just want to make a few comments and then direct most of my questions to Mr. Silver about this program that we're discussing.

But, first of all, how happy I am, and I think the country is, about this Exxon find out in the Gulf. People have been saying, "Can America produce more oil and gas domestically?" I think the answer is clearly yes.

This is not an insignificant amount of oil and gas. It will be found, I think, equivalent to 200 million to 300 million barrels, which represents maybe a 20 percent increase in the volume of oil

and gas produced in the Gulf, which is significant—not a 3 percent increase, not a 10 percent increase. But, I think we're producing over a million barrels a day—this is 200 to 300. So, it's significant.

No. 1, had the moratorium not been put into effect, which I strongly disagreed with and continue to, this find could have been identified potentially a year ago, adding not only to emotional security in the Nation, but jobs, et cetera.

No. 2, with, you know, to the chairman, particularly and to the Ranking Member, this find is 250 miles due south of New Orleans, about 190 miles due south of Houma, Louisiana. I would contend that this country would be unable to secure one drop of oil from this find if it weren't for the energy ports along the Gulf Coast; the thousands of miles of pipeline that support operations like this; the hundreds of businesses that build the widgets, gadgets, pipes; the ports and the workboats that leave our docks every day.

The thought that this will generate $4 billion when it's up and producing annually for the Federal Government, and not a penny will go to these Gulf Coast States that served as a platform now for this industry for the last 60 to 70 years, is beyond what this senator will take.

So, I just urge this committee to lean very forward on how we're going to do this, because I cannot, as happy as I am about this find, cannot continue to support efforts to mine oil and gas out of the Gulf with 4 States, Texas, Louisiana, Mississippi, and Alabama, bearing the full responsibility as hosts.

Now, yes, do we want the jobs? Yes. But, if you look at the map of all of the workers from the Gulf, they work and reside in almost every State of this union. They are just not citizens of Louisiana, Senator Bingaman and Senator Murkowski, and Mississippi. People commute in from Maine. I've seen these charts. They come and work 2 weeks offshore, and they go back and spend their money in Maine.

Meanwhile, we pick up the responsibility for the canals, for the wetlands restoration. So, I just wanted to get that off my chest this morning, and our efforts for fair revenue sharing for coastal States that are at least equivalent to what interior States receive now will go on with some renewed energy.

Mr. Silver, I appreciate the 5 loans or 7 loans, I'm sorry, in 14 months. Let me make sure I'm correct. Is it 7 loans?

Mr. SILVER. It's 5 loans.

Senator LANDRIEU. Five loans. Five loans in 14 months, only one in the last 16 months. Of the 5 loans, which, were any loans given to nontraditional companies? Where did those loans go? One went to Chrysler?

Mr. SILVER. No, ma'am.

Senator LANDRIEU. Ford? What were the 5 loans?

Mr. SILVER. Ford, Ford received a loan—battery work for the Nissan Leaf.

Senator LANDRIEU. Nissan, that's one.

Mr. SILVER. Tesla. Tesla received a loan for the migration of its battery technology into a mid-priced Sedan. Fisker received a loan.

Senator LANDRIEU. Were Tesla and Fisker already established companies, or are they new companies?

Mr. SILVER. I guess a little bit, it depends on your definition, but I would describe them as new companies. They are not established OEM providers.

Senator LANDRIEU. OK.

Mr. SILVER. Then the VPG is, as you know, a compressed natural gas provider that serves——

Senator LANDRIEU. So, you say 2, 2 traditional and 3 nontraditional, or 3 established and 2 non-established? Is that the breakdown, you think?

Mr. SILVER. Our objectives are not based——

Senator LANDRIEU. I realize that, but my point is this. I think that we need to not only have this program supporting companies that have long been in this industry, but companies that are emerging and have real potential to create more competition and more robust competition around the country.

If the chairman will give me just one more minute, I think it's important that there be some interest, particularly in viable applications, in emerging companies.

As you know, we've had a 2-year, two-and-a-half-year application before the agency for a company trying to emerge out of Louisiana so that these jobs can be spread throughout the country and not just focused in Michigan and Ohio, where the industry has traditionally been. The South is emerging as quite a powerhouse in the automobile, and we'd like to make sure that that remains. Of course, we're happy for the West and the Northeast, but this is not just a Michigan-Ohio revitalization effort.

So, can you give me any updates, not on the specifics, which I know you can't, but we seem to be hung up on this application of positive net present value. Can you give just 30 seconds on that? Can you also say are you still working with Next Autowworks on a daily or weekly basis? Or is this something that we're ready to pull the trigger on one way or the another? Because this has been a very tough, and there's been a lot of the State money and local effort going into this, as you know. So, if it's going to work, we want to continue to work with you, and if not, the State can use the $65 million that it has in other ways.

Mr. SILVER. Senator, I appreciate your concern and your questions, and it is certainly our goal to provide financing as efficiently and as effectively as we can and without respect to geographic focus. Geography is not a screen in the review process for this or any of the other projects we do.

Iin addition, some of the factories that I made mention of in my earlier testimony are in fact located in the south. But, it doesn't distract, I think, from, or detract from your fundamental point.

As you know and as you indicated, I obviously cannot comment on the particulars of any individual transaction. But, I will say that we meet regularly and we speak very regularly with all of the applicants that are in the due diligence process.

Senator LANDRIEU. Including this particular applicant?

Mr. SILVER. Including this particular applicant.

Senator LANDRIEU. Would you describe it as moving forward or stalled?

Mr. SILVER. I think the, all the applications in the due diligence process, by definition, because they got into due diligence, are moving forward.

As I mentioned in my earlier comments and, in a sense, in response to Senator Murkowski's question to me as well, speaking generically, when applicant business plans change and when fundamental elements of a particular proposal change, we need to re-set in terms of the analysis that we do and essentially commence it again, and that is a time-consuming exercise. It is one of the reasons that, you know, it would be attractive to consider ways in which, you know, robust applications make their way into the intake process to begin with.

But I am cautiously optimistic that the projects that we are working on now—and there are a number of them in due diligence, as you know—will come forward.

Senator LANDRIEU. OK.

Finally, Mr. Chairman, I need to bring it to your attention that the House of Representatives has taken a million—a billion dollars from this program under the guise that there weren't enough applications pending, or the program couldn't be used to pay for the disaster relief fund that's short $3 billion. So, this is another nexus between my responsibilities as the Chair of the Homeland Security Committee, so I've got to get to the bottom of it.

The House seems to think you have $1 billion that you don't need. There's a difference of opinion about that. But the bottom line is, this fund is about $3 billion to $4 billion short. Even taking $1 billion from your program isn't going to solve the problem that we have responding appropriately to the victims of Missouri and Tennessee, Montana, including Louisiana and the Gulf Coast.

Mr. SILVER. Speaking as a citizen, of course, I support anything that we can do for, you know, our fellow Americans.

I will say that, in the group of applicants in due diligence, as I'm sure many of you are aware, are one or 2 very, very large OEM manufacturers who, should those applications reach successful resolution, would account for a substantial portion of the credit subsidy that remains. There is, certainly, sufficient subsidy to make sure that the other applicants in the pool—and we have about 130 and change in total—that the most robust applications there can also be brought forward, and we would be interested in working with you all in terms of proposed legalization as to how we could make the remaining resources available to the, you know, the opportunities you've presented here.

The CHAIRMAN. Thank you all very much. I think it's been useful testimony. We appreciate it.

That will conclude our hearing.

[Whereupon, at 12:01 p.m., the hearing was adjourned.]

# APPENDIXES

## APPENDIX I

## Responses to Additional Questions

RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* Both S. 963 and S. 1000 include provisions directed at energy efficient Federal buildings. Could you provide for the record your analysis of the programs that would provide the largest amount of energy savings for Federal agencies without burdening the agencies with multiple mandates and overlapping programs?

Answer. Federal agencies are subject to a comprehensive suite of outcome-based performance goals, prescriptive process requirements, and performance standards for new and existing buildings. Full implementation and compliance by agencies with existing mandates would result in significant energy savings as characterized below.

The Government has reduced its energy intensity (Btu per square foot) in buildings by 15 percent in FY 2010 compared to the FY 2003 baseline, meeting the goal set under the Energy Independence and Security Act of 2007, and is working toward the FY 2015 goal of a 30 percent reduction.

Recovery Act GSA funds and savings-financed investments for efficiency improvements in Federal facilities, totaling approximately $5.8 billion in FY 2009 and FY 2010, should keep the Government on track to meet the reduction goals for FY 2011 (18%) and FY 2012 (21%). Further progress is expected to include performance contracting arrangements that use the savings stream from reduced energy costs to finance the initial investments in infrastructure improvements. Undertaking these types of capital improvements and retrofits through direct or financed investment is expected to result in the majority of the mandated energy savings.

Agencies are also implementing the approach for improving facility energy efficiency prescribed by Section 432 of the Energy Independence and Security Act of 2007. This entails assigning energy managers at designated covered facilities, identifying opportunities by evaluating Federal buildings, investing in the deployment of energy efficiency and conservation projects (ECMs), continually monitoring the performance of these projects, and benchmarking building performance annually. So far, Federal agencies have evaluated approximately a third of the Government's 3 billion square feet of facility space and identified potential annual savings of 31 trillion Btu or 9 percent of facility energy use. Approximately $7 billion in potential investment was identified, including projects that could potentially save 6 billion gallons of water annually. The potential annual cost savings from implementing these projects is $600 million. Key types of potential ECMs that agencies identified are listed below ranked in terms of number of projects:

- Lighting improvements
- Water and sewer conservation systems
- Heating, ventilation, and air-conditioning improvements
- Building controls and automation systems/advanced metering
- Building envelope modifications
- Boiler plant improvements
- Energy-related process improvements
- Electric motors and drives
- Chiller plant improvements
- Chilled/hot water, steam distribution systems
- Distributed generation opportunities, including renewable energy.

Additionally, conservation of energy through institutional changes, such as implementation of operations and maintenance best practices, continuous building commissioning, streamlined approaches for procurement of energy-efficient equipment, and workforce engagement is also important.

Another area for energy savings from these institutional approaches is the procurement of energy-efficient products and equipment as prescribed in both the Federal Acquisition Regulations (FAR) Subpart 23.2 and in Section 104 of the Energy Policy Act of 2005. By fully complying with the requirement to purchase equipment in the top 25 percent of efficiency by category, Federal agencies could potentially save from 3 to 12 percent of facility energy use, as estimated for example in an analysis from the American Council for an Energy-Efficient Economy.[1, 2] The Federal Energy Management Program has increased its focus in this area to assist agencies' compliance and accelerate the uptake of commercially-available, under-utilized technologies

*Question 2.* Mr. Crasi made an excellent point about the potential energy efficiency savings that could be tapped in older existing homes compared to new homes. I believe he said that an energy retrofit program like HomeStar could work if it were simplified and more builders could be involved. Is this something DOE is could do?

Answer. The Department of Energy has a long standing interest in improving the energy efficiency of existing homes. The DOE currently has a grant program for existing homes called the Better Buildings Neighborhood Program. Through this grant program, DOE has competitively awarded close to half a billion dollars to 41 states and local jurisdictions. The purpose of these grants is to test alternative approaches to improving the energy efficiency of existing homes. Several grants are designed similar to the HomeStar legislation, and all aim to reduce costs to home owners, broaden the pool of participating contractors, and reduce the cost of home improvements. DOE closely monitors these projects for important lessons for improving the energy efficiency of the nation's housing stock. Successful grants that have adopted the HomeStar approach may prove to be important deployment models. If the results indicate that further simplifications could improve the program, DOE will certainly explore implementing those simplifications. However, many times the seemingly over-complex requirements of retrofit programs are necessary to protect homeowners from poor workmanship. Within these requirements, these projects as well as other retrofit programs have sought to include additional builders to the greatest extent possible, as well as new construction sub-contractors who have lost their jobs because of the housing recession.

*Question 3.* Has DOE been briefed on the draft version of the SAVE Act (Sensible Accounting to Value Energy Act) ? While the bill affects mortgage underwriting and would not be in the Energy Committee's jurisdiction, I've heard from several homebuilders that it would promote cost-effective investments in home energy efficiency. Does the Department with the goal of the legislation to reform mortgage underwriting and appraisal policies so that prospective homeowners can benefit from efficiency when financing their home purchase?

Answer. The Department of Energy (DOE) supports all reasonable efforts to encourage the American public to pursue the use of energy efficiency and renewable energy technologies. While DOE does not specialize in mortgage underwriting or appraisal policies, tangible methods that make energy savings affordable and accessible to the American public are laudable goals.

*Question 4.* Other than Low-Income Weatherization, what energy efficiency programs for existing homes does DOE manage? (Please provide for the record)

Answer. The Department of Energy has a long standing interest in improving the energy efficiency of existing homes. Through the Recovery Act, the Energy Efficiency and Conservation Block Grant (EECBG) provided approximately $2.7 billion in formula grant awards and an additional $454 million in competitive grants for energy efficiency and conservation programs. EECBG recipients plan to invest approximately $8 million in residential sector energy audits and $63 million in residential sector retrofits.

DOE's State Energy Program (SEP) is investing through the states in residential energy efficiency, including retrofits in the residential and other sectors.. Through the Recovery Act, SEP invested $226 million in residential energy retrofits. States also use their annually awarded formula grants, which are cost-shared with the

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[1] http://wwwl.eere.energy.gov/femp/technologies/eep__resources.html.

[2] "Potential Energy, Cost, and $CO_2$ Savings from Energy Efficient Government Purchasing." Proceedings of the 2000 ACEEE Summer Study on Energy-Efficient Buildings. Asilomar, CA. August 2002.

states' own funds, to develop state strategies and goals to address energy efficiency and renewable energy, including energy efficiency programs for existing homes.

DOE currently has a grant program for existing homes called the BetterBuildings Neighborhood Program. Through this grant program, DOE has competitively awarded close to half a billion dollars to 41 states and local jurisdictions, largely through the use of Recovery Act funding. The purpose of these grants is to test alternative approaches to improving the energy efficiency of existing homes. It is the intent of these programs to improve the energy efficiency of homes by at least 15%. DOE will work with these grantees to assist them making these retrofit programs self-sustaining once the grant funds have ended, and to broaden their programs to non-grantee jurisdictions.

At the same time, DOE is assuming responsibility for the Home Performance with ENERGY STAR Program, a whole house energy retrofit program that had been shared by DOE and EPA. Over 110,000 homes have been retrofitted to date under this program, with homeowners seeing a range of 15% to 30% energy savings for this program. These retrofits are paid either entirely by the homeowner or subsidized in part by a local program sponsor such as a utility. Federal funds are only used to set program specifications, provide technical assistance, or to promote the ENERGY STAR program.

DOE also oversees the Building America program which is an industry-driven research program working with national laboratories and building science research teams to accelerate the development and adoption of advanced building energy technologies and practices in new and existing homes. The program's overall goal is to reduce home energy use by 30—50% compared to 2009 energy codes for new homes and pre-retrofit energy use for existing homes.

Additionally, DOE runs the Home Energy Score program which allows homeowners to compare their home's energy consumption to that of other homes, similar to a vehicle's mile-per-gallon rating.

Finally, DOE's Appliance Standard program assists in reducing the energy consumption within existing homes. With close to half of the average household's energy consumption attributed to products and appliances, energy efficiency standards for these products help reduce household energy consumption.

### Responses of Kathleen Hogan to Questions From Senator Murkowski

*Question 1.* Code Data I am a little concerned that it has been so much trouble to produce the data documents to justify DOE's 30% code improvement. Do you know why the process was so difficult?

Answer. DOE is working to streamline the process of developing and providing data to support code improvements. Statutorily, DOE is required to determine whether a new version of the energy code improves energy efficiency in residential and commercial buildings over the previous version within one year of publication of the new version.

### AUTHORIZATIONS AND BUDGETING

*Question 2.* As we address new authorizations regarding efficiency programs at the DOE, it is necessary to understand your existing authorities to fund these programs. As Senator Murkowski requested at the hearing, will you provide us a list of all the programs submitted within your budget, with the authority cited to fund it, and the amount of the total proposed budget number allocated to each authority within the 2012 submitted budget?

Answer. EERE's programs have long been authorized through the Energy Policy and Conservation Act, and more recently through the Energy Policy Act of 2005 and Energy Independence and Security Act of 2007 (EISA 2007)[3]. All programs within SERE, as submitted in the FY 12 budget request, cite EISA 2007 as their funding authority, for the entirety of their request.

| Office of Energy Efficiency and Renewable Energy Overview | |
|---|---|
| Program | Authority |
| Hydrogen & Fuel Cell Technologies | EISA 2007[1] |

[3] http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110__cong__bills&docid=f:h6enr.txt.pdf

| Office of Energy Efficiency and Renewable Energy Overview | |
|---|---|
| Program | Authority |
| Biomass Technologies | EISA 2007[1] |
| Solar Energy | EISA 2007[1] |
| Wind Energy | EISA 2007[1] |
| Geothermal Technology | EISA 2007[1] |
| Water Power | EISA 2007[1] |
| Vehicle Technologies | EISA 2007[1] |
| Building Technologies | EISA 2007[1] |
| Industrial Technologies | EISA 2007[1] |
| Federal Energy Management Program | EISA 2007[1] |
| Facilities and Infrastructure | EISA 2007[1] |
| Weatherization and Intergovernmental Activities | EISA 2007[1] |
| Program Direction | EISA 2007[1] |
| Strategic Programs | EISA 2007[1] |

[1] http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110__cong__bills&docid=f:h6enr.txt.pdf

OVERLAP AND DUPLICATION

*Question 3.* Please describe whether any of the programs depicted in the bills before us today could be done within existing authority. If they can't be done within existing authorities please describe why.

Answer. The attached tables* assess whether DOE has existing authority to carry out the programs proposed in S.734, S.948, S.963, S.1000, and S.1001. The Administration is still reviewing these bills and does not take a position on any of them at this time.

RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR SHAHEEN

*Question 1.* I understand that the DOE and the Administration need additional time to review the legislation before taking a position; however, can you tell me if the Department supports the underlying goals of our legislation?

Answer. The Energy Savings and Industrial Competitiveness Act (S.1000) outlines new provisions for building codes, appliance standards, and industrial energy efficiency among other areas. Energy-conserving appliance standards, building codes and other efficiency efforts are extremely important steps that can save energy in homes and businesses nationwide, and pave the way toward a clean energy future for our country.[4] DOE will continue to prioritize and support codes and standards that will provide the greatest benefits in energy savings for the least cost.

*Question 2.* Can you discuss why improvements in model building codes is so important?

Answer. Buildings consume 40 percent of the energy and 70 percent of the electricity in the U.S. Buildings, by their very nature, are meant to last for decades, meaning that a building built today will have an impact on our energy use for 50 to 100 years or more. Building energy codes set a floor for energy efficiency in new construction by establishing minimum energy efficiency requirements for all new and renovated homes and buildings. These efficiency requirements affect the design, materials, and equipment installed in dwellings and buildings which reduce the en-

*Tables have been retained in committee files.

[4] http://www.whitehouse.gov/sites/default/files/blueprint__secure__energy__future.pdf

ergy inputs needed to maintain healthy, comfortable and fully functioning indoor environments over the life of the building. Because the energy codes can apply to all construction, they have the potential to affect energy consumption across all building types and sizes.

Energy efficiency gains are low or no cost at the time of construction. Alternately, going back later to make efficiency improvements can cost much more. Improving energy codes/standards generates energy savings in a consistent low cost and long lasting manner. However, improvements to state energy codes beyond the national model energy codes have typically been slow to occur. Therefore, improvements to national model energy codes/standards allow states to continue to align their building construction practices with the latest developments in building methods and technologies that result in continued energy savings.

*Question 3.* The Recovery Act made federal funds available to states to—among other things—help them adopt and enforce building codes. Has DOE been able to capture or quantify the improvements from these advancements in code adoption?

Answer. The Recovery Act provided the opportunity for DOE and the five existing regional energy efficiency partnerships (EEPs) to fund 9 statewide energy code compliance evaluation pilot studies. These studies are designed to systematically measure code compliance resulting from new procedures and tools implemented under the Recovery Act. The pilot studies are intended to help states in their compliance efforts, while at the same time provide valuable insight into the effectiveness of these tools and suggestions for their improvement. The pilot studies were implemented over a 10-month period, with final reports, including lessons learned and quantitative assessments of code compliance, to be released no later than September 2011.

*Question 4.* Our legislation includes incentives to help states adopt and enforce building energy codes. From your experience, can you discuss how the Recovery Act funds made available for the same purpose has been received by the states?

Answer. Investing in efficiency helps stretch local energy budgets so scarce public dollars can be spent on other critical needs. With initiatives like the State Energy Program (SEP) and incentive funding provided through the SEP, the Department supports states' efforts to achieve their energy efficiency goals. In doing so, the federal government develops partnerships with state energy offices, enabling them to leverage technical expertise at DOE.

When states focus on local initiatives—whether they support energy code training, compliance assessments, or building retrofits—they help business owners and residents reduce energy costs while contributing to broader goals, such as stimulating economic development, reducing the impacts of climate change, and improving public health.

The American Recovery and Reinvestment Act of 2009 (ARRA or Recovery Act) provided an opportunity for every state to conduct activities aimed at improving building energy codes from assistance through either the State Energy Program (SEP) or the Building Technologies Program (BTP).

- Through the State Energy Program, 18 states are spending a small share of their SEP grant to support code development, enforcement and compliance training
- Through the Building Technologies Program, technical assistance is provided to states in the areas of code adoption, compliance and training. Currently, there are 33 adoption, 35 compliance and 17 training activities underway on the state level funded through either the Technical Assistance Program or financially supported with ARRA funds.

Our experience with the Recovery Act indicates a rate increase in state adoption or improvement of building energy codes over previous rates. For instance, some states previously had no statewide energy code but are now adopting the ARRA target codes. However, adoption is only the first step in full implementation, and the states still face challenges in adoption, implementation, and enforcement of energy codes, in order to realize energy savings through these codes. Lack of training, time, and resources have been cited as critical barriers to improved enforcement and increased adoption efforts. It is critical to use the momentum gained with the Recovery Act to support states in realizing the full benefits of energy codes. Investing in efficiency helps stretch local energy budgets so scarce public dollars can be spent on other critical needs. The incentive funding provided through the SEP and BTP allows the Department to develop partnerships and to support states' efforts to achieve their energy efficiency goals by providing technical assistance, analysis and tools.

RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR COONS

*Question 1.* With respect to the department's weatherization assistance program, I'd like to ask for your response on the Weatherization Innovation Pilot Program (WIPP), the program funded with $30 million in Fiscal Year 2010. We need to look at more innovative ways to invest in energy efficiency and retrofit more low-income homes. I know the projects funded under this program are still in the early stages of implementation, but I would like your thoughts on whether the WIPP program has been beneficial and cost effective for DOE thus far? Do you see a future role for WIPP to allow qualified nonprofits to maximize the implementation of weatherization? Do you believe innovation can play a role in improving the quality and consistency of weatherization as a whole?

Answer. Yes, the WIPP program funded with $30 million in Fiscal Year 2010 will be a cost-effective program that is beneficial to the Department.

First, these projects are projected to leverage over $76 million in non-federal resources, over 2.5 times the initial federal grant. This enables more homes to be weatherized (18,500 homes projected to be weatherized) with the same federal investment. The projects are just starting implementation, but thus far the grantees are executing on schedule to prove these pilot programs will be effective.

Second, 16 qualified organizations, including non-profits, state and local governments, and for-profit organizations, are participating in WIPP. These grantees are bringing together resources on local, regional, and national scales to implement weatherization as effectively as possible. The Weatherization Assistance Program (WAP) is able to serve the entire nation, but where the confluence of non-federal resources and programs exist, WIPP grants enable organizations to expand their programs for new pilot projects to demonstrate innovative weatherization delivery, financial models and new technologies, making WAP and WIPP effective complements. Future WIPP funding as proposed in the budget for FY 2012 would allow an expansion of the organizations participating, including qualified nonprofits, and the goals would continue to be to leverage non-federal dollars to weatherize more homes.

Third, the WIPP projects can play a role in improving the quality and consistency of weatherization. As the projects begin implementation, we will be reviewing them through DOE onsite visits and through independent evaluation and case studies to determine best practices and lessons learned. Many innovative aspects of these grantees, including financing approaches, healthy homes plus weatherization approaches, and applying new technologies (namely in-home energy monitors to help clients understand and reduce their energy use) are new to the WAP. The lessons learned from these pilot projects will be very important to their potential broader application to weatherization as a whole.

*Question 2.* With respect to Senator Carper's bill, S. 963, the Reducing Federal Energy Dollars Act, the bill contains a provision that would expand the government's definition of renewable energy to include thermal energy. This will allow for thermal energy to be counted as renewable for the purposes of federal energy requirements. It would also bring the definition under code in line with the definition detailed in President Obama's green government executive order. In your view, why is this change so important and necessary?

Answer. The Administration is still reviewing the Reducing Federal Energy Dollars Act of 2011 (S. 963) and does not take a position on any of its provisions at this time.

EO 13514 (Sec. 19) includes thermal renewable energy sources in its definition of renewable energy. The EO recognizes both renewable thermal and electric energy because they both can be used to reduce Federal agencies' scopes 1 and 2 greenhouse gas emissions. Federal agencies consume thermal energy as well as electric energy at their facilities. They can use renewable thermal technologies such as geothermal heat pumps, biomass heating systems, and solar hot water systerns.Renewable thermal energy can be a particularly cost effective way to reduce greenhouse gas emissions when displacing electricity tied to heating. (See, for example, http://www.nrel.gov/gis/images/femp/graphic_shwe5_ratenoincen.jpg)

*Question 3.* The Carper bill, S. 963, the Reducing Federal Energy Dollars Act of 2011 mandates continuous commissioning for all federal property that is over $10 million in value or larger than 50,000 square feet or has an energy intensity greater than $2 a square foot. Commissioning is not the most well-known topic, but it is estimated by Texas A&M researchers that as much as 20 percent of the energy used in an average commercial building is wasted because of poorly commissioned systems. Could you explain for us what exactly commissioning is and how it could be of value for the federal government as it attempts to save energy and cut operating expenses?

Answer. From the guide "Commissioning for Federal Facilities"[5]:

"The National Conference on Building Commissioning has established an official definition of total building commissioning as follows:

> 'Systematic process of assuring by verification and documentation, from the design phase to a minimum of one year after construction, that all facilities perform interactively in accordance with the design documentation and intent, and in accordance with the owner's operational needs, including preparation of operational personnel.'

"Total or whole building commissioning differs from "building commissioning" inasmuch as the former refers to the whole process from the project planning to post-acceptance, as well as to all of the building systems that are integrated and impact on one another, such as HVAC, lighting, electrical, plumbing, building envelope and their respective controls and technologies.

"Building commissioning that is not qualified as total or whole building commissioning may be more selective in terms of the phases during which the commissioning activities actually take place (e.g., the Commissioning Agent may be hired to commence work late in the design or during the construction phase) or in terms of the systems to be commissioned (e.g., HVAC and electrical systems only). It is essentially a subset, or a slice of the whole building commissioning pie, and for the purposes of this document, the terms will be used interchangeably."[6]

"The goals of commissioning are to:

- Provide a safe and healthy facility.
- Improve energy performance and minimize energy consumption.
- Reduce operating costs.
- Ensure adequate O&M staff orientation and training.
- Improve systems documentation."[7]

"Continuous commissioning is a form of remote intelligence. The primary focus of continuous commissioning is ensuring the persistence of building systems optimization. It is an ongoing process for existing buildings, employed to resolve operating problems, improve building comfort and safety, optimize energy use, and improve system reliability."[8]

Most Federal buildings are not equipped for continuous commissioning, and there are few Federal employees or contractors who possess the skills required to implement continuous commissioning. While there are potential savings, implementing continuous commissioning at Federal facilities would take significant additional resources.

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RESPONSES OF JONATHAN SILVER TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* The Advanced Technology Vehicles Manufacturing program currently has funding for some additional lending. Do you have any estimates of how much of your remaining capacity could be used by the current applicant pool? With the modifications in this bill to clarify the situation with component suppliers and add medium and heavy-duty trucks, would you expect that to use your remaining capacity?

Answer. The ATVM Loan Program has a strong pipeline of applications from a broad range of companies and projects. The 2012 Budget estimates that the program will use the remainder of the program's appropriated credit subsidy.

*Question 2.* The program also has allowed grants instead of loans, but Congress has never appropriated dollars for that portion. Do you have any thoughts on whether grants may be a good fit for some projects?

Answer. As a general matter, grants may be a more efficient form of supporting early stage projects. DOE has not specifically evaluated whether grants would be appropriate for any of the projects that have applied to the ATVM loan program or

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[5] Commissioning for Federal Facilities, http://wwwl.eere.energy.gov/femp/pdfs/commissioning__fed__facilities.pdf

[6] Commissioning for Federal Facilities, http://wwwl.eere.energy.gov/femp/pdfs/commissioning__fed__facilities.pdf

[7] Commissioning for Federal Facilities, http://wwwl.eere.energy.gov/femp/pdfs/commissioning__fed__facilities.pdf

[8] Commissioning for Federal Facilities, http://wwwl.eere.energy.gov/femp/pdfs/commissioning__fed__facilities.pdf

requested funds for these purposes, although some of the projects that have applied have not been sufficiently mature to qualify for debt financing.

*Question 3.* Are there additional changes to the program that could aid in administering the program and allow you to do more transactions with smaller companies or new entrants?

Answer. DOE has supported a broad range of companies, including large mature companies and start up ventures, and a broad set of projects, including advanced technology vehicle manufacturers and suppliers. DOE is committed to administering the program as effectively and efficiently as possible and continuously looks for ways to improve the execution of the ATVM program as with all of its programs. A number of bills introduced in Congress contain proposals for amending the ATVM program. The Administration has not yet taken a position on these bills, but is currently reviewing the various proposals.

## RESPONSES OF JONATHAN SILVER TO QUESTIONS FROM SENATOR MURKOWSKI

### ATVM LOANS

*Question 1a.* We regularly hear from companies that have applied for, but not received a decision on, loans from the ATVM program. It's a source of considerable frustration for many of those companies.

We've heard for months now, in this committee and elsewhere, that ATVM is on the verge of providing multiple additional loans. Can you provide an update on how many applications have been received, how many loans are currently under consideration, and when it is likely that DOE will make a decision on them?

Answer. The ATVM loan program has a strong pipeline of applications. DOE has offered loans or conditional commitments to seven projects to date, including the recent announcement of a conditional commitment to Severstal and one additional conditional commitment that did not proceed to closing. DOE is currently reviewing additional applications.

*Question 1b.* How did some companies make it through the application process so quickly, while others' applications are still in review?

Answer. All applications are reviewed using the same eligibility and underwriting criteria. But every application and project is different, and the amount of time that it takes for a given application to successfully move through the due diligence process depends on the specific details of that project, and its ability to meet our underwriting standards and demonstrate that it represents a prudent investment of taxpayer resources. In addition, the timeline is often driven by the applicant who often needs to meet other requirements and/or negotiate with other stakeholders involved in the project before due diligence and be completed.

### LOAN GUARANTEE ELIGIBILITY

*Question 2.* To what degree are transportation projects—whether for production of vehicles or the development of infrastructure—currently eligible for loan guarantees? If an auto manufacturer applied for a loan guarantee today, would their application be rejected because it does not explicitly match the criteria listed in EPAct 2005, or does DOE believe the current criteria are sufficient to provide eligibility for such projects? What sort of expertise can DOE currently draw on to help evaluate transportation-related projects?

Answer. "[P]roduction facilities for fuel efficient vehicles, including hybrid and advanced diesel vehicles" are eligible for loan guarantees pursuant to Section 1703(a)(8) of EPAct 2005.

Section 1703 does not provide loan guarantees for transportation infrastructure projects, although there are other programs in the federal government that do. In evaluating transportation-related projects, the Department is able to draw on the expertise of the EERE Vehicles Technology Program staff and the ATVM program staff and expert consultants.

### RD&D PROGRAM

*Question 3.* Section 109 of this bill outlines a $500 million research, development, and demonstration program for alternative fuel vehicles and technologies. Right now, however, there is already a Vehicle Technologies Program at DOE. How do you see these programs interacting? Is it necessary to have another program focused on many of the same areas?

Answer. The attached tables* assess whether DOE has existing authority to carry out the programs proposed in S.1001. The Administration is still reviewing this legislation and does not take a position on it at this time.

ATVM BASE YEAR CALCULATIONS

*Question 4.* I understand the 2007 energy bill has been interpreted as requiring ATVM projects to achieve at least 25 percent greater fuel economy than the 2005 base year standard. As fuel economy standards increase in the years ahead, will the "base" standard move with it to ensure that projects continue to produce vehicles with greater and greater efficiency? For example; if a loan is awarded next year, in 2012, would the vehicles need to be 25 percent above the 2005 standard or the 2012 standard? What are the advantages and potential disadvantages of establishing a steadily-increasing base year standard?

Answer. In order to qualify as an advanced technology vehicle (ATV) under the Interim Final Rule (IFR), an applicant must demonstrate that the subject vehicle meets the definition of an advanced technology vehicle—that is, the vehicle is expected to achieve "at least 125 percent of the average base year combined fuel economy for vehicles with substantially similar attributes," as well as to meet EPA emissions standards. This statutory standard required DOE to define "substantially similar attributes" and choose a base year against which DOE could measure the 125 percent improvement. To define "substantially similar attributes," DOE researched other related rules and then developed its vehicle classes largely based on EPA's size-based vehicle classes existing at the time of the Interim Final Rule. Similarly, in the Interim Final Rule implementing the ATVM program, the agency chose 2005 as the base year for measuring fuel economy improvement in part because model year 2005 CAFE compliance data were fully available when the Interim Final Rule was being drafted, and, because Congress had selected model year 2005 in the statutory test for manufacturer eligibility. For these reasons, DOE determined that using model year 2005 would promote efficient and effective administration of the program. In application, this rule means, for example, if a loan is awarded in 2012, eligible vehicles would need to meet a fuel economy performance at least 125% of the average fuel economy of substantially similar vehicles from MY 2005.

ATVM ELIGIBILITY

*Question 5.* In November 2010, ATVM awarded a $50 million conditional loan to a company that plans to produce vehicles that run on compressed natural gas. Does this loan indicate that DOE believes that alternative fuel vehicles already qualify for the ATVM program?

Answer. Alternative fuel capability, alone, does not ensure eligibility under the ATVM Loan Program. In order to qualify as an advanced technology vehicle (ATV) under the Interim Final Rule (IFR), an applicant must demonstrate that the subject vehicle meets the definition of an advanced technology vehicle—that is, they are expected to achieve "at least 125 percent of the average base year combined fuel economy for vehicles with substantially similar attributes," as well as to meet EPA emissions standards.

ATVM RECOMMENDATIONS

*Question 6.* During the hearing, you made a number of legislative recommendations for the ATVM program. Please summarize those recommendations for the Committee, and any other suggestions DOE believes are appropriate at this time.

Answer. DOE has supported a broad range of companies, including large mature companies and start up ventures, and a broad set of projects, including advanced technology vehicle manufacturers and suppliers. DOE is committed to administering the program as effectively and efficiently as possible and continuously looks for ways to improve the execution of the ATVM program as with all of its programs. A number of bills introduced in Congress contain proposals for amending the ATVM program. The Administration has not yet taken a position on these bills, but is currently reviewing the various proposals.

SPR SALES

*Question 7.* Please provide the Administration's views and position on Section 202 of S. 1001, which would require the Department of Energy to substantially reduce the size of the Strategic Petroleum Reserve.

*Tables have been retained in committee files.

Answer. With regard to the proposal to reallocate prior year funds appropriated for the Strategic Petroleum Reserve and to use proceeds from Reserve oil sales and exchanges to support alternative fuel vehicles development, the Administration is continuing to review Title II and has not developed a position at this time.

AUTHORIZATIONS AND BUDGETING

*Question 8.* As we consider new or expanded authorizations for vehicle technology and loan programs at the DOE, it is necessary to understand your existing authorities. Please provide the Committee with a list of all vehicle-related authorizations available to the Department of Energy, as well as an explanation of how those authorities are reflected in the funding proposals in DOE's Fiscal Year 2012 budget request.

Answer. The Department has two programs that include vehicle technology: LPO's ATVM program and EERE's Vehicle Technologies Program. The 2009 Continuing Resolution appropriated $7.5 billion in credit subsidy to provide up to $25 billion in loans to eligible projects under the ATVM loan program authorized by the Energy Independence and Security Act of 2007. The President's FY 2012 budget requests funds to administer the program, including funds to monitor the loan portfolio.

The Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program activities are authorized in the Energy Policy Act of 1992, Energy Policy Act of 2005, and the Energy Independence and Security Act of 2007. The President's budget request for FY 2012 would provide support for key activities including research and development of batteries and electric drive technologies, advanced combustion engines, materials technologies, and fuels technologies; vehicle systems simulation and testing; and vehicle technologies deployment, outreach, and analysis (EPACT 1992, EPACT 2005, EISA 2007). In addition, it would support a proposed competitive community grant program, administered through the Clean Cities initiative, to accelerate market adoption of electric drive vehicles (EPACT 1992).

OVERLAP AND DUPLICATION

*Question 9.* Please describe whether any of the programs and activities within S. 1001 - as well as two bills considered at our recent legislative hearings, S. 734 and S. 948 - could be undertaken with existing DOE authorities. To the extent that new authorities are necessary to carry out the provisions or programs within any of those bills, please explain.

Answer. The attached tables* assess whether DOE has existing authority to carry out the programs proposed in S.734, S.948, and S.1001. The Administration is still reviewing these bills and does not take a position on any of them at this time.

RESPONSES OF JONATHAN SILVER TO QUESTIONS FROM SENATOR COONS

UTILIZING OTHER FINANCIAL CREDIT MODELS

*Question 1.* In my state, the Delaware Sustainable Energy Utility has successfully managed a loan program for energy efficiency investments in residential and commercial buildings for over a year. Can you envision a way in which unique financing organizations like Delaware's Sustainable Energy Utility would be eligible, in cooperation with the state energy offices, to put the federal program funds to use?

Answer. While organizations like the one you discuss are not eligible for ATVM loans or Title XVII loan guarantees, the Administration recognizes the importance of financing energy efficiency retrofits for existing buildings. The President's FY12 budget requests $105 million, as part of the Better Buildings Initiative, to create a pilot program to provide loan guarantees to finance such retrofits for hospitals, schools, and universities.

DOE LOAN GUARANTEE PROGRAM—ENERGY EFFICIENCY UPGRADES FOR THE EXISTING BUILDING STOCK

*Question 2.* I was particularly drawn to the opportunities of a provision in S. 1001, the Shaheen/Portman bill that expands opportunities for municipal, university, schools, and hospitals (MUSH) buildings through the DOE's loan guarantee program. The University of Delaware has been implementing a number of renewable and energy efficiency measures on campus. This includes the installation of a solar project, a green roof for a major laboratory building, energy efficient lighting in a parking garage, HVAC upgrades, and other projects. The needs and opportunities in local government, hospital, university and other buildings are tremendous. Are

*Tables have been retained in committee files.

these the types of measures that you could envision benefiting from such loan guarantees?

Answer. The Administration recognizes the importance of financing energy efficiency retrofits for existing buildings. The President's FY12 budget requests $105 million, as part of the Better Buildings Initiative, to create a pilot program to provide loan guarantees to finance such retrofits for hospitals, schools, and universities.

CLEAN ENERGY DEPLOYMENT ADMINISTRATION (CEDA) AND SECTION 136 VEHICLE TECHNOLOGIES LOAN GUARANTEE PROGRAM

*Question 3.* The Advanced Vehicle Technology Manufacturing (AVTM) loan guarantee program has been very successful to date. This includes one project financed in my state—Fisher Automotive, and there are four other AVTM projects that have been finalized. At the same time, about half of the original $7.5 billion in budget authority remains in the program for financing additional projects. This committee is considering the Clean Energy Deployment Administration. That entity would supersede and incorporate the DOE's innovative loan guarantee program. CEDA would also have the authority to delegate other financial programs to CEDA. It does not currently designate moving the AVTM program into CEDA. Given that the remaining authorities of the 1703 loan guarantee program would be moved into CEDA, do you see significant hurdle by moving the remaining funding and existing authorities of the AVTM as well should Congress pass it and the administration set it up?

Answer. The Administration has not yet taken a position on CEDA or its relationship with the ATVM program. The Department of Energy is committed to administering the ATVM program in an efficient, effective, and responsible manner.

RESPONSES OF JONATHAN SILVER TO QUESTIONS FROM SENATOR PORTMAN

Mr. Silver, as you know, a project with significant national security and energy security benefits for our nation is the American Centrifuge Project located in Ohio. This project will also create thousands of jobs at a time when we need those jobs in Ohio and in our nation—about 8,000 jobs with about 4,000 of those in Ohio.

Secretary Chu in a call on April 15 advised Senator Brown and I that he was pushing hard to keep this project on track for the possibility of a conditional commitment by June.

*Question 1.* Where does the loan application for this project stand and what is the current timing for issuing a conditional commitment?

Answer. The Department cannot provide information on individual applications.

*Question 2.* What can be done to expedite the DOE-OMB review and credit-subsidy process for the project and for DOE loan guarantees generally?

Answer. DOE and OMB work closely together in reviewing the credit subsidy cost estimates for all DOE loan guarantees to ensure as timely a review as possible while also ensuring all estimates accurately reflect all appropriate costs to the government.

*Question 3.* Secretary Chu has previously testified that national security value should be considered in the credit subsidy calculation.

What is DOE doing to ensure that the national security value of the ACP is considered in the credit subsidy cost calculation to achieve a full and fair calculation?

Answer. Credit subsidy costs for the Title 17 loan guarantee program are calculated consistent with the Federal Credit Reform Act of 1990, as amended. For each project, the credit subsidy cost reflects DOE's analysis of the risks associated with the project, including its analysis of the borrower, the project and the financial prospects of both. We are working closely with OMB on this issue.

RESPONSES OF JONATHAN SILVER TO QUESTIONS FROM SENATOR SHAHEEN

The President's Better Building Initiative seeks to make improvements in the residential, commercial and municipal school university and hospital (or MUSH) building sectors. The initiative calls for a variety of tools to catalyzing private sector investment in these building sectors, including the expansion of the Department's Loan Guarantee Program to cover building retrofits.

The potential for efficiency gains in our existing building stock is enormous. More than 70% of the commercial buildings in this country are older than 20 years and these buildings are significantly less efficient than buildings built today. Improvements to these types of buildings can improve efficiency by 20 to 40% using widely available technologies and the payback period can be as little 5 years.

As you know, one of the key barriers to unlocking the potential of retrofitting of existing building stock is access to capital. That's why Senator Landrieu and I intro-

duced legislation last Congress which would help unlock this potential by expanding the DOE Loan Guarantee program to retrofit commercial and industrial buildings, schools and universities, and hospitals so that they can be renovated to be more energy efficient. We included this provision in S. 1000.

*Question 1.* Would you agree that there is enormous opportunity to create jobs and save money by making energy efficiency retrofits to existing buildings?

Answer. The Administration agrees that making energy efficiency retrofits to existing buildings will create jobs, save money, reduce our energy consumption, and enhance our energy security.

*Question 2.* Do you think an expansion of the DOE Loan Guarantee Program, such as our legislation or the President's Better Buildings Initiative, to cover building retrofits could leverage private sector financing for building retrofit projects and achieve the goals I mentioned?

Answer. While the Administration does not yet have a position on 5.1000, the Administration does believe that federal financing may be an appropriate tool to leverage private sector investment and stimulate energy efficient building retrofits, as evidenced by the President's 2012 budget, which requests $105 million to create a pilot program to provide loan guarantees to finance such retrofits for hospitals, schools, and universities.

LOAN SUBORDINATION

One of the concerns we've heard from the real estate community is over senior lien status of a loan guarantee.

As you may know, one of the challenges we face is that when the loan guarantee program was originally created in 2005, it included provisions to ensure that debt obligations backed by federal loan guarantees must not be subordinate to other financing. These provisions were adopted with larger, potentially riskier investments in mind, such' as new nuclear plants, CCS projects, and large-scale solar projects in mind.

However, the challenge we face in expanding the loan guarantee program to cover building retrofits is that a fundamental tenet of real estate finance is that in the event of a default, the lenders will be paid first before others. They have mortgage superiority. Potential borrowers would be in breach of contract of their mortgage if they applied for a loan guarantee that contained the same senior lien provisions that apply to more expensive and riskier transactions, such as a nuclear power plant.

*Question 3.* Would you agree that the risks of a building retrofit project, which uses commercially available technologies, is less than a new nuclear power plant or CCS project?

Answer. Project risk cannot be detelinined in the abstract; determining the risk of any project is a highly fact-based exercise. Building retrofit projects face different risks than energy generation projects.

*Question 4.* Would you be willing to work with us on this loan subordination issue to craft language that minimizes risk to the federal government while at the same time leveraging the Loan Guarantee program to attract more private capital to the building retrofit market?

Answer. Per Federal credit policies, credit assistance should be provided in a manner that most efficiently and effectively achieves the policy goal, while minimizing risk and cost to the taxpayer. Generally, the Government's claims should not be subordinated to the claims of other creditors. Subordination increases the risk of loss to the Government since other creditors would have first claim on the borrower's assets. We look forward to working with Congress on legislation to support energy retrofits.

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## RESPONSES OF KEVIN BOOK TO QUESTIONS FROM SENATOR MURKOWSKI

SPR SALE

*Question 1.* Can you provide the Committee with a sense of how the United States' energy security would be impacted by increased domestic oil production, as compared to a decision to sell significant quantities of SPR oil?

Answer. Producing oil in the United States has benefits above and beyond the physical attributes and financial value of the oil itself.

The most obvious of these is differentially lower disruption risk. During times of heightened geopolitical risk, a barrel produced within our borders may be more likely to reach refineries located within our borders than a chemically-identical barrel produced overseas that might be intercepted or delayed. In this sense, domestic pro-

duction provides supply assurance even if it does not provide price insurance, because global crude prices generally rise together. Even so, domestic energy consumers should theoretically assign higher risk-adjusted values to domestic energy sources to reflect their reduced costs of buying hedges and building inventories to mitigate supply risks.

There are other potential benefits, too, including: creation of well-paying jobs (and the capture of corresponding tax revenues); government revenue streams from bid bonuses, rents, permits and royalties; opportunities for innovation and development of improved business practices; and a politically-stable environment within which U.S. companies might improve the performance and profitability of technologies with potential for sale overseas (e.g. ultra-deepwater drilling and shale gas production).

By contrast, selling significant quantities of SPR oil in a non-emergency situation could diminish domestic refiners' assurance of stable supplies in the event of a future disruption. Sales that are sufficiently large and priced sufficiently low to temporarily depress U.S. market prices could deter domestic production and erode the value of industrial consumers' hedging investments, as well. Finally, SPR sales are unlikely to encourage U.S. producers or refiners to become productive or more innovative.

GENERAL POLICY EMPHASIS

*Question 2.* In your written testimony, you noted that "subsidizing or assuring loans can, in many cases, promote diffusion of innovative technologies at lower taxpayer cost than paying out cash grants or 'tax equity'." We've had quite a range of policy proposals come before our committee this year, on vehicles and other topics. Generally speaking, can you expand on the types of energy policies that would promote innovation and, at the same time, make the best use of limited taxpayer dollars?

Answer. Federal guarantees of private commercial loans make borrowing cheaper by bolstering borrowers' creditworthiness. In some cases, loan guarantees make borrowing possible, especially for innovative firms pursuing new technologies in the absence of long performance records, but also in the case of mature companies contemplating infrastructure investments so large that they rival the enterprise values of would-be project sponsors, as with electric utilities building nuclear power plants.

Selection and due diligence are important. A portfolio that balances projects with diverse risk profiles may serve the public interest much better than a program that allows companies to obtain cheaper credit than their otherwise-identical competitors or to secure loans for which they may be unworthy. Comparing a single technology in a single circumstance, however, a loan guarantee can optimize the benefit to the project sponsor per tax dollar spent, a ratio I sometimes refer to as "return on tax" because it measures the subsidy efficiency of the taxpayer outlay.

For example, a wind farm operating at a 33% capacity factor over a 20-year operating life with a capital cost of $2,000/kW, financed with 20% equity at 15% and 80% debt at a 12% interest rate over a ten-year period, would theoretically generate power at a "levelized" cost of about $0.055/kWh. (This example excludes startup time, rental fees and O&M costs for the purposes of illustration; real generating costs would be about $0.015/kWh higher).

The project sponsor could lower his or her generation cost to $0.046/kWh with a ten-year production tax credit of $0.021/kWh by selling the "tax equity" of the credit stream to a financier and offsetting the cost basis of the project with the proceeds. Taking a 30% investment tax credit at the end of the first year would reduce the generation cost to $0.40/kWh. Taking that 30% as an outright grant would bring generation costs down a little further, to $0.39/kWh. Each of these provides a big "pop" to the project sponsor relative to his or her unsubsidized generation cost.

Guaranteeing the loan, assuming a 10% default risk and government-borne credit subsidy costs of 14% of the expected value of the default (10% times the value of the loan) would lower the generation cost less dramatically, to $0.48/kWh. On the other hand, the subsidy cost of doing so would also be lower than giving "equity subsidies" to the project sponsor. In other words: the project sponsor would get more benefit for every tax dollar spent.

The table below highlights the differences in the subsidy efficiency of taxpayer outlays in each case. For every dollar taxpayers spend on the ten-year PTC in this example, the project sponsor takes home only 45%. A 30% ITC delivers 141%; an outright grant delivers 159%, but a loan guarantee delivers 227% return on tax.

**Figure 1 – "Return on Tax" Projection for a Theoretical Wind Farm**

| Scenario | Base Case | PTC over ten years | 30% ITC paid in Year 1 | 30% Grant in Year 0 | 10% default rate |
|---|---|---|---|---|---|
| Differential | | $344.23 | $532.86 | $500.00 | N/A |
| How Modeled | | Deduct PV of Tax Equity from Capital Cost | Deduct PV of ITC from Capital Cost | Deduct PV of Grant from Capital Cost | Lower Interest Rate, 14% Credit Subsidy Costs, 10% EV of Default |
| Effective Capital Cost | $2,000 per kW | $1,656 per kW | $1,467 per kW | $1,400 per kW | $2,000 per kW |
| Capacity Factor | 33% | 33% | 33% | 33% | 33% |
| Useful Life | 20 years | 20 years | 20 years | 20 years | 20 years |
| Financing Life | 10 years | 10 years | 10 years | 10 years | 10 years |
| Debt | 80.00% of project | 80.00% of project | 80.00% of project | 80.00% of project | 80.00% of project |
| Cost of Debt | 12.00% APR, monthly | 12.00% APR, monthly | 12.00% APR, monthly | 12.00% APR, monthly | 8.00% APR, monthly |
| Interest Costs | $1,127 nominal | $933 nominal | $827 nominal | $789 nominal | $719 nominal |
| Equity | 20.00% of project | 20.00% of project | 20.00% of project | 20.00% of project | 20.00% of project |
| Cost of Equity | 15.00% hurdle rate | 15.00% hurdle rate | 15.00% hurdle rate | 15.00% hurdle rate | 15.00% hurdle rate |
| Equity Costs | $60 levelized | $50 levelized | $44 levelized | $42 levelized | $60 levelized |
| Disc/WACC | 12.60% | 12.60% | 12.60% | 12.60% | 7.00% |
| Total Cost | $3,187 per kW | $2,639 per kW | $2,338 per kW | $2,231 per kW | $2,774 per kW |
| Total Hours | 57,816 hours | 57,816 hours | 57,816 hours | 57,816 hours | 57,816 hours |
| Levelized Fixed Cost | $0.055 per kWh | $0.046 per kWh | $0.040 per kWh | $0.039 per kWh | $0.048 per kWh |
| Benefit to Sponsor | | $0.009 per kWh | $0.015 per kWh | $0.017 per kWh | $0.007 per kWh |
| Cost to Taxpayer | | $0.02 per kWh | $0.01 per kWh | $0.01 per kWh | $0.003 per kWh |
| "Return on Tax" | | 45% | 141% | 159% | 227% |

*Source: ClearView Energy Partners, LLC*

OFFSHORE PRODUCTION REVENUES

*Question 3.* During the hearing, you estimated that the federal revenues associated with the production of oil and gas at just one recent discovery in the Gulf of Mexico could total $4.6 billion. Please summarize for the Record how you calculated that figure.

Answer. Assuming that the 700 MM bbl find is 40% recoverable (a high, but reasonable number over the operating life of the well), a $100/bbl crude price and a 16.67% federal royalty rate, the federal government would receive a nominal total of $4.667 billion in royalties, exclusive of any volumes suspended from royalty payments, but also excluding the value of any associated gas and natural gas liquids.

This number excludes the other sources of revenue a deepwater well might provide, including (1) the bid bonus received at the time of the lease sale; (2) federal rents; and (3) any permit and user fees assessed by BOEMRE, as appropriate. The most significant of these may be the bid bonus because, unlike royalties, rents and fees, the federal government receives the bid bonus at the time of sale irrespective of whether the operator bidding on the lease ever produces the asset in question. It isn't clear how bidders will price Central GOM real estate in the next sale in light of the recent find, but I would suggest that they would probably pay bigger bid bonuses for ten-year leases than they would for five-year leases, reflecting the "option value" that comes being able to optimize production choices for market conditions and to scale infrastructure costs across an extended development program.

OIL IMPORTS

*Question 4.* What is the typical convention used when discussing oil imports from an energy security standpoint?

Answer. When discussing petroleum imports from an energy security perspective, government and industry economists typically discuss "net imports"—the difference between total inbound volumes and total outbound volumes. Doing so takes into account the extent to which many countries simultaneously import and export petroleum and, in the short term, may be unable to redirect outbound volumes due to commercial obligations and infrastructure limitations. Gross imports would be appropriate when discussing the security risks confronting a country that does not export any petroleum, but this does not apply to the United States.

## RESPONSES OF KATERI CALLAHAN TO QUESTIONS FROM SENATOR COONS

### WEATHERIZATION ASSISTANCE PROGRAM

*Question 1.* With respect to weatherization, do you believe that qualified nonprofits could play a role in reducing energy use and cutting utility bills for low-income homeowners by leveraging private funding? If so, do you have thoughts on the ways we can expand opportunities for nonprofits and other organizations to help with weatherization?

Answer. In general, the Weatherization Assistance Program (WAP) network has evolved over the past thirty years, with a focus on best practices and standards for excellence that have been an example for the wider energy efficiency retrofit industry. The existing WAP network leverages a significant amount of private and other funding along with federal dollars.

That said, we recognize that non-profit organizations can play a role in reducing energy use and cutting utility bills for low income homeowners by leveraging private finding with respect to weatherization. Non-profits can seek to obtain private financing through community development loan funds, or private banks willing to finance energy efficiency improvements, as well as seek matching grants. We believe that the non-profits can most effectively play a role in supplementing the WAP network in areas of the country where the existing networks for whatever reason need additional resources to fully realize weatherization goals, and we would point to the innovation grants awarded recently by the Department of Energy as examples of creative use of non-profit resources to supplement the existing WAP network.

*Question 2.* I also wanted to ask you specifically about your thoughts on financing and private sector leverage for residential energy efficiency. Do you think the private sector can play a role in weatherization for low-income homeowners? In your work with the Alliance and its partners, are the private sector and non-profits ready to play a greater role in weatherization?

Answer. Due to funding limitations, WAP has always been able to meet only a fraction of the need for low-income weatherization. The difficulty of today's fiscal climate makes finding opportunities for creative involvement of the private sector in improving energy efficiency in low income households even more of a necessity. Leveraging private investment funds for residential energy efficiency will be necessary to finance energy efficiency measures for low-income homeowners at a time when dollars for federal programs such as the Weatherization Assistance Program are severely limited. Public advocates for energy efficiency in low income households must leverage marketing investment opportunities, and tap private and public investment capital, as well as market the potential of low-income weatherization to generate profits in energy savings to further entice private investors to seek investment opportunities.

Creative private financing could also be important in the multi-family housing sector, which often has not been well-served by the existing WAP structures. For example, low-income housing developers could contract energy service companies (ESCOs) to carry out energy saving projects that guarantee estimated savings and pay the ESCO service fees and interest through energy savings.

### FEDERAL ENERGY EFFICIENCY (CARPER BILL S. 963, THE REDUCING FEDERAL ENERGY DOLLARS ACT OF 2011)

*Question 3.* As the nation's largest consumer of energy, the federal government has a responsibility to lead by example when it comes to energy efficiency. I am interested to hear what specific pieces of Senator Carper's Reducing Federal Energy dollars Act you believe help the federal government accomplish this?

Answer. As noted in testimony, the Alliance commends Senator Carper for his leadership in this area, including introduction of S. 963. We believe that several of the bill's provisions have potential for enhancing federal government energy and cost savings, and serving as leadership examples. We are especially pleased that some of the provisions address ongoing operations of federal buildings, a neglected area in comparison to design of new buildings and capital retrofits.

A particularly important area in the bill is building commissioning (Section 11). While the section refers to "ongoing" commission, it really addresses periodic recommissioning of federal buildings. (Ongoing commissioning is usually used to refer to commissioning on a continuous basis with building operators using monitoring and control systems to enhance and optimize performance, in contrast to discrete recommissioning events taken every few years. Both are important, though ongoing commissioning may have even more potential for enhancing and optimizing building performance.)

Our work with commissioning experts and researchers agrees with findings that buildings' energy performance degrades over time after a commissioning event, meaning that periodic recommissioning (or implementation of true ongoing commissioning) is needed to regain energy and other performance benefits. Energy, water and other savings as well as other aspects of improved building performance, leading to enhanced occupant comfort and productivity, should yield significant dividends.

The Alliance supports policy to require periodic recommissioning or ongoing commissioning of federal buildings that are significant energy consumers. The bill would require standards and regulations to this end. However, we suggest that such requirements be integrated with requirements under Sec. 432 of the Energy Independence and Security Act (EISA) of 2007. EISA requires that large federal buildings undergo energy and water audits every 4 years on average, with consideration of recommissioning. The language on commissioning could be clarified more clearly to require periodic recommissioning or ongoing commissioning (with provision for appropriate definitions and rules).

In addition, Section 7, Improving Computer Energy Management at Federal Agencies, would save energy and money by encouraging automated power management of desktop computers and other equipment. The addition of smart submetering to federal metering requirements in Section 6 could further building monitoring and ongoing commissioning, though it is important to develop ways to use the data effectively, not just to collect it, and the proposed language could be clarified. These provisions could help develop best practices that could be used by non-federal building owners and managers too.

*Question 4.* Today, a lot of time may pass between the funding for the design of a project and the funding for actual construction. In the intervening time, standards may have changed, but no additional design funds are available to update the original design to current standards. In many cases this means federal buildings are outdated the day they open their doors. The Reducing Federal Energy Dollars Act authorizes the General Services Administration to use funds from the Federal Building Fund Capital Account to update designs to current standards. This seems like a simple solution to a pretty serious problem. What thoughts do you have on this proposal and its potential to give us better buildings that will run cleaner and cheaper?

Answer. All federal buildings should be built to up-to-date best practices in order to reduce the billions of dollars taxpayers pay for federal energy bills each year, reduce air pollution, and enhance energy security. There often is a long delay between design and construction of new buildings based on availability of funds, leading to buildings designed to standards that are outdated before construction even begins. Federal buildings especially should be designed for future energy needs rather than based on past minimum standards. It is well worth a little more up-front investment in good design in order to reduce energy bills over decades, and that includes redesign or updating designs when there are delays in construction. The Alliance supports a provision to help enable this smart investment.

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## RESPONSE OF TONY CRASI TO QUESTION FROM SENATOR MURKOWSKI

### RESIDENTIAL RETROFITTING

*Question 1.* You point out that older, existing homes consume virtually all of the energy in the residential sector. It seems that there would be an enormous opportunity for people like yourself to gain employment by retrofitting those old homes to be more efficient. Is this the case? If not, what are the barriers?

Answer. The opportunities that exist for creating jobs by retrofitting older homes and buildings are exponential, particularly for unemployed or under-employed builders that are still struggling with the worst housing economy since the Great Depression. Builders with expertise in energy efficiency, like me, have found a natural transition to retrofitting older homes, as a way to survive the significant downturn in the new home construction market. With 129 million existing homes and a billion single-pane windows still to replace, there is plenty of work for our industry. However, there are challenges and potential barriers to really grow the retrofit market on a large scale.

First, it has been more and more difficult for homeowners to obtain financing or utilize meaningful incentives to help offset some of the upfront costs to undertake efficiency work in older homes. With many homes lacking equity following the collapse, and homeowners lacking the ability to obtain home improvement financing, the capacity to undertake major renovation work, even for energy efficiency gains that may be extremely desirable, is limited. Attempts to allow consumers to finance

efficiency upgrades through a property tax assessment-type program, commonly referred to as Property Accessed Clean Energy (PACE) bonds, has not gained traction due to push back from government-sponsored enterprises (GSEs) and others over mortgage superiority status. Also, the only federal-level tax incentive for undertaking various efficiency upgrades in existing housing—Section 25C of Internal Revenue Code—was substantially decreased last year and is subject to a lifetime cap of $500 for consumers. Although demonstrated returns on investment can be realized, coupled with energy savings paybacks that are far more realistic than layering on requirements for new construction, consumers are extremely price-sensitive in today's market and the upfront costs can still be a barrier for some, particularly families in the lower-to-moderate income range—ironically, those families that would likely benefit most from an energy retrofit.

Secondly, a major environmental rule covering renovation and retrofit work in older housing took effect in April 2010—the EPA's Lead: Renovation Repair & Painting Rule (RRP). In almost every instance, the types of retrofit work that improve energy efficiency (e.g., window replacement, insulating or re-insulating, HVAC-replacement, re-roofing, etc.) that are conducted in homes built before 1978 would be subject to the requirements of this law. For contractors that have not undergone the required training or paid the appropriate certification fees to EPA, undertaking renovation work, for hire, in a pre-1978 home is illegal. That is, a homeowner can choose to undertake the upgrade project himself and the rule would not apply, but as soon as the homeowner hires me, or another contractor to do the work, the law is triggered and compliance, for all legitimate contractors, like me, is not optional.

NAHB supports requirements to use lead-safe work practices (LSWP) and fully supports the intent of the rule to protect children and pregnant women from potential lead exposure during renovation work in older homes. In fact, NAHB members were some of the experts that helped developed the LSWP protocols that EPA used in the finalization of the rule back in 2008. However, because lead exposure for consumers is a very serious issue, I have personally chosen to require my customers to contact a professional lead abatement firm before I will undertake any work on pre-1978 homes because I want to ensure that I am working on a home that does not contain lead-based paint. Due to the liability and compliance costs that accompany this rule, I have decided not to work in any home that contains lead-based paint and I ask my customers to have their homes checked and abated, if necessary. In some cases, this means that I have had to turn down jobs, but I believe it has protected my business from potential lawsuits and/or enforcement actions that stem from working in pre-1978 homes under the RRP, particularly since the rule has been implemented so poorly by the EPA and it is especially burdensome to small businesses attempting to do the right thing and not create lead hazards.

As stated, the RRP that was finalized in 2008, and NAHB supported that rule at that time. However, it has since been modified very substantially, far beyond Congress' original intent for regulating renovation work in the underlying Toxic Substances Control Act (TSCA). As part of a voluntary settlement, EPA first agreed to amend the RRP by disallowing homeowners without children under six or pregnant women in the home to waive the costly compliance requirements—July 2010. Secondly, EPA is finalizing a post-renovation clearance testing requirement to require contractors to provide test results to homeowners that may show EPA-verified lead hazards and such results must be disclosed to future buyers—July 2011. Lastly, EPA will prescribe work practice standards and protocols for all public buildings built before 1978 and all commercial (including multifamily residential) buildings—regardless of vintage—that will be finalized within the next few years, despite EPA's own Science Advisory Board admission that there are no scientific data to support the standards. These modifications to the RRP hold serious legal liability and hefty fines ($37,500 per day, per violation under TSCA) for contractors that might otherwise actively pursue retrofit work in older homes. For contractors like me that are similarly choosing not to work in pre-1978 homes, this limits the impact of efficiency work by slowing or halting work in the oldest stock (pre-1978), i.e., the most inefficient housing, which subsequently limits the overall impact of a national retrofit policy.

## RESPONSES OF TONY CRASI TO QUESTIONS FROM SENATOR SHAHEEN

*Question 1.* I was pleased to read in your testimony about the importance of retrofitting existing buildings to cut energy bills and save consumers money. You note that "upgrading an older, less-efficient, pre-1940 homes can save over $1,500 per year in energy costs with an upfront cost of "$10,405.00," and with an energy-savings payback period of just under 7 years. In New Hampshire we have a lot of older

building stock, and Sen. Portman and I included provisions to help retrofit homes, businesses, manufacturers and municipal buildings. I was pleased to see that the National Homebuilders [sic] are supportive of these provisions.

Now I understand that it is actually cheaper and easier to add wall insulation or install efficient windows when the house is built rather than in a retrofit. Would you agree that it is generally cheaper and easier to make a home efficient at the time it is built rather than to fix is later?

In New Hampshire we spend a lot of money weatherizing low-income homes and assisting people in paying their energy bills because the homeowners cannot afford their energy bills, and often risk losing their homes. I know you do in Ohio too. Would you agree that it is cheaper to have building codes that make sure the home is built efficiently rather than paying more both in energy bills and to fix the homes later?

Answer. Depending on how the term "cheaper" is being defined, it is possible that it is "cheaper" to build a new home to modern energy codes rather than to mandate an efficiency upgrade to current standards of an existing home at the point of sale or lease. However, the first family to own the new home with the higher efficiency features is the only one obligated to pay the costs for the efficiency. Using the same example from my Written Statement,—a 1,400 square foot home in Akron, Ohio—if a builder added $5,864 in upgraded insulation to a 2009 IECC-compliant home, it could save $102.00 a year in energy bills. A simple payback, without the cost of money, calculates an energy savings return of 57 years, i.e., the upfront cost of $5,864 divided by $102.00 in savings = 57 years. Adding the cost of financing the additional $5,864 into a mortgage, on a life-cycle basis, using 30 years and 5.75% interest, adds an additional $34.22 a month and makes the full cost of the upgrade a $12,319 expense. The payback for the total efficiency requirement is 121 years—i.e., $12,319 cost divided by the energy savings of $102.00 per year = 121 years [documentation of this calculation on REM design software is attached].

In this case, it would not be "cheaper" for that first owner who must finance the extra cost, particular for energy savings that may never accrue to them, and further, must bear the increased interest, property taxes, and mortgage insurance on the additional upfront cost.

As information from the Danter Company explains, for every $1,000 increase in total home price for a new home at the $190,000 price range in Franklin County, Ohio, 1,197 households residing in Franklin County can no longer qualify for a mortgage on that home. In the total Columbus MSA, 1,831 households would no longer qualify with an additional $1,000 in total home price.[1] To be sure, these numbers will vary nationally and NAHB does maintain average mortgage data on home price sensitivity for a variety of areas, but the point is the same in almost every example—even a modest increase ($1,000) in home price can disqualify a potential homebuyer from obtaining a mortgage on a newer, more energy-efficient home. Some of the data presented in the testimony of Kateri Callahan, from the Alliance to Save Energy, does not adequately explain how the cost calculations estimated by her organization—via research by the Building Codes Assistance Project (BCAP)—accommodate these very specific housing finance issues that are a critical component of housing affordability.

For example, the BCAP study that Ms. Callahan references in her Statement, dated June 2011, shows weighted incremental costs, median energy savings, and mortgage payback averages for 27 States. The chart she includes shows an average weighted cost of $840.77, energy savings of $243.37, and an average "mortgage payback" of 10.25 months. The citation for the chart links to a BCAP analysis, which relies heavily on a study by DOE titled, "Impacts of the 2009 IECC for Residential Buildings at State Levels," but after careful review of both the BCAP analysis and the underlying DOE study, it is not apparent where in either document "mortgage payback" data is derived. It is specifically unclear if the BCAP analysis even calculated any increases in property taxes, interest, and/or mortgage insurance that accompany such cost increases. Similarly, it is unclear if the study factored in recent changes from the implementation of the Dodd-Frank Act and other changes that are occurring with FHA mortgages and with the Government Sponsored Enterprises. If these factors are excluded in the respective analyses, then the information that they are providing should be qualified, as such, to reflect that the cost increases are only accounting for actual cost of materials, or perhaps materials and labor, but not

[1] Memo from Ken Danter, Danter Company, March 3, 2011. Assumptions based on 90% financing, 30-year term mortgage at 5.0% interest rate and average real estate taxes at $278 with P.I.T. not to exceed 28% of gross salary (excluding consideration of additional debt—credit card, auto, etc.).

housing finance-related costs, in order to provide a more accurate reflection of the actual cost increases that accrue to the consumer.

As expressed in my Written Statement, we have already demonstrated that energy codes, as applied in the construction of new homes over the last 20-30 years, have delivered substantial energy savings. Modern energy codes are indeed working as intended to increase efficiency in a cost-effective manner, and they are rapidly increasing in stringency as each new iteration is published every three years. That said, the most efficient new homes today still cannot compete on a cost-based comparison with older, less-efficient housing. Newer, more efficient homes are subject to appraisals and comps that use foreclosed or distressed properties, in addition to not getting adequate consideration for their energy performance superiority. It is unfortunate that older, less-efficient housing is "cheaper" to finance when we all agree it is much more expensive to maintain and operate, in terms of energy costs.

Lastly, I think it is extremely important to recognize that builders of new homes are the only ones working to preserve affordability for a constituency of people that does not yet exist—i.e., future homebuyers. Not only do builders of new homes have to comply with the most stringent energy codes, construct the tightest housing, comply with other environmental regulations, and absorb additional costs to compete against "cheaper," older housing, but the beneficiaries of efforts to preserve this affordability are those who do not yet own that home, do not yet pay taxes, and do not yet vote. Yet, this future group is being tacitly forced to pay additional costs for features that may never accrue any energy savings to them. Therefore, it is easy to argue that it is "cheaper" to impose costs on a group of people who do not yet exist to pay for energy requirements because there is no one to argue the alternative, except for the builder.

*Question 2.* In your testimony you say "With. . .substantial increases in energy efficiency requirements and rigorous energy codes, energy performance in new homes has skyrocketed delivering tremendous savings." Does the National Association of Home Builders support adoption of the 2012 International Energy Conservation Code? Are you supporting adoption of the 2009 edition of the code? Have you supported adoption of the 2006, 2004 Supplement, 2003, or 2000 editions of the IECC?

Answer. NAHB policy supports the adoption of a single coordinated set of national model building codes, as currently developed by the International Code Council (ICC), by jurisdictions seeking to adopt a new or updated set of building codes. This includes the 2012 IECC, as well as previous editions of the IECC. However, NAHB leaves the decisions of which of the various editions of the code to support adoption of, within a State or local jurisdiction, to the various State and local members and home builder associations (HBAs). As a federation, the Ohio Home Builders Association is not compelled to support the adoption of any specific code at the State or local level, or, it is free to adopt a version of the 2012 IECC that meets specific energy savings, as specified in the code, without adopting the exact code as a whole. With respect to the 2012 IECC, if a jurisdiction chooses to undertake the adoption of the 2012 IECC, NAHB would recommend that our members and HBAs seek amendments needed to make this code more cost-effective and affordable for new home buyers while preserving and still achieving the same level of energy savings. In this manner, the code's adoption can be implemented while allowing more avenues to achieve overall energy savings.

With regards to the 2009 IECC, I participated in a collaborative effort with many in the efficiency and environmental advocacy community to develop an alternate code for adoption in the state of Ohio that actually produced energy savings that exceed the thresholds specified in the 2009 edition, while being less costly to implement. The DOE approved this alternate code and the collaborative effort demonstrates that builders are committed to effective energy policies that work to advance efficiency while preserving affordability for consumers. Builders are leaders in delivering energy efficiency to the new home market, as demonstrated by the substantial advances in energy codes over the last few decades.

NAHB has long supported energy efficiency both through mandatory minimum code requirements that apply to all housing and voluntary above-code programs, such as the National Green Building Standard (ICC 700). On the other hand, NAHB's support of mandated provisions within a national model energy code is limited to those requirements that are cost-effective and affordable. In terms of affordability, NAHB believes that the added cost of mandated energy efficiency requirements should not prevent first-time home buyers, who typically have modest incomes and limited resources for down payments, from purchasing a new home or relegate their options to only older, less energy-efficient housing.

Further, NAHB believes that minimum efficiency requirements in new homes should provide a payback to home buyers of the initial added cost through annual

energy savings—without impacting their ability to purchase a newer, more efficient home. In this regard, given current mortgage underwriting practices and appraisal standards, a payback period that is scaled to the "life-cycle" of a home or building is financially unrealistic. For example, if an energy code provision's payback period is required to be calculated over the "life cycle" of a home that may exist for 60 or 70 years, it is unreasonable to assert that a consumer must wait 60 or 70 years to obtain an energy savings payback. Alternatively, if an energy code provision returns savings to the consumer in 10 years, it is entirely reasonable to assume that the consumer will wait a decade to get their upfront investment returned in the form of energy savings. NAHB would support any provisions that return energy savings paybacks to consumers in this reasonable fashion and, thereby, objects to energy code provisions—whether in whole or in part in various editions of the IECC—that do not meet this energy savings payback criteria, regardless of our overall support for the adoption of national model energy codes themselves.

*Question 3.* I have been told that the National Association of Home Builders will have the authority to appoint one-third of the members of the new development committee that the International Code Council board recently decided to create for the residential portion of the International Energy Conservation Code, the model energy code specifically recognized in several places in federal law. Could you tell me what agreements, if any, NAHB has with the ICC regarding appointments to, representation on, or voting of members on committees developing energy codes? Could you provide me with any Memoranda of Understanding or other documents that contain these agreements?

Answer. NAHB does not have a Memorandum of Understanding with the International Code Council (ICC) regarding appointments to the new Residential Energy Code Development Committee. However, NAHB does a pre-existing written agreement with ICC regarding its code development committees and is not willing to share a copies of this document without the express written consent of the ICC, the other partner in that agreement. It is important to note that NAHB does not have the authority to "appoint" members to any ICC committees and that such authority to "appoint" rests solely with the ICC Board of Directors.

As with the other code development committees involved in residential construction, ICC recognizes the importance of having representatives from the industry that will ultimately be subject to and regulated by its model code provisions to serve on the code development committees. As was previously the case with the Building and Energy Committee of the International Residential Code (IRC), the ICC agreed to allocate one-third of the committee slots on the new Residential Energy Code Development Committee to representatives from the home building industry. The practice of allowing regulated stakeholders to participate in the development of industry standards is not uncommon. In fact, it is the preferred protocol by which the federal government must recognize consensus-based technical standards, per the National Technology Transfer Act (P.L. 104-113), that have undergone a development process that involves industry experts and practitioners.

NAHB has more than 160,000 members involved in home building, remodeling, multifamily construction, property management, subcontracting, design, housing finance, building product manufacturing and other aspects of residential and light commercial construction. ICC recognizes that NAHB is, in fact, "the voice of the housing industry" and has agreed to seek qualified representatives from NAHB to fill the slots allocated to the home building industry.

The NAHB nominees to the ICC code development committees, like all other applicants, must submit applications detailing their credentials and qualifications in order to serve on the committee for which they have been nominated. In fact, I am one of builders that NAHB has nominated for consideration for this code development committee. The ICC Codes and Standards Council reviews applications received from all applicants and then forwards its recommendations to the ICC Board of Directors and it is the Board who ultimately decides who is selected to serve on the code development committees.

The one-third allocation referenced in your question is within the limits set by the consensus process for representation by a single group of stakeholders, as prescribed by the American National Standards Institute (ANSI) and, as stated above, is a common practice for the consensus committees that oversee the development of industry technical standards. The ANSI process recognizes the importance of having representation from industry groups with expertise and a significant stake in the codes and standards being developed. As such, it is reasonable and practical to have industry representatives serving on panels that prescribe standards development for the entire industry.

Further, it is crucial to understand that it is not the decisions of the ICC code development committees that ultimately determine the outcome of proposed changes

to the IECC and the other ICC codes. Only the designated representatives of ICC's Governmental Members are permitted to vote at Final Action Hearings on proposed code changes. ICC's voting members consist of building officials, fire officials, officials from state energy offices, and even DOE employees. Representatives from NAHB and other industry groups do not have a vote at the final hearings. The final vote of these ICC members can, and often does, reverse the action recommended by a specific code development committee panel.

Nonetheless, NAHB does believe that undue influence into the model codes development process should be of concern to the Committee. Perhaps the Committee could examine a variety of special interest groups, some who receive funding from DOE, and their participation and relationship with DOE vis-&-vis the ICC code development process. With regards to DOE and other voting members being allowed to both offer proposals and vote on their approval, this privilege is extended only to representatives of DOE and other ICC Governmental Members and does not extend to any industry group, including NAHB.

NAHB believes that Congress should take a much closer look at the actions of DOE, investigate its funding of special interest groups and their activities related to the development of national model codes, and examine how DOE is sharing, or not sharing, information with the regulated community about how energy efficiency calculations are being performed. While NAHB is pleased that the industry is allowed to participate in the consensus code development process and offer our industry expertise, NAHB is very concerned that the national model codes development process has the potential to become very political and veer from its intended path of providing a path towards consensus that is based on technical integrity and openness. Much as the question alludes, NAHB believes that there may be issues of undue influence affecting the codes development process, but not in a manner that favors industry.

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## RESPONSES OF SHANE KARR TO QUESTIONS FROM SENATOR MURKOWSKI

### AUTOMAKER PREFERENCES

*Question 1.* As you noted in your testimony, the members of the Auto Alliance are responsible for 75 percent of domestic auto sales. Please describe your Alliance's top legislative priorities, both within the jurisdiction of this committee and beyond it.

Answer. The Alliance of Automobile Manufacturers is committed to developing and implementing constructive solutions to public policy opportunities that promote sustainable mobility and benefit society in the areas of environment, energy and motor vehicle safety.

Currently, automakers' top priority is to ensure the continuation of a single, national program for fuel economy and greenhouse gas (GHG) emissions for 2017-2025 model year (MY) light-duty vehicles. In 2009, the Alliance supported the federal government in finalizing a national program for MY 2012-2016 that increases fuel economy by 40%, which is projected to save 1.8 billion barrels of oil over the lifetime of the vehicles. This program avoids separate stringencies of programs administered by EPA, NHTSA and California by creating a harmonized approach. Automakers are now working with EPA, NHTSA and California on a single, national program for MY 2017-2025. This is a difficult process involving significant assumptions and uncertainties. It is imperative that the necessary analyses and studies be completed and fully evaluated prior to these standards being set. A Notice of Proposed Rulemaking is expected in September 2011 and the rule is likely to be finalized sometime next summer. It is critical that any proposal recognize and balance technological feasibility, safety, and economic practicability, including impact on U.S. jobs. This will help ensure that a single, national program for fuel economy and GHG emission standards exists and that it continues to provide clarity and certainty, without pricing consumers out of the market or preventing them from choosing from a broad range of vehicles and technologies that can meet their diverse needs.

While the 2017-2025 standards are our top priority, the Alliance continues to support enhancing energy security and promoting fuel diversity through accelerating the availability of advanced technology and alternative fuel vehicles in the market. However, there is no silver bullet or single technology that will eliminate U.S. dependence on foreign oil and make significant cuts in GHG emission levels. The Alliance strongly believes that effective energy policy must be based on a broad, technology-neutral approach with all regions of the country participating, not just a select few. We remain concerned that mandating particular vehicle technologies or targeting a select handful of cities for "exclusive" incentives, while well intended, has the potential to misallocate resources in ways that could ultimately slow adop-

tion of advanced vehicle technologies. We are at an exciting period of innovation in the automotive sector. To the extent that the government intervenes in the market to "encourage" adoption of new technologies, it should not adopt policies that dissuade manufacturers from continuing to invest in a broad suite of potential solutions or consumers from purchasing vehicles that they believe will best meet their needs. Ultimately, consumers will decide which transportation solutions work best for them.

Finally, achieving widespread adoption of vehicles that run on alternative fuels requires developing a supporting infrastructure. The Alliance supports public policy directives that will help create new and expand existing refueling infrastructure. Legislative efforts to provide state and local governments technical assistance to help with the deployment of these vehicles and infrastructure is critical to the successful adoption of these technologies.

NONFINANCIAL BENEFITS

*Question 2.* Please discuss the impact that nonfinancial benefits—whether HOV lanes, or preferred parking spots, or something else—can have on consumers' willingness to purchase a vehicle. Please provide the Alliance's position on nonfinancial benefits, and any additional policy options our committee could consider in this area.

Answer. The Alliance strongly supports proposals to incentivize the purchase and use of advanced technology and alternative fuel vehicles. During these challenging economic times, governments can adopt a broad range of nonfinancial benefits to encourage consumer adoption of fuel efficient and alternative fuel vehicles. In addition to incentives that support refueling infrastructure (electric charge point, CNG, LPG etc.), streamlined permitting process and outreach efforts that highlight alternative fuel locations are critical. Particularly in congested urban areas, benefits such as HOV lane access, priority parking, and public access to alternative fueling locations help support consumers who purchase advanced technology vehicles. In an effort to level the playing field and allow consumers to choose what technologies are right for them, the Alliance supports the adoption of incentives that encompass all advanced technologies, not just a select few. Finally, any federal policy should merely guide state and local governments, providing them the flexibility they need to implement these incentives.

Encouraging policies that support utilities to offer off-peak charging rates for electric vehicles and integrating electric vehicles into utility outreach efforts with current customers is also a key part of encouraging plug-in electric vehicles. The utility industry has much to gain from integrating vehicles into the grid in a way that minimizes increased capacity requirements and costs.

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RESPONSE OF FRANK RUSCO TO QUESTION FROM SENATOR MURKOWSKI

ATVM REPORT

*Question 1.* A significant portion of DOE's testimony responds to your report on the ATVM program. DOE appears to disagree with GAO's recommendations. Is GAO satisfied by DOE's response, and the statements included in DOE's testimony?

Answer. GAO continues to believe that DOE needs to implement the two recommendations we made to the agency in our February 2011 report to help ensure that DOE is achieving its goals and is accountable to Congress and the American people. GAO is concerned that DOE continues to believe that such accountability is unnecessary, particularly as DOE has plans to spend additional taxpayer money on this program.

Regarding our first recommendation—that DOE accelerate efforts to engage engineering expertise—at the time of our report, DOE had not secured independent engineering expertise, nor was DOE following its program's procedures that called for engaging such expertise. DOE's statements on engineering expertise in their June 9 testimony were vague as to whether they have implemented this recommendation; we do not know what they have done in this regard. According to the ATVM program's procedures, ATVM staff are to analyze information borrowers report on their technical progress and are to use outside engineering expertise to supplement their analysis once borrowers have begun constructing or retrofitting facilities or are performing engineering integration—that is, designing and building vehicle and component production lines. At the time of our review in February of 2011, several projects needing additional technical oversight were under way but the program had not brought in the required technical expertise to supplement program staffs' oversight.

In their testimony, DOE states they have contracted with engineering firms for technical oversight of ATVM loans. However, DOE has not provided GAO with evidence that they have fully implemented this recommendation and engaged sufficient engineering expertise to be applied at the design and build stages of the projects.

With regard to our second recommendation, we continue to believe that DOE should more fully assess progress toward achieving the three program goals of the ATVM program. Principles of good governance call for performance measures tied to goals as a means of assessing the extent to which goals have been achieved. To date, the ATVM program has made about $8.4 billion in loans. The loans made to date represent about a third of the $25 billion authorized by law, and the program has used 44 percent of the $7.5 billion allocated to pay credit subsidy costs. Because of the significant amount of taxpayer dollars being loaned through the ATVM program, and because the amount of risk involved—as measured through the credit subsidy costs—is not insignificant, we believe that DOE should set appropriate performance measures for its program goals. Without such measures, we maintain that DOE is not able to assess its progress in achieving what it set out to do through the program.

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RESPONSE OF JAY SCRIPTER TO QUESTION FROM SENATOR MURKOWSKI

*July 23, 2011.*

DEAR MS. CAMPBELL: Thank you for the opportunity to respond to the question submitted by Senator Murkowski for the record of the June 29th hearing on energy efficiency:

> As a manufacturer, what do you think is the role of private industry in facilitating energy efficiency in manufacturing processes, and what is the role of the government?

Below is the portion of my testimony given on the 29th that is most directly responsive:

> Through many of the devices contemplated in the proposed legislation, such as well conceived partnerships, strategically targeted collaboration, best-practices promulgation, and revolving-fund financing assistance, the government can accelerate and spread the efficiency revolution, making it an engine for American competitiveness and job creation.

I would make a few points in elaboration.

First, we believe that one useful way to think about the Senator's question—which is of course an essential one—is to put the issue in a broader policy context, that of the nation's energy policy, manufacturing policy, job-creation policy and environmental policy. Increased energy efficiency can play a very positive role in each of these areas. With respect to energy policy, to the extent that among our goals is increased energy independence and less reliance on imported and fossil fuels, our energy policy should vigorously embrace efficiency-enhancing programs. With respect to our manufacturing and jobs policies, many governmental policies and practices, including regulatory and tax burdens, tend to work against U.S. manufacturing; promotion of energy-efficiency, by contrast, is a potentially significant means of aiding American manufacturing competitiveness and job creation. With respect to environmental policy, particularly because of the strong correlation between energy efficiency and pollution reduction, promoting efficiency should become an integral part of our environmental policy.

Second, governmental programs may have a particularly effective role to play in fostering break-through advances in efficiency. It is likely that game-changing advances in manufacturing energy-efficiency will involve innovative thinking, extensive research and considerable cost and risk of failure. A partnership with government in some aspects of this would make possible research, development and adoption that would be unlikely to occur, or occur soon enough, without such assistance.

Third, the government can play a vital role in the dissemination of new ideas and best practices. The Department of Energy has already demonstrated effectiveness in this area. Even for companies that are leaders in their industries, such as O–I, energy-efficiency may not be a "core competency" and, in any event, it greatly benefits by collaborative work and shared expertise. Small and medium-sized businesses may be especially aided by a governmental role of this kind. Moreover, governmental involvement is more likely to involve the fostering and dissemination of ideas that broadly help a U.S. industrial sector, as opposed to proprietary or otherwise closely held advances that may benefit only one company.

Again, thank you very much for the opportunity to testify, and please just let me know if I could be of any further assistance.

# APPENDIX II

## Additional Material Submitted for the Record

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[Due to the large amount of materials received, only a representative sample of statements follow. Additional documents and statements have been retained in committee files.]

### STATEMENT OF THE REAL ESTATE ROUNDTABLE

Chairman Bingaman, Ranking Member Murkowski, and Members of the Committee, The Real Estate Roundtable is pleased to submit this statement for the record of the hearing on June 9, 2011, regarding proposed legislation to promote energy efficiency. The Roundtable represents the leadership of the nation's top 130 privately owned and publicly held real estate ownership, development, lending and management firms, as well as the elected leaders of the 17 major national real estate industry trade associations. Collectively, Roundtable members hold portfolios containing over 5 billion square feet of developed property valued at over $1 trillion; over 1.5 million apartment units; and in excess of 1.3 million hotel rooms. Participating Roundtable trade associations represent more than 1.5 million people involved in virtually every aspect of the real estate business. More information on The Roundtable can be found at www.rer.org.

This statement will address S. 1000, the Energy Savings and Industrial Competitiveness (ESIC) Act of 2011, sponsored by Senators Shaheen, Portman, and Coons. The Roundtable commends the Committee, and Senators Shaheen's and Portman's offices in particular, for the open and transparent manner in which diverse stakeholder input has been sought in developing S. 1000. As discussed below, the bill's current language addresses many of the suggestions we have made. However, we still have concerns with the bill—in particular, its provisions on model building energy codes—and we look forward to continue working with you to improve S. 1000 as it moves through the Committee process.

#### I. SUMMARY AND ECONOMIC BACKGROUND

*A. Summary*

- The real estate sector is in the midst of a sluggish recovery. The real estate sector remains in a sluggish, tentative economic recovery from the Great Recession. Rather than a new law creating a federal building energy codes bureaucracy that will lead to more stringent regulations and greater costs on construction, Congress should focus on tax, loan guarantee, and other incentive programs that will leverage private investment in real estate and create new "green jobs."
- Building energy codes at the federal level are unnecessary. Stakeholders on all sides agree that ASHRAE and IECC codes are becoming more stringent and will result in vastly improved energy efficiency in buildings. Accordingly, The Roundtable questions the need for S. 1000's model federal energy code provisions, as the market is already moving in the direction of higher-performing residential and commercial structures. The Committee should instead consider the legislative proposal offered by The Roundtable and other real estate stakeholders in March of this year (attached to this statement). Our proposal would improve the current codes-establishment process, avoid creating a new federal codes bureaucracy in the U.S. Department of Energy—and not require the $500 million authorization of appropriations sought to implement S. 1000's energy code provisions.
- S. 1000's energy codes provisions are improved relative to prior bills. The Roundtable recognizes that the energy codes language in S. 1000 is improved compared to prior bills. For example, language that would incorporate economic

considerations (such as a business owner's return on investment) into codes development is a significant change for the better. Similarly, subjecting federal energy codes and targets to a small business impact review analysis, requiring the Energy Department's release of data when determining code efficiencies, and giving the public an opportunity to comment on efficiency targets without enshrining them in a statute, are progress from The Roundtable's perspective.

- Still, S. 1000's energy codes provisions require improvement. Nonetheless, establishing an across-the-board national goal of "net zero energy buildings," as the ESIC Act would do, presents serious concerns to the real estate sector. We suggest modifications to this language at p. 7 of this statement. Also, while the bill factors economic considerations into certain Energy Department acts and responsibilities, it does not do so uniformly and further amendments are needed to ensure consistent and robust economic analyses.
- Other aspects of S. 1000 could enhance energy efficiency and benefit the real estate sector. In particular, the ESIC Act's sections regarding credit enhancement through loan guarantees for building retrofit financing are a step in the right direction. However, more work is needed to make the program usable and viable for real estate owners and lenders. In this regard, the statutory text should incorporate changes suggested starting at p. 10 of this statement, to protect the prime lien position of "first mortgagees" in building collateral while minimizing the credit risks of the federal government in backing private sector retrofit debt. Similarly, the Committee should support changes to electronic "right-to-know" language that would overcome significant energy data obstacles currently faced by owners of multi-tenant buildings.

*B. The Real Estate Sector is in the Midst of a Tentative, Sluggish Economic Recovery. Rather Than a New Law Creating a Federal Codes Bureaucracy, Congress Should Focus on Incentive Programs that Will Leverage Private Investment in Real Estate*

The Real Estate Roundtable's members recently confirmed, through our 1st and 2nd Quarter 2011 Sentiment Indexes,[1] that commercial real estate markets nationwide are experiencing a slow, tentative recovery. So-called "gateway" cities have come back strong while smaller, more mainstream markets still struggle. There is improved access to functioning liquidity and improving values (particularly for "Class A" assets) in cities like New York, Washington, D.C., Boston, San Francisco, and western Los Angeles. Contrast this to still-weak capital formation and lackluster fundamentals in the rest of the country. Smaller, more mainstream real estate markets continue to face big challenges. Absent strong improvement in U.S. job markets and demand for business space, the nation's commercial real estate sector will likely continue its sluggish, "bifurcated" recovery—with top urban markets outpacing recovery in secondary, non-gateway markets.

In markets outside of our key urban areas, rent and occupancy rates are weak while construction remains at its lowest levels in the past 40 years. From a position of comparative balance in mid-2008, as the economy shed 8.6 million jobs, demand for commercial space fell precipitously. To make matters worse, 2 million new jobs were needed to absorb the new commercial space delivered through the development pipeline. This 10.6 million job shortfall has reflected directly in vast oversupply, lack of demand, and declining rents. Since the economy hit bottom at the lowest depths of the recession, only about 1.3 million jobs have been added to the workforce, leaving jobs about 9.3 million short of striking a balance. Thus, even with a solid recovery, it will take three to four years at least to make up this 9.3 million job shortfall.

Until private sector job creation picks up, we are not out of the economic danger zone. Commercial real estate markets tend to recover from the top down, when higher quality markets attract new capital and eventually affect other markets. But legitimate headwinds remain, such as an unacceptable unemployment level, a huge pipeline of maturing commercial mortgages, and significant fiscal issues faced by state and local governments. Looming just around the corner is the roughly $1.5 trillion of commercial mortgage debt coming due over the next four years. Most commercial real estate loans have terms of 10 years or less, and a significant percentage of outstanding debt matures each year which needs to be refinanced.

Exacerbating all of this is the chronically slumping single-family housing market, still plagued by a near-record 14 million vacant residences. That glut could take

[1] Available at www.rer.org. This survey is the commercial real estate industry's most comprehensive measure of leading executives' confidence in financial and real estate markets. Conducted by FPL Advisory Group, it captures the perspectives of over 100 senior real estate executives, including CEOs, presidents, board members, and other executives from a broad set of industry sectors including owners and asset managers, financial services firms and operators.

years to eliminate and is the significant cause for falling home values which decline at an increasingly rapid pace.

Against this sobering economic outlook, Congress should not enact legislation to further dampen the real estate sector's lackluster performance. In particular, measures like the "Building Energy Codes" provisions in Subtitle A of S. 1000 would vest the U.S. Department of Energy (DOE) with new authorities to "support the development of" and "establish" federal model building energy codes. We believe that creation of such a bureaucracy in Washington, D.C., will result in greater complexity, confusion, and costs not only for the regulated community, but also for traditional codes development bodies like ASHRAE and ICC, and enforcement agencies within state and local governments. Legislation like Subtitle A would likely generate increased regulation and costs on construction activities and thereby hinder the sector's recovery. This is especially problematic as the jobless rate among construction workers still hovers above 16%, employment rates are stagnant and unlikely to change soon,[2] and new claims for jobless benefits from the construction workforce increased from March to April 2011.[3]

New construction activity, and financing streams to support it, must be encouraged. This is why The Roundtable favors a meaningful program of financial incentives, like improved tax deductions and loan guarantees, to spur energy efficiency retrofits of existing buildings. Such incentives for building upgrades can help get people back to work, lower energy consumption, save consumers and businesses money on utility bills, and reduce our nation's dependence on foreign oil. From The Roundtable's vantage point, retrofit incentives are better energy policy compared to programs that would create federal jurisdiction to develop building energy codes.

We thus take this opportunity to re-direct your attention to a May 5, 2011 letter (attached to this statement). The Roundtable joined over 80 diverse stakeholders from the real estate, energy, environmental, manufacturing, and building products sectors, all supporting legislative improvements to the existing tax deduction for energy efficient commercial buildings at Section 179D of the Internal Revenue Code. We encourage Congress to focus on tax incentive proposals like those endorsed in the May 5 letter—as opposed to new bureaucracies that will expand the federal government's regulatory footprint.

## II. LEGISLATION IS NOT NEEDED FROM CONGRESS TO AUTHORIZE AND ESTABLISH FEDERAL BUILDING ENERGY CODES

The Roundtable joins other national real estate organizations in questioning why S. 1000's Subtitle A is necessary. Even without congressional action, DOE and stakeholders on all sides acknowledge that recent iterations of IECC and ASHRAE model codes will result in more energy efficient buildings as compared to prior code versions. And, DOE currently plays an active role in the consensus-based processes administered by IECC and ASHRAE. With traditional energy codes already moving down the path of vastly improved building efficiency—driven in large part by DOE's on-going support and advocacy—we doubt the need for Subtitle A to create a federal bureaucracy that would, among other things:

- Give the federal DOE responsibility to establish energy savings "targets" for buildings (§ 304(a)(2)(c), p. 5 starting at line 5).
- Implement burdensome procedures for DOE to issue "preliminary determinations," "positive final determinations," and "negative final determinations" on ASHRAE/IECC code efficacy (§ 304(a)(4), starting at p. 10 line 1).
- Compel states to "certify," "demonstrate," and "measure" energy code compliance, while further requiring the federal Energy Secretary to "validate" such states' certifications (§304(b), starting at p. 14 line 7).
- Burdening states with reporting and other obligations when DOE determines that such states fail to meet federal targets (§304(d), starting at p. 18 line 12).
- Authorize the federal DOE to reach down to local governments as necessary to demonstrate code conformity when a state fails to do so (§304(d)(3), p. 19 line 3).

Subtitle A appears out-of-step with sentiments on Capitol Hill, as leaders from both parties search for means to minimize the federal government's regulatory reach, curtail unneeded government spending, and tame the nation's deficit and debt. An Executive Order issued by President Obama on January 18, 2011, advised that our "regulatory system" must "identify and use the best, most innovative, and

[2] See http://news.agc.org/2011/06/03/construction-employment-remains-stagnant/.
[3] See http://www.bls.gov/iag/tgs/iag236.htm.

least burdensome tools for achieving regulatory ends."[4] In this regard, The Roundtable recommends that current ASHRAE/IECC consensus-based processes are the best and least burdensome means to enhance building energy efficiency, and federal energy codes will add unnecessary administrative layers to the process.

On March 18, 2011, The Roundtable joined other real estate and building supply groups in submitting to the Committee a proposal to amend the Energy Conservation and Production Act (ECPA). Our suggestions would amend the same section of ECPA as S. 1000's model energy code provisions would revise. However, our approach improves the current consensus-based IECC and ASHRAE processes without creating new federal responsibilities and mandates vis-&-vis building energy codes. We attach these suggestions again for your consideration—and further note that our proposal would not require the $500 million authorization sought by section 304(i) (p. 24, line 1). Respectfully, we recommend that our March 18 approach should be taken in lieu of Subtitle A.

III. RELATIVELY SPEAKING, S. 1000'S ENERGY CODE PROVISIONS ARE IMPROVED COMPARED TO BILLS FROM PRIOR CONGRESSES

The Roundtable indeed recognizes that S. 1000 is improved over similar bills introduced by previous sessions of Congress. While there is still room to improve Subtitle A (we suggest amendments in that regard at pp. 6-10), The Roundtable commends provisions in S. 1000 that would:

- Require DOE to establish all energy targets, determinations, and national model codes through public notice and comment rulemaking procedures, as opposed to enshrining efficiency targets in the legislation itself. (§304(a)(5), p. 13 starting at line 18.) For example, the ESIC Act does not include a statutory mandate that model energy codes must achieve greater efficiencies by 50% over ASHRAE/IECC baselines by some target year, as prior bills have done.
- Incorporate economic and cost considerations from the perspectives of building owners and tenants as model energy codes are developed—including return on investment analysis. (For example, see §304(a)(2)(E), p. 8 starting at line 5.)
- Subject DOE model codes to a small business impact review analysis. (§304(a)(2)(C)(iv)(IV), p. 7 starting at line1.)
- Recognize that tenant "plug load" uses and other considerations must be counted as model energy code targets are developed. (§304(a)(2)(D)(v), p. 8 lines 1-4.)
- Make transparent the methodology and data used by DOE to determine whether, and by how much, a subsequent code iteration improves energy efficiency compared to its predecessor (§304(a)(3)(D), p. 9 starting at line 20.)
- Strike language that appeared in earlier drafts of S. 1000, which would have measured federal code compliance against ill-defined "renovations," and maintain the status quo on building retrofits as already covered by current ASHRAE and IECC codes.

In short, to the extent federal energy codes remain in play, Subtitle A should continue to include those sections discussed above.

IV. THE ENERGY CODES PROVISIONS IN S. 1000 REQUIRE IMPROVEMENT

In any event, Subtitle A requires further improvement. Insofar as S. 1000 continues to incorporate a federal energy codes section, The Roundtable recommends that the Committee consider at least the following six (6) amendments:

- Amendment 1: S. 1000's energy code provisions should replace current ECPA Section 307 (as well as Section 304).

Amend: Section 101(a), p. 3, lines 5-7, as follows:

TITLE I—BUILDINGS
Subtitle A—Building Energy Codes
SEC. 101. GREATER ENERGY EFFICIENCY IN BUILDING CODES.
(a) In General.—Sections 304 and **307** of the Energy Conservation and Production Act (42 U.S.C. 6833, **6836**) ~~is~~ **are** amended to read as follows:

[4] "Improving Regulation and Regulatory Review—Executive Order" (January 18, 2011), available at http://www.whitehouse.gov/the-press-office/2011/01/18/improving-regulation-and-regulatory-review-executive-order.

Explanation: Subtitle A purports to replace all of ECPA section 304 (42 U.S.C. § 6833). It appears, however, that Subtitle A should also replace all of current ECPA section 307 (42 U.S.C. § 6836) as well.

Current ECPA section 307 is titled, "Support for voluntary building energy codes." Among other things, section 307(a) presently gives DOE authority to consult with model codes bodies to "support the upgrading of voluntary building energy codes . . ." 42 U.S.C. § 6836(a). "[S]uch support shall include" activities like compiling data regarding building efficiency standards; assistance in improving the technical basis for such standards; assistance in determining the "cost-effectiveness and technical feasibility of energy efficiency measures"; and assistance to identify measures for radon and other indoor air pollutants. Id. § 6836(a)(1)-(4). Meanwhile, S. 1000's Subtitle A would duplicate these existing provisions of ECPA section 307. The proposed legislation would direct DOE to "provide technical assistance to model code-setting and standard development organizations," and gives a laundry list of what such technical assistance shall include. (Proposed § 304(a)(3), starting at p. 8 line 13.) Thus, current section ECPA 307(a) is apparently mooted by proposed new § 304(a)(3).

Similarly, current ECPA section 307(b) provides that DOE shall "recommend amendments" to energy codes; "seek adoption of all technologically feasible and economically justified energy efficiency measures"; and "otherwise participate" in processes to review and modify energy codes. Id. § 6836(b). Likewise, Subtitle A's proposed new § 304(a)(3)(C) provides that DOE may "submit timely code and standard amendment proposals" (p. 9, starting at line 12.) And, proposed new § 304(a)(4) prescribes an elaborate process for DOE to determine whether IECC and ASHRAE codes meet the federal energy targets (p. 10 starting at line 1.) These provisions in S. 1000 make existing ECPA section 307(b) redundant and, at worst, conflicting.

In short, it appears that the ESIC Act's new federal energy codes provisions should replace all of current ECPA sections 304 and 307.

- Amendment 2: Language for the Zero-Net Energy Goal Should be Deleted or at Least Modified, and the Bill's Overall "Goals" Should Reflect Economic Considerations.

Amend: Section 304(a)(2)(B), p. 4 starting at line 17, as follows:

"(B) Goals.—The Secretary shall—

"(i) establish **goals** ~~of~~ **to reduce energy demand in new commercial and residential buildings, before considering supply of renewable energy sources, on a path to** zero-net-energy for such ~~new commercial and residential~~ buildings **where feasible**; ~~by 2030; and~~

"(ii) work with State and local governments, the International Code Council, ASHRAE, and other interested parties to achieve these goals through a combination of national model building codes, appliance and lighting standards, and research, development, and demonstration of new efficiency technologies; **and**

**"(iii) ensure the economic feasibility and the potential costs and savings for consumers and building owners, including return on investment, to achieve these goals through deployment of the codes, standards and technologies referenced in subclause (ii).**

Explanation: Proposed section (B)(i) above would create a national "goal" of net-zero-energy buildings by 2030. This provision is extremely troublesome to the real estate community. Net-zero-energy is not a feasible goal for all buildings in every circumstance. A task force examining this very goal reported recently to the Governor of Massachusetts that "achieving zero net energy will be more difficult for some building types than others and . . . the concern over the costs of incorporating significant improvements into buildings is real."[5]

Not every building can be constructed in such a way to achieve net-zero-energy by going "off-the-grid"; using passive design, siting, or location strategies; or gaining access to on-site energy generation sources (at least without incurring crippling project expenses). The very definition of "net-zero-energy" is vague and subject to many different interpretations. For example, how is energy use to be accounted? Is there enough renewable energy to be purchased? If yes, are there geographic limits as to how far away from the site renewable energy may be purchased? Are we talking about net zero "site" energy or "source" energy? Is there a sufficient cadre of

[5] See "Getting to Zero—Final Report of the Massachusetts Zero Net Energy Buildings Task Force" (March 11, 2009), available at http://www.mass.gov/?pageID=eoeeamodulechunk&L=1&L0=Home&sid=Eoeea&b=terminalcontent&f=eea__energy__getting__to__zero&csid=Eoeea

knowledgeable builders, architects, and designers that have the necessary skills to build zero-energy structures? The Roundtable strongly cautions against establishment in the ESIC Act of an across-the-board net-zero energy "goal" for all buildings by 2030, when such fundamental questions still defy consistent responses from industry experts.

Moreover, specialists in the field readily acknowledge that net-zero-energy as a goal is unrealistic unless "plug load" behaviors of homeowners, office tenants, and other building occupants are considered. In this regard, it is critically important to recognize that plug-load behaviors are wholly outside the purview of building codes and standards to regulate. A leading white paper on the subject of net-zero-energy buildings declares that plug loads are the "hidden energy sinkhole," and finds:

> Even though energy modeling and innovative energy-efficient designs will certainly go a long way toward achieving net-zero, the shocking fact is that in terms of a building's total energy profile, it's only half the equation. "For the RSF project, the facade design, daylighting, natural ventilation, etc., only accounted for half of the energy use in the building," states Okada. The other half is devoted to plug load. Computers, copiers, electronic devices, appliances, and the like account for an average 50% of a commercial building's total electricity use.[6]

Of course, no federal law on energy codes could appropriately legislate the use of desk top computers in an office in favor of laptops, control the temperature level of thermostat settings, limit the number televisions allowed in a home, or restrict the hours that residents may use their appliances. Yet, it is precisely these plug load behaviors that must be addressed in the context of any lofty net-zero-energy aspirations for buildings.

The white paper cited above states: "[A]cross all NZEB definitions and classifications, one design rule remains constant: reduce energy demand to the lowest possible level first, then address energy supply."[7] This strikes The Roundtable as a better basis for Subtitle A's goals than striving for a too-elusive net-zero-energy ideal. Our suggested edits to proposed § 304(a)(2)(b)(i) are based on this ambitious, yet somewhat more realistic, objective.

The Roundtable also suggests a new goal in subsection (B)(iii). More stringent codes will come with greater up-front costs for higher efficiency equipment and materials. And, to the extent that the goal in (B)(i) continues to place buildings on a path to achieving net-zero-energy, demand reduction strategies and renewable technologies will certainly add to the expenses of building design and construction. We thus believe an equally compelling objective is to assess economic impacts on businesses and consumers. Accordingly, the "Economic Considerations" in proposed § 304(b)(2)(E) (p. 8, line 5) should be re-stated as a "Goal" of this legislation through a new subsection (iii) added to § 304(a)(2)(B).

- Amendment 3: Target Years Should be Consistent With Net-Zero Energy Revision from Amendment 2.

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[6] "Zero and Net-Zero Energy Buildings + Homes" (March 2011) at p. 10-11, available at http://twgi.com/downloads/NetZeroWhitePaper__BDC.pdf pp. 10-11.

[7] Id. at p. 5.

***Amend:*** Page 6, starting at line 11, as follows:

"**(cc)** on a path to achieving zero-net-energy buildings **consistent with the goal in subparagraph (B)(i).**"

***Explanation:*** Please see explanation under Amendment 2 regarding net-zero-energy buildings.

- **Amendment 4:** Import Same "Economic Considerations" into DOE's Preliminary Determinations on Code Revisions.

***Amend:*** Page 10, starting at line 2, as follows:

"(A) Revision of model building codes and standards.—If the provisions of the IECC or ASHRAE Standard 90.1 regarding building energy use are revised, the Secretary shall make a preliminary determination not later than 90 days after the date of the revision, and a final determination not later than 1 year after the date of the revision, on whether the revision will—

"(i) improve energy efficiency in buildings compared to the existing national model building energy code; ~~and~~

"(ii) meet the applicable targets under paragraph (2)(C); **and**

**"(iii) account for the economic considerations under paragraph (2)(E).**

***Explanation:*** A thorough and robust consideration of economic impacts should underpin all determinations made by DOE in Subtitle A. Proposed § 304(b)(2)(E) provides that economic feasibility, cost impacts on consumers and building owners, and return on investment analysis must be considered whenever DOE establishes and revises building code targets. (Page 5, starting line 8.) The Roundtable suggests that those same "Economic Considerations" should apply when DOE makes preliminary determinations relative to efficiency improvements in IECC and ASHRAE codes.

- **Amendment 5:** Import Same "Economic Considerations" into Preliminary Negative Determination.

***Amend:*** Page 10, starting at line 18, as follows:

"(B) Codes or standards not meeting targets.—

"(i) In general.—If the Secretary makes a preliminary determination under subparagraph (A)(ii) that a code or standard does not meet the targets established under paragraph (2)(C), the Secretary may at the same time provide the model code or standard developer with proposed changes that would result in a model code that meets the targets and with supporting evidence, taking into consideration—

"(I) whether the modified code is technically feasible and life-cycle cost effective;

"(II) available appliances, technologies, materials, and construction practices; and

"(III) ~~potential costs, savings, and other benefits for consumers and building owners, including the impact on overall building ownership~~

~~and operating costs~~ **the economic considerations under paragraph (2)(E).**

***Explanation:*** Please see explanation under Amendment 4, above. Also, the language here is not consistent with general "Economic Considerations" provision at proposed §304(b)(2)(E). For sake of consistency, it is better to cross reference "paragraph (2)(E)" as the basis for analysis in this section.

- **Amendment 6:** National Labs Study Should Also Contemplate Economic Considerations.

***Amend:*** Page 23, lines 5-10, as follows:

"(h) Studies.—The Secretary, in consultation with building science experts from the National Laboratories and institutions of higher education, designers and builders of energy-efficient residential and commercial buildings, code officials, and other stakeholders, shall undertake a study of the feasibility, impact, and merit of, **and to account for the economic considerations under paragraph (2)(E) regarding** —

***Explanation:*** Please see explanation under Amendment 4, above.

V. LOAN GUARANTEE PROVISIONS SHOULD BE AMENDED, AND ENERGY DATA "RIGHT TO KNOW" PROVISIONS SHOULD BE CONSIDERED

While the model energy code provisions are of most impact and concern to the real estate sector, other aspects of the ESIC Act can be enhanced to benefit building owners and achieve the overarching objective to improve energy efficiency in our built environment.

- Loan Guaranties for Building Retrofits

The Roundtable has repeatedly advocated for a program of credit enhancement from DOE to support and leverage private sector financing for building retrofit projects. In that regard, section 202 of the ESIC Act (starting at p. 154, line 12), which would authorize a building retrofit program within Title XVII of the Energy Policy Act of 2005 (EPAct), is a step in the right direction.

As with any loan guarantee authorization, section 202 must be crafted to allow for fiscally austere measures that limit DOE's exposure to financial risks in the event of a borrower's default on a retrofit obligation. The Roundtable thus recommends that agency "guidelines" required by section 202, to implement the new loan guarantee program, should include assessments of a borrower's creditworthiness, the building's loan to value ratio, and the building's history and expectations in generating rental and other income, among other factors. We also suggest that the agency guidelines carve-out retrofit "performance risks" not to be borne by DOE. A prerequisite to project qualification should be guaranteed energy savings arising from the retrofit, such as through energy service performance contracts and other mechanisms. Third-party contractors responsible for the retrofit like DOE-approved energy services companies—but not DOE itself—should bear risks that installed energy efficiency measures will perform as designed. In this way, the transaction can be structured so as to amortize retrofit financing through energy savings, and energy performance will be measured and verified. The project thus becomes a safer bet and DOE's guarantee is limited to covering the "default risk" of the borrower.

While DOE's risks must be contained, refinements are also needed to make the retrofit loan guarantee program meaningful for and usable by real estate owners, managers and financiers. Currently, the EPAct requires that debt obligations backed by federal guarantees must not be subordinate to other financing.[8] When these provisions were adopted in 2005 with nuclear plants, wind farms and large-scale solar projects in mind, Congress did not consider their effect on the proper functioning of traditional commercial and residential mortgages (such as the sale of mortgages on secondary markets). A fundamental tenet of real estate finance is that, in the event of a property owner's default on the mortgage and/or foreclosure, the lender (or "mortgagee") will receive payments outstanding on the loan before sums are paid to any other secondary security interest in the property. In other words, the first mortgagee has a superior lien taking precedence over secondary se-

[8] See 22 U.S.C. 16512(d)(3) ("The obligation shall be subject to the condition that the obligation is not subordinate to other financing"); id. § 16512(g)(2)(B) ("The rights of the [Energy] Secretary, with respect to any property acquired pursuant to a guarantee or related agreements, shall be superior to the rights of any other person with respect to the property").

curity interests in the collateral. This principle of "mortgage superiority" is an industry standard written into deeds of trust and other mortgage documents, including Fannie Mae's uniform security instruments. Borrowers would likely be in breach of contract if they allowed a secondary lender (such as one extending a loan to finance a building retrofit) to occupy a more favorable lien position on the asset, to the detriment of the bank providing a mortgage loan in the first instance.

It appears that the EPAct sections cited in footnote 8, if applied to a loan guarantee for building retrofits, would have DOE's interests leapfrog over the prior rights of first lenders in mortgaged properties. Building owners considering retrofits and contemplating loan guarantee financing will find themselves in untenable positions. Such borrowers could not simultaneously respect their contractual obligations to allow mortgagees to maintain a higher interest in the collateral, while also ensuring that a government-backed retrofit loan is "not subordinate to other financing" or that the Energy Secretary has superior interests compared to the "rights of any other person" in the property.[9]

For purposes of S. 1000, it is critical to get this lien priority issue right—or else we risk that the real estate ownership and lending communities will not avail themselves to any new retrofit loan guarantee product in a market transformative manner.

Accordingly, The Roundtable suggests the following refinements to ESIC Act section 202—with the objective to both minimize DOE's exposure to borrower default and address the significant lien priority issue:

*Implementing Guidelines*

S. 1000 would amend the EPAct by adding a new §1706 which, among other things, would direct DOE to develop guidelines to implement the credit support program for building retrofits. These guidelines must include "any lien priority requirements that the Secretary determines to be necessary." (§1706(c)(2)(E), p. 156 lines 17-18.) We take this to mean that DOE may, through its guidelines, establish new principles to address the first mortgagee lien issue discussed above and provide that the federal obligation may be subordinated to prior mortgages on an eligible building. The Roundtable suggests that the statutory language needs to be clearer on this matter, and Congress should direct DOE to consider how the superior rights of first-in-time mortgagees can be maintained while minimizing the federal government's exposure to default on the underlying retrofit obligation. We accordingly recommend the following edits:

[9] 22 U.S.C. §§ 16512(d)(3), (g)(2)(B).

"(2) Requirements.—The guidelines established by the Secretary under this section shall **be published in the Federal Register with an opportunity for comment from the public, and** include—

…

"(E) **notwithstanding sections 1702(d)(3) and 1702(g)(2)(B),** any lien priority requirements that the Secretary determines to be necessary, **in consultation with the director of the Office of Management and Budget, which may include:**

**(i) mechanisms to preserve prior lien positions of mortgage lenders and other creditors in buildings eligible for credit support;**

**(ii) remedies available to the Secretary under the Federal Debt Collections Procedures Act of 1990 (28 U.S.C. § 3001, et seq.), in the event of default on the efficiency obligation by the borrower;**

**(iii) measures to limit the exposure of the Secretary to financial risk in the event of default, such as—**

**(I) the collection of a credit subsidy fee from the borrower as a loan loss reserve, taking into account the limitation on credit support in subsection (d);**

**(II) minimum debt to income levels of the borrower;**

**(III) minimum levels of value relative to outstanding mortgage or other debt on a building eligible for credit support;**

**(IV) allowable thresholds for the percent of the efficiency obligation relative to the amount of any mortgage or other debt on an eligible building;**

**(V) analysis of historic and anticipated occupancy levels and rental income of an eligible building;**

**(VI) requirements of third-party contractors to guarantee energy savings that will result from a retrofit project, and whether financing on the efficiency obligation will amortize from such energy savings;**

**(VII) requirements that the retrofit project incorporate protocols to measure and verify energy savings; and**

**(VIII) recovery of payments *pari passu* by the Secretary and the retrofit project lender in the event of default by the borrower.**

In sum, a critical element to the success of proposed §1706 for retrofit financing support will be to preserve the prime position that pre-existing mortgagees enjoy in the underlying asset. At the same time, DOE's guidelines to implement the new program must—and can—be structured in a manner to significantly minimize the federal government's default risk while maintaining lien superiority of first-in-time mortgage lenders. The guidelines to implement a new Title XVII building retrofit guarantee should be developed in consultation with OMB to ensure that taxpayer interests are safeguarded. And, opportunity for comment on the new guidelines should be available so the real estate, lending, energy services, and efficiency advocacy communities can assist in creating a meaningful, workable, and usable loan guarantee product for building retrofits.

*Eligible Projects and Buildings*

The Roundtable recommends edits to the definition of "Project" (p. 155, starting at line 3). It should also include operations, maintenance, management and monitoring systems for energy efficiency measures. New equipment and materials (like HVAC and lighting) can be installed in a building, but unless they are properly managed and maintained by skilled and trained staff, anticipated energy savings may not accrue. Indeed, retrofit projects with continuous commissioning and monitoring protocols will present safer investments and pose less credit risks to DOE, and are precisely the kinds of projects that should fall within the retrofit loan guarantee's purview. We thus suggest the following amendment:

"(2) Project.—The term 'project' means the installation **and implementation** of efficiency or renewable energy measures (including metering), **and operations, maintenance, management and monitoring systems for such measures**, in a building (or in multiple buildings on a given property) that are expected to increase the energy efficiency of the building (including fixtures) in accordance with criteria established by the Secretary."

The Roundtable also recommends edits to eligible project "Inclusions" (p. 155, starting at line 15) to encompass multifamily residential buildings. Apartments and other multifamily structures present many of the same energy efficiency and financing challenges as commercial office buildings. DOE can narrow the scope of eligible multifamily buildings when it issues a solicitation for projects, but the authorizing statute should not exclude apartments and the like from the retrofit loan guarantee program. We thus suggest the following amendment:

"(b) Eligible Projects.—
...
"(2) Inclusions.—Buildings eligible for credit support under this section include commercial, **multifamily residential,** industrial, municipal, university, school, and hospital, facilities that satisfy criteria established by the Secretary."

*Minimum Energy Savings*

The Roundtable recommends that proposed §1706(c)(5), "Minimum Energy Savings Requirements" (p. 157, starting at line 22), be deleted. This section states that DOE "shall establish an initial minimum energy savings requirement for eligible projects that, to the maximum extent practicable, results in the greatest amount of energy savings on a per project basis." However, such a one-size-fits-all minimum requirement can unduly hamper the program's success.

The building types within the commercial sector are varied and diverse. Indeed, EPA's ENERGY STAR program office recognizes the heterogeneous composition of the commercial building stock. It has identified 14 unique types of commercial buildings for purposes of energy ratings—and even these represent only about 50% of the commercial floor space in the United States.[10] It is highly unlikely, for example, that a single, minimum savings target will make sense for an office building, supermarket, warehouse, school, or retail mall. Compound this diversity of building categories by regional climatic differences, and then again by variations of occupant "plug load" uses across these types. Selection of a single arbitrary threshold for minimal energy savings will not be workable considering the broad spectrum of commercial structures.

The Roundtable does encourage, however, that energy savings be an important factor when DOE decides which building retrofits warrant credit enhancement. When DOE receives competing proposals through project solicitations, the agency should certainly prioritize which of those projects are designed to achieve higher levels of energy performance.

In short, The Roundtable believes the market should select levels of energy savings among competing project proposals. To this end, we support language stating that DOE shall prioritize "(A) the maximization of energy savings with the available credit support funding." (Proposed § 1706(c)(4)(A), p. 157 lines 12-13.) Moreover, in our suggested amendments to the "Guidelines" provision discussed above (pp. 11-12), DOE should consider requirements that third-party contractors guarantee energy savings as a condition to receiving credit support; whether energy savings will cover the costs of the retrofit obligation; and that the project should incorporate energy savings measurement and verification protocols. These provisions will be undermined by a single threshold for energy savings applied across all building types as a prerequisite for loan guarantees.

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[10] See http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager. The 14 varied commercial building types that are eligible to receive ratings from EPA's ENERGY STAR office are bank/financial institution; courthouse; data center; hospital; hotel; house of worship; K-12 school; medical office; municipal wastewater treatment plant; office; residence hall/dormitory; retail store; supermarket; and warehouse. But even this list is not exhaustive, and does not encompass other commercial building types like retail malls, restaurants, assisted living facilities, distribution centers, and others such as a wide variety of factories and other types of industrial facilities

In lieu of a minimum savings requirement, the Committee may consider adding a new subsection (D) in the "Priorities" section (following page 157, line 21), as follows:

"(4) Priorities.—In carrying out this section, the Secretary shall prioritize

...

**"(D) Projects designed to implement whole-building retrofits, operations, and maintenance of heating and ventilation, water heating and cooling, lighting, and envelope systems.**

Deep retrofits of this sort will certainly be designed to achieve high levels of energy savings—such as the upgrade at the Empire State Building, where the performance contract guarantees reduced energy consumption by about 38 percent.[11] Rather than a minimum savings standard that could impede the success of a nascent loan guarantee program, we suggest the Committee instead consider language emphasizing the importance of whole-building retrofits as preferred beneficiaries of federal credit enhancement.

- Whole-Building Data Capture in Multi-Tenant Buildings

The Real Estate Roundtable also encourages Congress to enact energy data "right-to-know" provisions with regard to multi-tenant commercial and residential buildings.

Whether through voluntary or regulatory programs, building owners face increasing demands to benchmark whole-building energy performance and report data on energy consumption throughout an entire structure. However, while owners can manage energy consumption in common space areas within their control (like lobbies, atriums, parking lots, clubhouses, etc.), they frequently lack access to energy usage information in individual spaces leased by tenants. This is especially the case where leased spaces are covered by separate utility-grade meters to record energy usage, and are outside of the owner's ability to fully manage.

Whole-building energy benchmarking is an important tool that enables commercial building owners and managers to identify energy performance issues in buildings, undertake energy management actions and cost-effective improvements in buildings, track energy performance over time, and set energy performance goals. But these significant objectives are impeded by owners' lack of access to consumption data throughout tenant-leased spaces.

The Roundtable suggests that energy consumption "right to know" provisions can be a vehicle to overcome the significant data issues faced by owners and managers of multi-tenant buildings. Before its introduction, S. 1000 included provisions of the Electric Consumer Right to Know (eKNOW) Act. While these sections were removed from S. 1000, the eKNOW Act has since been introduced as S. 1029, sponsored by Senators Mark Udall and Scott Brown. Whether through S. 1000 or stand-alone legislation, we recommend that whole-building data capture be addressed in the context of the eKNOW Act and are prepared to assist with suggesting text in that regard.

Several utilities[12] are already utilizing EPA's ENERGY STAR automated benchmarking services, in a manner where the modest and incremental costs of the service are spread among ratepayers. Additionally, tenant privacy concerns have been addressed through aggregated, whole-building consumption data provided by the utility to the owner, which neither reveals the individual identities of tenants nor divulges energy usage in a particular leased space. For example, the "Energy Usage Data System," pioneered by Commonwealth Edison in Chicago, is a program that enables utilities to upload whole-building performance data directly into Portfolio Manager, the ENERGY STAR benchmarking tool.[13] ComEd received a 2009 ENERGY STAR award for collaborating with EPA to promote the use of the EUDS by real estate owners and managers in the Chicago area.[14]

Armed with information about whole-building energy use, owners, tenants, and other consumers will be able to better target energy efficiency upgrades for their homes and businesses. They also will be able to see how their actions affect their

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[11] http://apps1.eere.energy.gov/news/news_detail.cfm/news_id=12387; ;http://www.esbnyc.com/sustainability_project_finances.asp.

[12] Utilities include Commonwealth Edison Co. (ComEd), Pacific Gas and Electric Co. (PG&E), Southern California Edison (SCE) and the Sacramento Municipal Utility District (SMUD).

[13] See https://www.comed.com/sites/businesssavings/Pages/wholebuilding.aspx; http://www.cee1.org/cee/mtg/06-09mtg/files/BB6Bricknell.pdf.

[14] http://www.energystar.gov/index.cfm?fuseaction=pt_awards.showAwardDetails&esa_id=3666.

energy use. The Roundtable stands ready to assist the Committee in exploring how eKNOW provisions can be modified to specifically address data capture in multi-tenant commercial and residential buildings.

VI. CONCLUSION

The real estate community and its suppliers fully endorse proposals to create green jobs, enhance our nation's energy security, and lower energy consumption. We applaud the Administration's call in the January 18 Executive Order to assess alternatives to regulation, such as "economic incentives to encourage the desired behavior." To that end, we enthusiastically support proposals to assist homeowners and businesses with the costs to retrofit the vast stock of existing buildings. Modest but meaningful retrofit incentives will accomplish more effective results, we believe, than federal codes which would largely govern in a still-struggling market where the pace of new construction is anemic at best. The Real Estate Roundtable looks forward to finding solutions with the Committee which enhance building efficiencies without unduly extending the regulatory reach of the federal government into the energy codes arena.

For more information on the content of this statement, please contact Duane J. Desiderio, Vice-President and Counsel, at (202) 639-8400 (ddesiderio@rer.org).

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## STATEMENT OF THE AMERICAN CHEMISTRY COUNCIL

### INTRODUCTION

The American Chemistry Council welcomes this opportunity to state our support for the Energy Savings and Industrial Competitiveness Act of 2011 (S. 1000). The Council thanks Senators Shaheen and Portman for developing and introducing the bill, and we thank Senators Bingaman and Murkowski for holding today's hearing.

Energy efficiency must have a prominent place on the nation's energy policy agenda. After all, it's a proven way to help America save energy and money while creating jobs. Unfortunately, energy efficiency has been devalued in the clean energy policy discussion this year. The Obama Administration's Energy Blueprint, for example, specifically excludes energy efficiency from the definition of "clean energy" in its proposed national clean energy standard. We are dismayed that champions of clean energy would exclude cost-effective and proven emission-reduction and energy-savings strategies from a clean energy deployment program.

We strongly believe that energy efficiency must not be relegated to some vague suite of "complementary" programs. If policy awards tradable credits to "qualified" clean energy technologies and energy efficiency is excluded from the list, then that would only lead to underinvestment in cost-effective efficiency solutions and overinvestment in more expensive, less effective products and technologies. Developing a clean energy economy that can compete with the rest of the world demands that policymakers maximize energy efficiency's contribution to the nation's energy portfolio.

Given the second-class status of energy efficiency in some policy circles, we are especially pleased to see the Committee deliberate the Energy Savings and Industrial Competitiveness Act. The bill contains a series of measures that each save energy and reduce costs. S.1000 restores energy efficiency to its rightful place high on the nation's energy policy priority list.

### AMERICAN CHEMISTRY AND ENERGY EFFICIENCY

America's chemistry companies are leaders in energy efficiency. They invent and make products used in building insulation, appliances, lightweight vehicle parts, windows, engine lubricants, compact fluorescent light bulbs, energy storage systems, thermal coatings, water saving systems and many others. These markets are significant, and growing.

In today's highly competitive global commerce, we know that being energy-efficient in our own operations helps our industry reduce costs and maintain U.S. production and jobs. This commitment has led to a 56 percent improvement in energy efficiency since 1974, and 33 percent since 1990. Just last month, we recognized member companies for implementing energy efficiency improvements in 2010 that saved 14.8 trillion BTUs—enough to power the homes of Akron, Ohio's 210,000 residents for one year.

It is important to recognize that affordable, reliable energy supplies are vital to making the United States a competitive producer of energy efficient products and services. For example, the domestic chemical industry relies on natural gas liquids (e.g. ethane) to make chemistry that is used to make energy efficiency products.

Policies that create reliable natural gas supplies directly affect whether America has a globally competitive manufacturing sector to make the products that drive energy efficiency throughout the U.S. economy.

SPECIFIC COMMENTS ON S. 1000

*Title I-Buildings*

*Subtitle A-Building Energy Codes*

ACC is a longtime supporter of updating building energy codes. Buildings currently consume 40 percent of all energy used in the United States. Building codes help investors overcome the market barriers that impede energy savings in this sector, while reducing energy costs for businesses. ACC commends the authors for setting a goal of zero net energy in new buildings by 2030.

*Subtitle B-Appliance Standards*

This section of the bill would require conservation and energy efficiency standards for a broad range of appliances. These include, heat pump pool heaters, GU-24 base lamps, bottle-type water dispensers, commercial hot food holding cabinets, portable electric spas, refrigerators and freezers, room air conditioners, water heaters, clothes dryers, dishwashers, reflector lamps, outdoor lighting, commercial furnaces, and a specific type of commercial refrigerator.

According to the American Council for an Energy-Efficient Economy, appliance standards provisions in the bill will cut consumers' home energy costs by $43 billion through 2030. Existing federal appliance standards have saved taxpayers more than $300 billion in energy bills and reduced national energy use by 3.6 percent annually. This provision is identical to S. 398, which was recently reported by the Senate Energy and Natural Resources Committee with a bipartisan 18-4 vote.

American Chemistry Council member companies supply a wide range of materials and products that enable appliances to be more energy efficient.

*Title III-Industry*

*Manufacturing Energy Efficiency*

The bill would establish a $700 million loan program for 2012 through 2021 for manufacturers to adopt commercially available technologies and processes that "reduce systems energy intensity, including the use of energy intensive feedstocks." The Secretary of Energy would be directed to provide an assessment of commercially available energy efficiency technologies that are not widely implemented for a number of sectors including (but not limited to): chemicals, steel, aluminum, and paper.

The bill would establish a public-private partnership to develop industry-specific roadmaps to identify the technologies necessary to reduce energy intensity and greenhouse gas emissions. It would also establish a sustainable manufacturing initiative as part of the Industrial Technologies Program of DOE. With this fund, domestic manufacturers could fine-tune their equipment, improve use of water in their process, reduce utility related overheads, and strengthen their bottom-line.

We believe Title III will help industries identify additional energy efficiency opportunities and can serve as a springboard to attempt even more ambitious industrial energy efficiency programs in the future.

CONCLUSION

The Energy Savings Act also contains a provision based on the Rural Star legislation which was passed by the House of Representatives last year. This program would create a loan program through rural public utilities and electric cooperatives to finance energy efficiency improvements for rural utility customers. Sponsors of the original bill estimate that it will create 20,000 to 40,000 jobs to conduct and implement these energy improvements. ACC supported Rural Star legislation in the last Congress and we continue to support it today.

In conclusion, we'd like to leave the committee with three thoughts:

- Energy efficiency must be recognized as a cornerstone of any clean energy policy agenda
- The domestic chemistry industry is a leading supplier of products and technologies that make energy efficiency possible
- A sound domestic energy supply policy is critical to implementing a successful energy efficiency strategy

Thank you for this opportunity to express ACC's support for S. 1000 and to comment on specific provisions of the bill.

EFFICIENCY FIRST,
*May 27, 2011.*

Hon. JEANNE SHAHEEN,
*U.S. Senate, 520 Hart Senate Office Building, Washington, DC.*

Hon. ROB PORTMAN,
*U.S. Senate, B40D Dirksen Senate Office Building, Washington, DC.*

DEAR SENATORS SHAHEEN AND PORTMAN, On behalf of Efficiency First, I am writing in support of the Energy Savings and Industrial Competitiveness (ESIC) Act of 2011. Efficiency First is a national nonprofit trade association that represents home performance contractors from across the country working to advance home energy efficiency and combat rising energy costs.

Efficiency First applauds your bi-partisan call for increased energy efficiency technologies across the residential, commercial, and industrial sectors of our economy. We also appreciate the focus on increasing the energy efficiency of our nation's current building stock. Buildings currently consume 40% of all energy used in the United States, and by including provisions in your bill that call for regular updates to the existing national model building codes, you are helping to provide certainty to the marketplace and ensure new homes continue to take advantage of increases in energy efficiency.

While we support the legislation, Efficiency First is concerned with the bill's lack of focus on existing residential buildings, which account for more than 20% of the nation's energy use. Policies like the Retrofit for Energy and Environmental Performance (REEP) program, which passed both the Energy and Natural Resources Committee and the Environment and Public Works Committee in the 111th Congress, would promote quality jobs that would put people to work retrofitting homes and saving Americans energy. We request that you consider including this legislation in your bill.

Efficiency First represents thousands of contractors who are hurting in these harsh economic times; they are trying to do right by their customers and provide quality installations but are faced with increasingly large financial burdens and dwindling government resources. The construction industry has almost twice the unemployment rate compared the entire nation—17.8% unemployment in the construction sector compared to 9% nationally. In 2010, 1,826,000 construction sector workers were unemployed, 1,083,000 of whom were unemployed for 15 weeks or more.

Making matters worse is the fact that construction industry unemployment is not subsiding, as is the case in many other sectors of the economy. Approximately 42,000 construction sector jobs—0.8% of the industry as a whole—have been lost since April of last year. Intervention is desperately needed. As the sole voice for home performance contractors across the nation, Efficiency First respectfully requests that your offices consider including provisions aimed at getting America's contractors back to work.

The REEP program would save consumers money, create jobs and help protect the environment through incentives for energy efficiency home retrofits. These performance-based incentives—deployed as direct consumer rebates—reward modeled energy savings, not specific products or technologies, and leverage private investment to minimize the burden on public funding sources. These incentives are technology neutral, removing government from the role of trying to pick winning technologies and freeing the market to innovate and reward performance. Inclusion of the REEP program would make your bill a truly comprehensive package and would serve to enhance its overall goals.

By fully deploying the power of energy efficiency, we can help create new jobs, save energy, save money, and reduce carbon emissions. Energy efficiency is the quickest, cleanest, and cheapest way to meet America's growing energy needs. Well-designed programs such as those contained in the Energy Savings and Industrial Competitiveness Act will help those American families and businesses who are struggling today to lower their energy costs.

We again commend your leadership in developing and introducing the Energy Savings and Industrial Competitiveness Act of 2011, and hope to work with you to ensure that when this legislation reaches the floor, it is a vehicle by which we can get our American contractors back to work.

Again, thank you for your efforts to advance home energy efficiency and we look forward to working with you.

Sincerely,

GREG THOMAS,
*Chair.*

STATEMENT OF THE NATIONAL PROPANE GAS ASSOCIATION

The National Propane Gas Association (NPGA) applauds Senators Ron Wyden (D-OR) and Debbie Stabenow (D-MI) on the introduction of the Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011 (S. 1001), comprehensive alternative fuel vehicle legislation designed to reduce our dependence on imported petroleum by replacing it with clean domestic sources of energy to power America's on and off-road vehicles, including cars, trucks and buses, as well as commercial and agricultural equipment.

The only path toward achieving United States energy security is to reduce our dependence on foreign oil, particularly in the transportation sector which accounts for over 70% of all oil used in the United States. NPGA strongly believes that S. 1001 addresses head-on the broad concepts that our nation must confront in order to wean ourselves off of foreign petroleum products, spur economic growth, and create good jobs here at home.

First and foremost, the Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011 gets the details regarding fuel neutrality in public policy correct. In the previous Congress, numerous alternative fuel and alternative fuel transportation bills were introduced that would have incentivized the development, production and use of various alternative fuel vehicles, notably vehicles that operate on compressed natural gas (CNG), biofuels, ethanol, hydrogen and electricity. Unfortunately, in many cases this legislation neglected to also support propane autogas as a vehicle fuel and propane autogas vehicle alternatives despite the fact that propane autogas is defined in law as a clean alternative fuel, is widely available, domestically-produced, and increasingly deployed in vehicle fleets nationwide.

NPGA appreciates the "technology neutral" approach S. 1001 takes. Passing legislation that incentivizes only one, or a select few, fuels places the Congress in the position of "picking winners" among alternative transportation fuels. Alternative fuel choices should be made by the marketplace, by the fleets, companies, and consumers across the country who are tasked with making individual decisions about which alternative fuels and vehicles suit their needs best. The government should not intercede in this process.

NPGA fully supports the policy positions outlined in S. 1001. Expanding existing Department of Energy programs to include manufacturing support for alternative fuel vehicles and alternative fuel infrastructure; offering DOE technical and workforce training assistance to state and local entities toward the deployment of alternative fuel vehicles; and increasing interagency alternative fuel vehicle technology research and development program funding will help manufacturers, suppliers, fuel providers, and transportation program managers deploy alternative fuel vehicles in numbers large enough to reduce our dependence on imported oil.

At the end of the day, the propane industry is confident that, given a level playing field, propane autogas vehicles can play a lead role in addressing many of the objectives outlined in the Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011. Propane autogas offers the right attributes:

- Propane autogas is a clean American fuel. 98.7% of U.S. propane supply is produced domestically. 66% of propane supply is derived from natural gas. This compares very favorably to the current U.S. transportation sector which is 95% reliant on petroleum. Even better news is that U.S. propane production from natural gas will increase between 2010 and 2020.
- Propane autogas vehicles have a positive emissions reduction profile. Propane autogas vehicles are 19% lower in CO2 emissions than gasoline powered vehicles. Propane autogas vehicles also produce significantly lower particulate matter, carbon monoxide, nitrogen oxide and hydrocarbon emissions than gasoline or diesel vehicles.
- Propane supply is abundant. In 2010 the North American market (U.S and Canada) was a net exporter of propane. This trend is likely to continue as shale gas, and natural gas liquids production in conjunction with shale gas, increase.
- Propane autogas vehicles are here now. Over the past several years, more and more commercial, state and local government fleets have been transitioning to propane autogas as a cost-effective, environmentally sensitive domestic fuel.

Propane autogas is easily the most accessible alternative transportation fuel currently available in the marketplace. Moreover, this clean, domestic and abundant fuel is already displacing imported petroleum products in the American marketplace. Recognizing this market, Ford and General Motors are now producing propane autogas vehicle platforms and many smaller companies are now converting existing vehicles to run on propane autogas. With gasoline and diesel prices rising fast

and our country's continued reliance on foreign oil, now is the time to support all opportunities to bolster alternative vehicle deployment.

NPGA appreciates the approach Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011 takes in promoting alternative fuels and respecting parity in the alternative fuel marketplace. As an industry, we the look forward to working with the Senators Wyden and Stabenow, the Senate Energy and Natural Resources Committee, and our partners in the broader alternative fuel industry to craft smart and equitable alternative fuel transportation solutions for the American public.

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NPGA is the national trade association of the propane gas industry with a membership of approximately 3,200 companies, including 39 affiliated state and regional associations representing members in all 50 states. Although the single largest groups of NPGA members are retail marketers of propane gas and propane autogas, the membership includes propane producers, transporters and wholesalers, as well as manufacturers and distributors of associated equipment, containers and appliances. More than 55 million households and businesses use propane gas for space heating, water heating, cooking, outdoor recreation, and other uses. Propane gas is also used in millions of installations nationwide for commercial heating and cooking, in agriculture, in industrial processing, and as a clean alternative engine fuel for over-the-road vehicles and industrial lift trucks.

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## STATEMENT OF KENT JEFFREYS, STAFF VICE PRESIDENT, THE INTERNATIONAL COUNCIL OF SHOPPING CENTERS

### SUMMARY AND INTRODUCTION

Thank you for this opportunity to comment on the record concerning such an important national issue. In the interest of brevity, these comments are specifically addressed to the Building Energy Codes provisions of Subtitle A of S. 1000, the Energy Savings and Industrial Competitiveness Act of 2011. These comments convey two essential points:

(1) Existing law and the current code-writing process are more than sufficient to achieve economically appropriate levels of energy efficiency in commercial and residential buildings.

(2) Setting a goal of Zero-Net-Energy for all new buildings is simply bad public policy.

The International Council of Shopping Centers (ICSC), founded in 1957, is the premier global trade association for the shopping center industry. Its approximately 50,000 members include shopping center owners, developers, investors, lenders, retailers and other professionals as well as academics and local public officials. As such, ICSC members have a uniquely broad perspective on the effect of proposed building energy code provisions as they relate to multi-tenant retail and mixed use commercial real estate. ICSC and its individual members continue to support consensus-based energy codes that reflect current technological capabilities and existing market realities.

### BACKGROUND AND CONTEXT

Congress has frequently addressed the issue of energy efficiency in both privately and publically owned buildings. Major recent examples include the American Recovery and Reinvestment Act of 2009, the Energy Independence and Security Act of 2007, and the Energy Policy Act of 2005.

The legislation being considered at today's hearing seeks, once again, to further refine federal policy and thereby increase the efficiency of energy consumption by the private sector. These are laudable goals. However, federal policy is made less effective when each succeeding Congress revises the scope and purpose of past policies without providing sufficient time to determine the success of failure of previous efforts.

Consider that current federal law (42 USC § 6836) already directs the Secretary of Energy to "support the upgrading of voluntary building codes for new residential and commercial buildings." Some participants would argue the Department of Energy has, if anything, been excessively involved in driving consensus-seeking building code processes toward predetermined outcomes. For example, it is safe to assume that most Members of Congress are unaware that the Department of Energy,

operating under current law, submitted at least 56 code change proposals during the International Code Council's (ICC) 2009/2010 code development cycle (which is developing the 2012 code).

Nevertheless S. 1000 proposes to amend the existing statute before Congress has fully determined the impact of its past statutory directives and determined the full extent of progress toward its goals.[1]

ZERO NET ENERGY

Cost-effective, carbon-free energy production is fairly limited in scope. This is largely due to limitations inherent in these technologies. In addition, solar and wind energy are time and place specific. That is, their energy output depends upon the precise conditions present over time at each unique building site. Furthermore, reliance upon them must be augmented by two-way access to the power grid. As the installed capacity of on-site solar increases, complications are predicted to arise in balancing power fluctuations on the grid and properly anticipating peaks in demand. Without first successfully addressing these issues, Congress should not move forward with proposed zero-net-energy code provisions.

If zero-net-energy is adopted into state and local building codes building owners would be required to engage in an entirely unrelated business (that is, power generation) that effectively forces them into competition with regulated public utilities and large distributed power generators. It is unlikely that all building owners would be equally successful in any such competition but if it is written into building codes, what choice will they have? Bear in mind that state regulated utilities typically are guaranteed a minimum return on their investment—yet no similar guarantee is being provided to building owners.

Hypothetically, neighborhood or community-wide zero-net-energy might be feasible if there were significant changes to the regulatory structure of the electrical distribution system and an expensive increase in current subsidy levels for "green" energy. However, universal building-by-building "zero net" simply is not possible with today's technology, or even with tomorrow's foreseeable improvements—unless one simultaneously restricts occupant behavior to a degree far beyond anything yet admitted by energy efficiency advocates. That would be a huge, unintended consequence of imposing zero-net-energy requirements on the code writing process and Congress would be remiss if it did not carefully consider the potential impacts in advance. Does Congress truly want to force landlords to reject one tenant simply because they might consume 5 percent more energy than another? What if the first tenant created more jobs and generated far more income in the process? Proponents also gloss over the fact that existing street patterns, building orientations and property locations may not be conducive to zero-net-energy requirements (particularly when utilizing wind or solar). Yet if such requirements become part of the state or local building code, many private citizens will be denied the full and fair use of their property.

If Congress is to impose the "zero net energy" concept on building energy codes, a precise definition will be critical, yet one is not included in S. 1000. There has been a long debate over the proper definition of zero net energy to be applied in federal laws. See, for example, the 2006 publication Zero Energy Buildings: A Critical Look at the Definition. (http://www.nrel.gov/docs/fy06osti/39833.pdf)

One definition is found in Executive Order 13514, issued by President Barack Obama in 2009. It provides the following definition: "Zero-Net-Energy Building means a building that is designed, constructed, and operated to require a greatly reduced quantity of energy to operate, meet the balance of energy needs from sources of energy that do not produce greenhouse gases, and therefore result in no net emissions of greenhouse gases and be economically viable." This is slightly different from the definition found in the Energy Independence and Security Act of 2007, which referred to zero-net-energy commercial buildings (at section 422(a)(3)), but only as part of a High-Performance Green Building initiative.

Executive Order 13514 goes on to require that beginning in 2020, all new Federal buildings that enter the planning process must be designed to achieve zero-net-energy by 2030. Admittedly, this is a rather imprecise requirement. Yet shouldn't Congress first determine whether federal buildings (which typically have "captive" tenants and the deep pockets of the Treasury backing them) are able to achieve such lofty goals before imposing the same requirement on the private sector?

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[1] The U.S. Energy Information Administration recently stated that it "regrets to report that the 2007 Commercial Buildings Energy Consumption Survey (CBECS) has not yielded valid statistical estimates of building counts, energy characteristics, consumption, and expenditures. Because the data do not meet EIA standards for quality, credible energy information, neither data tables nor a public use file will be released."

In addition, one should not be too quick to assume that the caveat in Executive Order 13514 that zero-net-energy be "economically viable" will have the same definition for businesses as it does for the government. Indeed, the definitions already adopted in existing law clearly highlight the false assumption that "everyone knows" what a specific term really means. Consider that under the existing law (that would be amended by S. 1000's Building Energy Code provisions) one of the primary purposes listed is "to assure that reasonable energy conservation features will be incorporated into new commercial and residential buildings receiving Federal financial assistance."[2] Few would object to a policy that appears to extract concessions only from those private developers who seek federal financial assistance to complete their projects. Yet the definition of "Federal financial assistance" included in the same law effectively declares that merely borrowing money from any regulated entity qualifies as "federal financial assistance."[3] In other words, essentially every new building in America is covered by that definition.

The language of the Building Energy Codes subtitle of S. 1000 includes numerous words and phrases that, despite any assurances by the authors, will be subject to bureaucratic reinterpretation and ultimate enforcement. These include "support," "life-cycle cost effective," "technologically feasible," "technically feasible," "return on investment analysis," and "cost benefit analysis."

CONCLUSION

ICSC's members uniformly support sensible sustainability practices, particularly when it comes to energy efficiency. Energy expenses directly impact the bottom line for most businesses in the retail industry. Yet that does not mean that energy is the only priority or that there is a "one size fits all" solution to the important question of "how much efficiency is enough?"

The goods and services supplied by the retail real estate industry are as diverse as the American economy itself. So it is entirely understandable that carefully tailored business models have arisen to serve different market segments. Some, perhaps many, of these business models may not be viable under a requirement to achieve zero net energy for each new building in America.

Directing the Department of Energy to draft a model building energy code around zero-net-energy requirements is not a hypothetical exercise. The purpose is to make this model code the minimum standard for the entire nation. Therefore, the potential negative consequences of such a radical goal should be more fully contemplated before any Congress considers imposing them on the US economy.

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STATEMENT OF ANN WILSON, SENIOR VICE PRESIDENT, GOVERNMENT AFFAIRS, MOTOR & EQUIPMENT MANUFACTURERS ASSOCIATION

The Motor & Equipment Manufacturers Association (MEMA) represents more than 700 companies that manufacture motor vehicle parts for use in the light vehicle and heavy-duty original equipment and aftermarket industries. Motor vehicle parts manufacturers are the nation's largest manufacturing sector. MEMA represents its members through four affiliate associations: Automotive Aftermarket Suppliers Association (AASA), Heavy Duty Manufacturers Association (HDMA), Motor & Equipment Remanufacturers Association (MERA) and Original Equipment Suppliers Association (OESA).

MEMA strongly supports the Advanced Vehicle Technology Act (S. 734) and the Alternative Fuel Vehicles Competitiveness and Energy Security Act (S. 1001) and urges the Committee to report these bills to the full Senate for consideration as soon as possible. These important bills will help motor vehicle parts suppliers develop, implement, and manufacture technology for more fuel efficient components.

Component suppliers and vehicle manufacturers have worked together to develop the technologies necessary for advanced technology vehicles that will improve the fuel economy of our nation's fleets. Suppliers account for 30 percent of total automotive investment in research and development and continue to take on a greater role in the design, testing, and engineering of new vehicle parts and systems. Addi-

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[2] 42 USC 6831(b)(1): The purposes of this subchapter, therefore, are to—(1) redirect Federal policies and practices to assure that reasonable energy conservation features will be incorporated into new commercial and residential buildings receiving Federal financial assistance;

[3] 42 USC 6832(7)(B): (7) The term "Federal financial assistance" means . . . (B) any loan made or purchased by any bank, savings and loan association, or similar institution subject to regulation by the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Comptroller of the Currency, the Federal Home Loan Bank Board, the Federal Savings and Loan Insurance Corporation, or the National Credit Union Administration.

tionally, suppliers now account for as much as 70 percent of the value-added in the manufacture of motor vehicles.

S. 734 calls for the research, development, and deployment that will be necessary for motor vehicle suppliers to make the highly efficient components and technologies for future cutting edge vehicles. These investments will advance fuel efficiency, lower emissions, and expand and strengthen U.S. manufacturing capabilities for the next generation of automobiles as well as increase our nation's energy independence.

S. 1001 broadens and makes improvements to the Advanced Technology Vehicle Manufacturing Incentive program which will allow the program to work more effectively for suppliers and extend the program to medium-and heavy-duty vehicles.

We look forward to working with you to ensure that S. 734 and S. 1001 are considered by the full Senate.

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## STATEMENT OF DAVID TERRY, EXECUTIVE DIRECTOR, NATIONAL ASSOCIATION OF STATE ENERGY OFFICIALS, ON S. 1000

On behalf of the National Association of State Energy Officials (NASEO) we wish to express our strong support for the Energy Savings and Industrial Competitiveness Act of 2011 (S.1000). We also want to stress the importance of the building energy codes provision (Section 101) contained in the bill, which would spur major building efficiency improvements by working with states to strengthen national model building codes to make new homes and commercial buildings more energy efficient.

New building energy efficiency must be a key part of any successful national energy policy because homes and commercial buildings are the largest source of energy use. In the United States, non-industrial buildings consume over 40 percent of all energy and over 70 percent of all electricity. We believe improved energy efficiency of buildings codes is a critical measure in achieving our goal to greatly increase energy efficiency and reduce demand of the largest energy consuming sector in our economy.

NASEO and our 56 State and Territory members share the committee's goal to strengthen the nation's economy through sound energy policy advances. We are encouraged by the building energy codes policies contained in S. 1000, and urge you to support these provisions in committee. We welcome the opportunity to work with you to advance this important piece of legislation that will surely accelerate our efforts for cost effective and dramatic efficiency improvements in new homes and commercial buildings.

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## STATEMENT OF NATURAL GAS VEHICLES FOR AMERICA

### INTRODUCTION

NGVAmerica is pleased to offer the following written statement with regard to this hearing. NGVAmerica is a national organization dedicated to the development of a growing and sustainable market for vehicles powered by natural gas and biomethane. NGVAmerica represents more than 130 member companies, including: vehicle manufacturers; natural gas vehicle (NGV) component manufacturers; natural gas distribution, transmission, and production companies; natural gas development organizations; environmental and non-profit advocacy organizations; state and local government agencies; and fleet operators.

The purpose of the Committee's hearing on June 9, 2011 is to receive testimony concerning energy efficiency and alternative fuel provisions contained in S. 963, S. 1000, and S. 1001. Our statement addresses the alternative fuel provisions in S. 1001, Alternative Fuel Vehicles Competitiveness and Energy Security Act of 2011." In general, we appreciate the provisions contained in S. 1001, including loan guarantees for alternative fuel vehicle manufacturers, research and development grants, and other incentives like the high-occupancy vehicle exemption extension. Below we offer some general comments on the benefits of NGVs and the types of incentives we believe the Congress should offer as well as specific comments on the incentives contained in S. 1001.

### NATURAL GAS VEHICLES SHOULD BE A PART OF FUTURE ENERGY LEGISLATION

Today, natural gas vehicles are uniquely positioned to help the United States achieve a number of critical policy objectives. The increased use of natural gas vehicles can reduce our dependence on foreign oil while reducing greenhouse gas emissions and urban pollution. And, equally important, increased use of natural gas ve-

hicles will benefit the economy by stimulating demand for domestic natural gas and by lowering fuel cost to businesses, fleets and consumers that operate natural gas vehicles. Thus, energy legislation that is intended to reduce reliance on oil consumption should also seek to promote the use of natural gas vehicles. We are pleased to see that a number of the provisions contained in S. 1001, specifically includes natural gas vehicles, or include natural gas vehicles by reference to existing definitions that incorporate natural gas powered vehicles.

The House of Representatives has already introduced HR 1380, a bill intended to promote the use of natural gas vehicles. We would urge the Committee Members to support the HR 1380 when a Senate companion is introduced. HR 1380 is discussed in greater detail below.

AN ABUNDANT AND ECONOMICAL DOMESTIC RESOURCE

Reliance on foreign oil exacts a high toll on the U.S. in terms of direct economic costs and indirect energy security costs. In the past three years (2008—2010), the US spent nearly $700 billion on imported petroleum. More recently, the tab for imported oil has been much higher as oil prices have once again exceeded $100 per barrel. In the coming decade, the EIA forecasts total expenditures for petroleum imports to top $3.3 trillion dollars. See EIA, 2011 Annual Energy Outlook , Table 11 (April 2011). Our reliance on oil not only affects our trade balance but makes the U.S. vulnerable to price spikes and supply disruptions. And high oil prices results in a windfall for regimes that may not be friendly to the U.S. Fortunately, the U.S. has an unprecedented opportunity to displace petroleum with domestic natural gas. In the past several years, a wealth of new data has been developed demonstrating that the U.S. has an abundant supply of readily available, economically priced natural gas.

The U.S. Energy Information Administration, the Potential Gas Committee and other expert bodies now estimate that we have up to a 100 years supply of natural gas. The Potential Gas Committee's 2011 bi-annual report indicates that the U.S. now has a total future supply of 2,170 trillion cubic feet of natural gas. This is 89 Tcf more than estimated in the 2009 report. As was the case with the 2009 report, the 2011 report includes the highest resource estimate in the Committee's history; PGC has now been estimating natural gas supplies for 46 years.

Increased demand for natural gas helps to keep our economy growing by supporting new jobs and economic development. In 2008, U.S. production of 20 Tcf of natural gas supported nearly 3 million jobs ("The Contributions of the Natural Gas Industry to the U.S. National And State Economies", IHS Global Insight 2009, p.1) Even a modest increase in demand for natural gas as a transportation fuel could create tens of thousands of jobs associated with producing natural gas.

Natural gas also benefits our economy because it is a low cost energy that helps businesses grow while at the same time controlling costs. Natural gas is priced much lower than petroleum. The two fuels no longer track one another and haven't for many years. The current contract price for natural gas (NYMEX July delivery) is $4.629 per million Btu, which equates to a per-barrel of oil price of only $26.85 at a time when oil is trading above $100 a barrel. The difference in price relates to the fact that petroleum prices are set by world markets. An increase in demand in China or India leads to an increase in the cost of oil consumed here in the U.S. However, the same is not true for natural gas. The U.S. market for natural gas is currently insulated from most overseas events. Given the fact that large quantities of natural gas cannot be readily shipped from North America to other markets, the supply and demand for natural gas here in the U.S. sets the price that U.S. consumers pay. Because of the abundant supply of natural gas that exists here in the U.S., natural gas prices relative to oil prices are expected to remain much lower in the coming years. In fact, the EIA estimates that the differential between diesel fuel and natural gas for transportation could be as much as $2 per diesel gallon equivalent in the future.

TRANSLATING OPPORTUNITY INTO ADVANTAGE

How should we use this natural gas? Market price signals tell us that transportation fuel and vehicles are the highest valued application of all natural gas uses. Outside the U.S., demand for natural gas vehicles is growing at a rapid pace. In the last seven years the market for NGVs has more than tripled with a compound growth rate of over 17 percent per year. In fact, NGVs are the fastest growing alternative to petroleum vehicles in the world. In 2003, there were only about 2.8 million NGVs globally. Today, there are over 13.2 million NGVs in operation worldwide. This rapid growth points to the fact that rapid scaling up of NGVs is possible. The International NGV Association forecasts that, by 2020, there will be 65 million

NGVs on the world's roads. Unfortunately, the U.S. currently ranks fourteenth in the world in total number of NGVs.

Most of the new natural gas vehicles sold outside the U.S. are either conversions of light-duty gasoline vehicles or are produced by light duty OEMs, including: Ford, GM, Toyota, Honda, Nissan, Hyundai, Fiat, Volkswagen and Mercedes. Fiat alone makes 14 separate NGV models, and more than 100,000 NGVs were sold in Italy in 2009, comprising some 7% of the new vehicle market. Most U.S. manufacturers currently offer natural gas vehicles in places like Europe, South America and Asia, but only Honda currently offers a light duty OEM NGV product—the Honda Civic GX.

For a number of reasons, including the sheer geographic size of America, the strategy of the US NGV industry has been to focus on high fuel-use fleets: trash trucks, transit buses, short-haul 18-wheelers, school buses, urban delivery vehicles, shuttles of all kinds, and taxis. Today, the U.S. only has about 120,000 NGVs. Vehicle demand has been growing, but slowly. However, because of the large fuel use per-vehicle, the amount of natural gas used (and petroleum displaced) has been increasingly at a robust pace. NGVAmerica estimates that, last year, natural gas vehicles used about 43 billion cubic feet of natural gas. That is the equivalent of about 320 million gallons of gasoline that was not imported. At today's fuel prices, this represents about a billion dollars not spent on foreign oil.

Fortunately, the U.S. currently leads the world in offerings of new medium-and heavy-duty NGVs. In the past several years, virtually all the major truck and bus manufacturers in the U.S. have begun offering factory-built NGVs. The impressive list of manufacturers includes: Kenworth, International/ESI, Peterbilt, Mack, American LaFrance/Condor, Crane Carrier, AutoCAD Truck, Capacity, Thomas Built Bus, Blue Bird Bus, Optima, NABI, El Dorado, New Flyer, Daimler/Orion, Freightliner, Gillis, Workhorse Chassis, Elgin, Allianz/Johnston, Schwarz, and Tyco.

Manufacturers are betting that the U.S. will get serious about its desire to displace petroleum demand and increase the use of alternative fuels like natural gas. With proper government policies, like those proposed in S. 1001, and incentives, like those proposed in HR 1380, sales of these trucks and use of natural gas could grow substantially in the coming years. NGVAmerica estimates that current fuel consumption of natural gas for vehicles could grow to one and a quarter trillion cubic feet or the equivalent of about 10 billion gallons within 15 years. At the level of fuel prices currently projected, that would lower fuel costs to businesses by up to $20 billion a year and reduced payments for imported petroleum by more than $40 billion per year.

NGVAmerica believes that there could be a substantial market for natural gas vehicles in all applications. However, the most immediate opportunity for displacing petroleum and increasing the use of natural gas as transportation fuel lies with light-, medium-and heavy-duty fleets—especially trucks, buses and other heavier vehicles. As noted above, America currently has a large selection of medium and heavy duty vehicles available here in the U.S. This is significant since trucks are the economic lifeblood of America. Everything we buy moves by truck. Reducing the cost of trucking reduces the cost of everything, benefiting businesses and consumers alike.

PROPOSED CHANGES TO S. 1001

Section 2. Definitions. The definition of alternative fuel vehicle incorporates the definition of qualified alternative fuel vehicle found in 26 USC 30B (e) (4) (e.g., dedicated alternative fueled vehicles) and section 30B (e) (5) (B) (e.g., mixed-fueled alternative fueled vehicles operating on 75% NG or more). Section 30B specifically includes compressed natural gas and liquefied natural gas. The definition in section 2 controls key provisions elsewhere in S. 1001 (e.g., loan guarantee program). As currently written, the bill would not include incentives for bi-fuel NGVs or most dual-fuel NGVs. The NAT GAS Act (HR 1380) specifically amends section 30B to allow all bi-fuel and dual-fuel NGVs to qualify for the tax credits. For the section 136 loan guarantee program authorized under EISA 2007, the NAT GAS Act (HR 1380) would allow a bi-fuel NGV that is capable of achieving a minimum of 85 percent of its total range with compressed or liquefied natural gas, or a dual-fuel NGV that is capable of operating on a mixture of natural gas and gasoline or diesel fuel but is not capable of operating on a mixture of less than 75 percent natural gas. The provision contained in the NAT GAS Act is intended to limit the loan guarantee incentive to vehicles that will be predominately fueled with natural gas. S. 1001 should include bi-fuel and dual-fuel alternative fuels vehicles that will be predominately fueled with alternative fuel. Outside the U.S. bi-fuel vehicles are the dominate technology offered by automakers. Providing incentives for them could encour-

age manufacturers to offer such vehicles here and would make the use of alternative fuel vehicles far more practical for a larger portion of the consumer and fleet market. That is why the NAT GAS Act amends the tax code in section 30B to include such vehicles.

It is true that S. 1001 already allows mix-fueled vehicles but by referencing the current version of section 30B of the tax code, it would only encourage heavy-duty mixed fueled vehicles (i.e., vehicles 14,001 lbs. GVWR or greater). S. 1001 should be expanded to include the change requested here by tracking the definitions found in section 202 of HR 1380.

Section 101. Loan Guarantees Program. This section amends the U.S. Department of Energy (DOE) loan guarantee program found in 42 USC 16513(a) (EPAct 2005, Sec. 1703) so that activities that reduce petroleum through the use of alternative fuels as defined in 26 USC 30B(e)(4) (NG is included here) also qualify. S. 1001 would amend this program to add support for activities involving the "production and distribution of alternative fuel." The DOE program (section 16513(b)(8)) already includes production facilities for fuel efficient vehicles, including EVs and diesel fueled vehicles. However, it doesn't specifically include alternative fueled vehicles or natural gas vehicles.

We believe that the program found in section 42 USC 16513 (b) (8) should be expanded to specifically include natural gas vehicles so that there is no doubt that they qualify. And the language in S. 1001 should be expanded specifically to include fueling infrastructure equipment for natural gas vehicles; the current wording "production and distribution of alternative fuel" sounds like it is intended for refinery-type operations and terminal distribution networks, not fueling station equipment. If the word "dispensing" were added that probably would take care of our concern: "production, distribution or dispensing."

Section 102. Advanced Technology Vehicle Program. S. 1001 amends the Section 136 Program found in EISA 2007 to add medium and heavy duty vehicles and certain non-road vehicles if they reduce consumption of conventional motor fuel by 25% or more. This loan guarantee program for manufacturing facilities is currently geared to retooling for fuel-efficiency improvements. If conventional fuel means gasoline or diesel then this amendment would allow for inclusion of NGVs. The amendment adds alternative fuel vehicles as defined 30B(e) so that means NGVs qualify, but only dedicated and mixed-fueled vehicles that operate at 75% or more NG.

As noted above, we think that bi-fuel and dual-fuel vehicles should qualify for this program. Since this section references the definition section in S. 1001, making the changes we have suggested for that section would take care of our concern here.

Section 105. Workforce Training. This section provides assistance for job training related to alternative fuel industry, including the manufacture and maintenance of AFVs. Authorizes $50 million for each FY, 2012—2016. We propose that the bill specifically include "installation of conversions" in the list of industry jobs supported by this incentive. This would help small businesses and automotive dealerships who are involved in installing aftermarket conversion systems on existing or recently acquired vehicles.

ENACTING MEANINGFUL POLICIES SUCH AS HR 1380 AND S. 1001

Currently, NGVs cost more to buy than comparable gasoline or diesel powered vehicles. But they cost less to operate. The more miles a vehicle is driven each year, the faster the payback and the more likely the owners can justify the investment in NGVs. For some of the most fuel intensive fleets and vehicle applications, NGVs already are economic. However, to expand the use of NGVs and maximize NGVs' oil displacement potential, the first-cost or incremental cost of NGVs needs to be brought down rapidly. And this will only happen with large scale production and increased economies of scale. H.R. 1380, the New Alternative Transportation to Give Americans Solutions (NAT GAS) Act of 2011 provides the means to accelerate demand for NGVs and to help manufacturers achieve economies of scale and build-out much needed fueling infrastructure. HR 1380 would provide federal incentives for the production, purchase and use of natural gas vehicles and the expansion of the NGV fueling infrastructure.

It is important to note that there is no free market when it comes to the leading transportation fuel, i.e., petroleum. It is significantly distorted by the cartel power of OPEC. All other transportation fuels and technologies are at an extra-market economic disadvantage. Nothing would please OPEC more than for Congress to assume that, left on its own, the marketplace would solve the problem of our addiction to foreign oil. Federal intervention to offset the policies of OPEC is essential.

That is why NGVAmerica strongly supports H.R. 1380, and hopes similar legislation will be introduced in the Senate soon. There is broad bipartisan support for this

bill. Although only introduced on April 6th, H.R. 1380 already has 190 bipartisan co-sponsors. As proposed, these incentives would be available for only a five year period. During that time and long thereafter, it would make NGVs the economic choice for many more fleets. This legislation would accelerate NGV use, which, in turn, would bring more NGV manufacturers into the market, increase competition and drive down the first-cost premium of NGVs.

NGVs are a here-and-now technology. This fact is highlighted by the investments and commitments by fleets already taking place in the market place in the U.S. Highlighted here are some of the growing examples of how natural gas is helping meet the needs of fleets:

- AT&T operates more than 2,400 vehicles powered by natural gas and has a goal of expanding the fleet to 8,000 by 2013;
- UPS has more than 1,100 natural gas powered vehicles, and is expanding its fleet of vehicles powered by liquefied natural gas. The company has said it would convert a much larger share of its trucking fleet to LNG if the fueling infrastructure was in place;
- The Los Angeles County Metropolitan Transportation Authority earlier this year held a retirement ceremony for its last diesel bus, and 2,221 of its buses are now running on compressed natural gas; a number of the other smaller transit agencies around the country have successfully switched their entire fleet over to using natural gas. In Washington, DC, the local transit authority operates nearly 500 natural gas transit buses, and several feeder systems (outlying counties) also operate natural gas buses.
- Ryder System Inc. is purchasing 202 heavy-duty natural gas vehicles that will be used in its Southern California network;
- Waste Management, the largest refuse company in the country, has more than 900 vehicles running on either compressed natural gas or liquefied natural gas;
- The Dallas Area Rapid Transit system recently announced it will purchases 452 natural gas powered transit buses—the largest single order of natural gas transit buses currently in place.

As these fleet examples highlight, NGVs do not need technical breakthroughs to capitalize on the potential of natural gas as a transportation fuel. What is needed most is to grow demand for these vehicles faster. Federal leadership in leading the way and providing incentives will make this happen. By providing critical incentives like S. 1001 and HR 1380, the Congress can help jumpstart that growth. While NGVs do not need technological breakthroughs to be commercial, NGVs can be further improved by, for example, integrating hybridization technology with natural gas power. Therefore, it is important that the federal government support research, development and demonstration programs, like the ones proposed in S. 1001. Federal assistance and public private partnerships can ensure that natural gas vehicles continue to improve over time, delivering increased performance and delivering increased fuel efficiency.

CONCLUSION

The U.S. has an unprecedented opportunity to displace petroleum with domestic natural gas. Now is the time to act to encourage the increased use of natural gas vehicles. We have an abundant supply of readily available, low-cost domestic natural gas. The fact that this fuel is domestic, low-cost, and clean means that America can achieve multiple national goals (energy security, clean air, economic security) all the while helping fleets and businesses to lower their costs, thus improving economic prosperity. Today, nearly every major truck or bus manufacturer in the U.S. is now offering factory-built NGV models. Federal policies and incentives, however, are needed to aid in the successful market penetration of these vehicles and to help accelerate their use so that the benefits of increased natural gas use can be realized.

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*June 6, 2011.*

Hon. JEANNE SHAHEEN AND ROB PORTMAN,
*U.S. Senate, Washington, DC.*

DEAR SENATORS SHAHEEN AND PORTMAN: On behalf of the Petroleum Marketers Association of America (PMAA), the New England Fuel Institute (NEFI), the Ohio Petroleum Marketers and Convenience Store Association (OPMCA), the Oilheat Council of New Hampshire (OHCNH), and the National Association of Oil & Energy Service Professionals (OESP), we are writing in support of the "Energy Savings and Industrial Competitiveness Act of 2011" (S. 1000) which will pay dividends both in

the short and long-term for residential, commercial, and industrial sectors by promoting the use of energy efficient technologies. The bill updates provisions for building codes sections and appliance standards which will reduce America's dependence of imported oil and provide for a cleaner, greener future for American households and commercial businesses.

PMAA is a national trade association in the petroleum industry representing 8,000 independent petroleum marketing companies who own 60,000 retail fuel outlets such as gas stations, convenience stores and truck stops. Additionally, these companies supply motor fuels to 40,000 independently owned retail outlets and heating oil to eight million households and businesses. Nearly all of the heating oil consumed in the United States is sold by PMAA member heating fuels companies. NEFI is a member of PMAA, and an independent trade association representing the home heating industry since 1950. NEFI represents over 1,000 home heating oil and propane retailers and related service companies in New England and throughout the northeastern United States, most of which are small, multi-generational family ownedand-operated businesses. OPMCA is the statewide trade association representing more than 500 independent, small businesses in Ohio's petroleum and convenience industry. OPMCA's members own and operate the overwhelming majority of Ohio's 5,200 convenience stores and employ more than 55,000 Ohioans. Members on the wholesale side of the industry employ thousands more in commercial fueling facilities, transportation divisions, and heating oil sales. OHCNH represents 122 heating fuels companies which market traditional heating oil and biodiesel blended fuels. OHCNH keeps the public informed regarding energy conservation, safety and environmental protection and the benefits of heating with oil. Finally, OESP devotes its resources for education and the advancement of oil heat service professionals.

S. 1000 encourages consumers and businesses to upgrade to newer, more efficient energy savings technologies which will stimulate the economy and encourage private-sector job creation. S. 1000 specifically builds upon Section 325(f) of the Energy Policy and Conservation Act for non-weatherized oilheat furnaces by increasing the Annual Fuel Utilization Efficiency (AFUE) standards to 83 percent. Increasing the AFUE ratings for non-weatherized oilheat furnaces will save consumers money because of the higher AFUE rating offset for using less energy to heat their homes. Standards for commercial oilheat furnaces would have a minimum thermal efficiency rating of 81 or higher.

We would also like to thank Senator Shaheen's lead role to reauthorize the National Oilheat Research Alliance (NORA), S. 949. The bill promotes research and development in the oilheat sector to increase energy efficiency to conserve fuel for oilheat consumers. NORA educates consumers on the benefit and importance of regular service and safety practices, and the latest in oilheat technology and renewable alternatives. With passage of S. 1000 and S. 949, oilheat consumers will benefit tremendously with the tools and tips to reduce their heating bills.

Again, we would like to thank Senators Shaheen and Portman for putting aside party politics by introducing a bipartisan bill which will lower consumers' energy bills, create jobs for small businesses and will provide for a cleaner and greener future for American households and commercial businesses.

Sincerely,

DAN GILLIGAN, PRESIDENT,
*Petroleum Marketers Association of America.*

JIM COLLURA, VICE PRESIDENT,
*New England Fuel Institute.*

JENNIFER RHOADS, PRESIDENT AND CEO,
*Ohio Petroleum Marketers & Convenience Store Association.*

JUDY GARBER,
*Association of Oil & Energy Service Professionals.*

ROBERT SCULLEY,
*Oilheat Council of New Hampshire.*

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*May 5, 2011.*

Hon. JEFF BINGAMAN, DIANNE FEINSTEIN, AND OLYMPIA SNOWE,
*U.S. Senate, Washington, DC.*

DEAR SENATORS BINGAMAN, FEINSTEIN, AND SNOWE: We represent real estate owners, builders, contractors, building managers, energy service companies, building efficiency manufacturers and suppliers, energy efficiency financing sources, environ-

mental and efficiency advocates, architects and engineers, and other stakeholders who believe that modifications to the Energy Efficient Commercial Buildings Deduction (Section 179D of the Internal Revenue Code) could increase its effectiveness at encouraging retrofits of existing buildings.

We appreciate your leadership in recognizing that federal tax incentives to improve the energy performance of commercial buildings could deliver tremendous benefits in terms of job creation, energy savings and greater competitiveness. In particular, we commend your work to establish and improve Section 179D. We understand that the Department of Energy is currently working on prescriptive guidance to make 179D more useable, and that your offices have been encouraging them to do so. While we support these efforts, we have concluded that additional statutory options are required for Section 179D to have a meaningful impact on the market for retrofits of commercial buildings. The Obama Administration's Better Buildings Initiative also suggests legislative modifications to increase the uptake of Section 179D for existing building retrofits and we are supportive of the goals of this initiative.

We recommend adding an additional tax incentive provision that is specifically targeted at encouraging existing building retrofits. This provision should include the following key elements:

- Measure energy savings compared to the existing building baseline. Currently Section 179D rewards buildings that reduce the energy consumption of the whole building to 50 percent of the amount the building would use if it were built to a particular code. This is an arbitrary baseline for buildings that were constructed decades ago. Additionally, the current savings threshold of 50 percent better than this code is very aggressive for existing buildings. For instance, the project at the Empire State Building—a leading and internationally recognized example of whole-building commercial retrofits that makes a $13.2 million investment in efficiency upgrades—would not meet this target, despite the fact that the retrofit is guaranteed to reduce the building's energy consumption by about 38 percent.[1]

  Energy usage pre-and post-retrofit is a more appropriate comparison metric for existing buildings. For example, many building owners today commonly use the EPA Portfolio Manager tool to document the total energy use of a building. This information could be used in combination with analysis by a Professional Engineer to project and measure energy savings. The incentive should be structured in such a way that reductions in energy used by exterior lighting can also qualify, even though it falls outside of the building envelope.
- Link the amount of the incentive to energy savings achieved. This would calibrate the tax benefit to the value created. We recommend that the minimum amount of the incentive should correspond to 20 percent total energy savings compared to the building's baseline energy consumption, and the maximum incentive should correspond to 50 percent savings. The amount of the incentive would increase for every 5 percent increase in energy savings within this range. This will encourage ambitious projects while also rewarding projects that achieve meaningful yet more moderate levels of energy savings. A larger incentive for deeper energy savings is justified as achieving high percentage savings is often dependent on addressing the building's core systems, such as the HVAC system, which can be more technologically challenging and costly.
- Tie a portion of the tax incentive to implementation of efficiency measures and a portion to demonstrated energy savings. There are good reasons to reward a building owner for implementing energy savings measures, and good reasons to reward energy savings actually realized at the meter level. We recommend doing both by allowing the building owner to claim 60 percent of the incentive at the time measures designed to save a certain percentage of energy (as certified by a Professional Engineer) are put in to service. The remaining 40 percent of the incentive would be available 2 years later, based on demonstrated energy savings (as measured using the ENERGY STAR Portfolio Manager tool or other tools designated by the Secretary).[2]
- Allow owners or tenants to claim some incentive for improving a substantial space within a building. There is significant opportunity and appetite for building owners and tenants to improve energy efficiency during tenant build-out of office space, but current landlord-tenant arrangements seldom seize that opportunity. Similarly, there is also appetite and opportunity for building owners to

[1] http://apps1.eere.energy.gov/news/news__detail.cfm/news__id=12387; http://www.esbnyc.com/sustainability__project__finances.asp.

[2] http://www.energystar.gov/index.cfm?c=evaluate__performance.bus__portfoliomanager.

improve the efficiency of a large space within a building, but where they do not necessarily have access to all tenant space. To encourage these objectives, the Department of Energy should be directed to develop guidance for how the tax incentive can be used for efficiency improvements for large defined spaces within an existing building.

- Make the tax incentive useable for a broad range of building efficiency stakeholders and building types, including REITS and multifamily buildings. Commercial buildings are owned by a variety of organizations, some of which do not have appetite for conventional tax incentives. To gear a tax incentive for optimal benefit by Real Estate Investment Trusts (REITS), the full amount of the incentive that considers such entities' special tax requirements should be available for REITS.[3] Furthermore, we believe it is important to enable a range of building efficiency stakeholders to realize the value of the tax incentive when making investments in energy savings. Hence, we suggest clarifying language that the building owner be permitted to allocate the incentive to other parties related to the transaction, such as the contractor, a tenant, engineer, architect, or source of financing. Additionally, multifamily buildings should remain eligible for any commercial building incentive given their similarity to commercial buildings with respect to ownership, structure, and application of energy codes. To capture a larger set of multifamily buildings within the scope of the incentive, it will also be critical to ensure that the incentive complements the rules of the existing low-income housing tax credit to encourage energy efficiency upgrades in the affordable housing stock.
- Supplemental incentives should be considered for retrofits that multiply energy efficiency benefits. Some retrofit projects and technologies can achieve important policy objectives beyond energy efficiency, and are not normally implemented as part of comprehensive retrofits, and thus may not be effectively incentivized by the base provision. Congress should consider additional incentives for certain improvements that multiply energy efficiency benefits—such as renovating historic buildings, installing ?cool roofs? to mitigate urban heat island effects, and replacing chillers that use ozone-depleting refrigerants..

We welcome your continued leadership in paving the way for tax incentives that will drive efficiency upgrades in commercial buildings and appreciate the opportunity to share these suggestions with you. We are available to discuss these issues with you in greater detail at your convenience.

Sincerely,*

3M,
CANNON DESIGN,
EARTH DAY NEW YORK,
JONATHAN ROSE COMPANIES.

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STATEMENT OF RHONE RESCH, PRESIDENT & CEO, SOLAR ENERGY INDUSTRIES ASSOCIATION, ON S. 1000

The Solar Energy Industries Association (SEIA) thanks you for introducing S. 1000, the Energy Savings and Industrial Competitiveness Act of 2011. This bill addresses the energy challenges facing our nation today by promoting energy efficiency and renewable energy measures. The bipartisan bill will foster job creation, increase our energy security and benefit the environment. SEIA strongly supports enactment of S. 1000.

SEIA is the national trade association of the U.S. solar energy industry. Through advocacy and education, SEIA is working to build a strong solar industry to power America. As the voice of the industry, SEIA works with its 1,000 member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry and educating the public on the benefits of solar energy.

The Energy Savings and Industrial Competitiveness Act of 2011 promotes the increased use of solar energy in a number of ways. The bill strengthens national model building codes for residential and commercial buildings, with the goal of achieving net-zero-energy buildings by 2030. Solar photovoltaics as well as solar heating and cooling will be an integral part of the netzero-energy building effort. In addition, the bill authorizes funding for credit support for commercial buildings to do renewable energy and energy efficiency projects, including solar, through the

[3] For example, see: S. 3935, "Advanced Energy Tax Incentives Act" (introduced Sept. 29, 2010).

* Complete list of signatures have been retained in committee files.

Building Retrofit Financing Program. The measure also promotes training and education by authorizing funding for grants to be provided to colleges for Building Training and Assessment Centers, which will promote the use of alternative energy sources to supply heat and power for buildings, including solar energy. Finally, the legislation amends the definition of renewable energy in Section 203 of the Energy Policy Act of 2005 to include thermal energy for the federal purchase requirement of renewable energy, a positive for solar heating and cooling.

SEIA applauds your leadership on this issue and we look forward to working with you to help pass S. 1000.

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*June 9, 2011.*

Hon. JEANNE SHAHEEN,
*520 Hart Senate Office Building, Washington, DC.*

Hon. ROB PORTMAN,
*B40D Dirksen Senate Office Building, Washington, DC.*

DEAR SENATOR SHAHEEN AND SENATOR PORTMAN, We the undersigned represent a broad-based coalition of energy efficiency and environmental organizations, small and large businesses, public interest organizations and faith organizations.

We commend your work on the Energy Savings and Industrial Competitiveness Act of 2011, which was introduced on May 12, 2011. Your bill will help to deploy energy efficiency across all sectors of our economy; save consumers and businesses money, help make us more competitive globally and reduce our dependence on imported sources of energy at a critical time. We look forward to working with you in the coming months to see that this important legislation is enacted into law.

We specifically commend those provisions in your bill that will help to drive job creation. For example, the Energy Savings and Industrial Competitiveness Act will include a state partnership manufacturing revolving loan fund to finance investments in manufacturing process equipment though the issuance of federal bonds. With this fund, domestic manufacturers can fine-tune their equipment, reduce utility related overheads, and strengthen their bottom-line.

Your legislation would also advance targets for national model building energy codes. Buildings currently consume 40% of all energy used in the United States. The Energy Savings and Industrial Competitiveness Act would support regular updates to the existing national model building codes. Building codes help investors overcome the market barriers that impede energy savings in this sector, and reduce energy costs for businesses.

Similarly, appliance standards provisions contained within the Energy Savings and Industrial Competitiveness Act will cut home energy costs to consumers by $43 billion through 2030.[1] Existing federal appliance standards have saved taxpayers more than $300 billion in energy bills and reduced national energy use by 3.6% annually. This provision is identical to S. 398, which was recently reported by the Senate Energy and Natural Resources Committee with a bipartisan 18-4 vote.

The Energy Savings and Industrial Competitiveness Act also contains a provision based on the Rural Star legislation which was passed by the House of Representatives last year. This program would create a loan program through rural public utilities and electric cooperatives to finance energy efficiency improvements for rural utility customers. Sponsors of the original bill estimate that it will create 20,000 to 40,000 jobs to conduct and implement these energy improvements.

Another important bill from last session, Supply Star, is also included in the Energy Savings and Industrial Competitiveness Act. This bill was reported favorably by the Senate Energy and Natural Resources Committee. Supply Star would promote energy efficiency improvements throughout the supply chain, including savings from product sourcing, development, distribution, use and disposal. This bill would provide crucial support to small businesses in reducing unnecessary energy expenditures.

As the nation's largest energy consumer, it is critically important that the federal government lead by example. The Energy Savings and Industrial Competitiveness Act contains several provisions which will improve the energy efficiency of federal agencies. Rather than squandering taxpayer's dollars on needless energy costs, the Energy Savings and Industrial Competitiveness Act implements practical, cost effective measures to tackle federal energy consumption. These provisions include per-

[1] American Council for an Energy-Efficient Economy & Appliance Standards Awareness Project, Appliance and Equipment Efficiency Standards: A Money Maker and Job Creator. January 2011. http://www.standardsasap.org/documents/A111.pdf

sonal computer power saving techniques, advanced metering, building upgrades and more.

By fully deploying the power of energy efficiency, we can help create new jobs, save energy, save money, and reduce carbon emissions. Energy efficiency takes effect faster than other policies designed to address our energy needs. Well designed programs such as those contained in the Energy Savings and Industrial Competitiveness Act will help those American families and businesses who are struggling today to lower their energy costs. Moreover, energy efficiency policies offer Americans protection from rising energy costs caused by political instability abroad, and moves us towards energy independence. We again commend your leadership in developing this comprehensive package, and offer our support in helping to advance this important bill toward enactment by the 112th Congress.

Sincerely,*

ACUITY BRANDS,
CLEAN WATER ACTION,
EARTHJUSTICE,
ENERGY FUTURE COALITION.

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STATEMENT OF THE WINDOW & DOOR MANUFACTURERS ASSOCIATION, ON S. 1000

On behalf of the Window & Door Manufacturers Association (WDMA), we would like to thank Chairman Bingaman, Ranking Member Murkowski and Members of the Committee for conducting today's hearing to explore tools to promote energy efficiency. WDMA is a national trade association representing the leading producers of commercial and residential doors, windows, and skylights for domestic and export markets. Our members sell to distributors, dealers, builders, remodelers, homeowners, architects, contractors, and other specifiers in residential, commercial, and institutional markets. WDMA welcomes the Committee's interest in energy efficiency and higher-performing residential and commercial buildings, and is pleased to submit this statement addressing S. 1000, the Energy Savings and Industrial Competitiveness (ESIC) Act of 2011, introduced by Senators Shaheen and Portman.

WDMA appreciates the efforts by Senators Shaheen and Portman to incorporate stakeholder input in the development of S. 1000. We believe the bill's current language improves considerably upon previous iterations of legislation to establish model federal energy codes. However, WDMA continues to have several concerns regarding the appropriateness and efficacy of creating a new federal codes bureaucracy and involving the Department of Energy (DOE) in the codes process.

First and foremost, WDMA believes that the greatest gains to be made in reducing building energy use also lie in existing building stock. Tax incentives for homeowners, like the 25C nonbusiness energy tax credit, are proven mechanisms for spurring replacement of older, less efficient products to make homes more energy efficient. For example, there are more than 1 billion single-pane windows still in use in today's housing stock, and restoring the 25C tax credit to its 2009-2010 levels would make an immediate and direct impact in incentivizing homeowners in their replacement.

Likewise, improving the 179D commercial building deduction to make it easier for building owners to take advantage of the benefits would directly spur needed commercial retrofits to reduce energy use and create jobs in the hard-hit construction sector. To that end, we commend Senators Shaheen and Portman for including the Rural Energy Savings Program, originally proposed as part of S. 3102 in the 111th Congress, as a mechanism for rural homeowners to finance voluntary retrofits through their utility co-operatives. We encourage the Committee to make such voluntary incentives available to more homeowners through the 25C tax credit and other such methods.

WDMA's primary concerns are in Subtitle A of S. 1000, which would vest the Department of Energy (DOE) with new authority to "support the development of" and "establish" federal model building codes. We do not believe there is a demonstrated need for increased DOE involvement in the established model codes development process. The existing code development bodies, ASHRAE and the ICC, are already producing increasingly more energy efficient codes through a well-established, open and consensus-based approach with the full participation of stakeholders including DOE. In fact, we and many other stakeholder interests believe DOE has exerted excessive influence through their participation that borders on undermining the consensus code development process.

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*Complete list of signatures have been retained in committee files.

Rather than vesting new authority in the DOE, which we believe will be unduly intrusive and is not necessary to DOE's participation, we call on Congress to further clarify and limit the DOE's role and to make transparent the methodology and data used by DOE to support their claims regarding the energy efficiency gains of subsequent code iterations and to substantiate specific code amendments they are advocating. We believe that introducing new DOE oversight of the ICC and ASHRAE processes, as S. 1000 does by subjecting future code iterations to their approval, will only slow the energy improvements the legislation is intended to achieve. In addition, compelling states to certify and measure energy code compliance will add an additional layer of bureaucracy and red tape without achieving the desired results.

We also remain deeply concerned about the establishment of a "net zero energy buildings" goal by 2030 absent additional research into the cost effectiveness, practicality and attainability of such a goal. Research has already demonstrated that net-zero-energy is only attainable if "plug load" behaviors of building occupants are considered; this is entirely outside the reach of building codes to regulate. The fragile real estate market can ill afford new federal mandates that arbitrarily drive up the cost of new construction. New construction activity, energy-efficient retrofitting, and financing to support it, are worthwhile public policy objectives. However, we urge the Committee to act with care in promoting those objectives without increasing the regulation and costs of construction activity that would hinder our economic recovery.

WDMA appreciates the Committee's work to develop proposals that will restore jobs and promote energy efficient retrofits and new construction. We believe modest retrofit incentives for homeowners and businesses will accomplish more effective results than establishing new federal energy codes. We look forward to working with members of the Committee to continue to improve S. 1000 as it moves through the committee process.

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*June 8, 2011.*

Hon. TOM CARPER,
*Senator, U.S. Senate, 513 Hart Senate Office Building, Washington, DC.*

DEAR SENATOR CARPER, As leading organizations within the building community, the undersigned organizations thank you for your continued efforts to improve federal buildings and provide agencies with the tools to accomplish high-performance building goals. As you know, federal agencies have numerous Congressionally and Executive mandated goals regarding energy use. Achieving these goals requires a comprehensive approach with various tools and practices available.

The Reducing Federal Energy Dollars Act of 2011 (S.963) provides implementable solutions to many of the issues currently faced by agencies including sharing of best practices, keeping design criteria up-to-date (in general and for specific projects), implementation of smart meters, and use of ongoing commissioning.

Federal agencies have long been looked to as an example of what can be done within the built environment. As the nation's largest holder of real estate, the federal government has the opportunity and resources to influence the development and implementation of building design, construction, operations and maintenance tools, technologies and practices. Federal buildings should serve as public showcases and leading examples of energy efficiency and indoor environmental quality (IEQ) through their design, construction, equipment, and operations and maintenance.

We look forward to working with you on this and other opportunities to achieve high-performance buildings in both the public and private sectors.

Sincerely,*

NATIONAL INSTITUTE OF BUILDING SCIENCES,
DRYVIT SYSTEMS.
U.S. GREEN BUILDING COUNCIL (USGBC),
ASSOCIATION FOR FACILITIES ENGINEERING (AFE).

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STATEMENT OF THOMAS J. BISACQUINO, PRESIDENT AND CEO, NAIOP, COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION, ON S. 1000

On behalf of NAIOP, the Commercial Real Estate Development Association, I want to thank you for holding a hearing on S. 1000, "The Energy Savings and Industrial Competitiveness Act of 2011" introduced by Senators Jeanne Shaheen (D-NH) and Rob Portman (R-OH). NAIOP is the leading organization for developers,

* Complete list of signatures have been retained in committee files.

owners, investors and related professionals in office, industrial, retail and mixed-use real estate, and is comprised of 15,000 members and more than 50 local chapters throughout North America. I write to express our concerns with the legislation, specifically regarding Section 101 of the introduced bill.

We have been given the opportunity to work with staff during the initial drafting of this bill, and sincerely appreciate the open and transparent way that this legislation was created. We commend you and Senators Shaheen and Portman for facilitating the numerous discussions that took place with a variety of stakeholders during the past several months. We believe that the approach to increasing the energy efficiency of building codes contained in S. 1000 is superior to prior legislative proposals in the 111th Congress that relied primarily on mandating specific numerical targets in statute.

While we are appreciative that some of our concerns were addressed prior to the introduction of this bill, we remain concerned that this legislation, if enacted without further changes, would cause significant confusion and harm to the real estate industry. It is our hope that our specific concerns with Section 101 in particular, can be addressed prior to this bill being brought to a vote in Committee.

The overriding goal of Sec. 101, Greater Efficiency in Building Codes, is to achieve a zero-net energy outcome for all new commercial and residential buildings by 2030. Essentially, zero-net energy would require buildings to produce as much on-site energy as they would consume. However, Section 101 only deals with building energy codes and does not provide for a power generation strategy for buildings. The extent of how much on-site power generation will be available to reach the zero-net energy goal, either through existing technology or future technology, is almost entirely unknown. As a consequence, this leaves increasing energy efficiency as the sole measurable tool for achieving this net-zero target. If the contribution of on-site power generation efforts are modest, whether through technical infeasibility or because of prohibitive costs, then the difference would have to be made up through higher efficiency through building codes.

The aggressiveness of the code efficiencies that would be needed to achieve zero-net energy could very well be outside the scope of most development practices, and not practical for all building types. In addition, while achieving a net-zero energy target for buildings by 2030 may seem like a far off goal, the code targets would need to be established far in advance of this date. Because this standard is not attainable in the foreseeable future, especially without defining the role of on-site power generation, we feel strongly that it should not be considered as the basis for setting code targets and efficiency gains in new buildings.

This legislation also does not take into consideration the significant efficiencies already gained in new construction during the past few years. Since 2002, commercial building energy codes have already achieved gains approaching 50 percent. These substantial gains have been achieved in just the last three code cycles: 2004, 2007 and 2010. All of this was accomplished without implementing new federal guidelines or creating targets for new energy codes.

New buildings account for a very small percentage of overall building stock. This is especially true in today's environment. Commercial buildings that are built by today's standards are vastly more energy efficient than the majority of existing buildings across the country. Rather than recreate a process that is already working, this legislation should be more focused on creating incentives for existing buildings where the majority of energy is consumed and the most energy efficiency gains can be achieved. It is much easier to increase the efficiencies of an existing building by 50 percent, using the previous year's energy usage as a baseline, than to create a new building that is 50 percent above the most recent energy code. Setting more stringent code targets for new building codes is not the best way to address the vast amount of energy that is consumed by buildings. In order to better address the efficiencies of the entire building sector, new existing building incentives need to be created to have a more measurable impact.

In conclusion, we appreciate your attempts to advance energy legislation that leads to improved energy efficiency in buildings. While we applaud the intent of S. 1000, we feel strongly that zero-net energy should not be the basis for setting code targets for new construction. We look forward to working with your offices to improve this legislation as it is considered by the Energy and Natural Resources Committee.

JELD-WEN,
EXTERNAL AFFAIRS,
*Portland, OR, June 7, 2011.*

Hon. JEANNE SHAHEEN,
*U.S. Senate, 520 Hart Senate Office Building, Washington, DC.*

Hon. ROB PORTMAN,
*U.S. Senate, 338 Russell Senate Office Building, Washington, DC.*

DEAR SENATORS SHAHEEN AND PORTMAN, On behalf of JELD-WEN, inc.'s over 7,000 employees in 19 states, I am writing to support S. 1000, the Energy Savings and Industrial Competitiveness Act of 2011. JELD-WEN is the largest manufacturer of windows and doors in the United States, and we appreciate your leadership in introducing such an important piece of energy legislation.

Your bill will encourage energy efficiency measures in residential, commercial, and industrial settings, incentivize states to accelerate their energy efficiency activities, and direct the Federal Government to make energy efficiency improvements as the nation's largest energy consumer. Furthermore, it will foster essential job creation throughout the country.

We commend the inclusion of alternative financing proposals in your legislation as a promising, cost-effective path to deploying efficiency products. We particularly applaud the Rural Energy Savings Program provision. The establishment of a rural electric loan program will assist those in rural communities to finance critical energy-efficient improvements to their homes and small businesses, resulting in significant savings in energy costs. Likewise, by expanding the DOE Loan Guarantee program to include building efficiency upgrades, the legislation will provide greater access to capital, benefitting both consumers and builders, and resulting in more investments in building efficiency upgrades and renovations. Finally, we support the bill's call for strengthened, updated building codes for new homes and commercial buildings, and we appreciate the balanced attention paid to cost effectiveness as that model is developed. A national model code is a way to further advance energy efficiency in buildings, and your legislation encourages the production and use of the best technologies in energy efficiency. Likewise, your legislation urges states and local governments to revise outdated building codes and adopt the most recent consensus-based model codes.

At JELD-WEN we know well the environmental and cost-saving values of energy efficient buildings. We believe that this legislation is a good step, especially if paired with direct consumer incentives, in encouraging investments in energy efficient buildings. We commend your work on these efforts and applaud your leadership. We look forward to working with you to enact this legislation into law.

Sincerely,

RON SAXTON,
*Executive Vice President.*

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STATEMENT OF GP RUSS CHANEY, CHIEF EXECUTIVE OFFICER OF IAPMO

DEAR CHAIRMAN BINGAMAN, RANKING MEMBER MURKOWSKI AND MEMBERS OF THE COMMITTEE. Thank you for the opportunity to provide testimony on S. 1000, the Energy Savings and Industrial Competitiveness Act of 2011.

We, the International Association of Plumbing and Mechanical Officials (IAPMO), have been protecting human health and safety since 1926. IAPMO remains the preeminent code development association for plumbing, mechanical and solar codes. Furthermore, with membership of approximately 5,000 members, IAPMO remains the only trade association through which plumbing, mechanical and solar codes are developed employing an open consensus process accredited by the American National Standards Institute (ANSI). As a result our codes are designated as American National Standards.

The membership of IAPMO is comprised of plumbing and/or mechanical inspectors, engineers and building code officials, union representatives (installers), plumbing and mechanical contractors, water and energy efficiency experts, government representatives, and manufacturers of plumbing, mechanical, and building products.

Not only do we create baseline construction codes as previously mentioned, but we also have created the first-ever "green" construction code entitled the Green Plumbing and Mechanical Code Supplement (GPMCS). This "stretch" code was developed with the assistance and support of more than one dozen major trade associations, manufacturers, unions, engineering societies, environmental organizations and many others. One purpose of the GPMCS is to supplement ANY construction code, not only IAPMO's baseline codes but other codes that are available for use

throughout the United States. By simply adhering to the water provisions found in the GPMCS, one can realize, at minimum, a 30 percent decrease in water usage. We are all becoming increasingly aware of the incredible amount of imbedded energy in water and how being more efficient with our water usage is one of the most cost effective ways to save energy.

Chairman Bingaman and Ranking Member Murkowski, you will be interested to know that the respective states you represent adopt and utilize IAPMO's baseline construction codes. Additionally, on this committee many of the senators' home states are currently being protected by IAPMO's codes.

Numerous countries throughout the world depend upon IAPMO's code to protect their citizens as many of the United States have done over decades of use.

As you know, construction codes are critical to maintain the structural security of buildings, our infrastructure and overall public health. Cities, counties and states across the country are always changing and updating codes to address the revolving concerns of local policy makers and this should continue.

With that said, I would specifically like to provide input on Title I, Subtitle A, Section 101, "Greater Energy Efficiency in Building Codes." As I previously mentioned, building or construction codes are key to ensuring the safety and structural well being of our country, but they also can be utilized to make our buildings more efficient, which is the purpose of this subsection.

Under this subsection, the bill aims to achieve more efficient, better performing buildings, and specifically calls upon the Department of Energy to "establish goals of zero-net-energy for new commercial and residential buildings by 2030." This is a widely supported and fantastic goal. It should be noted that IAPMO is heavily involved in these effort, participating on both the National Institute of Building Sciences Consultative Council and the Net-Zero Energy Consortium however, our primary concern with S. 1000 lies within the direction given by congress to the Department of Energy. In the subsection, congress singles out two organizations with which the Department of Energy should work in achieving the desired results. By doing so, congress is creating an imbalance by singling out two organizations over the many others that contribute as much if not more to energy conservation and not allowing other organizations, such as IAPMO, to provide their expertise in the area of increased energy conservation.

Finally, within the same building code section, under the subsection titled "Voluntary Advance Standards," once again congress is not only selecting preferred organizations but actually directs the Secretary to "give preference" to only two organizations. By giving the Secretary such a large goal and then limiting whom the department can consider will be a great hindrance and would certainly at the least be unfair to IAPMO and the many other organizations that can make a huge contribution in this area.

We respectfully request the following two changes be made to Title I, "Greater Energy Efficiency in Building Codes";

**Proposed change #1**

*"B) GOALS.—The Secretary shall—*

*(i) establish goals of zero-net-energy for new commercial and residential buildings by 2030; and*

*(ii) work with State and local governments, the International Code Council, ASHRAE, **IAPMO** and other interested parties to achieve these goals through a combination of national model building energy codes, appliance and lighting standards, and research, development, and demonstration of new efficiency and clean energy technologies.* ***(Suggested changes in bolded and underlined font)***

**Proposed Change #2**

*(3) PREFERENCE.—In carrying out this subsection, the Secretary shall give preference to advanced standards developed by the International Code Council, ASHRAE* ***and IAPMO****.* ***(Suggested changes in bolded and underlined font)***

Again, Senators, many of your home states use IAPMO's construction codes, yet we, our member building code officials, contractors, engineers and manufacturers will be neglected by the current language in the bill.

In closing, we fully support the intentions of the bill and by addressing these two small areas of concern, IAPMO can wholly endorse the proposed legislation.

Thank you for your time.

NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION,
*Arlington, VA, May 12, 2011.*

Hon. JEANNE SHAHEEN,
*U.S. Senate, 520 Hart Senate Office Building, Washington, DC.*

DEAR SENATOR SHAHEEN:

I am writing on behalf of the The National Rural Electric Cooperative Association (NRECA) to express our appreciation for making the Rural Energy Savings Program Act (RESPA) a part of your comprehensive energy efficiency legislation, the Energy Savings Act of 2011.

NRECA is the national service organization representing over 900 not-for-profit, member-owned, rural electric cooperative systems, which serve 42 million customers in 47 states. NRECA estimates that cooperatives own and maintain 2.5 million miles or 42 percent of the nation's electric distribution lines covering three-quarters of the nation's landmass. Cooperatives serve approximately 18 million businesses, homes, farms, schools and other establishments in 2,500 of the nation's 3,141 counties.

As you have recognized, energy efficiency is a critical step in lowering electricity costs, while helping the environment and creating jobs. RESPA would boost needed investments in energy efficiency in rural areas by providing rural electric cooperative consumers access to low-interest loans through USDA's Rural Utilities Service (RUS). Through these loans, rural consumers will be able to make upgrades to their homes and small businesses that may otherwise be out of reach, and will ultimately save energy and money on their power bills.

The RESPA program builds on USDA's successful RUS electric loan platform which provides loans to cooperative borrowers (and other qualified entities) to build infrastructure for the generation and distribution of electric service to their member owners. Under this program, the cooperatives first use their own funds for such projects. After completion, the co-ops submit documentation and are reimbursed by RUS only after the expenses are found to be within the federal purpose. We believe that this new efficiency program under continued careful RUS management will also garner stellar results.

NRECA would like to thank you for your leadership in energy efficiency, and your efforts to ensure that investments in energy efficiency extend to rural areas.

Sincerely,

GLENN ENGLISH,
*Chief Executive Officer.*

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NATIONAL ASSOCIATION OF REALTORS®,
*Washington, DC, June 7, 2011.*

Hon. JEFF BINGAMAN,
*Chairman, Committee on Energy and Natural Resources, U.S. Senate, 703 Hart Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,
*Ranking Member, Committee on Energy and Natural Resources, U.S. Senate, 709 Hart Senate Office Building, Washington, DC.*

DEAR CHAIRMAN BINGAMAN AND RANKING MEMBER MURKOWSKI: Thank you for holding this important hearing on S. 1000, the Energy Savings and Industrial Competitiveness Act. Included in the legislation introduced by Senators Jeanne Shaheen (D-NH) and Rob Portman (R-OH) is authority to implement the "Rural Star" energy savings program. While the 1.1 million members of the National Association of REALTORS® (NAR) strongly support a voluntary, incentive-based approach to building efficiency, NAR is concerned that this authority could be used to implement a mandatory real estate energy labeling program across rural America. We are also concerned with provisions to clarify priority lien status for purposes of federal retrofit financing and to provide for an increased federal role in the development of state building energy codes, and would support amendments to address the following issues.

RURAL STAR ENERGY LABELS

Many property owners would like to make energy improvements, but simply do not have the financial resources to undertake the project. The Rural Star provisions would change this by providing direct loans and incentives to make improvements, which would not only benefit our environment, but also create jobs and cut energy bills for the rural owners. While these owners would like to take advantage of the incentives, many would he discouraged from doing so if the program requires an en-

ergy label as a condition for the incentives. As currently drafted, the bill provides no apparent limit on the new authority from imposing such a condition. Labeling could stigmatize the older properties which would most benefit from a Rural Star program. A disproportionate share of these older properties are owned or occupied by populations living on modest or fixed incomes according to the American Housing Survey.

PRIORITY LIEN STATUS

The bill would also direct the U.S. Department of Energy to develop guidelines for federal retrofit financing, including "any lien priority requirements that the Secretary determines to be necessary." However, this provision could cause unintended consequences if the Department requires this financing to have superior status to existing mortgages. Rules governing "mortgage superiority" are written into deeds of trust and mortgage documents including Fannie Mac's uniform security instruments. Allowing an intervening lien could violate the borrower's contract with current lenders. For future loans, there is a serious question whether a bank will make a loan (or Fannie/Freddie will purchase the loan) unless the loan documents provide a first lien for the mortgage (ahead of subsequent loans) so the lender will receive payments outstanding on the underlying mortgage before sums are paid on loans with a subordinate interest in the event of a foreclosure. Many rural owners would not be able to make improvements without financing and these owners are less likely to obtain the requisite financing given these concerns.

FEDERAL BUILDING CODES

While we appreciate the revisions and improvements over prior legislation, we continue to question the need, achievability and affordability of the federal energy code provisions—especially the "net zero energy building" standard—for recovering real estate markets. Introducing federal bureaucracy and red tape into a consensus-driven model code development process by IECC and ASHRAE will only slow the energy improvements the bill is intended to achieve. Rural Star, by itself however, would offer significantly more incentive for the rural property owners to take advantage of and speed the voluntary building energy improvements.

Thank you again for your extensive and on-going efforts toward a voluntary, incentive-based approach to making properties more energy efficient. We would welcome the opportunity to work with you and the bill's authors in clarifying the above provisions to ensure the bill's voluntary energy efficiency incentives are available to more Americans. We look forward to continuing to work with the Committee and other members of Congress as the legislative process continues.

Sincerely,

RON PHIPPS,
*ABR, CRS, GRI, GREEN, e-PRO, SFR 2011 President.*

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