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SMALL BUSINESS SOLUTIONS FOR COMBATING CLIMATE CHANGE

HEARING

BEFORE THE

COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP

UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

MARCH 8, 2007

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COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

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SMALL BUSINESS SOLUTIONS FOR COMBATING CLIMATE CHANGE

THURSDAY, MARCH 8, 2007

UNITED STATES SENATE,
COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP,
Washington, DC.

The Committee met, pursuant to notice, at 10 a.m., in room 428A, Russell Senate Office Building, The Honorable John F. Kerry (Chairman of the Committee) presiding.

Present: Senators Kerry, Snowe, and Thune.

OPENING STATEMENT OF THE HONORABLE JOHN F. KERRY, CHAIRMAN, SENATE COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP, AND A UNITED STATES SENATOR FROM MASSACHUSETTS

Chairman KERRY. Good morning. We will come to order. Welcome to the hearing on small business solutions for combating climate change. I appreciate the Administration being here with two witnesses, one from Policy and Planning in the Small Business Administration and the other from the Environmental Protection Agency.

Let me just say as an opener that this issue is getting a fair amount of national lip service now, but, regrettably, we are light years away from taking the kind of steps that are really necessary to deal with the issue.

Senator Boxer is going to be here a little bit later. She was delayed. When she does arrive, we will make arrangements for her to testify.

Last night, I was at a board meeting of the H. John Heinz Center for Science, Economics and the Environment, and some of the top scientists of our country, people who have been deeply involved in helping both sides of the aisle to look at this issue and understand it were there. I must say, having just finished writing a book on this subject, which is coming out in a few weeks, we sort of thought we—when I say "we," my wife and I—were state-of-the-art and up to speed on everything. But, in fact, things are moving so rapidly that even between the publication date of the book we have done and today, events have cascaded and started moving faster.

We have something called "feedback." As in anything in life, you do something and somebody else gives you some feedback on it. And in the matter of science, feedback is Mother Nature's way of expressing what is going on as a consequence of certain things that have happened.

In Alaska, for instance, Ted Stevens has now changed his position on global climate change and believes we ought to have CAFE standards. The reason he has come to that conclusion is because he has seen the feedback. The feedback in Alaska is that fishermen who used to be able to drive their snowmobiles out on the ice and go for 20 miles can no longer do so, because at about the 7-mile mark, it turns to mush, and their vehicles plunge into the ocean. So that is gone for them. A whole village is being moved at a cost of several hundred million dollars because of the now incessant damage being done, because there is no longer enough ice to protect it from storms. The storms come closer, and the village gets hurt. That is feedback.

There is a lot of other feedback taking place. I was really quite stunned last night to learn from some of these scientists that Russian scientists have now estimated that more than 4,000,000 billion—that is million billion—tons of methane are frozen worldwide. Methane has 20 to 30 times the greenhouse effect of CO_2. Its uncontrolled release would have a runaway effect that would accelerate the warming of the planet.

The problem is that the ice is now melting—and it is melting. Jim Hansen of NASA tells us that over the course of the next 30 years, the Arctic ice sheet will disappear—will disappear, folks. That is not an if, and, or but. That is a "will disappear." The ice currently is a reflector of long-range waves. And the ice reflects, and it feeds back, and you get long-range waves that go back up in the atmosphere. But as the ocean is exposed more, as the ice disappears, it does not reflect. It goes into the ocean, and then the ocean warms. And so you accelerate. This is feedback. The more the ocean is exposed, the more you accelerate the warming, the more you wind up with an increase in climate change impact, the result of which is that you now have an increased level of shrinkage of the Greenland ice sheet. That should be sending shudders through most Americans—and everybody in the world—because unlike the Arctic ice sheet, which is floating in the ocean and, therefore, the displacement remains essentially the same in terms of its melting and its impact on the sea level, the Greenland ice sheet is on rock, and as it melts, it goes into the ocean and adds to the volume causing it to rise.

That ice sheet is of a significant enough size that if it were to melt or slide off or break off in some significant portion, you could have a sea level increase of anywhere from 16 to 23 feet, in which case say good-bye to Boston Harbor, New York Harbor, most of Florida and so on and so forth; much of Washington, DC; because the Potomac River comes up, and so forth. There are computer formulations that show exactly what that impact would be, and people should take the time to go look at them.

But what is really scary, what I was not aware of, even, is the degree to which these scientists are now worried about the thaw taking place in the tundra across the arctic region. And as that melting takes place, permafrost melts, and methane is released. So despite our best intentions, there is an enormous potential for this 20 to 30 times impact of gas to have an impact on global climate change.

I might add that there is other feedback that we are getting. For instance, the acidification of the ocean has already increased by 30 percent, with substantial potential impacts on the marine food chain. We know that if CO_2 concentrations over the oceans increase to 600 parts per million, which is possible by the end of this century, then you could have a phytoplankton, coral, oyster reef, crab, and other crustaceous species beginning to lose the integrity of their supporting skeletal structures, and there is an actual demonstration of this which they can show in various ways. In addition, we see the destruction of nearly 4 million acres of mature white spruce forest on the Kenai Peninsula in Alaska, which is happening now because the spruce bark beetles have been taking over during the past decade. Why is this important? Because in Alaska, they could not survive previously because the temperature was such that they would not make it through the winter. So the warming has had an impact on the spread of disease-bearing beetle larvae that can now survive in these warmer temperatures. Plus, they mature faster, and they now complete the 2-year life cycle in 1 year. This is feedback.

So I am not going to go into all the examples of feedback, but I am just going to tell you folks that I am so disturbed by the lack of urgency in the Federal Government and this Administration to deal with this issue. In New England, everywhere, but Maine has seen a reduction in the production of maple syrup. It is a big industry. Maine has not had it yet because Maine's temperature has not yet felt the impact. But New Hampshire, Connecticut, Massachusetts, and Vermont have all felt it. And the result is a significant reduction in the production of syrup. Why? Because of the warmer temperature.

So there are a lot of impacts here. There is going to be a lot of feedback building up, and the bottom line is that we really have a responsibility to be serious about this. The long-term implications, according to all scientists, are very dramatic. If you get to the tipping point, there is no coming back.

We are told we have a 10-year window. I am going to beat this until it is dead. I mean, we cannot let go of this. A 10-year window. That is what scientists tell me. When I sit in front of a guy like Bob Hansen or Bob Corell or some of these guys and they tell me 10-year window, we better listen.

Now, what is the downside if those of us who care about global climate change are wrong? You know, what happens? What is the downside? The downside is we have the world's leading technologies and clean and alternative fuels. We create new jobs. We have better health. We have fewer kids with asthma, less particulates in the air. We have better security because we are less dependent on fuel from other countries. And what is the downside if they are wrong, the people who are still in the flat-Earth caucus? The downside is catastrophe.

So which side of the ledger do you want to be on, folks? And what is clear is that this is not a draconian process that will force you to give up your lifestyle or you have to lose quality of life or any of that. You do not have to do any of that.

So Nicholas Stern has put out a very sound, well-respected economic report for the British Government, which shows clearly that

the downside of not doing things is 5 to 20 times more expensive than the downside of doing it. And in the end, you may spend 1 percent of GDP to fix it now, versus a huge percentage in responding to the damages if we do not take these steps.

I think this is such a no-brainer, and we are not doing it. We have to reduce carbon in the atmosphere. There is no other choice. We have to become carbon neutral, even carbon friendly in what we are doing. And small businesses—this is where we get to the essence of this hearing today—are critical in terms of helping to do this. I remember being part of the first hearings on global climate change with Al Gore when he was a Senator in 1987. Then in 1990, we went down to Rio to be part of the Earth Summit Conference, and it has been a long road since then. I was in Kyoto. I have been to The Hague, to Buenos Aires, part of the COP conferences. I have watched other countries look at us and say, "Well, if the United States does not do it, why should we?" And so China is about to build one pulverized coal plant per week. Folks, if that happens, it is "Katy Bar the Door." But there is no serious international effort going on right now to bring people to the table.

I do not know how many of you read the TXU deal report the other day. The environment community got together with those folks. Now, they have done pretty well, but they are still going to build three plants that are still going to add 26 million tons of CO_2 to the atmosphere instead of 11. And it is a big step forward because we do not have a prayer of getting China or India or other people or even these small businesses that we need to get to respond unless we take the lead. The old clean hands doctrine of the law: If you do not come to the table with clean hands, it is pretty hard to win the equities.

So we are going to have to take these steps, and as I said, I am working with a lot of people outside of the Senate now. We are going to have a hearing in the Commerce Committee with some of the leading CEOs in the country of Dupont and GE and others who have embraced the notion that we have to have a carbon cap. You know, it is one thing for a big Fortune 500 company to step up to bat and say we are going to do this. Obviously, it is another thing for a small business to figure out how can it contribute and what role can it play here. And there are clearly several different kinds of roles.

You know, one is to be the innovators, to expand the SBIR and SBIC programs and excite people to be able to enter this marketplace and help provide the technologies, the alternatives. The other is that they themselves are going to have to take steps to reduce their own emissions and to find ways to be part of the solution.

This is how critical this fight is. Senator Snowe and I have joined together to introduce legislation that would require a cap on emissions, with a 65-percent reduction by the year 2050. Senator Boxer and Senator Bernie Sanders and others, picking up from Senator Jeffords, are looking at about 80 percent, and that is legitimate because the science says it has to be somewhere between a 60 and 80-percent reduction by 2080, although this methane issue creates an even larger challenge for us.

So buy-in from big business can get us halfway there, but we are going to need a concerted effort from America's small businesses in

order to help get us home on this issue because they employ half of all the private sector workers and produce half of the GDP of this country.

Right now, small business investors are beginning to show that they recognize this. In 2004, $1.4 billion in venture capital found its way to clean-tech startup companies. These companies are not only working to help save the planet, they are growing the economy and they are creating new jobs. This morning, we will hear from Jim Barber, whose company, Metabolix, turns corn sugar and switchgrass into natural plastics. Today, plastic and chemical production consumes nearly 10 percent of the oil we use. So there are alternative ways to be able to do what we are doing, produce what we produce, live the way we live, without having to rely on oil and fossil fuels.

I believe that we are at the beginning of the end of the oil era, and the question is how fast we are going to move to the new era, whatever it is going to be defined as. Nobody should be afraid of it. We have done that before in this country. We started with whale oil produced in Nantucket. Most of Great Britain was lit by whale oil. And then we went to wood and coal and finally to a mix of hydro and nuclear, alternatives and renewables and so on and so forth. We have been through these transitions, and it is clear we are going to have to go through one now.

Jim Barber is reducing America's dependence on fossil fuel, but his company is going to create 120 new jobs when he opens up his first commercial plant—in partnership, I might add, with Archer Daniels Midland in Clinton, Iowa, later this year. There are thousands of stories similar to Jim's that demonstrate how the entrepreneurial spirit of America can reverse the damage that has been done. But innovation alone is not going to get us there. There are 25 million small businesses in this country, 25 million business owners that are focused on keeping their doors open and putting food on the table for their families and growing their businesses. Climate change sometimes seems like a distant threat compared to rising health care costs or staying competitive. But even so, small business owners are telling us that energy costs are a concern.

The National Small Business Association recently conducted a poll of its members asking how energy prices affected their business decisions. Seventy-five percent said that energy prices had at least a moderate effect on their businesses, with roughly the same number saying that reduced energy costs would increase their profitability. Despite these numbers, only 33 percent of those small businesses have invested in energy efficient programs. So where is the disconnect?

If high energy costs are driving profits down and implementing energy savings programs will lead not only to greater profitability but also lower greenhouse gas emissions, why aren't American business owners falling over themselves to plug the leaks? That is where we ought to be going.

We need to do a better job of reaching out to America's small businesses to demonstrate to them that the savings are real, that the win for their bottom line is a win for the long-term health of the planet. And we need to provide the resources through public

and private commitments to help business owners with the upfront costs of implementing these programs.

Representatives from the Environmental Protection Agency and Small Business Administration are here to testify on how committed the Administration is to helping small business join this fight. We will hear from Chris Lynch, who is doing terrific work for the Pennsylvania Small Business Development Centers helping small businesses become energy efficient, and he will share with us some of the factors behind that success.

I really hope we can get this word out. I would just close by saying one thing to you. We were talking with these scientists last night, and they were talking about how our architects and many of our professionals in America are still training and working professionally in 20th-century structure. I will give you an example: building design. Today, driving in here, I was looking at all the construction that is going on in Washington. How many of those buildings are going to have green roofs? How many of those buildings have been built to the most modern specs with respect to energy savings? Most architects are still not embracing that.

My wife was deeply involved in the greening of Pittsburgh, which became the greenest city in America, until Portland took up the challenge and has now surpassed it. Other cities are beginning to see this.

In Texas, Texas Instruments was about to move to China, and they were given a challenge. The workers said, "Well, if our jobs go overseas, what do we do?" Well, we have to compete. How do we keep the costs down? So they challenged their engineers and architects and said, "If you can design a plant that saves us the equivalent of what we will save by going to China, we will stay here." Well, they went and did it. And guess what? They did it by removing pipes that bend so you save in the friction and can move fluid through the building more efficiently, by taking the building down a tier and making it two stories instead of three, by being more efficient in distribution—I was in a building in Boston the other day, the Biogen building, which has shades that are computer driven, that change as the sun moves. Those save them enormous amounts of energy.

If you go to Japan and you get on an escalator, it stops when you get off; it starts when you get on.

You walk out of a building in Europe, the lights go out in the hall. You move, the lights go up.

We do not do that. We are the most energy-inefficient country in the world, and our businesses are paying for it. We actually reward electric companies with more money paid for more electricity used.

So I am telling you folks, there are all kinds of painless things that we have to start doing. I know this is a long and perhaps a little bit rambling opening, but, we have to put this stuff on the table. We have got to get it out to the businesses of America. There is money to be saved here. There is money to be made here. There is a quality of life to be improved here. And it is stupid for us not to be connecting the dots and making all of this happen.

Senator Snowe.

OPENING STATEMENT OF THE HONORABLE OLYMPIA J. SNOWE, A UNITED STATES SENATOR FROM MAINE

Senator SNOWE. Thank you, Mr. Chairman, and I will be very brief. But I do want to commend you for holding this hearing, which is the first ever for this Committee to explore ways in which small business can play a pivotal role in combating climate change. And I also want to applaud the advocacy and the leadership of the Chairman on this issue and his longstanding commitment and contributions to global warming and environmental issues in general.

Clearly, I think we are witnessing, hopefully, a sea change in public and political acceptance of the scientific realities regarding this major global challenge that we are confronting. And I think a number of political challenges remain, obviously, within this Congress. But I think there is no question that we have to drive this train through this year, and hopefully we can succeed in the legislation that I have joined Senator Kerry on with respect to a 65-percent reduction in carbon dioxide emissions by 2050, which is a rigorous, realistic approach by any measurement and by the standards that many scientific experts say that is necessary to accomplish to avert a further increase in temperatures that would achieve that tipping point to which Senator Kerry referred.

There is no question about the incalculable impact of climate change and global warming, as Senator Kerry outlined. I think the question now is: Do we have the political critical mass necessary to effect a change that is essential to contribute to leadership on a global level? And I have been part of an international commission with a colleague in England on this question to develop a global consensus on this, outside of Kyoto because obviously the United States is not a signatory to Kyoto. So is there another way to effect that change and develop a template so that we can proceed?

We had the U.N. report that was issued recently, and Columbia University, as well, issued one 2 weeks ago. And I think the bottom line is the same, that we have a massive challenge, and we have a major impact, a major effect of global warming. I think there is no doubt about that.

Last year was the warmest year, at least in reporting temperatures, in the history of the United States. The last 25 years have been some of the warmest in the history of the United States. So we know the direction.

I applaud you, Mr. Chairman, for focusing on how small business can play a fundamental and crucial role, because I not only think that they can play a major role, but I think it can be profitable in doing so. And I want to welcome, in particular, Dr. David Goldstein, who has written a book, "Saving Energy, Growing Jobs," and in showing the path that there are stumbling blocks, but no matter, I think that if businesses understand the investments that can be made, there is no question that it can be profitable both from an environmental standpoint, but also from a monetary standpoint as well. So I am very pleased that he is able to be here today to contribute to the dialog about tax incentives, and I think that is good, and that is one of the issues that I have been pursuing here in the Congress. I did back in the Energy Act of 2005, and today I am introducing, along with Senator Kerry and Senator Feinstein, an extension of those tax incentives, because that is a way in which

I think we can encourage energy efficiency investments in new buildings and in the retrofitting of old buildings that will reduce energy consumption, and at the same time ultimately create jobs.

And so we want to make sure that there is some permanency to these tax incentives so there is reliability and certainty, and that is certainly true for industry, and it certainly will be true for small businesses.

There are many examples of small businesses that are engaged in making energy efficiency investments. In fact, in the State of Maine, we have Lyman Morse Boatbuilding in Thomaston, Maine, that are using tax incentives, the very tax incentives that were part of the 2005 Energy Policy Act, to construct an energy-efficient building. And we want to make sure we can encourage more small businesses to invest in green building practices because it does reduce energy consumption and increases and enhances their profitability.

We know that the Energy Policy Act directed the SBA, along with the EPA and other agencies, to develop a small business clearinghouse, which would develop options for small businesses to become more energy efficient. We need to discern here today if there is any progress being made within this clearinghouse and what needs to be done to give a level of urgency to a number of these initiatives that can well make a difference, because small businesses clearly are the laboratories for innovation and creativity. And that is where it is all going to spark the entrepreneurial spirit that is going to be so essential to helping us combat global climate change.

Another example in the State of Maine is Oakhurst Dairy. It is an 86-year-old business that recently announced it converted a fleet of 100 trucks and trailers to a biodiesel fuel blend. And the Oakhurst president, Stanley Bennett, sent me a letter last week and he said, "We firmly believe that doing the right thing environmentally is almost always the right thing to do for your business." And I ask unanimous consent to include his letter in the record, Mr. Chairman.

Chairman KERRY. Without objection.

[The letter follows:]

March 1, 2007

Senator Olympia J. Snowe, Ranking Member
United States Senate Committee on Small Business & Entrepreneurship
428A Russell Building
Washington DC 20510

Dear Senator Snowe:

I am pleased to report on the various "green" initiatives of my family's business, Oakhurst Dairy, here in Portland, ME. With a name like Oakhurst, it has been a natural for us over our 86 year history to focus on our region's environment. During my tenure here at Oakhurst, we have done so in three ways: focusing on Healthy Products, Healthy Communities, as well as a Healthy Environment.

Healthy Products encompasses our Nutrish value added product line, our first in the nation "no artificial growth hormone" program, and, currently, a re-emphasis on the fundamental health benefits of milk – "Nature's Most Nearly Perfect Food".

We support Healthy Communities by contributing (over three generations), year in and year out, 10% of our company's profits to charitable/non-profit organizations to benefit kids and the environment throughout Northern New England.

Third has been our Healthy Environment initiatives. Aside from our beginnings in a grove of oaks, we have a serious vested interest in our region's environment: our cows literally eat, drink and breathe the Northern New England environment, so it has been a natural for us over the years to initiate and support such projects as "Tree Releaf", which helped to reforest Maine's cityscapes following the ice storm of 1998, our millennium Tree Challenge, and, most recently, the Portland Tree Trust. In total, with direct contributions, fundraising efforts, and matching government funds, we have helped plant $500,000 worth of trees in Maine and New Hampshire over the past 15 years.

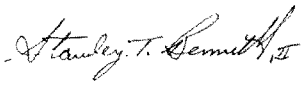
Most recently, and most exciting, has been the conversion of our 100+ fleet of trucks and trailers from diesel fuel to a biodiesel mix. At this time of year here in New England, the best we can do is a "B5" mix with only 5% of the fuel vegetable-based. By spring, we hope to be up to a B20 mix and our long-term goal is to use as high a mix percentage as our engines will allow.

A key to the success of this project is the support of our vendors. We have been fortunate here in New England to deal with a number of companies, including C.N. Brown and Irving Oil, who seem to look at themselves, not necessarily as oil companies, but as energy companies. These vendors made available to us biofuel at a cost within 1¢ to 3¢ per gallon of the fossil fuel alternative. They made the decision to convert very easy for us and we now have 90% of our fleet on some level of biodiesel mix as of December 1, 2006.

Biodiesel probably is not the long-term solution, given the various negatives of this technology (particularly the amount of agricultural acreage required), but we

believe that we are doing the best thing we can do at present for the environment by this conversion. Also, we firmly believe that doing the right thing environmentally is almost always the right thing to do for your business. Consumers nationally, not just here in environmentally-conscious New England, support companies they know are making their best efforts. There really is a "green" premium to be enjoyed by companies recognized as leaders in this area and I would urge other small and medium-sized businesses around the country to take advantage of this opportunity to do the right thing and, in the process, sell more of whatever their goods or services may be.

Yours truly,



Stanley T. Bennett II
President
Oakhurst Dairy

Senator SNOWE. And, finally, as we engage in this debate, we must be mindful of the potential solutions that we must consider the full economic impact on small businesses as well, because according to the SBA Office of Advocacy, the compliance with environmental regulations costs small businesses 364 percent more than it does for larger industry. So in developing the solutions, I think we do have to keep in mind that small businesses are obviously not as resilient as large companies, and so we have to avoid a one-size-fits-all mentality and come up with a range of solutions that can be economically and environmentally effective.

I look forward to hearing from the panel, both this panel and the next one, regarding what we can do to create these initiatives, and hopefully we start today with the reintroduction of the EXTEND Act, which is going to continue these tax incentives to make investments in more energy-efficient buildings, because I do think that that is a major step, and small businesses can play, I think, a profound role in that regard. But also what the clearinghouse can accomplish in meeting some of these requirements, as well, that will help the greater energy efficiencies to create greater profitability and ultimately the goal that we all seek to accomplish, and that is, reducing greenhouse gas emissions, which is, I think, the fundamental goal of this Committee in terms of how we can use small business in that endeavor. Engaging the small business community is a major step in reducing our carbon footprint for the future.

So thank you, Mr. Chairman.

Chairman KERRY. Thank you very much, Senator Snowe. Thanks for your support and cooperation and partnership in this effort, and I appreciate your leadership very, very much.

Mr. Horowitz and Mr. Wehrum, thank you for being here with us. We appreciate it. Why don't you start off, Mr. Horowitz, and we look forward to your testimony.

STATEMENT OF DANIEL HOROWITZ, ASSISTANT ADMINISTRATOR, OFFICE OF POLICY, U.S. SMALL BUSINESS ADMINISTRATION

Mr. HOROWITZ. Thank you. Good morning, Chairman Kerry, Senator Snowe. Thank you for inviting the U.S. Small Business Administration to provide remarks related to the Energy Policy Act of 2005.

The Energy Policy Act calls for the SBA and other Federal agencies to provide information on the benefits of becoming more energy efficient to small businesses across America. SBA appreciates the opportunity to update the Committee on its efforts, along with our Federal agency partners, to inform small businesses on the benefits and opportunities for becoming, promoting, and developing products for energy efficiency.

I am Dan Horowitz, Assistant Administrator for the Office of Policy, appearing on behalf of Administrator Preston.

Under President Bush's leadership, America is changing how it generates electricity by investing in clean coal technology, wind and solar power, and clean, safe nuclear power. Since 2001, the Federal Government has invested more than $12 billion to develop cleaner, cheaper, and more reliable energy sources. This Administration is also increasing funding for research and development

into alternatives to oil and gas, including advanced batteries for plug-in and hybrid cars, biodiesel fuels, and hydrogen fuel cells. New technologies like these have the potential to provide reliable energy at competitive prices.

The Department of Energy, Environmental Protection Agency, Department of Commerce, and the SBA have all made progress in developing a governmentwide program building on the ENERGY STAR Small Business Program. The goals of the program are: one, to assist small business in becoming more energy efficient; two, to sell their ENERGY STAR qualifying products to the Federal Government; three, to identify financing options for energy efficiency upgrades; and, four, to establish a Small Business Energy Clearinghouse with the technical information and advice necessary to help increase energy efficiency and reduce energy costs.

The ENERGY STAR Small Business Program, managed by the EPA and DOE, has been positioned as a clearinghouse for information related to energy efficiency that may be needed by small businesses. Small businesses have access to a wealth of information on a wide variety of topics related to energy efficiency through the ENERGY STAR Small Business Program. In particular, the Web site offers information on eligibility for Federal tax credits and a directory of energy efficiency programs so that small businesses can learn about utility-sponsored programs and available rebates for energy efficiency products.

The clearinghouse, when complete, will be accessible through the SBA's Web site with links and content provided by the EPA, DOE, and the Department of Commerce. However, already in 2006, Americans, with the help of the ENERGY STAR Program, saved $14 billion on their energy bills, and at the same time reduced greenhouse gas emissions.

In addition to ENERGY STAR, SBA and EPA worked together to reach out to small trucking companies with financial assistance to encourage the capital investment of fuel-efficient products. On November 14, 2006, SBA began making loans available to help small trucking companies finance the purchase of SmartWay Upgrade Kits. These kits include products that will help save the small firms money in reduced fuel costs, while helping the environment by reducing greenhouse gas emissions.

The SBA will distribute information on energy efficiency issues through its existing distribution network, including Small Business Development Centers, Women's Business Centers, and SCORE chapters, along with other Federal agencies, including the Federal Emergency Management Agency, the Department of Agriculture, and the Department of Commerce. Federal agencies will also have access to such information via the clearinghouse.

The EPA will handle telephone requests from small businesses for information through its ENERGY STAR hotlines, which is 888–STAR–YES. This program will enhance the Administration's support of America's entrepreneurs by helping them reduce their energy costs, thereby allowing them to grow their businesses and bring more jobs to the Nation's economy.

Thank you again for the chance to discuss the role of SBA in the information distribution to small businesses regarding energy effi-

ciency with the Committee. I will be pleased to answer any questions you might have.

[The prepared statement of Mr. Horowitz follows:]

SENATE SMALL BUSINESS AND ENTREPRENEURSHIP COMMITTEE
HEARING REGARDING
CLIMATE CHANGE/GLOBAL WARMING
MARCH 8, 2007

Testimony of Daniel Horowitz
Assistant Administrator for the Office of Policy

Good morning Chairman Kerry, Ranking Member Snowe and distinguished members of the Committee. Thank you for inviting the U.S. Small Business Administration (SBA) to provide remarks related to the Policy Act of 2005 which calls for SBA and other Federal agencies to provide information on the benefits of becoming more energy efficient to America's small businesses and entrepreneurs. SBA appreciates the opportunity to update the Committee on its efforts along with our federal agency partners to inform small businesses on the benefits and opportunities for becoming, promoting and developing products for energy efficiency.

I am Daniel Horowitz, Assistant Administrator for the Office of Policy appearing on behalf of Administrator Preston.

Under President Bush's leadership, America is changing how it generates electricity by investing in clean-coal technology, wind and solar power, and clean, safe nuclear power. Since 2001, the Federal Government has invested more than $12 Billion to develop cleaner, cheaper, and more reliable energy sources. This Administration is also increasing funding for research and development into alternatives to oil and gasoline, including advanced batteries for plug-in and hybrid cars, biodiesel fuels, and hydrogen fuel cells. New technologies like these have the potential to provide reliable energy at competitive prices.

The Department of Energy (DoE), Environmental Protection Agency (EPA), Department of Commerce (DoC), and SBA have made progress in developing a government-wide program building on the Energy Star Small Business Program. The goals of the program

are: 1) to assist small business in becoming more energy efficient; 2) to sell their ENERGY STAR qualifying products to the federal government; 3) to identify financing options for energy efficiency upgrades; and 4) to establish a "Small Business Energy Clearinghouse" with the technical information and advice necessary to help increase energy efficiency and reduce energy costs.

The ENERGY STAR Small Business Program, managed by EPA and DOE, has been positioned as a clearinghouse for information related to energy efficiency that might be needed by small businesses. Small businesses have access to a wealth of information on a wide variety of topics related to energy efficiency through the ENERGY STAR Small Business Program. In particular, the website offers information on eligibility for Federal tax credits and a directory of energy efficiency programs so that small businesses can learn about utility-sponsored programs and available rebates for energy efficiency products.

The Clearinghouse, when complete, will be accessible through the SBA's Web page with links and content provided by EPA, DoE and the Department of Commerce. However already in 2006, Americans with the help of ENERGY STAR, saved $14 billion on their energy bills and at the same time reduced greenhouse gas emissions.

In addition to ENERGY STAR, SBA and EPA teamed up to reach out to the small trucking companies with financial assistance for the upfront investment of fuel efficient products. On November 14, 2006, SBA began making loans available to help small trucking companies finance the purchase of SmartWay Upgrade Kits. The kits include products that will save the small firms money in reduced fuel costs while helping the environment by reducing greenhouse gas emissions.

The SBA will also distribute information on energy efficiency issues through its existing distribution network including Small Business Development Centers, Women's Business

Centers and SCORE chapters along with other Federal agencies including Federal Emergency Management Agency, the Department of Agriculture and Department of Commerce (DoC). Federal agencies will also have access to such information via the Clearinghouse.

The EPA will handle telephone requests from small businesses for information through its ENERGY STAR hotline which is 888-STAR-YES.

This program will enhance the Administration's support of America's entrepreneurs by helping them reduce their energy costs thereby allowing them to grow their businesses and bring more jobs to the Nation's economy.

Thank you again for the chance to discuss the role of SBA in information distribution to small businesses regarding energy efficiency with the Committee. I will be pleased to answer any questions you might have.

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Chairman KERRY. Thank you, Mr. Horowitz.

Mr. Wehrum.

STATEMENT OF WILLIAM L. WEHRUM, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. WEHRUM. Good morning, Chairman Kerry, Senator Snowe. Thanks for the opportunity to testify on behalf of the EPA. Small businesses are key partners in our Nation's efforts to promote economic growth and protect the global climate, and I am happy to highlight EPA's efforts with small businesses and voluntary partnership programs.

At EPA, we manage a suite of programs that are cost-effectively reducing greenhouse gas emissions through energy efficiency as well as other clean energy strategies. These programs are delivering tremendous results across the country and are projected to contribute significantly to the reductions necessary to meet the President's greenhouse gas intensity goal in 2012.

We have long recognized that energy efficiency offers one of the lowest-cost solutions for reducing our energy bills, improving our energy security, preventing air pollution, and addressing the important issue of global climate change. The good news is that small businesses are smart businesses and they are embracing the value of sound energy management.

Over the last 15 years, the ENERGY STAR Program managed jointly by EPA and the Department of Energy, has become a guidepost for energy efficiency for businesses and consumers. Overall, Americans with the help of ENERGY STAR saved $12 billion on their energy bills in 2005, while avoiding the greenhouse gas emissions equivalent to those of 23 million vehicles.

ENERGY STAR assists small businesses in two ways. First, it helps small businesses that manufacture and sell energy-efficient products get those products recognized in a crowded marketplace where they might otherwise go unnoticed.

Second, the ENERGY STAR Small Business Program helps small businesses reduce their own energy use, lower costs, and decrease greenhouse gas emissions.

Small businesses have diverse sets of energy issues. Restaurants, auto dealerships, convenience and grocery stores, hotels, and retail establishments all have very different energy use profiles, different challenges, and different opportunities. Furthermore, a large number of small businesses are home based. To address this diversity, ENERGY STAR provides tailored assistance and training for each of these small business types. The resources available to small businesses through ENERGY STAR are numerous, including online energy tracking, recorded and live training, Web resources, expert advice, information on tax credits and rebates, a toll-free hotline, award opportunities, and much more. With the help of ENERGY STAR, small businesses are effectively managing their energy use, saving money, and protecting the environment.

In addition to ENERGY STAR, EPA offers several other voluntary programs. The SmartWay Transport Program promotes fuel conservation and diesel emissions reductions, resulting in potential fuel savings of up to 150 million barrels of oil annually. SmartWay

reaches out to trucking companies of all sizes to participate in the program, including small businesses.

In November of 2006, in partnership with EPA, the SBA launched a loan program to help small trucking companies finance the purchase of SmartWay Upgrade Kits. These kits include a variety of technologies to help save fuel and decrease emissions. SmartWay is also collaborating with the Owner-Operator and Independent Drivers Association to reach out to the owner-operators and encourage greater awareness of energy-saving strategies.

Beyond this important work with voluntary partnership programs, EPA is also actively responding to the provisions of the Energy Policy Act of 2005. Just as public awareness of the ENERGY STAR label has increased from 40 percent in 2000 to 65 percent in the year 2006, a similar increase in awareness has occurred in the small business community. The National Small Business Association 2006 Energy Survey independently reported that 60 percent of small businesses surveyed indicated they are familiar with the ENERGY STAR and its technical support program.

ENERGY STAR also educates small businesses about proper maintenance for heating, ventilation, and air conditioning equipment. Through our pamphlet "Putting Energy into Profits: ENERGY STAR Guide for Small Businesses," as well as our Web site and a monthly electronic partner update, we provide guidance, checklists, and tips related to HVAC issues.

In addition, we run two annual consumer education campaigns on heating and cooling tips. They reach an estimated audience of over 45 million viewers.

EPA, together with the SBA, has also made progress in developing a governmentwide program building on the ENERGY STAR Small Business Program. EPA has participated in meetings with DOE, SBA, and a number of key small business associations to discuss a clearinghouse for information related to energy efficiency. EPA looks forward to the outcome of these productive discussions.

In closing, EPA recognizes the important role of small businesses in helping our Nation address the challenges of global climate change and energy independence. Our voluntary programs have been instrumental in helping this large and diverse segment of our economy gain recognition for their energy-saving products and become more energy efficient. The response of small businesses continues to grow.

We thank you for the opportunity to be here today. I look forward to answering any questions. And I will just add that we have provided for you some materials developed in support of our Small Business Program, and I hope that they will be a resource for you as you continue to consider these important issues.

[The prepared statement of Mr. Wehrum follows:]

TESTIMONY OF

WILLIAM L. WEHRUM
ACTING ASSISTANT ADMINISTRATOR
OFFICE OF AIR AND RADIATION
U.S. ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE
COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP
U.S. SENATE

March 8, 2007

Good morning, Chairman Kerry and members of the Committee. Thank you for the opportunity to testify on behalf of the Environmental Protection Agency. My name is Bill Wehrum and I am Acting Assistant Administrator for EPA's Office of Air and Radiation. Today, I would like to provide you with an update on our work with small businesses to help them gain recognition for their energy saving products and save energy and reduce greenhouse gas emissions through energy efficiency. Specifically, I will highlight the efforts of our voluntary programs and will provide an update on our progress in implementing the provisions of the Energy Policy Act of 2005 that apply to EPA and small business.

Overview

At EPA, we manage a suite of programs that are cost-effectively reducing greenhouse gas emissions through energy efficiency as well as other clean energy strategies. These programs are delivering results across the country and they are projected to contribute significantly to the reductions necessary to meet the President's greenhouse gas intensity goal in 2012.

We have long recognized that energy efficiency offers one of the lowest cost solutions for reducing our energy bills, improving our energy security, preventing air pollution, and addressing the important issue of global climate change – all while helping to grow the economy. Small businesses have tremendous opportunity to cost-effectively reduce energy use, which is critical to keeping their energy costs manageable and making significant contributions that benefit the environment.

Energy Star

Many of you may be familiar with the blue ENERGY STAR label on home appliances and office equipment. You may not be aware of its steady growth in the marketplace, in terms of the number of products that it covers, its growing influence with consumers, and the breadth of organizations that it benefits. Over the last fifteen years it has become a guide post for energy efficiency for businesses and consumers and has delivered remarkable results:

- It now includes products in more than 50 product categories; these products can offer savings of as much as 90 percent relative to standard models.

- EPA estimates that Americans have purchased approximately 2 billion ENERGY STAR qualifying products.
- EPA estimates that more than 65 percent of the public is aware of the ENERGY STAR label.
- EPA estimates that one in four households knowingly purchased an ENERGY STAR qualified product in 2006, and more than 60 percent of those households credited the label as an important factor in their decision.

The ENERGY STAR program, managed jointly by EPA and the Department of Energy, assists small businesses in two ways. First, it helps small businesses that manufacture and sell energy efficient products get those products recognized in a crowded marketplace where they otherwise might go unnoticed. Small businesses manufacture, sell, and service many of the more than 50 types of ENERGY STAR products, such as high-efficiency windows, reflective roof products, and residential lighting fixtures. The ENERGY STAR label makes it easy for consumers and businesses to find and purchase energy efficient products, and the ENERGY STAR program allows small businesses to leverage the public awareness of the ENERGY STAR label in marketing their products.

Second, the ENERGY STAR Small Business Program helps small businesses reduce their own energy use, thereby resulting in lower costs and fewer greenhouse gas emissions. The ENERGY STAR Small Business program maintains a comprehensive website that provides in-depth information on a wide variety of topics to aid small business in learning about and implementing energy efficiency measures. In 2006, there were more than 130,000 visits to the ENERGY STAR small business web site, making it one of the most highly visited sections of the ENERGY STAR site.

Through the ENERGY STAR Small Business Program, EPA:

- Provides tailored energy efficiency information for a variety of small business sectors on the ENERGY STAR web site. Small businesses have diverse sets of energy issues, depending on their industry or facility type. Restaurants, auto dealerships, convenience and grocery stores, hotels, and retail establishments all have very different energy use profiles, different challenges, and different opportunities. Furthermore, a large number of small businesses are home-based. To address this diversity, we have developed unique sections within the ENERGY STAR web site for each of these small business types. Small businesses can also access additional support through ENERGY STAR's toll-free telephone hotline, 1-888 STAR YES.

- Provides small businesses access to recorded and live web-based trainings on a variety of energy efficiency topics. EPA is currently developing trainings that focus specifically on small businesses.

- Provides recognition, through the annual ENERGY STAR Small Business Awards, to small businesses for outstanding and/or innovative energy efficiency projects. Recipients of the award are presented with a plaque, are highlighted in press releases, and often receive significant media coverage in their local markets.

I would now like to share with you two specific examples of the work that we do to help small businesses become more energy efficient.

Starting in the summer of 2005, we worked with officials from the National Automobile Dealers Association (NADA) to develop a tailored energy efficiency program for auto dealers. Auto dealerships, with their need to provide comfortable showrooms and to maintain security in external lots, consume a lot of energy.

On January 23 of this year at the Washington Auto Show, I had the pleasure of announcing the NADA Energy Stewardship. Through this initiative, NADA is challenging each of its more than 20,000 member dealers, which operate 43,000 individual stores, to reduce their energy use by at least 10 percent using ENERGY STAR tools and resources.

This partnership has provided EPA with a new model for cooperative initiatives with national small business associations. It is now being adapted for use with other small business and similar associations.

I would also like to highlight our work with the commercial kitchen equipment and food service industry, which includes a wide variety of restaurants, retail stores, clubs, lodging and many other small businesses. This industry includes many of the most energy-intensive commercial buildings, which consume roughly 2.5 times more energy per square foot than other commercial buildings, and as much as 10 times more energy than a typical office building. Restaurants alone are now paying in the neighborhood of $20 billion a year for electricity, natural gas, and water.

By addressing technologies related to cooking, refrigeration, and sanitation, significant energy and water savings can be achieved. These three combined end uses represent roughly 60 percent of the energy consumed in a typical food service facility. The total savings potential from a more efficient commercial kitchen can vary from 10-30 percent, depending upon the technologies installed.

Through the ENERGY STAR program we have already developed specifications for energy efficient commercial refrigerators and freezers, hot food holding cabinets, and a variety of cooking equipment. We are in the process of developing ENERGY STAR specifications for ice machines and commercial dishwashers and expect to have these complete by the end of this year. A number of utilities and other energy efficiency program sponsors are offering rebates to encourage the purchase of this ENERGY STAR qualified equipment, and we expect to see this trend grow.

Other EPA Voluntary Programs Supporting Small Business Efforts

In addition to ENERGY STAR, EPA implements several other programs that offer small businesses opportunities for saving energy and reducing greenhouse gas emissions. The **SmartWay Transport** program, an innovative public-private partnership between EPA and the transportation industry, promotes fuel conservation and diesel emission reductions. At the

same time, the program could result in fuel savings of up to 150 million barrels of oil annually. SmartWay reaches out to trucking companies of all sizes to participate in the program. Currently, small companies with less than 50 trucks comprise 95% of the carriers and 37% of the capacity in the trucking industry. SmartWay seeks to encourage greater participation from these small businesses and help them reduce fuel consumption and emissions.

A wide variety of technologies are available to help these trucking companies save on fuel costs. However, many companies lack the required up-front investment capital. To help more companies start saving fuel and money while reducing the emissions produced by their trucks, EPA has partnered with the Small Business Administration (SBA) to reach out to the small trucking companies with financial assistance. On November 14, 2006, [deleted: EPA and] SBA began making loans available to help small trucking companies finance the purchase of SmartWay Upgrade Kits. The kits include idle-reduction devices, low rolling resistance tires, aerodynamic equipment, and exhaust after-treatment devices. SmartWay is also collaborating with the Owner Operator and Independent Drivers Association to reach out to the owner operators and encourage greater awareness of energy-saving strategies.

EPA's Green Power Partnership provides its Partners with a comprehensive package of technical resources to facilitate the purchase of green power as a way to reduce the carbon footprint of their electricity use. Currently, nearly 300 of the total 673 Green Power Partners are small businesses.

EPA's Climate Leaders Program, which provides technical assistance to companies to help them develop credible greenhouse gas emissions inventories and management plans, currently has a number of small businesses as participants in addition to many large corporations. As participants, these small businesses agree to develop a greenhouse gas inventory and set an aggressive greenhouse gas emissions reduction goal. EPA has developed several tools and services to help these companies on a voluntary basis develop their greenhouse gas inventories, report emissions reductions, set and track reduction goals, and promote their successes.

Progress Implementing the Small Business Requirements of the Energy Policy Act of 2005

I would now like to update you on our progress with implementing the small business requirements of the Energy Policy Act of 2005, which instructs EPA to provide special outreach to small businesses in building awareness of the ENERGY STAR label and to develop a government-wide program building on the ENERGY STAR Small Business Program. I am pleased to inform you that significant progress has been made.

As I described earlier in my testimony, the Energy Star Small Business Program is successfully reaching out to small businesses to enhance their awareness of the Energy Star label. Just as public awareness of the ENERGY STAR label has increased from 40 percent in 2000 to 65 percent in 2006, a similar increase in awareness has occurred in the small business community. The National Small Business Association 2006 Energy Survey independently reported that 60 percent of small businesses surveyed indicated that they are familiar with the ENERGY STAR and technical support program.

EPA has also made strides in providing consumer education on proper maintenance for heating, ventilation, and air conditioning (HVAC) equipment. Through ENERGY STAR, EPA has been working to inform small businesses of the financial and environmental benefits of properly maintaining HVAC systems. We currently highlight HVAC maintenance as a key strategy in our primary technical resource for small businesses titled "Putting Energy Into Profits: ENERGY STAR Guide for Small Business."

We have also developed several web pages including guidance, checklists, and tips for finding HVAC contractors, and we disseminate all of this information through monthly electronic Partner updates, press releases, and other avenues. In addition, we have mounted two annual campaigns – in summer and winter – to educate consumers about the importance of proper maintenance of heating and cooling equipment. These campaigns garner large amounts of media coverage by national, regional, and local publications. In total, these campaigns resulted in over 45 million media impressions and generated hundreds of thousands of visits to the ENERGY STAR web site.

EPA has similarly made progress in developing, with help from the Small Business Administration, a government-wide program building on the Energy Star Small Business Program. The goals of the program are: 1) to assist small business in becoming more energy efficient; 2) to sell their ENERGY STAR qualifying products to the federal government; 3) to identify financing options for energy efficiency upgrades; and 4) to establish a "Small Business Energy Clearinghouse" with the technical information and advice necessary to help increase energy efficiency and reduce energy costs.

EPA has participated in meetings with the Department of Energy, the Small Business Administration, and a number of key small business associations to discuss a clearinghouse for all information related to energy efficiency that might be needed by small businesses. Associations that have participated in these discussions include the National Small Business Association, National Restaurant Association, National Association of Food Equipment Manufacturers, Association of Small Business Development Centers, and the National Automobile Dealers Association. As detailed earlier in my testimony, small businesses currently have access to a wealth of information on a wide variety of topics related to energy efficiency through the ENERGY STAR Small Business Program. They are also able to receive information and have questions answered through the ENERGY STAR telephone hotline, via a set of Frequently Asked Questions on the web site, or through an on-line form. The website also offers information on eligibility for Federal tax credits and a directory of energy efficiency programs so that small businesses can learn about utility-sponsored programs and available rebates for energy efficiency products.

Conclusion

EPA recognizes the important role of small business in helping our nation address the challenges of global climate change and energy security. Small businesses make and sell energy efficient products and have a strong incentive to reduce their own energy use and costs. EPA's voluntary programs have been instrumental in helping this large and diverse segment of our economy gain recognition for their energy-saving products and become more energy

efficient, save money on their utility bills, and reduce their emissions of greenhouse gases. The response of small businesses to our efforts continues to grow. Moving forward, EPA will continue to partner with small businesses to meet the growing demand for information and provide opportunities for small businesses to save energy and reduce greenhouse gases.

Chairman KERRY. Thank you, and I look forward to following up. I have some questions for you, as does Senator Snowe. But Senator Boxer is now here, and what I want to do is ask her to testify from up here rather than there, if she would.

Let me just welcome her. She is now the Chair of the Environment and Public Works Committee. She is very, very focused on this issue, has shown tremendous leadership in it, is the sponsor of one of the principal bills looking for 80-percent reduction by 2050, and has been a terrific partner in helping to work with us. So we are really pleased she could come today, and thank you for being here to testify.

STATEMENT OF THE HONORABLE BARBARA BOXER, A UNITED STATES SENATOR FROM THE STATE OF CALIFORNIA, CHAIR, SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

Senator BOXER. Senator Kerry, Mr. Chairman, Senator Snowe, Ranking Member, I am just really so pleased to be here with you, and I want to thank both of you for your work on global warming. I think your bill is also one of the principal bills, and as I have told both of you, we are going to all work together to really move this issue forward. And it takes focus, and we just have to move every day closer toward the day that we do produce a bill that we can put on the President's desk.

I also want to take a moment to welcome Scott Hauge of Small Business California. We go back a very long time, Scott, and I am just so happy to see you here and, of course, continuing to fight to protect the environment.

Small Business California was one of the first business groups to support the passage of California's landmark global warming bill, AB 32. And here is the thing, I think, Senator Kerry and Senator Snowe, that you know: Supporting strong global warming legislation is good for business, and that is why it is so great that you are doing this from the Small Business and Entrepreneurship Committee, and it is adding so much to the dialog.

We know global warming is one of the most pressing issues of our time. Every day we learn more and more. We all talked about the Intergovernmental Panel on Climate Change. Senator Snowe and I talked to a gathering of parliamentary leaders from all over the world to tell them that there is hope on the horizon now, that we can do something. We know there is a 90-percent certainty humans are causing most of the warming.

That report was followed by the U.N. Foundation report, which essentially underscored those findings, and we know that, left unchecked, global warming will lead to increased extreme weather events, to sea level rises, to more flooding and hurricanes, changes in our weather patterns that could reduce water supplies. Those are just a few of the effects if we do not address this issue.

When you talk about the kind of environment we need for our businesses to flourish, clearly the kind of environment we will get if we do nothing about, global warming will not enable anyone to flourish. So I think it is very clear that this Committee has to focus on this.

I believe there is an overwhelming consensus that global warming is happening. Yes, there are a few naysayers, but there are just a few. But there always are a few. When science comes out and they say, for example, that there is a tie-in between tobacco use and lung cancer, there are always a few people who doubt it. There are a few people who doubt that HIV causes AIDS. But we need to move forward when we have a consensus, and that is what we are doing in this Senate.

But there are still those who say, yes, we think it is happening, but it is too costly to our economy. But, again, I think we need to challenge that because if you look at the Stern report, for example, you realize that by doing nothing, there is a tremendous cost to our economy and every dollar we put in now to reverse the global warming impacts will yield $5 in return.

Many in business and the investment community are waking up to the business opportunities that will result from reducing greenhouse gas emissions. And we have seen big business come together, and we have had them before the Environment Committee. But we also see now that the can-do entrepreneurial spirit that resides in America's small businesses is really being tested here, and I believe these businesses will be nimble enough to adjust rapidly to a low-carbon, low-fossil fuel economy.

Since small business consumes more than half the electricity and natural gas that is used for commercial purposes, reductions from small businesses can make a difference. So small business can be part of the solution and can be leaders in energy efficiency, which at the end of the day cuts costs. We need to help small business undertake more energy-efficient projects which will also, again, increase their bottom line and increase our competitiveness.

Mr. Chairman, you and I, as well as Senator Snowe, have made many visits to places like the Silicon Valley and other areas where venture capital is leading the way in both of your States. And we see now that there are tremendous opportunities here. Imagine if we can lead the way in the world with these new technologies, these green technologies. Think about China; think about India. We know they are looking to us. We cannot sit back and wait for them to do the right thing. That is ridiculous. We need to do the right thing, and our small businesses can do the right thing, and we can all prosper at the end of the day.

So I would ask that the rest of my testimony be placed in the record because I see my time is winding down. But I would just say this to you, Mr. Chairman and Ranking Member Snowe: You are positioned in a very important way, both with this Committee and also the Commerce Committee, to be full partners with the Environment Committee and the Energy Committee so that we can really get our heads together and get moving. And I believe that just like in California, where small business led the way in passing landmark legislation, they can do it on the national level, and we should approach global warming with not fear, but determination and hope. And if we do it right, it could turn into a huge opportunity for our small businesses.

Thank you so much for this chance to stop by.

[The prepared statement of Senator Boxer follows:]

For Immediate Release **Contact: Peter Rafle**
March 8, 2007 **(202) 228-3102 direct, (202) 302-7086 cell**

Statement of Senator Barbara Boxer
Chairman, Senate Committee on Environment and Public Works
Before the Senate Committee on Small Business and Entrepreneurship
Hearing on Small Business Solutions for Combating Climate Change
March 8, 2007

Thank you, Chairman Kerry and Ranking Member Snowe for inviting me to speak regarding global warming and small business.

I also want to welcome one of the witnesses from California, Scott Hauge of Small Business California.

Small Business California was one of the first business groups to support the passage of California's landmark global warming law, AB 32.
And they supported AB 32 because they thought it made good business sense.

Global warming is one of the most pressing issues of our time.

Every day we learn more about how global warming is threatening the well being of our planet.

Just a few weeks ago, the Intergovernmental Panel on Climate Change released its report, which makes clear that global warming is happening now and that there is a 90% certainty that humans are causing most of the warming.

A more recent report from the UN Foundation also confirmed the fact that the earth is warming and that we need to take action soon.

Global warming can have enormous consequences for mankind. Left unchecked, global warming will lead to increased extreme weather events, to sea level rise, to more floods and hurricanes, and to changes in our weather patterns that could reduce our water supplies. These are but a few of the effects that global warming will have in the years to come.

That is why we need to take action now, so that future generations can live in a world that resembles the world of today.

Although there is now an overwhelming consensus that global warming is happening, some will say that we cannot move forward because of the costs to our economy.

But in fact, the business and investment community is waking up to the business opportunities that will result from reducing greenhouse gas emissions.

And while we have recently seen big businesses like GE, Dupont and BP join in the call for mandatory global warming legislation, small businesses are also leading the way.

That is because the "can-do" entrepreneurial American spirit resides in small businesses, which create more than half of the private sector jobs. These businesses will be nimble enough to adjust rapidly to a low carbon, low fossil fuel, economy.

And since small businesses consume more than half the electricity and natural gas that is used for commercial purposes, reductions from small businesses can make a big difference.

Small businesses can be leaders in energy efficiency, which is one of our most important tools in fighting global warming immediately. Reducing energy use is smart business, especially when fuel prices are high.

We need to help small businesses undertake more energy efficiency projects, which will also save money, increase our competitiveness and enhance our energy security.

Small businesses can also lead the way in developing innovative low carbon technologies.

In California, with the help of small businesses, we enacted the first mandatory global warming law, AB 32, which calls for a reduction to 1990 levels by 2020.

Small businesses supported AB 32 as a necessary step and as an important opportunity.

California leads the way in developing a thriving environmental business sector for so called "clean tech" projects, which are investments in clean technology solutions. In 2005, "clean tech" venture capital investment in California totaled $484 million dollars.

As the need for clean technologies develops worldwide, we will see an enormous business opportunity unfold in front of our eyes. My bet is small businesses will be among the first to recognize and take advantage of that opportunity, as small businesses are doing in California.

I am an optimist and I believe that we should approach global warming with hope and not fear. I believe that we can address this problem and that we will be better off in every way for it.

Small businesses are going to be key in helping us get there, and as we craft solutions to this problem, we need to work closely with small businesses–so that what we do helps them, and allows them to help us, as we all work together to curb global warming.

Thank you.

Chairman KERRY. Well, we are delighted, Senator. We love your passion on this issue, and we really look forward to and are grateful for your leadership because you have directed the Environment Committee to make this its lead priority.

Senator BOXER. Thank you.

Chairman KERRY. People may not believe it, but next to the war on terror, folks, this is the biggest priority that we face, and we have to treat it accordingly.

Senator SNOWE. Mr. Chairman, I just want to compliment Senator Boxer, who chairs the Environment Committee, because I think her leadership is going to be critical in that endeavor, and also for the innovative approach you adopted recently by having an open mike for Members of the Senate to testify, in which you had a third of the U.S. Senate testify on global warming.

Senator BOXER. We did.

Senator SNOWE. So thank you very much for giving the level of urgency that this issue rightfully deserves.

Senator BOXER. Thank you both.

Chairman KERRY. We appreciate it. Thank you very, very much.

Mr. Wehrum, thank you for your testimony, and Mr. Horowitz also. There is no question that the ENERGY STAR Program is a good program. It serves a valuable role in promoting energy efficiency for consumers. It certainly has increased awareness in the country of the ENERGY STAR label.

I think the question is: Are we really sufficiently committed to it? Is it all that it could be? And are we doing all that we can? I would ask you, Mr. Wehrum, you received $50 million in appropriations for 2006, but the President requested only $44 million for it for this next year. Can you explain why the President is looking to devote fewer resources for a successful energy-reducing program?

Mr. WEHRUM. Yes, Chairman Kerry. I would say three things.

One, ENERGY STAR is an enormously effective program and will continue to be an enormously effective program. The goal of the program all along since its inception has been to foster partnerships with our private sector and other partners that we have in the program.

Chairman KERRY. Do you believe we are at a level of those partnerships that is acceptable, that is what we ought to have?

Mr. WEHRUM. We are doing very well, and I would say we——

Chairman KERRY. That is not what I asked you. Are we at the level that we could be and ought to be with respect to the challenge of this issue?

Mr. WEHRUM. There is always more opportunity, Mr. Chairman——

Chairman KERRY. Then why are we cutting the program?

Mr. WEHRUM. Well, the first reason is I do believe we are making progress in mainstreaming these issues. ENERGY STAR has been about win-win solutions where, done correctly, significant energy savings and, therefore, cost savings can be achieved. At the same time, great benefits to the environment, including reductions in the growth of and outright reductions in greenhouse gas emissions can also be achieved.

The second thing I will say is that part of the reduction in the 2008 budget reflects a greater emphasis on international action. The President's budget in 2008 asks for $5 million, for example, to support the Asia Pacific Partnership, and a key aspect of the Asia Pacific Partnership is to support infrastructure development and real projects, and they call for sustainable development and energy efficiency. And ENERGY STAR is a significant component of our international efforts that way.

The third thing I would say is that times are tough budget-wise, and we at the EPA, along with our colleagues at the other departments and agencies, are doing what we can to help promote fiscal responsibility and contribute to our ability to reach a balanced budget, and we are trying very hard to do that.

Chairman KERRY. Well, it seems to me it is sort of penny-wise, pound-foolish in the end because of the savings that it would mean to those companies, the increased profits and then the increased revenues.

Mr. WEHRUM. Mr. Chairman, there is great opportunity, and as the Administrator said yesterday in testimony, we are all about results, and we think this is an enormously successful program and will continue to be an enormously successful program. And I am personally quite proud to have the opportunity to work with the folks who run this program and developed the program. It is among the best of what EPA and the Government has to offer, and I think we do a great job.

Chairman KERRY. Well, what percentage of the ENERGY STAR Program is dedicated to energy small business?

Mr. WEHRUM. On the specific dollars, we spend about $1 million a year directly on our small——

Chairman KERRY. Percentage.

Mr. WEHRUM. That is 1 in 50, so that is, you know——

Chairman KERRY. A tiny percent.

Mr. WEHRUM. Two percent, but——

Chairman KERRY. Small business is 50 percent of the businesses in the country in terms of energy use.

Mr. WEHRUM. Well, the other part of the answer, Mr. Chairman, is that the small business part of our program benefits from many of the other efforts that are underway in the program at large. With regard to developing the ENERGY STAR brand, promoting development of energy-efficient products, you know, our efforts specifically to small businesses are very, very important, and we take them quite seriously. But those efforts leverage off the broader efforts within the ENERGY STAR Program.

Chairman KERRY. Not unless people have the technical assistance and the knowledge of it. I mean, a lot of small business people are working head-down, straight-ahead, 6 a.m. in the morning until 11 p.m. at night. It is a long day. It is a tough ordeal. And they do not have a lot of time. They are not necessarily tuned into the Web. They do not know what is going on with ENERGY STAR. There needs to be a kind of proactive effort to help a lot of those folks be aware. Many of them are immigrants. Many of them are new to business. A lot of them are startups of two or three people, or whatever, and they are just not aware of these things. But there could be big savings to them.

Mr. WEHRUM. Mr. Chairman, we agree completely, and the money that we specifically spend on the small business aspect of the program goes at exactly the issues that you just talked about. For instance, one of the documents that we have provided to you is the ENERGY STAR Guide for Small Businesses. We make this widely available as a published document. It is available on the Internet. And you are exactly right, many folks do not have access to the Internet or do not have the time to access the Internet. But, nevertheless, that is quite a valuable resource.

Chairman KERRY. Does the EPA proactively work in joint venture with the Small Business Administration to reach out to small businesses?

Mr. WEHRUM. Yes, Mr. Chairman, we do.

Chairman KERRY. What is the format for that?

Mr. WEHRUM. Much of the focus of late has been to satisfy our mutual obligations under the Energy Policy Act. That law called for the SBA to lead an effort to create a clearinghouse for information, and I am sure my colleague has some thoughts on this. We feel like as a Government, and especially through the ENERGY STAR Small Business Programs, we have done a lot of what that law, I think, envisions as being helpful in setting up that clearinghouse. But we have spent time working with our SBA colleagues and others within the Government to figure out what it means to put the clearinghouse together.

And setting aside ENERGY STAR, we do have other programs, as I mentioned in my testimony. A good example is the SmartWay Program, which is directed at reducing fuel utilization and increasing efficiency of over-the-road trucks. And we worked very successfully with SBA late last year to put together a loan guarantee program directed at small businesses to help make financing more readily and easily available to small owner-operators or those that operate small fleets in order to take advantage of these energy efficiency opportunities.

Chairman KERRY. You mentioned the President's greenhouse goal by 2012. What is that goal by 2012 for greenhouse gas?

Mr. WEHRUM. An 18-percent reduction in greenhouse gas intensity.

Chairman KERRY. Which gets you to where?

Mr. WEHRUM. I do not have that figure in front of me. It slows the growth of greenhouse gas emissions between now and 2012.

Chairman KERRY. But an 18-percent reduction by 2012—is that what you said?

Mr. WEHRUM. Yes, Mr. Chairman.

Chairman KERRY. What is there in the current approach that suggests, since it is voluntary, that that is achievable?

Mr. WEHRUM. We take the Administration's commitment to that objective quite seriously, and, in fact, there is a governmentwide effort to track progress against that goal. And, in fact, much of the work that is done within EPA and, I believe, our primary contribution—one of our primary contributions to the governmentwide climate effort is to get real results against that goal.

My testimony and my colleague's testimony pointed out what we believe are some of the measurable results just from ENERGY STAR alone, $12 to $14 billion in energy savings for program par-

ticipants. That can be expressed in a lot of different ways. The figure we often use is what is that equivalent to in terms of automobiles. It is 23 million vehicles.

Chairman KERRY. But there is nothing historically—I mean—with all due respect, that kind of just talks around it. In the 22 years I have been on the Commerce Committee, we have been struggling with emissions, and we have been struggling with emissions nationally. Our emissions are only going up. We are not reducing. We set voluntary goals in 1992. President George Herbert Walker Bush signed the Voluntary Framework, and it has done nothing but go up. There has never been a reduction over the course of that time. The demand levels across the country show nothing but an increase.

Why do you think USCAP—are you familiar with USCAP?

Mr. WEHRUM. Yes, Mr. Chairman.

Chairman KERRY. Why do you think these leaders of major corporations are coming out and saying we need a mandatory cap? Why are they ahead of the EPA?

Mr. WEHRUM. As on many important and complex issues, there is a diversity of views right now.

Chairman KERRY. Well, these are not your—I mean, these are American CEOs of big companies. I doubt that—you know, most of them probably voted for George Bush, but they all believe that we need a cap because you have to do this mandatorily.

Mr. WEHRUM. Well, Mr. Chairman, the Administration's policy is that mandatory measures are not appropriate, but the policy——

Chairman KERRY. Why? Why would they not be appropriate if you have to achieve a certain goal?

Mr. WEHRUM. Because since the President set out the goal—and the goal is just one of four significant, four major prongs of the Administration's strategy. But since that objective was set by the President, we have been tracking progress against it. In fact, we have been exceeding on a pro rata basis what we otherwise need to achieve in terms of energy savings to meet the greenhouse gas intensity targets. So we have great confidence we are going to meet and probably exceed the target that has been set out by the President.

The President's goal has been to reduce the growth of greenhouse gas emissions in this country and, as appropriate, seek to stop the growth and reverse the growth. But the "as appropriate" goes to the other three prongs of the strategy. The other three prongs include substantial investment in continued scientific research, basic scientific research, and EPA does have a role in that as well. And substantial investment in technology development. You mentioned in your opening remarks that next-generation technologies and spurring those technologies is an important part of this debate and this effort, and we agree with that completely and spend something on the order of $3 billion per year as an administration on development of next-generation technology. And as I have alluded to in my comments today, aggressive action on the international front is a big part of our strategy, and we have been working hard at that. I personally have been involved in many important aspects of that effort.

Chairman KERRY. On the international front?

Mr. WEHRUM. Yes, Mr. Chairman.

Chairman KERRY. I want to turn to Senator Snowe, but can you just articulate what the Administration is doing on the international front?

Mr. WEHRUM. Sure, and I will give you a couple good examples based on my personal experience. The EPA administers a program called Methane to Markets. It is an international partnership program that currently has 19 member countries, and I happen to be the Chair of the Steering Committee of that effort.

The goal of Methane to Markets is to leverage the experience, the substantial experience that we have developed domestically to identify and reduce emissions of methane from primarily agricultural sources, coal mines, landfills, and oil and gas development and distribution.

We have had domestic programs in each of those areas for many years now, and we have had great success. So the idea of Methane to Markets is to leverage off of our experience and success and provide our technology, provide our know-how to the world at large, and seek to have projects implemented across the world to reduce methane emissions, because, again, as you pointed out in your opening remarks, methane is a very powerful greenhouse gas, and focused efforts on reducing methane can have that much more of an effect in reducing greenhouse gas emissions and in our case contributing to our goal of reducing greenhouse gas intensity between now and 2012.

That is one example of many, Mr. Chairman.

Chairman KERRY. Well, you know, it may well be that that is taking place. I will tell you that in my conversations—and most recently we had the Global Legislators for a Balanced Environment here, with delegations from China and India and Great Britain and all over the world. They met just downstairs in Senate Caucus Room 325, and to listen to them, they think we are one of the largest parts of the problem. They have no sense of our participation globally. They have no sense that this Administration is doing any of this or that it is making any difference. They see us as 25 percent of the world's pollution and not part of the solution.

Mr. WEHRUM. Mr. Chairman, I will just say there is substantial effort on the part of the Administration and the U.S. Government is directed at effective activity on the international level. Methane to Markets is one example. The Asia Pacific Partnership, which I mentioned previously, is another great example where we are seeking to get six countries on the Pacific Rim to invest significantly in sustainable development, which will have in part the effect of helping manage greenhouse gas emissions and the global climate change issue.

Chairman KERRY. I will come back to that afterwards.

Senator Snowe.

Senator SNOWE. To come back to the ENERGY STAR Program, is it true that you only have one employee that works on this program?

Mr. WEHRUM. Senator Snowe, specific to the small business component, we have two FTEs committed to it. So the equivalent of two employees. Again, I think it is very important to emphasize that our efforts specific to small businesses are able to take advan-

tage of and leverage off of many other components of the program where substantially greater resources are invested. And, again, a good example is development of the ENERGY STAR brand and the promotion and the defense of that brand. We spend a tremendous amount of time and effort making sure the brand has value, making sure the brand is recognized and promotes the goals of the partnership. And small businesses, they benefit directly from that and substantially from that effort.

Senator SNOWE. So how many small businesses have benefited from it? Do you have the numbers?

Mr. WEHRUM. I do not have that number in front of me. I would be happy to get that to you for the record.

Senator SNOWE. Well, I think the key here is that you have 25 million small businesses in America, so we have enormous potential. And when you are looking at the surveys, one was done by the National Small Business Association and said that 75 percent of small businesses believe that energy efficiency can make a significant contribution, yet only 33 percent have successfully made investments in that regard.

If you look at the other statistics, 40 percent of small businesses are still not familiar with the ENERGY STAR product label and technical support programs that are available. As I said, only a third or more have taken steps to reduce their energy costs and making the investments necessary.

So we have enormous potential here, and I am not sure that we are accomplishing the maximum in getting this message out and making the outreach to the 25 million small businesses who are out there that can ultimately make a difference. I mean, if they make an investment in reducing their energy infrastructure that is efficient, they can reap savings of more than 50 percent. That fact has been demonstrated time and again.

This is a good example of a program that can be enormously helpful to small business and also to our environment.

Mr. WEHRUM. Senator, we could not agree more, and we believe there is great opportunity. That is how we see it. Progress, tremendous progress, has been made; 60-percent brand recognition within the small business community is remarkable. That rivals many other national brands on the retail level, and we think that is a real strong indicator of the success of this program.

Senator Kerry pointed out that small businesses have particular challenges as compared to the larger businesses and industrial concerns in this country, and that is exactly right. A big part of what we try to do in the small business part of the ENERGY STAR program is identify those key differences and challenges that small businesses face and then try to find effective ways to deal with it. So time, as the Chairman pointed out, is a very real challenge for small businesses. There are only so many hours in the day, and many small businessmen just do not have time to surf the Web and time to read even the materials that we make available.

Money is always an issue, and particularly a challenge. Getting relevant information, getting technical support——

Senator SNOWE. Well, do you ever get feedback from small businesses about the program and what their needs are?

Mr. WEHRUM. We do——

Senator SNOWE. I will ask the same of Mr. Horowitz, but are we getting feedback?

Mr. WEHRUM. We do, Senator. We work very closely with a wide variety of businesses and business associations. A good example is the auto dealers. In fact, I just, a couple months ago at the Washington Auto Show, announced a partnership with the National Auto Dealers Association, which is largely comprised of small businesses, but not completely, to leverage our combined resources to really promote energy efficiency and ENERGY STAR in the retail automobile industry. It is a great opportunity. That is an energy-intensive small business industry because of the lighting and the ventilation, HVAC requirements to run these kinds of establishments. They saw a great opportunity, and we saw a great opportunity, and that is just one good example of where feedback and working together has allowed us to make real inroads into that particular segment in the small business community.

Senator SNOWE. Mr. Horowitz, can you shed some light on the SBA's role in this regard? In the 2005 Energy Policy Act, we elaborated on the requirements to buildupon the ENERGY STAR Program and to help small businesses. Can you tell me how successful we have been in meeting all of the goals that have been enumerated in the act in 2005 to help small businesses become more energy efficient? And, also, specifically on this clearinghouse, too, exactly what role is that playing? How many small businesses are tapping into it? And has it been successful?

Mr. HOROWITZ. Senator Snowe, I would like to be completely clear, forthright, and upcoming. I have been at the SBA 5 weeks, so I have limited knowledge on this issue.

That being said, having reviewed the——

Chairman KERRY. Is that why they sent you up here today?

[Laughter.]

Mr. HOROWITZ. I am also a former House Committee staffer from the House Committee on Small Business, so I am aware of these issues somewhat as well.

Chairman KERRY. So which way do you want it? Do you know everything or——

[Laughter.]

Mr. HOROWITZ. I am aware of them from a congressional staff point of view, and now I am responsible for fulfilling these needs and requirements on the agency level.

That being said, the SBA is required under the Energy Policy Act of 2005, in consultation with DOE and EPA, to develop and coordinate the program building on the ENERGY STAR Program. The four key points in the act are straightforward. There is a need for the Small Business Administration to finalize the clearinghouse and put it online. There are several people working on it. Information is readily available, and this hearing has provided a catalyst for making that a priority.

Senator SNOWE. Did you know there was not?

Mr. HOROWITZ. I do not. I do know that now I am responsible for it, and I will make it happen.

Senator SNOWE. Well, I think that is the essence of the problem we are facing. Unfortunately, it affects small businesses. It is not unique to this program. It has unfortunately become more the

norm within the Federal agencies, frankly. But the SBA is supposed to be the leader and the voice for small businesses across this country, and to provide a level of urgency, but also a sense of impetus for implementing these programs and reaching out and helping them. So that was 2005 when we passed the act, and here we are today in 2007, and basically the clearinghouse, for example, has not been implemented. And, frankly, I think we need to have submitted to the Committee and all the five goals under this requirement in the act, I would like to have a response from SBA in terms of, you know, what progress has been made or has not been made on these requirements and this commitment.

I mean, if 40 percent are not even familiar with the ENERGY STAR label or the technical support available, we have a long ways to go in reaching out to millions of small businesses across this country. And we fail to do so at a time at which I think it is an imperative, not to mention the fact they can be instrumental in many ways to helping us combat this problem.

Mr. HOROWITZ. We will get back to you with those answers.

Senator SNOWE. Well, it is not encouraging, frankly. That is the fundamental concern that I have. And I understand that you are new in your position, but, nevertheless, that should not be the issue here today.

Mr. HOROWITZ. Correct.

Senator SNOWE. It should be carrying over the policies that have already been in place. And so I think that that is unfortunate here.

Mr. HOROWITZ. Well, I do not want to say that the SBA has not been doing anything in this regard. That would be far from the truth. The SmartWay trucking initiative was a great example of partnership between the agencies of something that has been done that specifically targets small businesses to help them realize the possibilities of energy efficiency. This has allowed the small business firms to get loans under the 7(a) program, to get the upgrade kits, and do such things as put a 400-pound generator on the back of their cab or their truck, so instead of idling at a truck stop on the side of the road burning diesel fuel, they are allowed to run off the electrical generator, thus not burning fossil fuel. Now, this is a potential to save 1 billion gallons in diesel across the board. That is, I think, a significant opportunity.

We have to continue to work to make sure that such partnerships such as the Owner-Operator Independent Drivers Association (OOIDA) has the opportunity to make sure that their members and the other members of similar associations provide that information to the truckers and the owners of the small firms.

Senator SNOWE. What is the relationship between EPA and SBA on the ENERGY STAR Program? How well do you work together? Has there been a standardized relationship in the ENERGY STAR Program, for example? We have the clearinghouse and all of these initiatives that were passed in 2005.

Mr. WEHRUM. Senator, ENERGY STAR itself is a program implemented in partnership between EPA and the Department of Energy. SBA does not have a primary role in developing——

Senator SNOWE. No, I understand that. But how well do you work with SBA on this issue?

Mr. WEHRUM. I think we work together very well.

Senator SNOWE. Because the primary goal of the 2005 provisions were to buildupon the ENERGY STAR Program, so I just did not know what level of communication existed.

Mr. WEHRUM. Our staffs have been working together quite well and with great frequency, and, in fact, with growing frequency. We within the ENERGY STAR Program see the relationship as a great opportunity, a great opportunity for us to leverage the efforts of the Federal Government and use the resources of SBA to further spread the word about what we are doing with ENERGY STAR and making important information and resources more widely available. So it is a relationship we think is important, we are trying to foster, and I think we will continue to grow, and the clearinghouse is a great opportunity for us to have a common goal and a common project to accomplish all those ends.

Mr. HOROWITZ. On the SBA side of it, following the Energy Policy Act, there has been a concerted effort by the SBA to gather materials from the ENERGY STAR products and the other programs within the Department of Energy and the Department of Commerce and provide them through the regional district offices and through our affiliates, the SCOREs, the SBDCs, and the Women's Business Centers, across the country.

So the opportunity is there to provide the material on the Main Street level so that small business people see it whenever they are in the various locations of the SBA and our affiliates, in addition to the Web-site-based clearinghouse.

Senator SNOWE. Thank you.

Thank you, Mr. Chairman.

Chairman KERRY. Thank you very much, Senator Snowe.

Let me emphasize that we would really like the information provided that Senator Snowe asked for, and we will leave this record open in order to submit some questions in writing from the Committee that we want to follow up on.

Before we move to the next panel, I have a few more questions, if I could ask them.

Following up on what Senator Snowe just asked you, Mr. Wehrum, you said something about the resources that we apply to the ENERGY STAR Program, but you pointed out the two people who are effectively working on it with respect to small business. If I understand it correctly, most of what the EPA does with respect to the ENERGY STAR Program is either done over the phone or on the Internet, fundamentally. Isn't that accurate? I mean, the information is provided and made available to people, but you are not providing energy audits, for instance, or technical assistance.

Mr. WEHRUM. Mr. Chairman, it is difficult to quantify. It is very true that we emphasize——

Chairman KERRY. It is not hard to quantify that. I mean, the answer is you are not providing audits.

Mr. WEHRUM. And that is exactly right. That is——

Chairman KERRY. Is that accurate?

Mr. WEHRUM. That is exactly right.

Chairman KERRY. What is hard to quantify about that?

Mr. WEHRUM. But the question is, do we provide other means of disseminating information and provide technical support beyond the telephone and the Internet, and the answer is surely yes, and

that is what is difficult to quantify. We work very closely, as I pointed out before, with a wide variety of companies and small business associations, and that gives us great leverage. That gives us great access——

Chairman KERRY. Well, I want to get a better quantification.

Mr. WEHRUM. Sure.

Chairman KERRY. I want to give some questions to you that really try to break this down so we can see what is really happening, because what we get from small businesses is that, you know, not much actually touches them somehow.

Now, let me give you an example. Chris Lynch of the Pennsylvania SBDCs is going to testify in the next panel about this technical assistance issue. He will testify that six out of the eight ENERGY STAR Awards given out nationally to small businesses in 2006 went to his clients in Pennsylvania, and he provides those audits.

So I guess, you know, given the success of the EPA program in Pennsylvania, doesn't that sort of scream to you to say, Wow, maybe we ought to be able to augment this by providing a lot of audits?

Mr. WEHRUM. Well, I think that success is a great example of what we can accomplish through these relationships and leveraging relationships.

Chairman KERRY. Did you accomplish it or did Chris?

Mr. WEHRUM. Oh, Chris. No doubt about it. But——

Chairman KERRY. So why can't you augment that, replicate it? Don't you see the urgency of this?

Mr. WEHRUM. It is absolutely urgent, and, again, this is a just a great example of what we are trying to accomplish where—you know, one of the basic strategies of ENERGY STAR is that the Government, the Federal Government, should not be doing all the work, that we should be able to incentivize and energize other interested parties, including in this case small business associations and small businesses, to pick up the issue and help carry it along. And this is just a great example of that. We have worked great with Mr. Lynch's organization, and that has paid off in the form of—I mean, the awards are just evidence of the fact that it has paid off on the ground. And we try to replicate that, and we are working hard to replicate that across the country.

Chairman KERRY. Well, they are all resource-starved, I can tell you that. And as Senator Snowe pointed out, when you look at this gap between the 75 percent and the 33 percent receiving it, if I were sitting in your seat, I would say I want to close that gap.

Mr. WEHRUM. Absolutely. Great opportunity, Mr. Chairman.

Chairman KERRY. Where is the proposal to close it?

Mr. WEHRUM. We work hard every day on those issues. And we——

Chairman KERRY. Mr. Horowitz, let me ask you a question. You say that the SBA and its collaborating agencies have made progress in developing a governmentwide program to assist small businesses in becoming more energy efficient. That is what we mandated in the Energy Policy Act of 2005. Can you be a little more specific about what you mean by that progress? Define it for us.

Mr. HOROWITZ. Well, I think the ENERGY STAR Program is evident of the massive amount of work——

Chairman KERRY. Is that all you mean, just the ENERGY STAR Program?

Mr. HOROWITZ. Well, the SBA——

Chairman KERRY. It is not your program. That is theirs.

Mr. HOROWITZ. Correct. Well, consulting with the Office of General Counsel of the SBA, reading the Energy Policy Act, the SBA's role is to provide a conduit for small businesses to access that information, to make it more readily available for them.

Now, there are two ways we can do that: One is through the Web site that allows them to—we want to collate the information across the DOE, Department of Commerce, and the EPA so that small businesses have an easy-to-find, one-stop shop. Second is to take all the printed material, such as what you have on your table, and disseminate it to the Regional and District offices of SBA as well as our affiliates, the SBDCs, the Women's Business Centers, and the SCORE offices.

Chairman KERRY. And that is what is happening now, that information is being disseminated?

Mr. HOROWITZ. It has not yet begun.

Chairman KERRY. It has not yet begun.

Mr. HOROWITZ. No.

Chairman KERRY. OK. Let me ask you further: Who is the designated official or is there a designated entity within SBA to lift on this issue?

Mr. HOROWITZ. There has not been one; thus, it is my responsibility to take that up and to make sure——

Chairman KERRY. So, thus far, there is no sort of major Administration policy with respect to a small business global climate change initiative?

Mr. HOROWITZ. Well, I do not believe that would necessarily be the case. I——

Chairman KERRY. Well, what is——

Mr. HOROWITZ. Sitting——

Chairman KERRY. You just said that——

Mr. HOROWITZ. Becoming aware of the information—pardon me. Becoming aware of the information that the EPA has been working on such as——

Chairman KERRY. I am saying SBA. Within the SBA.

Mr. HOROWITZ. I understand.

Chairman KERRY. The Small Business Administration.

Mr. HOROWITZ. There is no one person that has been designated to be that person that I am aware of. Thus, it has become my responsibility.

Chairman KERRY. What is your designation? You are the——

Mr. HOROWITZ. Assistant Administrator for Policy and Planning. I will make certain it gets done.

Chairman KERRY. Well, I think Senator Snowe and I will probably have a conversation with Administrator Preston and try to see what we can do to augment this effort within SBA. It seems to me there is just a huge opportunity for proactivity being missed here that is pretty critical.

Mr. HOROWITZ. Very much so.

Chairman KERRY. And for joint venturing. At any rate, I will leave the rest of the questions for the record.

Senator Snowe, do you have any additional questions?

Senator SNOWE. No, I do not, Mr. Chairman, but I agree.

Chairman KERRY. Thank you both. Appreciate it. We will have panel two come up.

Did the EPA and SBA leave? Have they left? Oh, you are here. SBA is here. Well, good. I am glad you are here. The EPA is not, however. I think they might have benefited by listening. One person from EPA is here.

Well, thank you, members of this panel. Byron Kennard, Executive Director for the Center for Small Business and the Environment, a leader in the movement to bring small businesses to the table in the search for solutions to global warming. I appreciate your being back here before the Committee. You were here previously.

Jim Barber, President and CEO of Cambridge-based Metabolix, which is, as I said, a small business applying tools of biotechnology to create a new generation of versatile, sustainable, bio-based, biodegradable natural plastics and chemicals.

Chris Lynch, Director in the Environmental Management Assistance Program, Pennsylvania Small Business Development Centers.

David Goldstein, Co-Director of the Natural Resources Defense Council Energy Program. I might add that Dr. Goldstein helped negotiate the agreement that led to the National Appliance Energy Conservation Act back in 1987, and many other things, so we appreciate all of you being here very, very much.

Scott Hauge, Vice President, National Small Business Association, and founder of Small Business California, which was already mentioned by Senator Boxer. We appreciate your good work in these efforts.

So thank you all for being here. We look forward to your testimony. If you can try to compress it into 5 minutes, that would be helpful. Then we can have more time for some exchange.

Mr. Kennard, do you want to begin? Can you press the mike on? There is a little button on the mike. Make sure the light is on, and then bring it close to you. Just pull it right toward you.

Mr. KENNARD. Is that working now?

Chairman KERRY. That is great.

STATEMENT OF BYRON KENNARD, EXECUTIVE DIRECTOR, CENTER FOR SMALL BUSINESS AND THE ENVIRONMENT

Mr. KENNARD. Thank you, Chairman Kerry and Senator Snowe. Congratulations on holding this hearing. You are making vitally important connections between small business and climate change that have not been made by policymakers thus far. Why is this so? Largely because small business has not had a seat at the table where environmental and energy policies are determined. That has to change. Here is why.

Small businesses may be disproportionately harmed by extreme weather events associated with global warming. They do not have the financial reserves to bounce back from such disasters. Look at the impact of Hurricane Katrina on small businesses in the Gulf Coast region where they constituted the backbone of the economy.

But there is a positive connection here, too. Every single small business in the Nation can profit by making its workplace more energy efficient.

According to EPA's ENERGY STAR Small Business Program, small firms can save between 20 and 30 percent on their energy bills through off-the-shelf, cost-effective energy upgrades. The job—it is not rocket science—consists of installing the same few simple devices like programmable thermostats over and over again in millions of small business workplaces.

Now, small business is one-half of the economy. This means one-half of the economy could be quickly and profitably made more energy efficient. And there are devices to help this happen. My favorite is called On-Bill Financing about which you will hear more from other panelists, but basically this makes energy efficiency for small businesses as easy as falling off a log. It is described in my written submission.

The other critical connection between small business and climate is innovation. When it comes to producing technical solutions to the problem, entrepreneurs and small businesses are way out ahead of everybody else. They are ahead of the Government, they are ahead of the environmentalists, they are ahead of the regulators. The entrepreneurs are out there doing their thing.

Now, many of these clean-tech companies are now thriving and creating abundant new jobs. We call these fast-growing businesses "green gazelles." The technologies being produced by green gazelles are increasingly cost-effective. What is more, investment in them is soaring both here and abroad. Last year a record $71 billion was invested worldwide in renewable energy. Venture capitalist John Dorr, who invested early in Google and Amazon, recently declared, "Going green may be the biggest economic opportunity of the 21st century. It is the mother of all markets."

Vinod Khosla, another renowned venture capitalist who co-founded Sun Microsystems, was asked why he is investing so heavily in clean tech. "Because," he said, "the best brains in the country are no longer working on the next pharmaceutical drug or the next Silicon Revolution. They want to work on energy."

So envision this: A huge swarm of entrepreneurs tackling the problem from all directions and in countless ways. To me, these entrepreneurs are heroes, providing leadership of a high order, unique, indispensable, and ultimately transformational.

But the path of these heroes is not smooth. As Members of this Committee know all too well, entrepreneurs are forced to play on a playing field that is not level. Now facing the dire threat of global warming, the need to level the playing field is more urgent and compelling than it ever was. There are lots of ways to do this. In my written submission I propose the creation of a congressionally mandated initiative for the SBIR program to make green technology a priority. And we also propose the idea of a transferable R&D tax credit whereby entrepreneurs who are not profitable can go to a firm with the strength to commercialize their technology and strike a deal whereby the larger firm can take advantage of the tax credit.

In conclusion, small business needs and richly deserves a seat at the table when proposals to curb global warming are being ham-

mered out. We call on you, Mr. Chairman and Senator Snowe, and your colleagues on this Committee to take the lead in making this happen.

Thank you very much.

[The prepared statement of Mr. Kennard follows:]

SECURING SMALL BUSINESS SOLUTIONS TO CLIMATE CHANGE: AN OVERVIEW

Summary of Remarks by
Byron Kennard, Executive Director
The Center for Small Business and the Environment

US Senate Committee on Small Business and Entrepreneurship
March 8, 2007

I congratulate the committee for holding this hearing. You are making vitally important connections between small business and climate change that most environmental and energy policy-makers have so far neglected.

What are these connections?

To start with, small businesses may be disproportionately harmed by extreme weather events associated with global warming. They don't have the financial reserves needed to bounce back from such disasters. Look at the impact of Hurricane Katrina on small businesses in the Gulf Coast region, where they constituted the backbone of the economy.

Rising energy costs also pose a threat to small businesses, so they are understandably wary of proposed remedies to the problem of global warming that may drive up energy prices even further and that may add to the burden of government regulation.

The flip side of this is the prospect that small businesses can play a constructive and profitable role in addressing global warming.

SMALL BUSINESS ENERGY EFFICIENCY

Every single small business in the nation can profit by making its own workplace more energy-efficient. According to the EPA's Energy Star Small Business program, small firms can save between 20% and 30% on their energy bills through off-the-shelf cost-effective efficiency upgrades. The job consists largely of installing the same few simple devices—programmable thermostats, for example—over and over again in millions of small business workplaces.

Now, this energy efficiency option assumes extraordinary importance when you stop to consider that small business now constitutes one-half of the economy. This means we could make ***one-half of the economy*** energy efficient in fairly short order. And we could do it profitably too. Imagine that!

What is needed is a mechanism that makes energy efficiency for small businesses as easy as falling off a log. Fortunately, one such mechanism exists, called On Bill Financing.

Using this approach, an electric utility offers energy efficiency upgrades to its small business customers and also offers to lend them the money to pay for the upgrades. The energy savings are used to pay back the loan, so the monthly utility bill is no higher than it was before. When the loan is paid off, the small business owner's utility bill is significantly lower.

My colleague on this panel, Chris Lynch, will describe On Bill Financing a bit more in his presentation.

GREEN GAZELLES: ENTREPRENEURS SAVING THE PLANET

Small businesses produce two-thirds of all innovations. Today, not surprisingly, this includes most of the "clean-tech" breakthroughs that curb greenhouse gas emissions.

One such company – Metabolix – is represented on this panel today. They have devised an extremely impressive technology in forming recyclable and compostable plastics in living grass and similar plants. Their success would mean significant lessening of dependence on imported oil.

There are hundreds and perhaps thousands of other small companies like Metabolix that are creating innovations in alternative energy, water treatment, sustainable agriculture, construction, manufacturing, transportation and more that reduce energy consumption, pollution, and waste.

We call these fast-growing small companies "Green Gazelles."

We view Green Gazelles as shock troops assaulting outmoded industry-era technologies with innovations that are dramatically more efficient and productive. Green Gazelles are catalytic agents precipitating an emerging post-industrial economy that will protect and restore the environment while it produces abundant growth and employment.

These clean technologies are increasingly cost-effective. What's more, investment in them is soaring both here and abroad.

Last year, major corporations, venture capitalists, investment banks, hedge funds spent a record $71 billion worldwide on renewable energy, according to New Energy Finance, a London research firm.

Venture capitalist John Doerr, who invested early in Google and Amazon, recently declared that "Going green may be the largest economic opportunity of the 21st century. It is the mother of all markets."

Vinod Khosla, another renowned venture capitalist, who co-founded Sun Microsystems was asked why he's investing so heavily in clean tech companies. "Because" he said, "the best brains in the country are no longer working on the next pharmaceutical drug or the next Silicon Revolution. They want to work on energy."

Think of it, all these brainy people are going out and starting new small businesses in droves. In the fight against global warming, they are providing leadership of a high order - unique, indispensable and transformational.

But their path is not smooth. I expect the members of this committee know, they encounter unfairness and often they are forced to play on a field that is not level.

RECOMMENDATIONS FOR ACTION

Green Gazelles face two basic challenges: (1) how to fund R&D and (2) how to commercialize the new technologies they develop.

Thanks to my colleague, Mark Clevey, Vice President for Entrepreneurship at the Small Business Association of Michigan (SBAM), we offer two ideas for smoothing the path of these Green Gazelles.

Funding Green R&D thru SBIR (Small Business Innovation Research)

Under the Small Business Innovation Research Act (SBIR), federal agencies must set aside 2.5% of their external R&D budget to fund technology development by small businesses. This isn't chicken feed: It adds up to about $2.5 *billion* dollars a year.

We propose creation of a Congressionally-mandated initiative to make green technology a priority focus for SBIR.

Clevey calls his proposal the Partnership for Green Business Development (PGBD). This partnership would :

- Conduct a survey to identify technology needs in renewable energy, energy efficiency, bio-materials, and related energy and environmental technologies;
- Identify gaps between existing projects and the profile of needs;
- Direct SBIR agencies to identify existing research projects that match these needs, and to give priority to funding proposals in these areas;
- Issue new SBIR guidelines as needed.

Clevey's proposal may be seen on our website: www.aboutcsbe.org

Commercializing New Technologies

Small green entrepreneurial companies are seldom profitable in their early stages when they need help most. Tax credits, even if available, are of little use to them. Here again Mark Clevey has a proposal for a Transferable R&D Tax Credit.

Under this proposal, a green entrepreneur with a new technology would approach a profitable firm that possesses the resources needed to commercialize the technology. If the entrepreneur can strike a strategic alliance or investment, he or she can assign the tax credit to the firm and/or investor that commercializes the technology.

This proposal too may be seen on our website: www.aboutcsbe.org

A SMALL BUSINESS SEAT AT THE TABLE

In conclusion, it seems clear that small business needs and richly deserves a seat at the table where proposals to curb greenhouse gas emissions are being hammered out. We call upon the Senate Committee on Small Business and Entrepreneurship to take the lead in making this happen.

FOR MORE INFORMATION, CONTACT:

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www.aboutcsbe.org

Chairman KERRY. Thank you very much, sir. That is an important statement, and we appreciate it very much.

I might add that Vinod Khosla and John Doerr are people I have talked to about this. I think we are going to have them in front of the Commerce Committee at some point. We are working on dates with them. But they are indeed leading the venture capital field in that effort, and I like your idea about SBIR.

Mr. Barber, welcome. Good to have you here. It is a little colder up in Massachusetts, isn't it?

Mr. BARBER. It has been.

STATEMENT OF JAMES J. BARBER, PRESIDENT AND CHIEF EXECUTIVE OFFICER, METABOLIX

Mr. BARBER. Thank you very much, Senator Kerry and Senator Snowe, for this opportunity to meet with you today and talk a bit about what one small business is doing to combat global climate change.

Everyone knows by now about our unhealthy addiction to oil and that our consumption of oil contributes to global climate change and greenhouse gas emissions. What everyone does not know is that nearly 10 percent of the oil we use is used for producing plastics and chemicals, that is, products. And just as biofuels provide a path to reduce global climate change by reducing our use of oil, so do bioproducts. There are initiatives underway in the United States, by ourselves and others, to develop bioproduct alternatives to petroleum-based plastics and chemicals. These bioproduct alternatives will reduce our consumption of petroleum and reduce our emissions of greenhouse gases.

Metabolix is a small biotech company based in Cambridge, Massachusetts, 60 people today. We were formed 15 years ago, in 1992, to use bioscience to provide clean, sustainable solutions to our need for plastics, fuels, and chemicals, and last November we became a publicly traded company and are now listed on Nasdaq. We have had some help along the way from the Department of Energy, the Department of Agriculture, and the Department of Commerce in the form of research grants, and in 2005, we received the President's Green Chemistry Award.

We are now building our first commercial plant in Clinton, Iowa, in a joint venture with Archer Daniels Midland to convert corn sugar to natural plastic, a bioproduct. Natural plastic is useful in a wide range of everyday products—I brought a few here—from coffee cups and lids to gift cards to packaging, housewares of all sorts, bottle caps, plastic bags, many of the sorts of things that we now find in petrochemical-based plastics.

This first plant will startup next year, 2008, and will produce 110 million pounds per year of natural plastic, a small amount in comparison to the nearly 100 billion pounds per year of plastic material we make and use in the United States every year, but still displacing enough oil to fuel over 20,000 cars for a year.

While petroleum-based plastics are significant emitters of greenhouse gases in their manufacture and contribute to global warming, natural plastic will substantially reduce greenhouse gas emissions. In fact, our first plant in Clinton, Iowa, will be powered by biomass and other forms of renewable energy.

In Metabolix's case, our natural plastic bioproduct is totally biodegradable, so unlike any other plastic, natural plastic harmlessly biodegrades even in wetland and marine environments. Petroleum-based plastics, on the other hand, last virtually forever and are creating a growing solid waste and environmental challenge. Yet natural plastic, like wood that we build our homes of, is very durable in use and combines durability and biodegradability.

While this is a start, we can do much more as we expand production of natural plastic and so reduce our petroleum usage, greenhouse gas emissions, and waste in the environment. This commercial plant in Iowa is a realization of the opportunity to couple the biotechnology strength we have here in the United States, much of it in small companies, with the agricultural resources we have. But it is only a start.

Beyond our first platform now being commercialized, we have other exciting developments in the pipeline. Five years ago, we started working on developing enhanced switchgrass that would produce natural plastic right within the leaves and stems. And we now have test plants of switchgrass producing measurable levels of natural plastic growing in our greenhouse in Cambridge, Massachusetts. The natural plastic produced within the leaves and stems will be extracted for use in everyday products like you have seen here, and the remaining biomass will be used for producing cellulosic ethanol or other biofuels and will result in significant cellulosic ethanol cost reduction.

The production of a valuable co-product, natural plastic, along with switchgrass biomass that can be converted to liquid fuels will significantly lower the hurdle to economic production of cellulosic biofuels. And we have earlier stage concepts for bio-based production of large-volume chemical intermediates as well, now made from petroleum and natural gas.

There is another way you can affect climate change today. We and others developing and commercializing natural bioproduct alternatives to petroleum-based products are doing so without the policy initiatives that are speeding adoption of biofuels, such as bioethanol, yet bioproducts will displace oil just as effectively as biofuels do. We strongly encourage the Congress to consider extending the policy initiatives already in place to encourage and accelerate the adoption of biofuels to accelerate the adoption of bioproducts that displace petroleum uses as well. A barrel of oil displaced is a barrel of oil displaced, whether by biofuels or bioproducts, and there is a great deal to be gained here. Similarly, we encourage the Congress to assure that the greenhouse gas emissions associated with the manufacture of petroleum-based products are included in such a way that users are encouraged to adopt bioproduct alternatives.

I believe we have the opportunity to take the global leadership in this area with your help, and I appreciate your time and consideration this morning.

[The prepared statement of Mr. Barber follows:]

Prepared Remarks to U.S. Senate Committee on Small Business and Entrepreneurship:

Hearing on Climate Change and the Implications for Small Business

March 8, 2007

By

James J. Barber, President and CEO, Metabolix

Introduction

Public awareness of climate change in the United States and globally is higher than ever before. From the consumer purchasing energy efficient lightbulbs to the large corporations constructing LEED (Leadership in Energy and Environmental Design) green buildings and powering them with green energy, our nation is becoming proactive in the effort to combat climate change. Small businesses play an important role in the efforts to reduce climate change, both in technology development and in business practices. Industrial biotechnology, sometimes referred to as "green biotech" or the third-wave of biotechnology, is making important contributions to our alternatives to a fossil-carbon based economy. Industrial biotechnology uses the same genomic, proteomic, and recombinant DNA technologies used to discover new drugs and therapeutics, to produce polymers and plastics, chemicals, and biofuels. Industrial biotechnology companies that use sugar and agricultural crops as feedstock for product manufacture are helping the U.S. to move from a petroleum-based economy to a "bio-based economy."

Metabolix is a small business located in Cambridge, Massachusetts, and is a leader in the use of biotechnology to provide clean, sustainable solutions to satisfy our needs for plastics, fuels, and chemicals. We were formed in 1992, and we've had some help along the way from the Department of Energy, the Department of Agriculture, and the Department of Commerce. In 2005, we received the President's Green Chemistry Award.

Metabolix Technology

Metabolix is a world leader in metabolic engineering – the sophisticated reprogramming of cellular metabolism to provide for the efficient expression of desired traits – and in applying the advanced tools of metabolic engineering and molecular biology to create a broad link between sustainable, renewable agricultural production and polymers and chemicals.

Metabolix's first platform, which we are now commercializing in a strategic alliance with Archer Daniels Midland Company (ADM), converts sugars or vegetable oils to a versatile family of *Natural Plastics*. With ADM, we are now building a 110 million pound per year plant in Clinton, IA, which will start up in 2008, to produce *Natural Plastic* from corn sugar, an abundant agriculturally-produced renewable resource. *Natural Plastic* are useful in a wide range of everyday products, including disposable goods, packaging, agricultural products, consumer goods and electronics.

Beyond our first platform now being commercialized, we have other exciting developments in the pipeline. Five years ago, we started working on developing enhanced switchgrass that would co-produce *Natural Plastic* right within its leaves and stems, and we now have test plants of switchgrass producing measurable levels of *Natural Plastic* in our greenhouse. The *Natural Plastic* that is produced within the leaves and stems will be extracted for use in everyday products, and the remaining biomass will be used for producing cellulosic ethanol or other biofuels, and will result in significant cellulosic ethanol cost reduction. The production of a valuable co-product - *Natural Plastic* – along with switchgrass biomass that can be converted to liquid fuels, will significantly lower the hurdle to the economic production of cellulosic biofuels. And we have earlier stage concepts for biobased production of large volume chemical intermediates, now made from petroleum and natural gas.

The markets for petrochemical-based plastics, fuels and chemicals are among the largest in the global economy. While these markets encompass a diverse array of products, they are all derived from fossil fuels, particularly petroleum and natural gas. The prolonged, broad use of petrochemical-based fuels and products has created large economic, social and environmental issues, including green house gas emissions tied to global warming, plastic waste management and pollution, rising demand and resulting rising fossil fuel prices, and energy security. These problems have resulted in rising levels of interest in product alternatives that are renewable, sustainable and not dependent on fossil fuels.

Natural Plastic is the best candidates for broad replacement of petrochemical plastics due to their broad range of properties, which make them useful in a wide range of everyday items, from molded goods and housewares to packaging for fast food to gift cards to plastic bags. By replacing current plastics with *Natural Plastic* products, the U.S. will realize an overall decrease in the use of petrochemical feedstocks and a corresponding increase in utilization of agricultural feedstocks. Metabolix's *Natural Plastic* will bring a range of environmental benefits, including:

- ***Reduced reliance on fossil fuel and reduced greenhouse gas emissions.*** *Natural Plastic* is now based on conversion of renewable raw materials, such as sugar and vegetable oils. In the future, they will also be produced directly in plants.
- ***Reduced plastic waste burden.*** Whereas one of the unfortunate characteristics of most plastics is that they will persist in the environment for hundreds or thousands of years, while they are typically used only once (as in single use food service), or over a few year period, *Natural Plastic* will biodegrade harmlessly, reducing burdens on the solid waste system, the municipal waste treatment system, and marine and wetlands ecosystems.

Metabolix Technology Impacts on Climate Change

There is now a scientific consensus that global climate change is occurring and that the rise in carbon dioxide emissions over the last 100 years has contributed to this situation. A significant source of CO_2 emissions comes from the use of fossil fuel. The broad acceptance of the Kyoto protocol is evidence of the widespread concern for global climate change in the industrialized world. In the United States, companies have started to account for carbon emissions, to prepare for carbon limits and credit trading schemes, and to seek solutions for reducing their carbon emission profile, and several states are enacting limits on carbon emissions.

Considerable attention has been focused on reducing carbon emissions using biofuels rather than petroleum-based fuels. What is not as widely recognized is that other products currently made from petroleum resources can also be made from the same agricultural feedstocks used for biofuels with similar carbon emission reductions. Plastics and chemicals consume nearly 10% of the oil we use and can be made from the same cellulosic feedstocks as biofuels, in some cases directly in crops like switchgrass.

While the production of bioproducts such as our *Natural Plastic* produces carbon dioxide, both the agricultural production of corn feedstock for microbial fermentation and the direct production of *Natural Plastic* in plants such as switchgrass have the added benefit of removing carbon dioxide from the environment through plant photosynthesis. While fermentation processes do require electricity which may be generated by carbon dioxide emitting sources, the increasing availability of clean power (such as biomass, wind or solar power) is an attractive alternative to employ as the business develops.

The life cycle analysis (LCA) of our fermentation and purification process for *Natural Plastics* production that shows a net beneficial energy balance versus traditional fossil carbon based products. This LCA is currently being verified by independent third-party scientists.

When the technology for *Natural Plastic* production in switchgrass is commercialized, CO_2 will actually be removed from the environment, as switchgrass stores large amounts of carbon in its root systems.

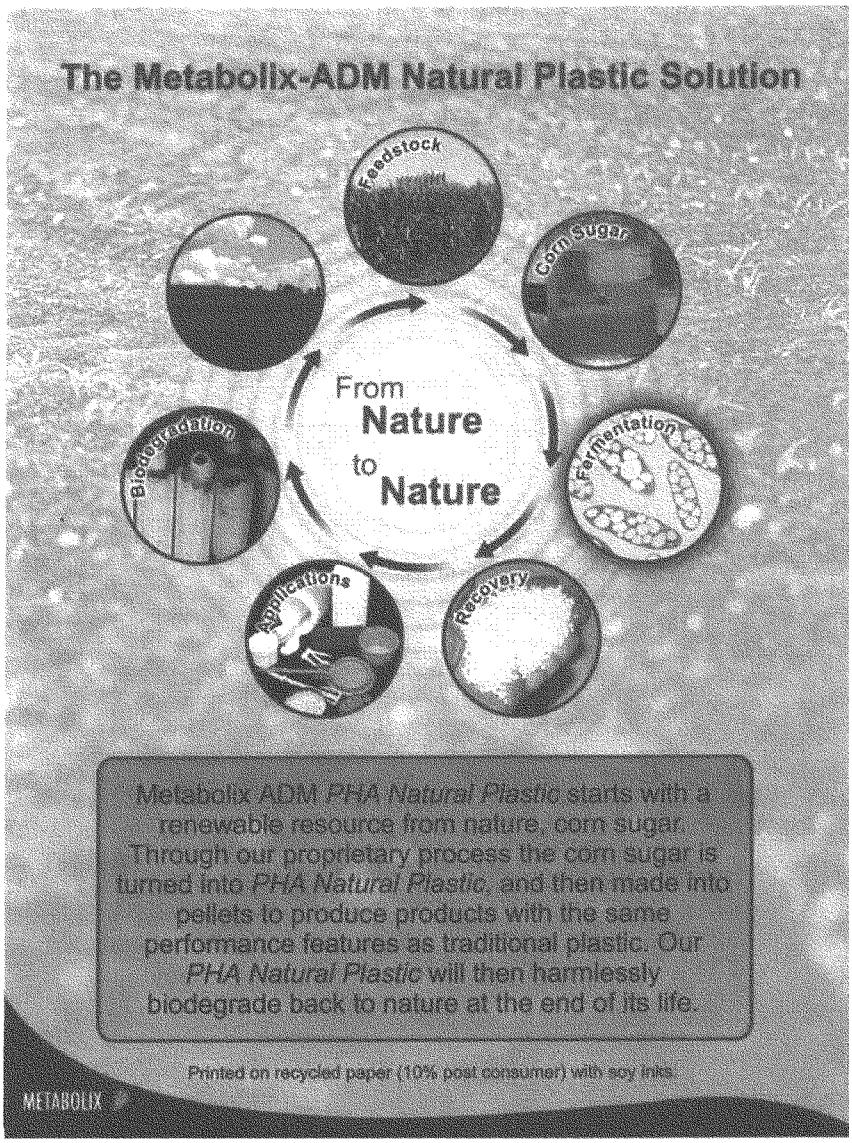
Metabolix Business Practice Impacts on Climate Change

Metabolix is creating a unique brand for our *Natural Plastic* which is predicated on reducing pollution, energy use and greenhouse gas emissions. Metabolix is endorsing this vision not only in the products we sell, but in our business practices. From a rigorous recycling program within Metabolix's headquarters in Cambridge to partnerships with state and local composting programs to the publication of our IPO prospective on recycled paper with soy inks, Metabolix is assuming a leadership role for responsible environmental corporate policy.

Recommendations for Government Efforts on Climate Change

There are at least three ways that the U.S. government can play an important role in encouraging small businesses such as Metabolix to develop and deploy *Natural Plastic* technology. First, the federal government could invest in a public-private partnership to accelerate the research and development work that is necessary to reach commercial quantities of organic plastic in switchgrass. Second, the government could provide a tax credit for *Natural Plastic* equivalent to the tax credit it provides for ethanol. And third, any climate change "cap and trade" legislation should include provisions to encourage the production of renewable *Natural Plastic*.

There is now heavy emphasis on stimulating adoption of biofuels and on developing technology for cellulosic biofuels. Proportionate emphasis should be put on stimulating the development and adoption of bioproducts, which will also help reduce our reliance on fossil fuels. For example, the policy incentives now in place to promote biofuels, should be extended to bioproducts. This would encourage investment in all alternatives that would reduce our use of petroleum, and reduce the associated greenhouse gas emissions.


The Metabolix-ADM Natural Plastic Solution
Feedstock
Corn Sugar
Fermentation
Recovery
Applications
Biodegradation
From
Nature
to
Nature
Metabolix ADM PHA Natural Plastic starts with a renewable resource from nature, corn sugar. Through our proprietary process the corn sugar is turned into PHA Natural Plastic, and then made into pellets to produce products with the same performance features as traditional plastic. Our PHA Natural Plastic will then harmlessly biodegrade back to nature at the end of its life.
Printed on recycled paper (10% post consumer) with soy inks.
METABOLIX

Chairman KERRY. Thank you very much, Mr. Barber. That is very interesting.

Mr. Lynch.

STATEMENT OF CHRISTOPHER J. LYNCH, DIRECTOR, ENVIRONMENTAL MANAGEMENT ASSISTANCE PROGRAM, PENNSYLVANIA SMALL BUSINESS DEVELOPMENT CENTERS, THE WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA

Mr. LYNCH. Good morning, Chairman Kerry, Ranking Member Snowe. I am pleased and honored to join you this morning to discuss small business solutions for combating climate change. Specifically, I would like to add to the discussion about energy efficiency as a solution.

In looking for small business opportunities to help address climate change, small business energy efficiency needs to be at the top of everyone's list. Since America's 25 million small businesses create more than 50 percent of the GDP, one could also assume that small business energy consumption is about equal to half of the total energy used for commercial and industrial purposes. Assuming small business energy usage is 50 percent, national data indicates that if small commercial and industrial businesses used energy efficiency to achieve realistic energy consumption reductions of 20 to 30 percent, then small businesses could help the United States reduce carbon dioxide emissions 93 to 140 million tons per year, while at the same time saving themselves an estimated $12 to $18 billion on annual energy costs.

To achieve these kinds of dramatic results, however, there are two primary challenges I would like to bring to your attention. First, small businesses have a significant need for technical assistance in order to make wise investment choices. And, second, as you are well aware, small businesses typically have limited capital.

With regard to technical assistance, the U.S. EPA's ENERGY STAR Small Business Program is an excellent destination for information and a limited amount of unbiased technical support, especially for do-it-yourself business leaders. But I think additional technical assistance is often required. When the Pennsylvania SBDC Environmental Management Assistance Program launched an energy efficiency outreach and education campaign in 1997, we quickly found that information and education alone were often not enough to see businesses go through with energy efficiency projects. In response, the Pennsylvania SBDC developed more advanced technical assistance. Starting in about 2003, our energy efficiency services were expanded upon and demand for these services has steadily grown ever since.

In 2004, about 38 percent of our clients requested energy efficiency assistance. The following year, this number increased to 49 percent. Last year, of the 428 businesses assisted by the program, more than half—a full 60 percent—sought assistance with energy issues.

Based on approximately 300 energy onsite assessments, we have consistently found that our recommendations, if fully implemented, will save SBDC-assisted businesses an estimated 25 to 30 percent on energy consumption and associated utility costs.

Now, obviously, implementation usually requires project finance, and this brings me to my second point: The need for small business financial incentives to address the scarcity of up-front capital. A few years ago, we worked closely with the Pennsylvania Department of Environmental Protection to create a micro-grant program offering a 50-percent cost share up to $7,500 for small business energy and environmental improvements. Demand on this grant program has been very strong, and a significant backlog has developed. In this current fiscal year, with a little over $780,000 available for grants, the Department had to stop accepting applications after just 10 weeks. Many potential applicants were turned away, including at least 50 small businesses that the SBDC was working with in Pennsylvania. But the bottom line is these grants really do help. Clients of the Environmental Management Assistance Program have been awarded 58 grants, totaling just under $360,000. These grants have been leveraged to implement projects costing over $792,000, and, most importantly, it is estimated that these 58 projects alone will ultimately save the businesses more than $273,000 per year on energy costs.

We are convinced that small business owners have the interest and the desire to become more efficient users of energy, both to control their internal operating costs and to become effective partners in reducing greenhouse gas emissions. Additional Government investment in the right mix of educational and technical and financial assistance tools can help significantly.

Again, thank you for this opportunity to speak with you this morning, and thank you for your leadership and your inclusion of the small business community in this debate.

[The prepared statement of Mr. Lynch follows:]

TESTIMONY

of

CHRISTOPHER J. LYNCH

Director
Environmental Management Assistance Program
Pennsylvania Small Business Development Centers
The Wharton School of the University of Pennsylvania

on

Small Business Solutions for Combating Climate Change

at a hearing before the

Committee on Small Business and Entrepreneurship

United States Senate

March 8, 2007

Good morning Chairman Kerry, Ranking Member Snowe, and members of the committee. I am pleased and honored to join you this morning to discuss small business solutions for combating climate change.

Specifically, I would like to discuss energy efficiency as a solution. In looking for small business opportunities to help address climate change, small business energy efficiency needs to be at the top of the list. Why? Because energy efficiency offers the greatest potential for immediately reducing small business climate change emissions; because small business energy efficiency can have a positive bottom-line impact for the business; and because the technologies already exist and can be implemented quickly. To stretch existing domestic energy supplies and decrease the need for building new capacity, energy efficiency needs to be looked upon as a valuable and reliable energy source in its own right.

Since America's 25 million small businesses create more than 50 percent of the non-farm private gross domestic product, one could also assume that small business energy consumption is also about half of the total energy used for commercial and industrial purposes. In analyzing energy consumption in Pennsylvania, we found small businesses consume about 50 percent of the total output from all of the state's coal-fired power plants. Assuming a 50 percent level of usage, national data from the U.S. Department of Energy's Commercial Buildings Energy Survey (CBECS) indicates that if small commercial and industrial businesses were to improve efficiency to achieve realistic energy consumption reductions of 20 to 30 percent – targets we have easily seen with our clients in Pennsylvania and which are also supported by the national experience of U.S. EPA's ENERGY STAR Small Business program – then small businesses could help the United States reduce carbon dioxide emissions by 93.8 to 140.7 million tons per year while at the same time saving themselves an estimated $12.5 to $18.75 billion on annual energy costs.

But to achieve these dramatic results there are two primary challenges I would like to bring to your attention. First, small businesses have a significant need for technical assistance in order to analyze their energy use and make wise decisions regarding energy efficiency investments. Second, as you are well aware, small businesses typically have limited capital and financial incentives are often needed to help small businesses implement energy improvements.

With regard to technical assistance, the U.S. EPA's ENERGY STAR Small Business program is an excellent destination for information and a limited amount of unbiased technical assistance; especially for do-it-yourself business leaders. Expanding ENERGY STAR Small Business so the program can enter more outside partnerships and develop more industry-specific guidance would be a great benefit to the small business community.

But additional technical assistance is often required. With modest pilot funding from ENERGY STAR Small Business, in 1997 the Pennsylvania SBDC Environmental Management Assistance Program launched an energy efficiency outreach and education campaign. What we quickly found, however, was that information and education alone were often not enough to see energy efficiency projects implemented – in our case primarily because the ability to refer interested small businesses to sources of additional technical assistance had become virtually non-existent

because the state energy office had been shuttered, electric utilities had eliminated energy efficiency programs in preparation for deregulation, and private service providers lacked interest in working with businesses with less than 100,000 square feet of facility space.

In response to this assistance void, the Pennsylvania SBDC obtained state funding to not only maintain our outreach and educational capabilities beyond the pilot but also to develop and offer more advanced technical assistance. Starting in about 2003, our energy efficiency services were significantly expanded upon to provide clients with comparative energy intensity analyses, on-site energy assessments, and customized technical reports with recommendations for cost-effective improvements.

Demand for energy efficiency services has steadily grown ever since, especially as transportation fuels, natural gas, and oil costs have risen. The recent spotlight on electricity rate increases as rate caps expired in Maryland, Delaware, and Pike County, Pennsylvania (where rates increased over 70 percent), has also served to increase the interest in controlling energy costs. While the majority of Pennsylvania's electricity consumers still benefit from partial rate caps, the remaining caps are due to expire in the next two to three years and people are starting to prepare.

In 2004, the Pennsylvania SBDC Environmental Management Assistance Program had about 38 percent of its clients request energy efficiency assistance. The following year, this number increased to 49 percent. Last year, of the 428 businesses assisted by the program more than half, a full 60 percent, sought assistance with energy efficiency issues.

Based on the results of approximately 300 energy on-site assessments conducted to date, it is estimated SBDC-assisted businesses can reduce their energy consumption and associated utility costs between 25 and 30 percent if all recommendations are implemented; for the typical small business this amounts to about $1,100 to $1,500 annually. Clients achieving such reductions have been well recognized; in 2006, six of our energy efficiency clients won the prestigious ENERGY STAR Small Business award given out to just eight small businesses nationally.

When it comes to the implementation process, the Pennsylvania SBDC not only attempts to connect business owners with contractors (often other small businesses) who can install the recommended upgrades but we also work with the business owners to evaluate options for project finance.

This brings me to my second point – the need for small business financial incentives. Many small business owners lack the up-front capital needed to make energy efficiency improvements, or they need a little extra incentive to make the investment.

In 2004, we suggested and worked with the Pennsylvania Department of Environmental Protection to create a micro-grant program, offering a 50 percent cost share up to $7,500, for small business environmental and energy improvements. Demand on this grant program has been very strong and a significant backlog has developed. In 2004, the Department exhausted initial program funding of $1 million in just over six months. In the second year of grant availability, the same level of funding lasted just over five months. This current fiscal year, with

a little over $780,000 available for grants, the Department stopped accepting grant applications after just 10 weeks. Many potential applicants were turned away; the Pennsylvania SBDC Environmental Management Assistance Program was aware of at least fifty small business owners who were in various stages of completing the grant application package when the announcement was made that applications would no longer be accepted.

Implementation of energy efficiency projects by Pennsylvania SBDC-assisted small businesses has increased with the availability of this grant funding and the estimated returns appear promising. Helping business owners prepare the technical and financial data required for grant applications has resulted in a high rate of awards with 58 SBDC-assisted grant applications receiving awards totaling just under $360,000. These grants have been leveraged to implement projects totaling over $792,000. Most significantly, it is estimated these 58 projects will ultimately save the small businesses more than $273,000 per year on energy costs.

Outside of targeted micro-grants, on-bill financing through energy utilities offers another potential avenue for helping small businesses overcome the issue of initial capital constraints. Although this financing option exists in some New England states and California, it is not currently available in Pennsylvania. Under this concept, a utility provides the initial financing to implement an energy efficiency improvement and extends the eligible small business a zero percent or low interest loan. Once the efficiency project is installed, the business does not see an immediate drop in its energy bill but instead continues paying bills at historic levels of consumption and effectively "shares" the cost savings with the utility until the loan is paid off. The attraction of on-bill financing is that it requires no up-front capital and loan repayment is done on the utility bill – the same one bill and one payment as usual. Once the energy efficiency improvement has literally paid for itself, the business receives all of the savings in the form of lower bills. Hopefully, more states will soon consider creative financing assistance like this.

Based on the Pennsylvania SBDC's experience, we are convinced small business owners have the interest and desire to become more efficient users of energy and additional government investment can help significantly. With the right mix of educational and technical and financial assistance tools, energy efficiency holds the promise of not only reducing greenhouse gas emissions associated with small business energy consumption; it also helps the businesses control their energy expenditures.

The importance of this latter point is highlighted by a July 2006 survey by the National Small Business Association in which 75 percent of respondents indicated they had been moderately to significantly impacted by rising energy costs. When asked how they were coping with those rising energy costs, an alarming 18 percent indicated they had already reduced their work force. Offering energy efficiency assistance to help these types of existing businesses reduce costs, while reducing climate change emissions at the same time, makes sense and is urgently needed.

Again, thank you for this opportunity to speak with you this morning. I am encouraged by your leadership to specifically include the small business community in the debate on climate change and energy independence.

Chairman KERRY. Thank you very much for your testimony, and thanks for what you are doing. We appreciate both.

Mr. Goldstein.

STATEMENT OF DR. DAVID B. GOLDSTEIN, CO-DIRECTOR, NATIONAL RESOURCES DEFENSE COUNCIL'S ENERGY PROGRAM

Dr. GOLDSTEIN. Thank you very much, Chairman Kerry, and thank you, Ranking Member Snowe, for calling this hearing. I think the fact that this is being held elevates the issue and is very important to getting the dialog moving in the right direction.

My testimony is going to argue that setting strict limits on greenhouse gas emissions can have a large, beneficial effect on small business.

Surprisingly little research on the effect of environmental protection policies on economic growth has been done, and that is one of the reasons I wrote the book that Senator Snowe so graciously referred to, "Saving Energy, Growing Jobs." This book examines the scientific evidence that is available and supplements it with experiential evidence on how environmental protection policy, and particularly greenhouse gas limitations, can enhance economic growth. It finds that limiting climate change provides an opportunity to increase economic development and small business growth because the primary opportunities for reducing greenhouse gas are through increased end-use energy efficiency. Efficiency cuts costs, as previous speakers have mentioned, and creates jobs. Policies to foster efficiency spur innovation and competition and produce larger economic benefits, particularly for small business.

There are opportunities everywhere, widespread throughout the economy, to cut greenhouse gas emissions in a way that increases profit. But because of formidable and nearly universal failures of the marketplace, most of these opportunities are going unrealized. Pollution reduction opportunities with annual rates of return on investment of 30 percent, even 100 percent and more, are not being exploited in the marketplace.

Government policies have a demonstrated track record of overcoming these failures. California has reduced its greenhouse gas emissions per capita by about half compared to the rest of the country over 30 years through growth-enhancing policies that have been pursued by both Republicans and Democrats in State leadership.

There are many examples of such policies, ranging from performance-based tax incentives for energy efficiency, such as the Snowe-Feinstein-Kerry bill introduced today, to reformed regulation for utility companies such that they profit from promoting customer energy efficiency. And this is actually a very big deal because the utilities are the front lines of contact with small business. They have an account with every small business in the country, and if they have the right incentives in their regulation, they can provide information and financial incentives to small business so that they can take advantage of these opportunities. And, of course, codes and minimum standards set on a performance basis are also important.

A misunderstanding of economic theory suggests that new technologies will automatically find their way from invention to acceptance by market leaders to universal applicability. But in the real world, this does not happen. Government policies of both incentives and regulation are needed every step of the way to assure that the economically optimal solution happens, and that is also the greenest solution.

The failure of the market to take advantages of opportunities to reduce emissions at a profit creates an even more powerful barrier to innovation indirectly than it does directly, and that is, if an existing product or service that saves energy at a profit does not sell, where is the motivation to develop the next generation of technologies? However, with the right incentives, this will be turned into a virtuous circle. Business A saves money by installing green technology. This creates a business opportunity for B to sell them the technology and competition with all of B's competitors to do it at increasingly lower costs and with side benefits that often outweigh the value of the energy benefits directly.

One of the ways to do this that is addressed in the Snowe-Feinstein-Kerry bill is to deal with existing homes, which account for 20 percent of greenhouse gas emissions, which is a little bit more than cars. These emissions can be cut dramatically while improving comfort and safety. The first step in doing so is to provide consumers with the information specific to their own home about what the opportunities are.

There is an emerging industry of small businesses that train and certify the technical expertise to do these energy ratings. In the European Union, where such ratings are required for *all* buildings, they are predicting tens of thousands of new jobs just from the ratings industry alone. Now, of course, when people act on the ratings, that produces construction jobs, which are also a small business opportunity.

In conclusion, mandatory limits on greenhouse gas emissions, if done right, can enhance market forces and increase innovation and competition. What does it mean to do it right? What actually works in the market is an issue of data, not philosophy or ideology. Promoting a purely market-based solution to the climate change problem should be both a conservative issue, a moderate issue, and a liberal issue. It should attract enthusiastic support from Republicans and Democrats alike.

As I said, greenhouse gas emissions reductions can be achieved in a market-based way guided by data, and a critical part of this is energy policies that enhance market forces where they are weak and rely on them more heavily where they are strong. Economic incentives should complement regulations to maximize innovation to the benefit of both the environment and the economy. The fact that large unexploited opportunities for energy efficiency persist in the economy is evidence that current markets just are not working well for efficiency. But the success of such policies as performance-based incentives and regulations shows that these failures can be overcome and markets enhanced to allow small companies and new startup companies to compete more effectively.

Thank you very much.

[The prepared statement of Mr. Goldstein follows:]

How New Policies to Reduce Greenhouse Gas Emissions Can Promote Economic Development and Enhance Opportunities for Small Business

Senate Small Business Committee
Hearing on "Small Business Solutions for Combating Climate Change"

David B. Goldstein, Ph.D.
Natural Resources Defense Council

March 8, 2007

I. Introduction

Setting strict limits on greenhouse gas emissions can have a strong beneficial effect on small business. Indeed, it could be one of the most effective policies that Congress can adopt to promote the growth and profitability of small business.

Surprisingly little research on the effect of environmental protection policies on economic growth has been done, and that is one of the reasons that I wrote the book: Saving Energy, Growing Jobs (Bay Tree Publishing, Point Richmond CA, 2007). This book examines the scientific evidence that is available, supplemented with experiential evidence and personal experience, on how environmental protection policy in general, and greenhouse gas emissions limits in particular, can enhance economic growth. This book is intended both to challenge the academic community to develop more solid scientific evidence and to set forth the informal experience that supports this hypothesis.

It finds that the bulk of the studies that have been published support the hypothesis that protecting the environment promotes more growth and more jobs. Many of the studies suggest that environmental protection encourages innovation, while others just find positive correlations between protecting the environment and growth.

Climate change provides an even greater opportunity to enhance economic development in general, and small business growth in particular, because the primary opportunities to reduce greenhouse gas emissions are through end use efficiency, and efficiency has been shown to cut costs and create jobs. Policies to increase energy efficiency drive innovation and competition.

II. How Environmental Policies Promote Economic Growth

The first key finding in the book is that there are widespread opportunities throughout the economy to cut greenhouse gas emissions in ways that increase profit. But because of formidable and nearly universal failures of the marketplace, and simple human tendencies towards risk aversion and loss aversion, most of these opportunities are not exploited. Pollution

reduction opportunities with rates of return on investment of 30%, 50%, and even over 100% are going around unexploited.

Government policies have a demonstrated track record of having overcome these failures. For example, California has reduced its greenhouse gas emissions per capital by about half compared to the rest of the country through growth-enhancing policies that have been pursued for over 30 years under both Democratic and Republican leadership.

There are many examples of such policies, ranging from performance-based tax incentives for energy efficiency (such as the Snowe-Feinstein EXTEND bill S. 822) to reformed regulation for utility companies such that they profit from promoting customer energy efficiency, to codes and standards that set minimum levels of efficiency on a performance basis.

Perhaps the most dramatic success story of such combinations of policies is in refrigerators. Refrigerators have been subject to mandatory standards that were first established effective 1977 and revised with effectiveness dates in 1979, 1987, 1990, 1993, and 2001. At the same time, utilities often have promoted energy efficiency through incentives, and the Energy Star program promotes energy efficiency refrigerators through information. The result of this effort is that refrigerators now consume a fifth of the energy that they did in 1972, despite being bigger, more feature laden, and better performing.

Despite the forecasts that each of these improvements would raise the cost of a refrigerator – an increase that would be paid back rapidly through reduced energy bills, but an increase nonetheless –in fact the cost of the refrigerator declined steadily throughout the last 35 years.

How could this be? Evidently, these environmental policies encouraged manufacturers to innovate, and this innovation induced operational efficiencies in producing refrigerators that made up for the increased cost of the energy efficiency features.

This is a pattern that is seen in other industries as well: increases in cost to cut greenhouse gas emissions through increasing energy efficiency usually don't show up at all, because the need to do something about energy performance provokes the need to recognize other unexploited opportunities to save money in the production process.

Where does small business fit into this? Many of the most important energy efficiency services are provided directly by small business. America has 105 million homes which collectively account for over 20% of American greenhouse gas emissions – more emissions than cars. Increasing efficiency in existing buildings has been identified by numerous studies both domestically and abroad, as the cheapest and fastest source of greenhouse gas emissions reductions.

How can we capture this potential? The European Union already requires that all member states adopt rules by which the entire building stock will be labeled for energy

efficiency. Labels are precursor to doing the work to improve efficiency, since the labeling process also relies on an energy inspection that identifies the opportunities for efficiency upgrades and their cost and benefits.

Who will provide these energy analyses? In the United States, there is an emerging industry of small businesses that train and certify the technical expertise of inspectors who can visit homes and make energy recommendation for modest cost. The European Union estimates that tens of thousands of new jobs will be created by this program.

Once the inspectors make the recommendations, homeowners can be expected to hire contractors to do the work, especially if the construction is incentivized, as is the case in the Snowe-Feinstein EXTEND bill. This is another area where small business benefits directly, since most contractors who work on home remodels and repairs are small businesses.

There are other ways that overcoming failures of the market will promote small business. The fact that unexploited opportunities to earn 30% annual returns on investment are so widespread implies that the economy is failing to allow enough competition in the areas that affect energy use. In many cases, current energy-using equipment is provided by a limited number of large companies sharing the market amongst themselves. If it is possible to produce more or less the same product for many years, these companies can remain as the industry leaders and are not under pressure to find newer and more competitive suppliers of parts and services.

When environmental policies aimed at overcoming market failures take effect, the large companies will look not only internally, but to external suppliers to come up with innovative ways to meet the environmental goal and cut costs. Many of these suppliers will be small businesses because smaller businesses often can respond more nimbly to market opportunities.

III. Caps on Greenhouse Gas Emissions Can Increase GDP

This testimony presents a much more optimistic view of the ability for businesses to innovate their way to climate stabilization than would be derived from studies performed by the Energy Information Administration (EIA). There is an important policy reason for this disagreement.

The EIA models assume structurally that climate emissions limitations are effectuated solely by a carbon tax or a cap-and-trade system. A limited number of greenhouse gas emissions permits are assumed either to be auctioned off or to be allocated based on past emissions and then purchased or traded. While such a system may be an essential part of the climate solution, it is not an effective environmental/economic policy by itself.

If the economy is already ignoring 50% returns on investment in mitigating climate emissions, how would raising the price of emissions, say by 20%, make much of a difference? The clear answer is that it would not. Charging appropriate prices for carbon will cause some

economic decisions to be made on a more rational basis (such as the choice of lower-emitting versus higher-emitting fuels for power plants or vehicles) but will not have much effect on efficiency, which virtually all studies throughout the world have shown to be the largest wedge of climate emissions reductions.

This observation is reflected in the EIA predictions that greenhouse gas emission limits reduce growth. But these predictions are only valid if the underlying assumption is valid: namely that carbon price increases are the only policy instrument available to meet the cap.

But this is not the case. Mandatory carbon caps in practice work most effectively by directing businesses' and policymakers' attention to the overlooked opportunities for emissions savings that are already cost-effective. The limits draw people's attention to the seriousness of the problem. But then, they find that the main efforts towards solution should be directed to the areas where emission limits save money rather than costing money. This is what I have seen in the way California is beginning to implement AB 32 and the way that the European Union's members are beginning to implement their compliance with the Kyoto Protocol.

Studies that look in detail at the opportunities for improving efficiency and substituting renewable fuels for conventional fuels consistently show that most, or all, or even more than all of the savings needed to meet international benchmark such as the Kyoto Protocol can be undertaken in a way that strengthens profitability for business in general, and most likely for small business to an even larger extent. Small business can benefit particularly because they are most in need of technical and financial assistance to undertake energy efficiency projects in their own operations, and most dependent on the efficiency services being available for purchase in the market.

One particularly interesting study found that if emissions credits were sold rather than given away, and the proceeds used to eliminate taxes that are most burdensome to small business – such as Social Security and Medicare – that all of the SIC codes in which small business is significant would come out winners. Indeed, almost all SIC codes in general—businesses accounting for 99% of the economy--would benefit from this combined strategy of policies to promote energy efficiency and tax substitution in which greenhouse emissions taxes replace employment taxes.

In summary, the bulk of the studies that have been done on environmental protection, including environmental regulation and the economy confirm the results I have illustrated in my book from individual experience and case studies: that setting aggressive and mandatory climate mitigation limits helps business by encouraging investment in pollution reduction technologies that are already better investments than what business does otherwise, by breaking down traditional arrangements that limit competition, by encouraging innovation and entrepreneurialism, and in general by establishing the very conditions of working free markets under which small business does best.

IV. Climate Protection Encourages Continuing Innovation

The failure of the market to take advantages of opportunities to reduce emissions with very high return on investment creates an even more powerful barrier to innovation indirectly than it does directly. The problem is this: if existing products or services that could generate a 30% annual return by saving energy don't sell, why would anyone develop an even better technology?

Even if newer technologies that could cut emissions even further were perfected, they still wouldn't sell. So lots of business opportunities for high-technology companies are not exploited. Indeed, it isn't even a good business decision to find out about them.

Policies to reduce emissions establish incentives by which companies that develop better technologies can sell them successfully. This change will encourage small and start-up companies to grow around the opportunity to commercialize improved products at efficiencies even higher than we can predict today.

This is not just speculation—we have seen new technologies develop in products and in buildings and cars wherever policy creates an economic incentive for this to happen.

V. Conclusions

Mandatory limits on greenhouse gas emissions, if done right, can enhance market forces and increase innovation and competition. The effect of enhancements to the market will be to promote economic growth and the creation of new jobs and better paying jobs.

What does it mean to get these policies right? This is a practical question, not a philosophical question. The answer depends on data and observations about what works, rather than theoretical speculation. Some policies produce their intended effects at a profit, while others are costly or ineffective. Some policies have unintended consequences that produce new problems, others have unintended consequences that make them even more effective or beneficial than was anticipated.

What actually works is an issue of fact, not a philosophy or ideology. Therefore, promoting truly market-based solutions to the global climate change problem should be both a conservative issue as well as a moderate and a liberal issue. It should attract enthusiastic support from Republicans and Democrats alike.

Greenhouse gas emissions limitations, done in a market-based fashion that is guided by data, should achieve broad support. This means that mandatory limits on emissions should allow the buying and selling of emissions permits, and complementary energy policies should be adopted to enhance market forces where they are weak and to rely on them more heavily where they are strong. Economic incentives should complement regulations to maximize innovation to

the benefit of both environment and economy. Both emissions limits and policies promoting zero-emissions technologies are essential parts of a pro-growth greenhouse gas limitation policy.

The fact that large, unexploited opportunities for emissions reductions through energy efficiency exist throughout the economy is evidence that current markets for efficiency are not working well. But the success of policies such as performance-based economic incentives and minimum efficiency standards, along with market transformation programs such as Energy Star and utility regulatory reforms to make efficiency profitable, shows that these failures of efficiency markets can be overcome and that markets can be enhanced to allow new and small companies to compete more effectively.

Chairman KERRY. Thank you very, very much.

Mr. Hauge.

STATEMENT OF SCOTT G. HAUGE, VICE CHAIR OF ADVOCACY, NATIONAL SMALL BUSINESS ASSOCIATION, AND PRESIDENT, SMALL BUSINESS CALIFORNIA

Mr. HAUGE. Thank you, Chairman Kerry, Ranking Member Snowe. Thank you for inviting me to speak today on this vital issue of climate change and for recognizing the important role that small business can and should play in any effort to combat it. I would also like to thank Senator Boxer for her leadership and her kind comments.

My name is Scott Hauge. I am the owner of a small business in San Francisco. I am the president of Small Business California, which is a grass-roots, nonpartisan advocacy group in California, as well as vice president of Advocacy for the National Small Business Association, the oldest small business advocacy organization in the United States.

While I appear today wearing two hats, the respective policy positions are not identical. Regardless of the differences, however, the two organizations both believe that climate change is real and significant. Small Business California and the National Small Business Association also are steadfast in their shared belief that if America is serious about confronting the specter of global climate change, the deficiencies of its national energy policy and the environmental, economic, and security threats posed by its oil dependence, small business must be comprehensively involved in the effort.

As you said, Senator Kerry, small business is half the economy, and undoubtedly we are responsible for a commensurate amount of the Nation's energy consumption as well. It is, therefore, both unfair and unwise to attempt to address this serious issue without the input and collaboration of America's small business.

I would like to begin my comments by addressing the role Small Business California played in the passage of AB 32 in August of last year, the so-called Global Warming Solutions Act. With the passage of AB 32, California became the first State in the Nation to limit statewide global warming solutions. The first general business association to support AB 32 was Small Business California.

Although other business groups lent their support to AB 32 before Small Business California, these organizations were industry-specific or environmentally oriented. This is not to diminish their role in its passage. It is simply an acknowledgment that the support of SBC went beyond the conventional.

SBC is not an environmental organization. We advocate for the interest of 3.1 million small businesses in California. We advocated for the passage of AB 32 because we believed it was right for the State of California and right for all of small business. I note this echoes Senator Snowe's original comments.

SBC thought the passage of AB 32 would help small businesses in three important ways:

First, AB 32 has the potential to help small firms find ways to reduce their energy use. Small businesses waste too much energy,

not because they have made a conscious business decision to do so, but they do not know how to solve the problem.

Second, the effort to combat global warming and curb emissions is creating new industries, which is good for nimble and innovative small businesses. We are confident that the California small businesses will take advantage of these opportunities.

Third, we believe that even those businesses not on the cutting edge of innovation will find increased business opportunities in the wake of AB 32's passage because they provide services that reduce energy use. For example, heating, ventilating, and air conditioning contractors all will have opportunities in the maintenance area for reduced energy. I am proud of the leadership role that Small Business California played.

As I previously outlined, in addition to my role with Small Business California, I am the vice chair of Advocacy for the National Small Business Association, which recently adopted a comprehensive energy policy. The small business owners at NSBA believe that the time has come to conclusively address America's national energy and environmental policies. Utilizing the power of the market, the effort should focus on technological innovation, the development of viable and cost-competitive clean and renewable energy solutions, and an increase in energy efficiency. The effort also must avoid placing too onerous a burden on America's small businesses, which are particularly vulnerable to increased regulation and tax obligations and already shoulder a disproportionate share of the cost of Federal regulations and paperwork.

This national endeavor must not only protect small businesses, it must also make full use of them. You have heard about green gazelles from Byron Kennard and Jim, about the potential, and we think those potentials need to be fully developed.

The need to increase the allocation of Federal research and development to small businesses is clearly illustrated by the Small Business Innovation Research Program, which helps small business innovators compete for Federal R&D funds and requires 11 Federal departments and agencies, including the Department of Energy and the Environmental Protection Agency, to reserve a portion of their R&D budgets for small businesses. Small technology firms with less than 500 employees now employ 54.8 percent of all scientists and engineers in United States industrial research and development. Yet these 6,000 scientists and engineers are able to obtain only 4.3 of the extramural Government R&D dollars. Congress should buildupon the successes of the SBIR program during SBIR's upcoming reauthorization process and increase the percentage of agencies' R&D funds reserved for small businesses.

Improving energy efficiency must be a central component of any national effort to confront climate change in the country's energy dependence, and the ENERGY STAR Small Business Program can play a crucial role. Although the ENERGY STAR Small Business Program has been highly successful, its full, vast promise is yet to be realized as its limited budget has hindered its ability to reach the general small business community. As was mentioned, only 60 percent of the respondents to the NSBA survey were aware of this program. This lack of visibility must change. The budget of EN-

ERGY STAR Small Business Program must be increased—now, this year, and this budget.

With limited funding, electronic outreach is the most cost-effective way for the ENERGY STAR Program to get information to as many businesses as possible. Online information and technical content about ENERGY STAR should be readily available on SBA, EPA, and DOE Web sites. The three agencies should integrate and promote key ENERGY STAR-provided hotlinks directly from their home pages to the ENERGY STAR Small Business home pages, as NSBA and Small Business California have done.

Simply making more small businesses aware of the benefits of improved energy efficiency is not enough, however. More must be done to help small businesses afford and utilize energy-efficient products and services. Congress should extend existing tax incentives for the purchase of ENERGY STAR products and establish additional tax incentives for a larger range of energy-efficient products and services. On-Bill Financing is a proven method of providing improved capital access to small businesses seeking improved energy efficiency, and Congress should work with States to extend On-Bill Financing and other access to capital to small businesses across the United States.

U.S. small businesses are ready to do more than just talk. Accordingly, it is my pleasure today to announce that for the first time the National Small Business Association, in partnership with the ENERGY STAR Small Business Program, will soon challenge the 150,000 small businesses we reach to reduce their energy use by 10 percent or more as part of the ENERGY STAR Challenge. America's small business community is ready to do its part.

Thank you.

[The prepared statement of Mr. Hauge follows:]

TESTIMONY OF
SCOTT G. HAUGE
PRESIDENT
SMALL BUSINESS CALIFORNIA
ON BEHALF OF THE
NATIONAL SMALL BUSINESS ASSOCIATION
AT A HEARING BEFORE THE
COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP
U.S. SENATE
ENTITLED
"SMALL BUSINESS SOLUTIONS FOR COMBATING CLIMATE CHANGE"

MARCH 8, 2007

Chairman Kerry, Ranking Member Snowe, and members of the committee, thank you for inviting me here today to testify on the vital issue of climate change and for recognizing the important role America's small businesses can and should play in any effort to combat it. I also would like to thank Senator Boxer, from my home state, for her leadership on the issue.

I am Scott Hauge, owner and president of CAL Insurance and Associates, located in San Francisco, which specializes in providing insurance for small to medium-sized businesses. Founded in 1927, the firm currently has 32 employees. I also serve as president of Small Business California, a nonpartisan, grassroots, small-business advocacy organization, and vice chair of advocacy for the National Small Business Association (NSBA), the oldest small-business advocacy organization in the United States—reaching more than 150,000 small-business owners across the nation. In fact, I am proud to serve in the leadership of NSBA as we celebrate our 70th year of small-business advocacy, and I look forward to continuing NSBA's long-standing tradition of working in a nonpartisan manner to promote pro-small-business policies.

While I appear before you today wearing the hats of both associations, their respective policy positions are not identical and I want to be careful to distinguish between the two groups in my remarks. I also want to stress that whatever the policy differences between the two associations may be, both organizations recognize that global climate change is real.

Small Business California and the National Small Business Association also are steadfast in their shared belief that if America is serious about confronting the specter of global climate change, the deficiencies of its national energy policy, and the environmental, economic, and security threats posed by its oil dependence, small businesses must be comprehensively involved in the effort. Why? Small businesses comprise 99.7 percent of all U.S. employer firms and more than half of all private-sector employees. Small businesses also produce more than half of the private sector output and consume nearly half of all of the electricity and natural gas used for commercial and industrial purposes in the United States. It is both unfair and unwise to attempt to address this serious issue without the input and collaboration of America's small businesses.

SMALL BUSINESS CALIFORNIA

I would like to begin my remarks by addressing the role Small Business California played in the August 2006 passage of Assembly Bill 32 (*AB 32*), the *Global Warming Solutions Act*, which limits the state's global warming emissions to 1990 levels by 2020, providing incentives to businesses to reduce emissions through market mechanisms. The bill also requires the California Air Resources Board to institute a mandatory emissions reporting and tracking system to monitor and enforce compliance with the emissions limit. With the passage of *AB 32*, California became the first state in the nation to limit statewide global warming pollution. The first general business association in California to support *AB 32* was Small Business California. We supported *AB 32* because we believe that global warming is real and that the issue is best addressed by premeditated planning rather than capricious reaction to a crisis.

Although other business groups—like the Environmental Entrepreneurs, the California Ski Industry Association, and the New Voices of Business—lent their support to *AB 32* before Small Business California, these organizations were industry-specific or environmentally-oriented. This is not to diminish their role in *AB 32*'s passage; it is simply an acknowledgment that the support of Small Business California went beyond the conventional. Small Business California is a not an environmental organization. We advocate for the best interests of the more than 1.1 million small businesses in California on a range of issues—including health care, regulatory burden, and access to capital—and we advocated for the passage of *AB 32* because we believed it was in the best interests of California's small businesses.

Small Business California thought the passage of *AB 32* would help California's small business in three important ways. First, *AB 32* has the potential to help small businesses find ways to reduce their energy use. Small businesses in California, and around the country, waste too much energy—not because they have made a conscious, business decision to waste money and resources, but because they do not know how to reduce their energy use. Small businesses are all too happy to reduce their energy use and costs when they know how—65 percent of the respondents to a survey Small Business California conducted last month reported that they had taken steps to reduce their energy use. This finding is consistent with results from similar surveys conducted over the past two years. Second, the effort to combat global warming and curb emissions is creating new industries, which is good for small businesses. America's small businesses, which lead the nation in research and development and create a majority of the nation's new jobs, are nimble and innovative. We are confident that California's small businesses will take advantage of the opportunities presented by *AB 32* and thrive. Third, we believe that even those small businesses not on the cutting edge of innovation will find increased business opportunities in the wake of *AB 32*'s passage, because they provide services that reduce energy use. For example, air-conditioning contractors have stated that simple air-conditioner maintenance will present them with a lot of businesses opportunities to reduce energy use

I am proud of the leadership role Small Business California took on this issue. We received a lot of criticism for our actions and were opposed by most of the established business associations. The position we adopted was based on our belief that it was both the right thing to do and in the best interests of the California's small businesses. We also were intent on being involved in the discussion of how the measure would be implemented, rightly believing that California's small businesses deserved a seat at that table. I have since been named to the Advisory Committee that will implement *AB 32*—a move as historic as it is deserved and overdue.

National Small Business Association

As I previously outlined, in addition to my role with Small Business California, I am vice chair of advocacy at the National Small Business Association, which recently adopted a comprehensive energy policy. Acknowledging that global climate change is real, the small-business members of NSBA believe that the time has come to conclusively address America's oil dependence and the shortcomings of its national energy policy.

NSBA supports increasing and diversifying America's domestic energy production, and encouraging the research and development of viable and cost-competitive clean and renewable energy solutions. This effort will no doubt require the initiation of myriad regulatory and administrative actions. NSBA is not in the habit of recommending new governmental programs or increased regulatory and tax burdens—preferring free enterprise, market solutions, and a neutral tax system—but the unique and urgent contours of America's environmental and energy policies and energy industry demand governmental intervention. Although I am confident that such an action can be successful, I cannot stress enough that it must be realistic, flexible, and science-based. It also must focus on technological innovation, the development and use of cleaner energy alternatives, and an increase in energy efficiency and conservation. It should utilize the power of the market and protect American businesses and jobs. It also must avoid placing too onerous a burden on America's small businesses, which are particularly vulnerable to increased regulatory and tax obligations and already shoulder a disproportionate share of the costs of federal regulations and paperwork compliance.

Green Gazelles

This national endeavor must not only protect small businesses, however, it must make full use of them. At the forefront of the effort to protect the environment, provide cutting-edge energy solutions, drive economic growth, and create new jobs are "innovative, entrepreneurial, profitable and fast growing small businesses" known as Green Gazelles. Despite their inherent potential, too often these innovative firms have been ignored by the federal government. Increased federal incentives and funding must be provided to these pioneering small businesses.

The need to increase the allocation of federal research and development (R&D) to small businesses is clearly illustrated by the Small Business Innovation Research (SBIR) program, which helps small-business innovators compete for federal R&D funds and requires eleven federal departments and agencies, including the Department of Energy and the Environmental Protection Agency, to reserve a portion of their R&D budgets for small businesses. Small technology firms with less than 500 employees now employ 54.8 percent of all scientists and engineers in U.S. industrial research and development. Yet, these nearly 6,000 scientists and engineers are able to obtain only 4.3 percent of extramural government R&D dollars. Congress should build upon the successes of the SBIR program—which has delivered more than 50,000 technology patents and is now doing so at the rate of seven patents a day—during SBIR's upcoming reauthorization process and increase the percentage of agencies' R&D funds reserved for small businesses

We know federal research and development can pay tremendous dividends. A National Research Council report found, "that DOE's RD&D [Research, Development, and Demonstration] programs in fossil energy and energy efficiency have yielded significant benefits (economic, environmental, and national security-related), important technological options for potential application in a different (but possible) economic, political, and/or environmental setting, and important additions to the stock of engineering and scientific knowledge in a number of fields."[1]

In fact, the report found that although "most projects yielded few (or no) public benefits, the ones that were successful provided national benefits significantly exceeding the *total* cost of the energy R&D [research and development] program."[2]

Diversify Domestic Production

While technological innovation presents the best prospects for a long-term solution to America's oil dependence and emissions production, the advances necessary to extend the nation beyond the fossil-fuel era will require a concerted national effort and the federal government has an important role to play in this regard. As a recent report, "American Energy: The Renewable Path to Energy Security," found,

> Across the United States and around the world, there is one clear lesson from past policy experiments: wherever renewable energy industries have emerged, government policy reforms have played a central role. The key to a bright American energy future and a new wave of economic activity and innovation is a robust partnership between government and the private sector—providing incentives to jumpstart the new energy industries while minimizing the cost to American taxpayers.[3]

The United States has a long history of failed and abandoned energy initiatives. Discarded, short-sighted, and misguided government policies have stifled innovation, deterred investment, and ruined many companies.[4] Federal subsidies too often have favored fossil-fuel technologies over the development of renewables. All this must change. It is imperative that the U.S. establish clear, long-term goals for renewable energy use. It must construct a "consistent, predictable, and long-term framework of rules and incentives" for the development of renewable energy sources.[5] It also must increase real incentives, such as investment tax credits, for small businesses and consumers to use alternative-energy and energy-efficient products and services and boost its support for research and development into clean and renewable energy technology—including the cutting-edge work of the nation's Green Gazelles. As a number of experts recently testified before the U.S. Senate Finance Committee, during a hearing entitled, "America's Energy Future: Bold Ideas, Practical Solutions" stable and long-term tax incentives are crucial for stimulating private sector investment in alternative energy sources.

There is a positive net job impact from increasing the use of renewable energy, according to a number of studies cited in a Union of Concerned Scientists report.[6] In a joint report, "American Energy: The Renewable Path to Energy Security," the Center for American Progress and the Worldwatch Institute state that "renewable energy creates more jobs per unit of energy produced and per dollar spent than fossil fuel technologies do."[7] Furthermore, many renewable energy technologies will be employed in a multitude of diverse locations, which reduces the "risk of accidental or premeditated grid failures cascading out of control."

Micro Power

Generally located on-site or in very close proximity and connected to local distribution lines, micro power plants—such as rooftop solar systems, bio-fuels generators, or small wind turbines—usually have generating capacities of five megawatts or less. In addition to reducing or eliminating line loss via improved transmission efficiency, micro plants do not require transmission or distribution investment and provide a very reliable power supply.[8] According to a joint report by Worldwatch Institute and the Center for American Progress, however, micro plants are not currently in wide use because "everything from electricity laws to environmental and tax regulations are often structured in ways that disadvantage" them.[9] Existing laws and regulations

that penalize the use of micro power should be modified or abolished. Congress also should encourage the construction of "smart grids" and enactment of net-metering provisions, both of which will facilitate more extensive micro-power production.

Net Metering
Net-metering allows small-energy producers to sell their excess energy back to the local grid, either at wholesale or retail prices or by having their electric meters turned back to offset future consumption over a billing period.[10] Unfortunately, many states have yet to enact net-metering regulations. Additional net-metering regulations should be enacted—especially those that will increase the economic incentives to end users to utilize net metering opportunities while protecting the interests of utilities.

Increase Energy Efficiency
Improving America's energy efficiency must be a central component of any national effort to confront climate change and the country's energy dependence. More than two-thirds of the energy content of the fossil fuels consumed in the U.S. is simply lost—in power plants and motor vehicles—as waste heat. It is time for the United States to reverse its historic trend of discouraging energy efficiency and make a concerted effort to reduce waste.

Well-designed energy efficiency programs can save the equivalent of about one percent of the country's annual electricity and natural gas sales, protecting the environment by reducing per capita energy consumption and helping consumers and businesses save money. Various state and regional studies have concluded that improved energy efficiency could save more than 20 percent of total U.S. electricity demand by 2025.[11] "At an average cost of about one-half of the typical cost of new power sources and about one-third of the cost of natural gas supply," well-designed energy efficiency programs also are much more cost effective than increasing supply and usually can be deployed much faster.[12] To achieve these economic and environmental benefits, however, the U.S. must bolster its spending on energy efficiency programs, which currently amounts to less than $2 billion per year in total.[13]

Recognizing that energy efficiency is a "critically underutilized" aspect of the nation's energy strategy, as part of its comprehensive energy policy, NSBA recently endorsed the policy recommendations outlined in the *National Action Plan for Energy Efficiency* (*Action Plan*), which seeks to lay a path to a "sustainable, aggressive national commitment to energy efficiency." If fully implemented, the *Action Plan* could forestall the need for approximately 40 new 500-megwatt power plants, reduce natural gas prices, avert the release of greenhouse gases equivalent to 35 million cars, and yield annual energy savings of nearly $20 billion. NSBA supports the *Action Plan*'s call that the U.S.:

- Recognize energy efficiency as a high-priority energy resource;
- Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource;
- Broadly communicate the benefits of and opportunities for energy efficiency. (It is especially important that this effort reaches America's small businesses);
- Promote sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective; and
- Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.

NSBA also is pleased to support the *EXTEND the Energy Efficiency Incentives Act of 2007*, which provides necessary enhancement of the *2005 Energy Policy Act*. I would particularly like to thank Ranking Member Snowe and Senator Diane Feinstein, from my home state, for their leadership, through the introduction of this bill, in helping U.S. small businesses finance the construction of energy-efficient buildings and pay for retrofit energy-efficiency improvements.

Energy Star

The Energy Star Small Business program—an important offshoot of the Federal Energy Star program, which was created through a partnership with the EPA and DOE to identify and promote energy-efficient products and practices—provides helpful technical support and information to small businesses trying to conserve energy and improve efficiency. Its resources allow small businesses to explore the options available in energy-efficient products, services, and financing as well as the tools to calculate the costs and payback periods of various products and updates.

While the Energy Star Small Business program has been highly successful—it estimates that it helped American save more than $12 billion on their energy bills last year alone—its full, vast promise has yet to be realized, as its limited budget has hindered its ability to reach the general small business community. In fact, only 60 percent of the respondents to a recent NSBA energy survey reported being familiar with the Energy Star label. This lack of visibility must change. The budget of the Energy Star Small Business program must be increased. Now—this year and this budget. Furthermore, the existing Energy Star rating should be adopted as a "standard" for federal support instead of each government agency developing a new energy rating system. For example, environmental and energy-related federal grants to universities and small businesses should require that an Energy Star rated product be the result of the research.

With limited funding, electronic outreach is the most cost effective way for the Energy Star program to get information to as many businesses as possible. Online information and technical content about Energy Star should be readily available on SBA, EPA and DOE web sites. The Web links need to be highly visible, easily navigated and well-maintained in order to be most efficient in providing information to the consumer. The three agencies should integrate and promote key Energy-Star provided hotlinks (e-updates, guides) directly from their home pages to the Energy Star Small Business home page (*www.energystar.gov/smallbiz*)—as NSBA and Small Business California have done. EPA should provide the SBA with the necessary links—including those to small business, products, business improvements, and home improvements.

Although Energy Star maintains a toll-free number (1-888-STAR-YES), which connects to tech support, more needs to be done to promote this service to small businesses. The Energy Star Small Business Web site should contain information about the toll-free number and what it offers: tech support and advice. Additionally, DOE and EPA should generate public service announcements on Energy Star-labeled equipment geared directly to small businesses. The current public service announcements show images of homeowners or general consumers and do not reflect the specialized needs of most small businesses. The Energy Star Small Business program also should be more frequently advertised in trade publications, as nearly a quarter of NSBA survey respondents reported using them as a primary source of information on energy efficiency. Of course, such expanded outreach requires more money, so I will say it again: the budget of the Energy Star Small Business program must be increased.

Simply making more small businesses aware of the benefits of improved energy efficiency is not enough, however. More must be done to help small businesses afford and utilize energy-efficient products and services. Congress should extend existing tax incentives for the purchase of Energy Star products and establish additional tax incentives for a larger range of energy-efficient products and services. On-Bill Financing is a proven method of providing improved capital access to small businesses seeking improved energy efficiency. It allows small businesses to borrow funds from their utility companies to purchase or rent energy-efficient products and services with no upfront costs. The minimal or no-interest loans, attained with little paperwork, are repaid from savings on the small businesses' utility bills.[14] Congress should extend On-Bill Financing and other access-to-capital innovations currently offered in some states to small business across the nation.

For small businesses to receive the best interest rates on their loans or the largest rebates for their energy-efficiency purchases, accurate and detailed energy metering is required. Ideally, this metering will provide continuous commissioning—in real-time via the Internet—that records both baseline and actual performance. This kind of ongoing measurement and verification lowers the risk premium for small businesses investing in energy efficiency to a point where it is comparable to other investments. Congress should expand opportunities for "continuous commissioning."

It is easy for me to sit here and tell you what I think Congress should do to increase energy efficiency within the small business community—although maybe not as easy as it looks—but U.S. small businesses are ready to do more than just talk. Accordingly, it is my pleasure to announce here today for the first time that the National Small Business Association, in partnership with the Energy Star Small Business program, will soon challenge the 150,000 small businesses we reach to reduce their energy use by 10 percent or more as part of the Energy Star Challenge.

Through the Energy Star Challenge, NSBA members will assess and track the energy performance of their facilities using EPA's rating tool, Portfolio Manager. Setting energy efficiency goals and tracking progress are important practices in implementing an effective energy management program. The energy information entered into Portfolio Manager by NSBA members will allow not only individual dealerships but the small business community as a whole to monitor the significant reductions that will result from operational improvements. The Energy Star Small Business program also will provide participants with webcast training, expert support, and more.

Revolutionize U.S. Transportation and Automotive Industries

Transportation is the crux of America's oil dependence: 97 percent of the oil used in the United States is consumed for transportation.[15] Only about two percent of the energy consumed by the nation's transportation fleet comes from renewables.[16] Automobile emissions also are the second-largest source of carbon dioxide in the country. This must change. It is time to make a concerted effort to revolutionize the country's transportation and automotive industry. If the United States is to reduce domestic demand, regulatory incentives to use more fuel-efficient vehicles are needed.

Hybrid Vehicles

Hybrid vehicle technology, especially the plug-in hybrid variety, has the potential to help curb America's oil dependence and its global warming pollution, and this potential must be fully

explored. Small-business owners personally are willing to explore the potential for energy savings that advanced vehicle technology presents—68 percent of the respondents to a NSBA energy survey reported a willingness to lease an alternative-service vehicle if it could provide, per mile of use, significant overall cost reduction. NSBA supports increased funding and incentives for plug-in hybrid vehicle technology, including advanced battery research. NSBA also supports consumer-tax incentives—without limits on the number of qualifying vehicles—for the purchase of highly-efficient hybrid, clean-diesel, and compressed-air vehicles.

Alternative Fuels

NSBA also supports the continued expansion of ethanol utilization and the removal of the protectionist 54 cents per gallon tariff on imported ethanol. NSBA recommends increased funding and incentives for the use and research and development of biodiesel and other biomass-derived fuel. NSBA also backs increased funding and incentives for biomass research with the goal of making cellulosic ethanol cost competitive with corn-based ethanol by 2012. Finally, NSBA urges federal incentives, especially for small businesses, to increase the use of hydrogen energy, and increased federal investment into the research and development of hydrogen energy. With hydrogen-powered buses operating in Chicago, Toronto, and Reykjavik—and on the horizon in London, Madrid, and Hamburg—as well as the news that FedEx and UPS plan to phase in fuel-cell trucks over the next five years—NSBA is insistent that small businesses should not be left behind in the early utilization of this emerging technology.

Fuel Efficiency/CAFE Standards

Higher gasoline mileage standards have been called the "most-needed reform in the U.S. energy policy," and with good reason.[17] The average fuel economy of a new vehicle sold in 2001 was lower than the average fuel economy of a new vehicle sold two decades earlier.[18] At 25 miles to the gallon (mpg), the original 1903 Model T was more fuel efficient than the average new Ford vehicle, at 22.6 mpg, sold in 2003.[19] This is not progress.

The Corporate Average Fuel Economy (CAFE) standards—first established by the U.S. Congress in 1975, largely in response to the nation's first oil shock —have lagged behind the nation's need for increased fuel efficiency for far too long.[20] While NSBA applauds the Bush Administration's increase of CAFE standards for light trucks and sports utility vehicles (SUVs)—the first such increase in a decade—from 20.7 mpg to 22.2 mpg for the 2007 model year vehicles, more must be done to improve the fuel efficiency of the nation's transportation fleet.[21] A 2001 report from the National Academy of Sciences concluded that existing technologies could produce a 25-to-35 percent increase in fuel efficiency for new cars, pickup trucks, and SUVs—without sacrificing safety or comfort.[22] This improved fuel-economy standard would displace as much petroleum as the "United States currently imports from Persian Gulf dictatorships."[23] NSBA supports an incremental but steady increase in the nation's CAFE standards and permanently closing the SUV CAFE standard loophole. In keeping with the recommendations of the National Academy of Sciences, NSBA also supports continued federal funding, in cooperation with the automotive industry, of "precompetitive research aimed at technologies to improve vehicle fuel economy, safety, and emissions."[24] Finally, NSBA supports the efforts of the EPA and automakers to improve the accuracy of the miles per gallon estimates of new vehicles. It is imperative that consumers, especially small businesses, be provided with accurate fuel efficiency information so that they can make informed decisions regarding their transportation needs.

Conclusion

This concludes my testimony. Thank you again for inviting me here today and for recognizing the vital role America's small businesses can and should play in any effort to address global climate change, America's oil dependence, and the shortcomings of its national energy policy. I thank you for your time and welcome any questions.

Notes

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[2] Council on Foreign Relations Independent Task Force, "National Security Consequences of U.S Oil Dependency," October 2006, <http://www.cfr.org/content/publications/attachments/EnergyTFR.pdf> (Emphasis added)

[3] Worldwatch Institute and Center for American Progress, "American Energy: The Renewable Path to Energy Security," September 2006, <http://images1.americanprogress.org/il80web20037/americanenergynow/AmericanEnergy.pdf>, 34

[4] Ibid , 7

[5] Ibid , 34

[6] Union of Concerned Scientists, "Powerful Solutions: 7 Ways to Switch America to Renewable Electricity," August 2005, <http://www.ucsusa.org/clean_energy/clean_energy_policies/powerful-solutions-7-ways-to-switch-america-to-renewable-electricity.html>, 2.

[7] Worldwatch Institute and Center for American Progress, "American Energy: The Renewable Path to Energy Security," September 2006, <http://images1.americanprogress.org/il80web20037/americanenergynow/AmericanEnergy.pdf>, 9

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[9] Worldwatch Institute and Center for American Progress, "American Energy: The Renewable Path to Energy Security," September 2006, <http://images1.americanprogress.org/il80web20037/americanenergynow/AmericanEnergy.pdf>, 17

[10] U S Department of Energy, office of Energy Efficiency and Renewable Energy, "Net Metering Policies," <http://www.eere.energy.gov/greenpower/markets/netmetering.shtml>

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[12] Ibid.

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[14] Ilana DeBare, "Small businesses get break on energy saving equipment can be bought with little interest," *San Francisco Chronicle*, 23 September 2005, <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2005/09/23/BUGJVESIDB1.DTL&hw=On+Bill+Financing&sn=110&sc=196>.

[15] David B. Sandalow, "President Bush and Oil Addiction," The Brookings Institute, 3 February 2006, <http://www.brookings.edu/views/op-ed/fellows/sandalow_20060203.htm>.

[16] Worldwatch Institute and Center for American Progress, "American Energy: The Renewable Path to Energy Security," September 2006, <http://images1.americanprogress.org/il80web20037/americanenergynow/AmericanEnergy.pdf>, 14

[17] Gregg Easterbrook, "Vote Yes for the Energy Bill, Then Start Working on the Real Issues," Brookings Institute, 28 June 2005, <http://www.brookings.edu/views/op-ed/easterbrook/20050728.htm>.

[18] Union of Concerned Scientists, "Fuel Economy: Going Farther on a Gallon of Gas," August 2005, <http://www.ucsusa.org/clean_vehicles/fuel_economy/fuel-economy-going-farther-on-a-gallon-of-gas.html?print=t>.

[19] "Environmentalists criticize Ford fuel efficiency," *Forbes*, 3 June 2003, <http://www.forbes.com/business/energy/newswire/2003/06/03/rtr989670.html>.

[20] Alliance to Save Energy, American Council for an Energy-Efficient Economy
Natural Resources Defense Council, U.S. Public Interest Research Group
Sierra Club, Union of Concerned Scientists, "The Fastest, Cheapest, Cleanest Way To Reduce Oil Dependence: Increasing America's Fuel Economy," February 2002, <http://www.ase.org/uploaded_files/policy/CAFEbriefingbk.pdf>, 3

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[24] National Academy of Sciences, "Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards" 2002, <http://newton.nap.edu/books/0309076013/html/6.html>

Chairman KERRY. That is terrific, Mr. Hauge. Thank you very much. That is a welcome announcement, one that might better have been made with the Administration standing up with you in a joint venture. But we obviously welcome the initiative.

I wish that Mr. Wehrum were here from the EPA when you testified that to sort of hear—partly to hear you, but partly also to kind of get the texture of all of you. In fact, I wish more people could hear a panel like this and listen to the kinds of things that you are all saying. It is really so important. And, Mr. Horowitz, I know you are not at the top of the hierarchy over there, but I assure you we are going to try to help leverage your ability to be able to affect this, because you hear this. I mean, you hear what these folks are saying, that more could be done, that there is not enough money within the current ENERGY STAR Program, that a lot of people are being left on the wayside, that there is a big gap that they recognize and are trying to fill it.

How many years have you been working with small business, Mr. Hauge?

Mr. HAUGE. Twenty-five years.

Chairman KERRY. Twenty-five years. And 25 years as a what?

Mr. HAUGE. Well, I am an owner of a small business, but I founded the Small Business Network, which is 17 associations with 19,000 businesses in San Francisco, and I founded Small Business California and have been involved with NSBA for about 10 years.

Chairman KERRY. When did you found Small Business California?

Mr. HAUGE. Twenty-seven months ago.

Chairman KERRY. And you did that to augment the ability to represent small business interests?

Mr. HAUGE. I felt that there was a need for grass-roots small business representation in Sacramento. It was sorely lacking.

Chairman KERRY. Do you feel that way about national efforts as well? Do you think that that is true?

Mr. HAUGE. Well, I think the National Small Business Association does a good job, obviously, but I do think there needs to be a stronger voice for grass-roots small business people, a nonpartisan voice for small business people.

Chairman KERRY. It is very important what you just said, "nonpartisan." I mean, there is no ideology and no party label that brings you here.

Mr. HAUGE. No. We get both sides.

Chairman KERRY. You are here in order to advocate for small business.

Mr. HAUGE. Yes.

Chairman KERRY. And in advocating for small business, you have clearly said today that you believe that recognizing global climate change and responding to it is both good for small business from a business point of view as well as policy, correct?

Mr. HAUGE. Yes.

Chairman KERRY. What do you say to those who are sitting on the sidelines and resisting this right now?

Mr. HAUGE. Well, my initial response, when asked about why we supported AB 32 in California, was somewhat similar to what you said in your opening comments. We have a choice here. I think

global warming is pretty much well accepted, so we have a choice. Do we plan or do we react in crisis? And I think a much smarter way to go is planning, and obviously on this particular issue, if we act in crisis, it could be too late.

Chairman KERRY. Mr. Barber, with respect to the natural plastic that you are producing now, you have done this without any policy initiative, as you mentioned. You said the absence of a policy initiative has probably handicapped it to some degree, but you are proceeding forward because you think there is ultimately a market there.

Mr. BARBER. Indeed.

Chairman KERRY. How would a policy initiative or a different Government framework have affected you?

Mr. BARBER. The products that we are commercializing now have a natural place in the market, but the adoption of those products, their pace of adoption, would be affected by the policy framework in which people make decisions.

In general, there are costs of switching all through a value chain, and so when an end user, a product manufacturer, decides to adopt a new product, there are inherent costs in that decision. And so making that decision in the absence of some encouragement is just a slower process than it might otherwise be. But I think the history with the biofuels is a good example to look to.

Chairman KERRY. How about the capitalization? Would that be affected if the policy of the Government said that we are going to move in this direction and we are setting a goal and it is mandated, et cetera? I assume capital would move more easily to those sectors as it did in the late 1970s, early 1980s, when we had a huge amount of environmental remediation companies in Massachusetts while that Government commitment existed.

Mr. BARBER. Sure, it would. And what it would also do is to allow that capital to find and support those opportunities that would most efficiently displace a barrel of oil, as opposed to being right now channeled only into certain particular avenues of displacement.

Chairman KERRY. Mr. Lynch, in your efforts to reach these companies, what difference—would more money make a difference from the EPA? Would more focus from SBA make a difference? Could there be a joint venture that would help with these audits that you think would reduce costs for small business more significantly?

Mr. LYNCH. I certainly think additional resources to be able to offer in other States, and even be able to expand our offerings in Pennsylvania, energy efficiency, onsite technical assistance, and one-on-one kind of assistance is really important, and the resources would certainly help.

Chairman KERRY. Do you think we are missing opportunities right now?

Mr. LYNCH. Oh, absolutely.

Chairman KERRY. Is there a cost to missing those opportunities?

Mr. LYNCH. I think there is as energy prices go up and the National Small Business Association Survey you referenced that found that 75 percent of small businesses had been at least moderately to significantly impacted by rising energy prices, when asked the further question, you know, what are you doing in response to

these rising costs, how are you coping, 18 percent said that they had reduced workforce. You know, there is a cost. There is a cost in terms of jobs when you do not do anything on the energy efficiency side.

Chairman KERRY. There are also unmeasured lost opportunity costs.

Mr. LYNCH. Absolutely.

Chairman KERRY. Let me cede to Senator Snowe, and then come back if we need to.

Senator SNOWE. Thank you, Mr. Chairman.

Well, it is a pleasure to listen to this panel. It is a reaffirmation of the programs and approaches that work, and it is a confirmation that we need to do much more. And you all have provided collectively and individually some very exciting initiatives that I think we ought to attempt to build on, frankly.

Sometimes I often think in the hearings we ought to reverse the panels. I have often thought about that, listening to the last panel first and then have the Administration officials.

Chairman KERRY. I have had the same reaction for many years of wanting to be able to do that.

Senator SNOWE. I know. But we appreciate, Mr. Horowitz, that you are here listening. I think that is very important because as Senator Kerry and I have been discussing, we need a level of energy and commitment to the programs that now exist and what can we do more where small business can play a role. And it is not even in this quarter. We have this problem in terms of resistance within the Federal bureaucracy toward reaching out to small businesses. It has just been an ongoing problem, and here is another example. Yes, it has worked well, but it is not the level of energy and commitment that I think is commensurate with the crisis that we are facing with respect to this issue and how it can help to create more jobs since small businesses are the job creators in America. It creates three-quarters of the net new jobs in America.

So you would think that the Federal Government would have a genuine interest to make sure what can we do to save jobs, and ultimately, as one of your testimonies indicated, the way they respond to energy cost increases is to cut jobs. So we have to help small businesses avert that response. And so, in any event, I appreciate what has been mentioned here today.

Dr. Goldstein, I do again want to welcome you. I know it has been a long road, and I have to say to my colleague, Chairman Kerry, that Dr. Goldstein really was a great influence on these energy tax incentives, paved the way back in 1999 as a way in which to create these incentives that can make a difference, and then ultimately he shared it with the world with his book. And so he has been an invaluable resource.

Chairman KERRY. I understand you wrote the foreword to that book. Is that right?

Senator SNOWE. Yes. See how I am touting it?

[Laughter.]

Senator SNOWE. But it is a very good one.

Chairman KERRY. I hear you.

Senator SNOWE. It sure is, and he has provided an abundance, I think, of information and data that ultimately reinforces some of

the issues here and what we are now hopefully, being able to address in the Congress.

When you were mentioning on the ratings, Dr. Goldstein, that was interesting, about the certification of those who would rate homes for example. And in the new legislation that we have introduced today, not only do we extend many of tax incentives that were created in the 2005 act, but we have also improved upon them. And one is to create a new tax incentive for the costs associated with training for the certification process. And hopefully that will create not only a new industry, but also help to accelerate this process that makes it more pervasive across this country.

Do you think that that will be helpful in that regard?

Dr. GOLDSTEIN. Yes. The concepts in the bill, the tax incentives bill, are to focus on the very cutting-edge technologies, to take things from the laboratory to enough commercial practice that they can be picked up by the world in general. And this has been the missing piece of American energy policy and, frankly, global energy policy for the last 20 or 30 years. How do you get the really leading-edge technologies to be bigger than five demonstration projects and to get to a point where the market can take them seriously, where small business can rely on the infrastructure that is built up to respond to the tax incentive and then be able to have these services available for themselves?

So in the case of ratings, we are not talking about small business as the client. It is homeowners. But small business is the provider of the service that would be offered.

We really have not done much on retrofitting existing homes in the last 20 years, but when we have made all-out efforts, we have been able to get about 90-percent market share in 3 years. So hopefully the tax incentives can spur this creation, again, of a virtuous circle of self-financing because the energy savings pay for the costs of the loan to do the home retrofit. Self-financing retrofits that can make a big impact on technology, as well as energy reductions.

Senator SNOWE. I appreciate that.

Mr. Hauge, you were mentioning the Small Business Innovation Research Program, and earlier I meant to ask Mr. Horowitz about this program, because I do think it is another way of helping with innovative firms. And when you were giving the statistics, it is actually amazing how underutilized this program is with respect to scientists and researchers. And you said small business technology firms with less than 500 employees now employ 54 percent of all scientists and engineers in U.S. industrial R&D, yet these nearly 6,000 scientists and engineers are able to obtain only 4.3 percent of the extramural research grants.

So I have included in the last SBA reauthorization, incentives for green initiatives under this program, but clearly we have to do far more than what we are doing with this program if we are going to invite more R&D and those who are able to provide it.

Mr. HAUGE. It is particular interesting because most of the R&D done in this country is done by small businesses, and yet we are getting such a very tiny percentage.

Senator SNOWE. Actually, it is stunning, the extent to which this program is underutilized. We did the same thing in the defense authorization bill last year with respect to Federal contracts and en-

ergy-efficient initiatives as well, because there is another dimension where we are not small businesses have not been given any advantages in that regard. So we are also kind of focused on those defense contracts specifically.

But I think this is an excellent idea, and I think we have to continue, as Mr. Kennard mentioned as well, to make sure that that is passed this year and mandating incentives for green initiatives under the ENERGY STAR Program, but also to provide tax incentives for those products that are labeled with the ENERGY STAR. I think that is an excellent idea, and we ought to incorporate that as well.

Chairman KERRY. A terrific idea, absolutely.

Senator SNOWE. It is. It is a very good idea.

Chairman KERRY. Also, get the SBIR designation thing, maybe the SBA would just move on it and do it.

Mr. HAUGE. Could I make a quick comment?

Senator SNOWE. Yes.

Mr. HAUGE. To kind of back up, because I want to applaud NRDC. In California, while we were asked by the Governor to get involved in this and we took a role, one of the problems small businesses had in the past is dealing with environmental groups, and to NRDC's credit, they reached out and worked with us, recognizing the role of small business. And I just want to thank them for that.

Dr. GOLDSTEIN. I appreciate that, and I think it points out an important point that this hearing brings out, and that is, if you did a blind reading of the testimony and asked which were the business representatives and which were the environmentalists, you would have trouble telling the difference. That is, I think, an important take-away message and something we learned from the AB 32 discussion in California, that there are a lot of common interests.

Chairman KERRY. A very good point. That is a very good point.

Senator SNOWE. Well, you know, the whole mandatory cap in trade and the fact is that the 10 largest companies in America have now rallied around the mandatory cap in trade program. They want uniformity across the country with respect to regulations in the CO_2 reductions, which is sort of interesting. See, I think we are at a crossroads here, and I think this could become the nexus for doing more in this area, because they want the certainty, the uniformity of regulations across the country; otherwise, we are going to be dealing with a patchwork of regulations. And our States are in the Northeast initiative and following California's lead. So I think that if there is impetus to do something nationally, which I think there is, something gets done, hopefully for that bipartisanship that will be essential to that, I think this certainly is another dimension that I think would be a real catalyst for action.

Mr. Lynch, you mentioned SBDCs, which is also fascinating to me. They have specifically an Energy Assistance Program within the SBDC?

Mr. LYNCH. In Pennsylvania.

Senator SNOWE. Yes, in Pennsylvania.

Mr. LYNCH. Yes.

Senator SNOWE. That is interesting. And so that was self-initiated, I gather.

Mr. LYNCH. Yes. We actually were the beneficiaries of a small grant from U.S. EPA's ENERGY STAR Small Business Program back in 1997 to try to start testing out the idea of providing energy efficiency assistance in the business development context. And it was something that we found that there really was an interest and there was a need. So we have been able to build the program with State funding since that initial seed funding.

Senator SNOWE. I am curious if you are the only State that does that. I am not sure that we know of another State that has a specific energy program within SBDC.

Mr. LYNCH. There are a couple of others that have tried working with the utilities. The Nevada SBDC would be another example. But in terms of having people on staff who can go out and do onsite visits and energy audits, I think Pennsylvania is the only State.

Senator SNOWE. Well, I think that is something that we ought to look at very carefully, because I think that is also an exciting initiative.

Mr. LYNCH. I think it would be a welcome——

Senator SNOWE. It is an ideal way of reaching out to small businesses in respect of States, frankly.

Mr. LYNCH. Absolutely.

Senator SNOWE. So I think that is an excellent idea.

Mr. Barber, you mentioned what you are doing in this whole renewable with plastics. Tell me, should we consider any competitive research grants in any way that would help, you know, for R&D, like in the SBIR Program or something? Would that be a benefit?

Mr. BARBER. There is a certainly a role to play for competitive research grants here, and the SBIR Program has been one way for small businesses to access that, and we have on occasion over the years.

One aspect, though, of the SBIR program specifically is that those grants, as typically implemented, tend to be rather small. And given the nature of the kind of research that is necessary to solve the sort of problems we are talking about here, it typically requires considerably greater resources than are available in the SBIRs themselves.

Now, the agencies have certainly offered up other opportunities to compete for grants. One thing I would point out, though, is that under the Energy Policy Act, there was specific provision for the funding of research to develop not only bio-based fuels, but also bio-based products. And I think the record would show that very little money has actually moved to the support of development of bio-based products.

I think there is a great opportunity to do far, far more than has been done here. As I pointed out in my own remarks, our first plant is 100 million pounds per year serving a 100-billion-pound U.S. market, and so there is an enormous opportunity to make an impact here on greenhouse gas emissions associated with the product side of the ledger as opposed to the fuel side of the ledger. Products—plastics and chemicals—consume almost 10 percent of the petroleum we use here in the United States.

Senator SNOWE. Thank you.

Thank you, Mr. Chairman.

Chairman KERRY. Well, thank you, Senator Snowe. I appreciate your questions, and you and I are in sync on this. It is—it is frustrating.

Senator SNOWE. It is scary, isn't it?

[Laughter.]

Senator SNOWE. It is. It is frustrating.

Chairman KERRY. It might be scary at some——

Senator SNOWE. At some point.

Chairman KERRY. But it is pretty positive.

Again, I emphasize that there is such a diversity here sitting in front of us. Mr. Kennard, did you also have the same kind of experience Mr. Hauge did? How did you come to this?

Mr. KENNARD. I was an organizer of Earth Day. I have been in the game as long as it was a game. But in 1973, I read a book called "Small Is Beautiful," written by E.F. Schumacher, who became my friend and collaborator. And so I have been advocating scale as a primary concern ever since. Look at the size. Look at the size.

New things first appear small. They do not first appear big. So if you are interested in the process by which the economy is renewed, new technology is born, then you want to look at the small and see, well, what happens there, go back to the source. And that has been a message I have been preaching for a long time.

But the policymakers and many of the advocacy groups are devoted to the work of large centralized institutions, so this has been an uphill struggle. What has happened in California, AB 32, which is most interesting to me, was the new voices of business that were raised in the debate changed the debate and made victory possible. You had clean-tech companies and the green small businesses mobilized politically for the first time, and so the debate was no longer jobs and economy versus the environment. The debate was between a clean-tech future versus the industrial status quo. And we won.

That should be a lesson that people in Washington, DC, heed.

Chairman KERRY. With respect to the comments I made earlier, is there any disagreement among any of you about the ability of the Government to show greater leadership on this issue at this point in time? Well, let me ask the question differently. I would like an answer from each of you. Do you believe that greater leadership is necessary now in order to respond to this issue?

Mr. Kennard.

Mr. KENNARD. The best policy results when you have entrepreneurial endeavors working in sync with Government policy. You need large and small working together in balance, and then you get a beautiful result.

Chairman KERRY. Mr. Barber.

Mr. BARBER. Indeed, inherently the kind of issue we are talking about here is one in which the costs are external to the normal pricing mechanisms in the market. And so the market mechanisms by themselves will not lead to a response to these kind of problems, and that——

Chairman KERRY. We have to set up——

Mr. BARBER. That becomes the role of——

Chairman KERRY. Encourage the market or direct it in a sense. Entice it.

Mr. BARBER. Indeed, that becomes the role of policy.

Chairman KERRY. Mr. Lynch.

Mr. LYNCH. I also agree that more on the national level needs to be done to address this significant issue, and ignoring the contributions that small businesses can make, you know, just does not make any sense anymore. We need to really involve the small business community.

Chairman KERRY. Mr. Goldstein.

Dr. GOLDSTEIN. Chairman Kerry, we desperately need stronger leadership at the national level on this issue. The role of Government is apparent because you can just look at what different States have done. If Government did not matter, you would see parallel paths among all 50 States. But what you see is States like your own, like California, like New York, where they have made efforts on energy efficiency, the results are visibly different.

Chairman KERRY. Mr. Hauge.

Mr. HAUGE. Well, I would echo that. In California, there was leadership, and you saw the resulting legislation that came out of it. I think that would be very helpful to have that same kind of leadership in Washington.

Chairman KERRY. I might add that California, I will remind people, is the sixth-largest economy in the world. And if California can move and embrace that, given the businesses that are there and the recognition, there is no excuse for a whole bunch of other places to not be able to move similarly.

This has been very, very helpful. There is a lot on the record. We are going to leave the record open for 2 weeks. There will be, I am confident, some questions submitted so that we can build that record. And I am very grateful to all of you. Your full testimony will be placed in the record as if delivered in full. All of it is very, very helpful to us, and we are deeply appreciative for you, many of you coming back, having testified previously at one time or another.

But thank you for your leadership. Thank you for what you are doing, and we need to get this job done. So let's go do it.

Thank you. Thank you, Senator Snowe.

[Whereupon, at 12:20 p.m., the Committee was adjourned.]

APPENDIX MATERIAL SUBMITTED

Senator John F. Kerry
Chairman, U.S. Senate Committee on Small Business and Entrepreneurship
"Small Business Solutions for Combating Climate Change"

Follow-up Questions to Witnesses

Energy Policy Act Provisions

For Mr. Horowitz (SBA):
In your testimony, you mention that the SBA and its collaborating agencies have "made progress" in developing a government-wide program to assist small businesses in becoming more energy efficient. This program was mandated in Section 132 of the Energy Policy Act of 2005, which passed more than eighteen months ago.

- **Can you be more specific as to what you mean by progress?**

  RESPONSE: The various Federal Agencies impacted by the Energy Policy Act of 2005 have each responded with the expertise within their Agency. Progress is easily shown by visiting the central information distribution website at the EPA's Energy Star Small Business website at http://www.energystar.gov/index.cfm?c=small_business.sb_index.

- **When do you anticipate this program will be accessible through SBA's website?**

  RESPONSE: SBA is in the process of updating it's website at www.sba.gov. When the upcoming update is complete, the program will be accessible through SBA's website.

- **Are there plans to market this program effectively to small businesses?**

  RESPONSE: The information within the Energy Star brochures and supporting material is being distributed to each of the SBA's field offices and those of our affiliates. These well-produced materials are the best source of information available and should be readily welcomed by anyone inquiring at any SBA location or that of our affiliates.

- **Can you please explain the service that will be provided by SBA through this Clearinghouse?**

  RESPONSE: Moving forward it is easy to see how the SBA can play a proactive role in helping small business owners become more energy efficient. Education and awareness by employees and volunteers in the offices of the SBA and our affiliates on a nationwide basis will cause change on multiple levels. While having the legislatively intended effect of lowering energy consumption and reducing carbon emissions, the dissemination of the information will have a secondary effect of raising awareness of the information in the everyday lives of people.

- **Does the Administration have any recommendations or thoughts as to how the SBA can playa proactive role beyond the constructs of the provisions included in the Energy Policy Act in helping small business owners across the country to become more energy efficient? Are there additional legislative steps that can be taken to optimize the Administration's work in this effort?**

  RESPONSE: For several decades the environmental health of the country has steadily inmproved as the awareness of citizens continues. The Energy Star program is a widely known program with a readily recognized national brand. Building on this firm foundation will allow the SBA to encourage entrepreneurs to cut costs while becoming more energy efficient and environmentally friendly. It also allows the SBA to utilize the best and most current information and regulatory changes throughout the entire Federal government without being forced to create, budget, staff and direct a separate full time office within the SBA for Energy Efficiency. Utilizing current technology the SBA's website allows us to direct the interested visitor directly to the extensive resource that is the Energy Star for Small Business website.

RESPONSE BY DANIEL HOROWITZ TO WRITTEN QUESTIONS FROM SENATOR LIEBERMAN

Question 1. I am unclear how the Environmental Protection Agency and the Small Business Administration work together to promote the ENERGY STAR program. Please describe exactly how the collaboration works. Do your respective agencies reach out to small businesses, or do you rely upon small businesses to contact you for assistance?

Answer. EPA and SBA staff have held a number of meetings and conference calls to comply with the requirements of EPAct 2005. As a result of SBA and EPA's collaboration, EPA now provides a full web page of SBA finance links which is available at *http://www.energystar.gov/index.cfm?c=small*__business.sb__index.

Question 2. What is the Small Business Administration's plan for reaching out to small businesses about the ENERGY STAR program? Does the SBA have an action plan? What is it?

Answer. The information within the Energy Star brochures and supporting material is being distributed to each of the SBA's field offices and those of our affiliates, These well-produced materials are the best source of information available and should be readily welcomed by anyone inquiring at any SBA location or that of our affiliates.

Question 3. I looked on the SBA's Web site to find information about green initiatives for small businesses, and could not find any links or content about ENERGY STAR or any other energy saving program. Can you explain why such information is not prominently available on the SBA's Web site? Do you intend to fix this omission?

Answer. SBA is in the process of updating it's Web site at *www.sba.gov*. When the upcoming update is complete, the program will be accessible through SBA's Web site.

Questions for Bill Wehrum from Senator Kerry

Q1: During the hearing on March 8th, Chris Lynch, Director of the Pennsylvania SBDC Environmental program, testified that with hands on technical assistance, small businesses can implement measures to save upwards of 30 percent on their energy costs. Mr. Lynch also testified that this technical assistance is most effective if it is done in a tailored way to meet the needs of individual small businesses. Would a technical assistance program similar to the one conducted in Pennsylvania under the supervision of Mr. Lynch be an effective way of helping small businesses reach their energy savings potential?

Answer:
Mr. Chris Lynch of the Pennsylvania Small Business Development Center (SBDC) testified that "hands-on" technical assistance, such as energy audits, is an effective means of providing assistance to small businesses seeking to improve their energy efficiency. EPA believes that technical assistance programs similar to the one operated by Mr. Lynch's organization are effective in assisting individual small businesses, and we are proud to have partnered with Mr. Lynch and the Pennsylvania SBDC for several years to bring ENERGY STAR tools and information to small businesses throughout Pennsylvania. The success of Mr. Lynch's program is evidenced by the fact that 6 of the 8 winners of the 2006 ENERGY STAR Small Business Awards are businesses that are clients of the Pennsylvania SBDC.

EPA does not provide energy audits for small businesses, or for companies of any size. There are many organizations, including SBDC's, state energy offices, utilities, and others that provide energy audits for small businesses free-of-charge. In addition, a large number of private companies, the majority of which are small businesses themselves, sell energy audit services in the marketplace. Rather than compete with these services, EPA instead focuses on providing information and tools to help small businesses learn the value of energy audits, and identify programs and providers that offer energy audits to small businesses.

Questions for Bill Wehrum from Senator Lieberman

Q1: You testified that the Environmental Protection Agency has already made progress in mainstreaming the need for small business to implement green initiatives, particularly through the ENERGY STAR small business program. Can you provide evidence to substantiate your claim?

Answer:
To see the mainstreaming of these issues among the small business community, one can look at the priorities of various organizations that serve the interests of small businesses and congregations. Organizations that serve a large number of small businesses and have partnered with ENERGY STAR in recent years, such as the National Small Business Association, National Automobile Dealers Association, and America's Small Business Development Center Network, now feature energy efficiency and green issues in their national conferences, in their committees, and on their web sites. Furthermore, a growing number of "green" organizations serving small businesses and congregations, such as the Green Restaurant Association, the Green Hotels Association, the Coalition on the Environment and Jewish Life, and the National Association of

Evangelicals' Re:Vision program, have been formed in recent years. These organizations are good resources for their members who wish to learn about the benefits of energy efficiency and green initiatives.

Q2: I am unclear how the Environmental Protection Agency and the Small Business Administration work together to promote the ENERGY STAR program. Please describe exactly how the collaboration works. Do your respective agencies reach out to small businesses, or do you rely upon small businesses to contact you for assistance?

Answer:
EPA and SBA staff have held a number of meetings and conference calls to coordinate response to the requirements of EPAct 2005. In addition, EPA maintains a long-standing relationship with the America's Small Business Development Centers (ASBDC), which are partially funded by SBA and which provide local business and financial counseling and support in all states. As a result of this collaboration, EPA now provides a full web page of SBA finance links which is available through our dedicated ENERGY STAR Small Business web page. In addition, EPA, in consultation with SBA and leading small business associations, developed new web content on financing energy efficiency initiatives for placement on the SBA web site. This content was provided to SBA for review in January 2007.

EPA conducts a significant amount of outreach to small businesses and congregations through the ENERGY STAR program. This outreach takes place through a wide variety of mechanisms, including dedicated web sites for small businesses and congregations, as well as through partnerships with dozens of industry associations and other small business-related organizations.

Due to the diverse nature of the small business community, EPA outreach and support to small businesses and congregations is coordinated through dedicated web sites found at http://www.energystar.gov/smallbiz and http://www.energystar.gov/congregations, in addition to the web pages for ENERGY STAR qualified products, and other ENERGY STAR offerings. Numerous small businesses and congregations visit these web sites searching for information on energy efficiency, resulting in more than 100,000 visits each year to the small business and congregation pages, and more than 4,000,000 visits to the general ENERGY STAR site. Those interested in receiving information from the ENERGY STAR program on an ongoing basis can join the ENERGY STAR Small Business and Congregations Network, and in recent years the network has had approximately 10,000 members participate.

The large number and variety of small businesses in the United States, coupled with the limited time available to small business owners to focus on issues such as energy efficiency, makes reaching out to these businesses a significant challenge. In order to cost effectively meet this challenge, EPA partners with a wide variety of membership and other organizations to convey the benefits of energy efficiency and ENERGY STAR resources to their small business and congregation members and clients. Following is a list of key partner organizations from recent years, including an indication of the numbers of small businesses benefiting from this outreach as requested by Ranking Member Snowe during the hearing on March 8, 2007:

- **America's Small Business Development Centers (ASBDC)** – More than 1,300,000 clients nationwide.
- **National Automobile Dealers Association (NADA)** – Approximately 20,000 members operating over 43,000 auto dealerships.
- **National Association of Manufacturers (NAM)** – Approximately 10,000 of NAM's 14,000 members are small businesses.
- **Green Restaurant Association (GRA)** – Approximately 4,000 members.
- **American Veterinary Medicine Association (AVMA)** – Approximately 20,000 members.
- **National Association of Evangelicals (NAE)** – Approximately 52,000 congregations.
- **State Interfaith Power and Light (IPL) Organizations** – Approximately 5,000 members of 20 IPL organizations.

The support provided through these organizations is aimed at informing small businesses and congregations of the financial and environmental benefits of pursuing energy efficiency, as well as the resources available from EPA and other organizations to assist them in their efforts. Activities implemented with partner organizations include:

- Partnering on campaigns to "challenge" the organization's membership to reduce energy consumption, and providing technical resources needed to implement the campaign.
- Development of sector-specific web pages on the ENERGY STAR Small Business site, providing tailored energy efficiency information for that sector.
- Development of sector-specific guidebooks that provide information on energy efficiency opportunities and strategies.
- Establishment of group purchasing programs to facilitate the purchase of energy efficient technologies by small businesses at discounted prices.
- Providing EPA speakers for conventions and other meetings to inform small businesses of the benefits of pursuing energy efficiency, and the resources available from ENERGY STAR.
- Enabling easy access to the full slate of ENERGY STAR resources by placing content and/or links to the ENERGY STAR site on the websites of partner organizations.
- Providing print materials on energy efficiency and ENERGY STAR for direct mailings to member small businesses.
- Writing articles for publication in magazines and journals of partner organizations.
- Promoting recognition opportunities available to small businesses through the annual ENERGY STAR Small Business Awards program.

In addition to the activities described above that directly benefit small businesses, many of the other activities undertaken by EPA under the ENERGY STAR program also provide significant benefit to small businesses. The following are just a few examples:

- The ENERGY STAR on office equipment, appliances, commercial food service equipment, and other products provides a clear indicator of the products on the market that are the most energy efficient. Without the ENERGY STAR on these products, a typical small business would not be able to make an informed decision when purchasing new equipment for its facility, and might pay higher utility costs as a result.
- EPA works with owners and managers of tens of thousands of office and other buildings across the country to assist them in making their buildings more energy efficient using ENERGY STAR tools and resources. When these building owners and managers invest in energy efficiency upgrades, the result is often a reduction in utility costs for occupants, many of which are small businesses.
- ENERGY STAR Partners include many companies, such as restaurant chains, that franchise or license a significant number of the properties operated under their names. As these companies learn more about the benefits of energy efficiency, they may provide this information to their franchisees as a way for these small businesses to reduce costs and improve their public image. They also may change corporate policies or modify building designs to enhance energy efficiency, which benefits the small businesses that operate the company's properties.

Q3: You testified that ENERGY STAR provides incentives for small businesses to become more energy efficient. But President Bush reduced funding for ENERGY STAR in the FY 2008 budget. How can you make an argument about incentives if funding has been reduced for ENERGY STAR?

Answer:
While EPA actively promotes existing financial incentives such as those made available to building owners through the Energy Policy Act of 2005, through utility programs, and through other organizations, EPA has never provided financial incentives to businesses of any type through ENERGY STAR. Instead we rely primarily on public and business-to-business recognition opportunities to provide an extra incentive for organizations to pursue energy efficiency. In FY 2008, EPA will continue to provide small businesses and congregations with the same types of non-financial incentives that have resulted in our substantial success to date, including exposure through the ENERGY STAR web site, and opportunities for local, regional, and national recognition through the annual ENERGY STAR Small Business Awards.

RESPONSE BY JAMES BARBER TO WRITTEN QUESTIONS FROM SENATOR BOND

Question 1. Your statement says that you have test plants of switchgrass producing measurable levels of natural plastic within its leaves and stems. The natural plastic that is produced within the leaves and stems will be extracted for use in everyday products, and the remaining biomass will be used for producing cellulosic ethanol or other biofuels, and will result in significant cellulosic ethanol cost reduction. Is this technology commercial yet?

Answer. No, the technology for this plant-based system is not commercial yet. We have successfully demonstrated feasibility, and are working on ramping up development efforts to reach field trials.

Ouestion 2. How soon do you think that you can achieve that objective?

Answer. With adequate funding, field trials can be reached in 4 years (2011).

Ouestion 3. Is there anything that we can do to help you with that R&D?

Answer. Metabolix is seeking to partner with the Government to adequately fund the project. Absent additional support; it will take significantly longer to reach field trials (8–10 years). Although the project directly addresses national goals, no programs have been funded at the Departments of Energy or Agriculture to support this type pf project.

The Energy Policy Act of 2005, Sec. 932, funded the biomass program to include research and development for bioproducts. Your help to convince and or require the Department of Energy or the Department of Agriculture to fund this R&D would be most helpful.

Additional Comments to US Senate Committee on Small Business and Entrepreneurship:
Hearing on Climate Change and the Implications for Small Business (March 8, 2007)

Submitted By
James J. Barber, President and CEO, Metabolix

Preface

In addition to the comments submitted to the record by Metabolix and the oral testimony given by James Barber, President and CEO of Metabolix, the following comments are also submitted for the record of the US Senate Committee on Small Business and Entrepreneurship Hearing on Climate Change and the Implications for Small Business, held on March 8, 2007.

Additional Comments

One of the central points discussed in the hearing involved the prospect of a regulatory approach to climate change, notably in the form of a carbon cap-and-trade mechanism. To date, most discussions regarding such mechanisms have focused on point source emitters such as power plants, and on transportation fuels. There are currently also a number of policy initiatives at the Federal level to promote the adoption of biofuels.

Nearly 10% of the oil we use is consumed in making plastics and chemicals – i.e., products. There is an excellent opportunity to stimulate and promote the adoption of biobased product alternatives to petroleum-based products by:

1. extending policy initiatives already in place for biofuels, such as the blenders tax credit for ethanol, to bioproducts; and
2. assuring that the mechanisms created in any carbon cap-and-trade or similar program include those positioned to select and adopt bioproducts as alternatives to petroleum-based products.

These steps would stimulate and promote significant opportunities to move away from petroleum-based, carbon emitting products to renewable products based on agriculture.

The focus of carbon credits and production offset systems and other policy initiatives have generally been on producers of electricity, bioethanol, and biodiesel. There is great opportunity, in many cases involving the efforts of small businesses, to develop and adopt clean technologies that will reduce greenhouse gas emissions and petroleum use. A carbon cap-and-trade system should be created to stimulate adoption of products and practices that capture or avoid carbon emissions. Specifically, production of bioproducts such as *Natural Plastic,* biopolymers, and bio-based chemicals should be included in any cap-and-trade system.

Metabolix urges the Senate Committee on Small Business and Entrepreneurship to push for climate change regulations such as a carbon credit trading system that includes production offsets for all industries that reduce greenhouse gas emissions, and to extend policies stimulating adoption of biofuels to include bioproducts as well. This policy extension would avoid government prescription of specific approaches to reducing greenhouse gas emissions and petroleum use (which current policies toward biofuels and particularly bioethanol do), and provide an environment in which market forces will guide capital to the most efficient solutions, including bioproducts as well as biofuels.

A central point in any carbon cap-and-trade system would be the allocation of the carbon credit. In order for such a system to provide incentives for industry to adopt cleaner products and practices, the credit should be allocated to the participant in the value-chain that drives adoption. In the case of bioproducts, to be most effective in stimulating adoption, the credit should go to firms purchasing bioproducts for use in the manufacture or packaging of products for end use. As another example, in the case of tax credits for transportation fuels, the current system provides a credit to the blenders who purchase ethanol. Extending the ethanol tax credit to bioproducts that replace petroleum-based plastics and chemicals in the manufacture of end-use products would reduce demand for petroleum, just as the credit has in the transportation fuel sector.

For example, a consumer products company would be stimulated to use bioplastics rather than petroleum-based plastics by virtue of the availability of a tax credit of similar value to the ethanol tax credit. This would promote more bioplastic production and therefore increase benefits to the environment and decrease petroleum use as incumbent petroleum-based products are displaced. Farmers would also see a better market for their crops, manufacturers would see more demand for bioproducts, and brand-owners and retailers would have more incentive to offer bioproduct-based items. Consumers would have an avenue for making a personal contribution to greenhouse gas emission reduction through the purchase of biobased products.

The same rationale would apply to a carbon cap-and-trade system aimed at reducing greenhouse gas emissions. Since bioproducts consume nearly 10% of oil used in the United States, it is important that such a regulatory approach to climate change include mechanisms to encourage the displacement of petroleum used in the production of plastics and chemicals, and the reduction of associated greenhouse gas emissions. We would be happy to discuss these ideas in more detail with your committee and others involved in developing climate change policy.

Sincerely,
James J. Barber
President and CEO, Metabolix, Inc.

Senator Olympia J. Snowe
Ranking Member, Senate Committee on Small Business and Entrepreneurship
Follow-up Questions to Small Business Administration
"Small Business Solutions for Combating Climate Change"

(1) Administrator Preston, as you know, both the President's Executive Order Number] 3-329 and a legislative provision I included in the National Defense Authorization Act for Fiscal Year 2006 provide preferences to manufacturing proposals for Federal contracts, awards, and grants under the Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STIR) programs.

Last Congress, the Small Business Reauthorization and Improvements Act of 2006 (S. 3778) included a similar preference for SBIR and STTR proposals that address renewable energy and energy efficiency. This bipartisan bill was voted out of the Small Business Committee unanimously but unfortunately was not considered by the full Senate.

Please detail for the Committee the SBA's views on this measure to stimulate small business innovation in the renewable energy Area? What other programs are available to small businesses looking participate in renewable energy innovation?

RESPONSE: Each agency sets their own procurement and technology strategy. SBA is not in a position to direct agencies on what their technology priorities should be.

There are several opportunities for small businesses looking to participate in renewable energy innovation. The most well known include the National Science Foundation, the Defense Advanced Research Projects Agency, and the Department of Energy's Office of Energy Efficiency and Renewable Energy.

Specifically, EPA provides the following programs:

ENERGY STAR for small businesses is a good start.
http://energystar.gov/index.cfm?c=small_business.sb_index
Our Green Power Partnership Program: http://epa.gov/greenpower/ Our Methane Programs: http://www.epa.gov/methane/voluntary.html

Also, S. 3788 included a provision that would have made the SBA's 7(a) express loans available to qualified small businesses wishing to purchase renewable energy systems or make energy efficiency improvements to their existing businesses. Please detail for the Committee the SBA's views on this provision? What other programs are available to assist small businesses in becoming more energy efficient?

RESPONSE: If a qualifying small business is interested in improving their energy efficiency there are a number of options before them. While SBA's 7(a) express programs are available, nearly every other loan program within the SBA portfolio could be utilized for that purpose. For opportunities outside of SBA, there are a number of opportunities that could be suggested: The

Department of Energy's Office of Energy Efficiency and Renewable Energy http://www.eere.energy.gov/ ; the Environmental Protection Agency's Energy Star Small Business website is an excellent resource for opportunities within the EPA and in several other Agencies as well.

(2) Administrator Preston, Congress has included contracting preferences for renewable **energy and renewable energy products in recent Federal statutes such as the Fiscal Year 2008 National Defense Authorization Act and the Energy Policy Act of2005. These preferences were intended to make government operations more energy-efficient while stimulating private-sector production of renewable energy with Federal dollars.**

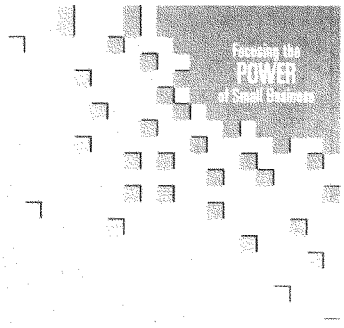
However, small businesses in my state of Maine are concerned that the Federal government has not done enough to bring small businesses into the Federal market for renewable energy. Specifically, a HUBZone project to revive the old Loring Air Force Base has been stalled because the SBA annual size standard cap of 4 million megawatt hours is well-below the annual output of a typical small power plant. In addition, Federal contracts for electricity last only 1 to 5 years, which is too risky to attract investment in renewable energy production by small firms.

Would the SBA commit to reviewing its size standards and the length of Federal electricity contracts to ensure that more small businesses can participate in the Federal renewable energy market?

RESPONSE: The size standard for electric power services defines a small business as one that generates or distributes not more than 4 million megawatts electric output per year. The size standard also requires that the small business be primarily engaged in the electric power industry.

The Office of Size Standards is reviewing whether to continue requiring the requirement for a small business to be primarily engaged in the industry. If that requirement were removed, it would allow a large business to own a subsidiary that would qualify as small. Therefore, we are also considering other changes to the size standard to prevent a subsidiary of a large business to qualify as small, such as applying an employee size standard to electric power services industry or another approach to solve that problem.

COMMENTS FOR THE RECORD



...Toward an Entrepreneurial Economy

Testimony

Partnership for Green Business Development (PGBD)

Presented to:

U.S. Senate, Small Business Committee

Presented by:

Mark H. Clevey, MPA
Vice President for Entrepreneurship

Small Business Association of Michigan (SBAM),
Entrepreneur Development Center (EDC)

March 25 2007

Introduction

I wish to thank Chairperson Kerry and members of the Senate Small Business Committee for the opportunity to address the Committee and to provide testimony on our proposal Partnership for Green Business Development. My name is Mark H. Clevey and I am the Vice President for Entrepreneurship for the Small Business Association of Michigan (SBAM) and Director of their Entrepreneur Development Center. I am also a specialist in green business development (see attached bio).

The United States is at the center of an all-or-nothing historical experiment to determine if a society can consciously and effectively re-engineer itself. Throughout history, all economies and societies have resulted from public-private interactions and partnerships. The U.S. has thrived in the past based on the strength of this partnership and its ability to create, retain, expand and attract large and affluent manufacturers to its shores. Globalization now calls for a balanced growth strategy: robust entrepreneurial growth from within (business creation, retention and expansion) coupled with traditional business recruitment (business attraction). America's future is now dependent on a new and robust public-private partnership that aims to build a new

economy based on entrepreneurship. One area that is particularly relevant for this new partnership is environmental and energy security.

The Small Business Association of Michigan (SBAM), Entrepreneur Development Center (EDC), calls for the United States to unleash the power of entrepreneurship to foster an environmental sustainability and energy security. SBAM EDC calls for the creation of a new Partnership for Green Business Development (PGBD) built upon two initiatives, described below.

Initiative One - Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)

Each year, by Federal law and with oversight of the SBA, Federal agencies that spent over $100 million on externally funded R&D in the prior year must set aside **2.5%** of their external R&D budget in the current year for the funding of small business technology development from design to prototype to commercialization through two programs: Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR). SBIR and STTR are the primary federal R&D programs that foster commercialization of federally funded research.

Accordingly SBAM calls for PGBD to work with Industry Representatives (i.e., Solar Energy Industries Association, ENERGY STAR Program, and Bio-based Industry Association, etc.) to identify technology needs in Renewable Energy, Energy Efficiency, Bio-Materials and other green areas. All SBIR R&D Agencies that have topics in the targeted technology areas would be required to identify R&D topics that matched the needs and give *priority of funding* to proposals in these areas. SBAM strongly recommends that the PGBD require *mandatory* Third-Party Cash Match using the program guidelines established by the National Science Foundation SBIR/STTR Phase I & II B programs.

Initiative Two - Transferable R&D Tax Credit

As 3M has aptly noted, Research and Development is the conversion of money into knowledge; commercialization is the conversion of knowledge back into money. Towards this end, SBAM EDC proposes the enactment of a new Transferable R&D Tax Credit that would facilitate the commercialization of SBIR/STTR research, conducted by cutting-edge small U.S. businesses and commercialized by small to medium sized U.S. manufacturers.

R&D Tax Credit

R&D Tax Credits are typically used to foster and stimulate the *invention* of breakthrough technology innovations. These tax credits offset the cost of research and are typically used by large companies with internal research and development capabilities.

R&D Tax Credits for large businesses make sense, from an economic development point of view, as long as there is a *high level of assurance that the successful results of the research and development will be commercialized in the U.S.* In-licensing, outsourcing, globalization, etc. all raise serious questions regarding the usefulness of traditional R&D Tax Credits. In the main, if no commercialization occurs, the R&D Tax Credit is not an effective economic development tool.

Within this context, there are a number of problems associated with traditional R&D Tax Credit proposals which makes it an ineffective economic development tool.

- *First*, cutting-edge High Expectation entrepreneurs generate most of the new technology, jobs and growth in the economy – they are the engines of economic prosperity. Many, if not most of these firms conduct research when they have no offsetting taxable revenue from product sales. They do pay lots of other taxes, however as well as fall into the highest utility rate class in the state. They also pay some of the highest labor rates because of their need for highly qualified employees. Lastly, these firms are also starving for capital to commercialize their breakthrough technology innovations.

- *Second*, most small to medium sized manufacturers:
  (a) Can't offshore their processes;
  (b) Need new products to stay competitive; and,
  (c) Can't afford either research and development or the start-up costs associated with the commercialization of new breakthrough products.

- *Third,* there are investors who do not invest in R&D but do invest in companies that are in the ramp-up phase of commercialization of breakthrough technology innovations.

Transferable R&D Tax Credit

The proposed Transferable R&D Tax Credit would simply be a new – albeit groundbreaking - variation of the current R&D Tax Credit. Under the proposed Transferable the small R&D firms would transfer their R&D Tax Credit to a U.S. manufacturer who will purchase a license to the new breakthrough technology and commercialize the successful research results in the form of new breakthrough products and/or processes. The Tax Credit will offset the start-up costs for the U.S. Manufacturer(s) associated with the commercialization of the new breakthrough products. The cutting-edge small business entrepreneurs will become a new and valued part of the U.S. Manufacturer's supply chain. The U.S. Manufacturer will increase sales and become an attractive investment opportunity for investors.

SBAM EDC recommends that the credit be applied to direct and indirect costs associated with the following research activities:

- The dollar of Federal SBIR and STTR grants and Third-Party Cash Match [1] *exclusively* for SBIR/STTR projects that have a Third-Party Commercialization Cash Match. [2]

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[1] Federal Small Business Innovation Research (SBIR) Program: (a) SBIR Phase I: Feasibility study; Proof of Concept research (SBIR – 6 month project up to $100K STTR – 12 month project up to $100K). (b) SBIR Phase II: Concept Development; full R&D (2-year award up to $500K). Phase IIB: Gap funding; Supplemental research to fit investor needs (NSF support - $50K to $250K, Investor support - $100K to >$750K). (c) Phase III: Commercialization stage; Commercial application (Private funding support).

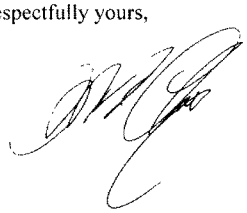
[2] The federal SBIR/STTR program requires that R&D grants demonstrate scientific, technical and commercial "merit." At the Phase I level commercial merit is demonstrated by a short discussion in a 25 page proposal. At the Phase II proposal level "commercial merit" is demonstrated in two ways: (a) A detailed Commercialization Plan that is reviewed by a minimum of three Commercialization Plan Reviewers; and, (b) An OPTIONAL Third-Party Cash Match ($.25.$1.00) Generally, those with Third-Party Cash Match receive "priority of funding" and are eligible to receive additional R&D dollars and commercialization training and assistance from the funding agency. The Third-Party Cash Match option is based on the premise that private sector interest and due diligence - in the form of Third-Party Match - is the best mechanism for determining real commercial merit.

- The cost of licenses for university technologies that: (a) were funded by U.S. tax dollars; and (2) are a fundamental part of the SBIR/STTR project.

- Cost associated with intellectual property protection.

I thank you for the opportunity to submit written testimony on this important proposal. Please do not hesitate to contact me with any questions.

Respectfully yours,



Mark H. Clevey, MPA
Vice President for Entrepreneurship

SECURING SMALL BUSINESS SOLUTIONS TO CLIMATE CHANGE: AN OVERVIEW

Summary of Remarks by
Michael C. Crabtree, Chairman and CEO
IdleAire Technologies Corporation

US Senate Committee on Small Business and Entrepreneurship
March 8, 2007

I congratulate the committee for holding the hearing for small business – a significant link to creativity, entrepreneurism and climate change, and hopefully a wise choice for investing in America's future.

In my 24+ years as an entrepreneur I have seen many small businesses both succeed and fail. There are many examples because they are all fueled by the American dream and opportunity of turning an idea or a concept into a success and possibly even a pot of gold at the end of the rainbow.

Small businesses start with an overwhelming amount of energy, excitement and an attitude that their concept of a product or service is the "best thing since sliced bread." While in reality the success quotient will be measured in (i) market attractiveness, (ii) a well researched and disciplined business plan, (iii) a smart, complementary, hard working and experienced management team and (iv) adequate capital to survive the inevitable peaks and valleys of the business venture.

Angel and venture capital investors have made a business out of investing in concepts and people. So money and capital are important ingredients. Most entrepreneurs know or quickly find out banks will not supply that need. Why, because banks are risk averse and, with regulation, look more for loan security.

Inevitably, the fledgling entrepreneurs turn to "friends and family" to fund a start-up. They make an "investment" in people to help, and the less likely cash in on a wild gamble. However, at this stage the essential ingredients to success are not known, may not have been adequately tested and have not progressed to a less risky venture capital "profile."

THREE PRACTICAL RECOMMENDATIONS

1. Investment is the best small business model where I believe the government could actually make a useful contribution. In professional golf, an aspiring professional seeks sponsors to back him financially for 1-2 years. It is an investment and a gamble. If the professional golfer is successful, both the golfer and the sponsors win.

If the professional golfer does not make it, he's had his opportunity and he is given his walking papers without having to repay the investment.

2. Governmental grants, SBIR programs, etc., especially those that provide "cost-effective" public benefits such as clean air, energy conservation, highway safety, etc. should be encouraged and monitored for effectiveness. Many times these governmental grants are used by local and regional governmental agencies to buy more infrastructure i.e. buses, construct green ways, etc. versus the intended purpose. In addition public agencies are the "gate keepers" to these funds, abhor private companies for using those funds cost effectively and believe private companies can not make important public environmental, energy or safety contributions.

3. IdleAire Technologies Corporation (www.idleaire.com) is an example of a small business with big and practical public benefits: jobs, clean air, conserved fossil fuel energy, improved public wellness, highway safety, etc. Our value proposition saves costs, improves the work environment and provides new revenues to different trucking industry players: truck owners, truck drivers and travel center owners, while simultaneously providing these public benefits.

   We applied to the DOT's TIFIA loan program and invested 2½ years and almost $2 million only to find we could not achieve an "investment grade rating" pre-requisite for capital to fund this very beneficial project. TIFIA, as it presently exists, is a typical governmental program that invests in well established, financially secure companies as opposed to investing in a "green" small business. TIFIA lost out is an ideal investment in a "green" company to investment from the commercial sector simply because its program was designed for "big business."

Stephen J. Gatto, Chairman and CEO, BioEnergy International LLC

March 19, 2007

Chairman John F. Kerry
Committee on Small Business & Entrepreneurship
Washington, DC 20510-6350

Dear Mr. Chairman, and Members of the Committee:

Thank you for the invitation to present written testimony in support of small business solutions to combat global climate change. I applaud your leadership, and offer the following comments.

In my view, we not only have the ability -- but the *responsibility* -- to make the world a better place for future generations. Small biotech companies are proving that we can go green, and achieve significant economic returns in the process.

Mr. Chairman, my message is simple yet profound -- we are at a transitional moment in history, and technological breakthroughs spurred by small biotech businesses have ushered in the next industrial revolution with biorefineries.

Using ethanol fuel as our initial revenue stream, BioEnergy, with less than 20 employees, aims to change the world through the commercialization of cellulosic technology. With entrepreneurship, small business can lead with renewable technology solutions to tackle global climate change. In the process, we can grow our economy with new biotech and manufacturing jobs throughout the US; improve our energy independence and trade deficit by reducing imports of foreign oil and exporting innovative new products; and save our environment for future generations.

In my view, for the United States to maintain its global moral leadership, we must evolve from a carbon to a carbohydrate economy using ethanol as the catalyst to spark this transformation. There is a lot of discussion these days about energy

independence, and the opportunity to replace foreign oil with homegrown ethanol fuel from corn or other biomass. Not only is this achievable now, but with biorefinery platforms either from corn or cellulosic materials, we can make cleaner fuels, and environmentally beneficial products that will transform ourselves from a hydrocarbon economy to one based on renewable carbohydrates.

While skeptics say the technology is years away, BioEnergy has proved its technological viability having operated three cellulosic pilot plants for over 60,000 consecutive hours on a multitude of feedstocks. All that is needed is the collective will to commercialize cellulosic ethanol technology. The Renewable Fuels Association estimates there are currently 114 traditional ethanol plants in operation, capable of producing about 5.6 billion gallons of ethanol a year. Some 78 are under construction and seven are up for expansion. While the increase in traditional corn-based ethanol over the last two years has been historic and extraordinary, cellulosic technology will achieve exponential environmental benefits and unleash a global industrial revolution.

Cellulosic technology converts cellulose from plant material from diverse biomass – such as corn stover, switch grass, sugar bagasse, yard and wood waste – to sugar rather than fermenting sugar from corn to produce ethanol fuel. The Department of Energy (DOE) estimates that the United States could produce more than a billion tons of cellulosic material annually for ethanol production. In theory, this could produce enough ethanol to replace about 30 percent of the country's oil consumption.

To meet the President's laudable target of 35 billion gallons of alternative fuel by 2017, support from the Federal Government to build the first commercial cellulosic plants is critical. This includes bi-partisan support for an aggressive expansion of the Renewable Fuels Standard (RFS), and full funding for the DOE and US Department of Agriculture (USDA) ethanol loan guarantee programs and the DOE's cellulosic grant programs.

With this investment, the Federal Government would spark a biorefinery industrial revolution that would dramatically improve our air, water, and overall quality of life -- with cleaner burning fuels and products manufactured from biomass waste and abundant renewable resources. This will have a threefold benefit – reduce our environmental footprint; enhance our national security with energy independence; and generate trillions of dollars in new domestic revenue from products that will help the United States reduce its trade deficit and maintain a competitive edge in the new global economy.

According to the 2003 *White Biotechnology Refinery* report by McKinsey, biorefineries could generate $2-3 trillion in new value worldwide. Rapid advances in drug development, cancer research, and gene therapy are creating the genetic tools required for innovative "Industrial Bioprocessing" techniques

that compete with traditional production technologies. This has spurred improved industrial applications of newly discovered enzymes that have additive benefits to tolerate extreme hot, saline, acidic or alkaline conditions. I highlight this data as a testament that going green for the environment translates into green dollars for profitability. And the US can lead this new environmentally friendly global industry.

The DOE states in a 2003 report, *Industrial Bioproducts: Today & Tomorrow*, that fully integrated facilities will process grain or biomass crops into a full range of products that will represent 20% of production, yet account for 80% of profits. By operating with a highly flexible and profitable product output, the biorefinery will be able to get the most value from a bushel of biomass, while optimizing overall profitability. In 2004, the DOE further identifies twelve building block chemicals that can be produced from sugars via biological or chemical conversions. These twelve can then be converted to high-value bio-based chemicals or materials. These statistics present a compelling story that American entrepreneurship, using domestic waste and renewable resources, can combat global climate change, fuel energy independence and power a new economy.

The science is here today to convert our current and future ethanol plants to biorefineries. Gene shuffling and metabolic engineering has given way to dramatic technological advances to use a broad array of feedstocks. As R&D drives down costs, distributed cellulosic biorefineries become cost competitive.

I know this from proven experience. Affectionately referred to as the village idiot by some of your colleagues when I would visit Washington DC over 14 years ago, I have since had the privilege of serving on Presidential Committees (under Bill Clinton and George W. Bush), as well as Congressional Committees (helped craft Energy Policy Act). In Massachusetts, I founded BC International, and have experience as a successful real estate developer with Arro Building Services. I currently serve as Chairman and CEO of BioEnergy International, LLC.

As a pioneer in cellulosic ethanol, BioEnergy International, LLC is committed to develop and deliver next generation technologies to produce clean, environmentally beneficial fuels and specialty chemicals from renewable sources. BioEnergy is proudly headquartered in Massachusetts, and is evaluating sites for the co-location of our corporate offices and first-of-its-kind, world-class cellulosic technology research and development facility. We are building two 108 million gallon per year ethanol plants – the firsts for Pennsylvania and Louisiana.

Our Advisory Board includes former CIA Director Jim Woolsey and former National Security Advisor Bud McFarlane. Our world-renowned technology team includes Dr. Joe Glas (former VP DuPont over 34 years), Dr. Lonnie Ingram (University of Florida), and Dr. Mohammed Moniruzzaman (Former Genencor, BC International, now Celunol). We have proprietary IP in both processes and microorganisms for cellulosic biorefineries. We have innovative collaborations

with partners, represented by an offtake agreement with Getty Petroleum, and license agreement with Purac to make d-lactic acid for biodegradable products.

We have proved that we can make homegrown fuels and products from renewable sources through biorefineries. The renewable fuel will reduce harmful greenhouse gas emissions, help achieve energy independence, spur economic development in communities throughout the United States, and create new trillion dollar markets through specialty chemicals. In short, biorefineries can generate astounding new revenue and significantly reduce the environmental footprint left by years of chemical disposal.

The benefits of ethanol fuel alone are staggering according to the Natural Resource Defense Council, which predicts the following environmental benefits from increasing the use of cleaner burning fuels, made from plant materials, to power our cars:

- **Biofuels can slash global warming pollution.** By 2050, biofuels -- especially those known as cellulosic biofuels -- could reduce our greenhouse gas emissions by 1.7 billion tons per year. That's equal to more than 80 percent of current transportation-related emissions.

- **Biofuels can be cost competitive with gasoline and diesel.** By 2015, we could produce biofuels at costs equal to between $0.59 and $0.91 per gallon of gasoline, and $0.86 per gallon of diesel. These prices are competitive with average wholesale prices over the last four years -- $0.91 per gallon for gasoline and $0.85 per gallon for diesel.

- **Biofuels will provide a major new source of revenue for farmers.** At $40 per dry ton, farmers growing 200 million tons of biomass in 2025 would make a profit of $5.1 billion per year. And that's just the beginning. Experts believe that farmers could produce six times that amount by 2050.

- **Biofuels can provide major air quality benefits.** Biofuels contain no sulfur and produce low carbon monoxide, particulate and toxic emissions. Using biofuels should make it easier to reach air pollution reduction targets than using petroleum-based fuels.

- **Biofuels offer major land-use benefits.** Switchgrass, a promising source of cellulosic biofuel, is a native, perennial prairie grass that has low nitrogen runoff, very low erosion, and increased soil carbon, and also provides good wildlife habitat.

In addition to reducing harmful greenhouse gas emissions, the Governor's Ethanol Coalition in December 2006 suggested that the goal of providing only 20% of the nation's gasoline supply from biofuels would deliver extraordinary economic and security benefits to the nation, including:

- Approximately 60 billion gallons of annual ethanol production, an amount equal to about 25 % of projected future gasoline demand in 2030;
- $52 billion a year in avoided oil imports, creating lasting reductions in our trade deficit;

- $110 billion of direct economic activity each year with the total impact to the nation's economy of $368 billion a year; and
- 2.4 million new jobs.

All of these benefits are achievable with cellulosic biorefineries.

Specifically, BioEnergy's proprietary microbial platform has expedited the cost efficiencies and environmental benefits of cellulosic processes. I submit we have already surpassed the DOE cost projections for some feedstocks, such as bagasse and wood waste. Small biotech firms like BioEnergy have led through innovation, and now need Federal leadership to help build the first few commercial demonstration plants. The Federal Government would send a powerful message on its commitment to combat global climate change by embracing an expansion of the RFS and financial commitment to cellulosic loan guarantee and R&D programs.

BioEnergy's team knows from over 10 years of experience processing bagasse, that we can deliver cost effective technology that will stand as an example of how cellulosic ethanol can be cost competitive and be retrofitted to traditional ethanol plants – whether US corn based or Brazilian sugar mill facilities. BioEnergy's team – while previously at BC International has proven results: designed, built and operated 3 separate cellulosic pilot plants ranging in size from 1 ton to 12 ton on a 24 hour operating basis; validated unit ops for entire system; processed more than 3000 tons of various biomass (bagasse, rice hulls, straw, wood waste, paper sludge); generated several hundred thousand gallons of hydrolysate; achieved over 90% yields first stage sugar recovery; completed over 700 successful scale up fermentations (3/60/200/900 working volumes, achieved >94% conversion with +/- 2.4% std dev) and completed design for a stand alone 23 million gallon plant.

Our strategic business plan would accelerate the commercialization of cellulosic technologies with an integrated cellulosic biorefinery strategy using our two 108 million gallon per year traditional corn-based ethanol plants, a proposed cellulosic pilot plant co-located with one of our corn plants, and an integrated R&D bench scale facility to optimize cellulosic applications. Combined, our facilities would speed to market next generation biorefineries, and will stand as an example of how cellulosic ethanol can be cost competitive and retrofitted to existing facilities.

We are confident our plan will create economic efficiencies by co-locating our pilot plants with cheap ethanol sugar platforms — to generate cleaner burning fuels and environmentally beneficial products. This will create fully integrated facilities that will process grain or biomass crops into a full range of products, including plastics and chemicals. Our biorefinery products could represent a fraction of production, yet account for a majority of profits. By operating with a highly flexible and profitable product output, our biorefineries will maximize value

from waste – current environmental liabilities – and turn that into revenue by creating innovative new environmental products, thus optimizing overall profitability and saving valuable resources for future generations.

We intend to launch our integrated project in Pennsylvania, the birthplace of the petroleum industry. In 1859, the world was changed forever by an event that took place near Titusville in northwestern Pennsylvania. On August 27, Edwin L. Drake struck oil in the first commercially successful well drilled specifically for oil and launched the modern petroleum industry in the United States.

Consistent with Drake's first *commercial* oil well, we strive to usher in the first *commercial* cellulosic plant in the US. Similar to Drake launching the last industrial revolution with oil, BioEnergy demonstrates the potential of small business innovation to launch the next revolution, which is vital to stem global climate change.

While we remain committed, we need leadership from the Federal Government. I am heartened by the bi-partisan support to expand biofuels, and recommend full funding of ethanol programs in the Energy Policy Act. I strongly endorse provisions that would address three areas: cellulosic ethanol fuel production, infrastructure delivery, and Flex Fuel Cars. As stated previously, I urge an immediate expansion of the RFS. The good news is American entrepreneurship has met the challenge of the RFS. The bad news is the market expects a glut of ethanol starting as early as third quarter this year with estimates of 8 – 10 billion gallons of ethanol as scores of new plants come on line. We need an expansion of the RFS to replace oil with ethanol, and incentives and mandates for infrastructure, such as E85 pumps, as well as incentives and mandates for Flex Fuel Cars. With these targets in mind, I recommend corresponding provisions in bills pending before Congress, such as those in the BioFuels Security Act, the Biofuel Act of 2006, and the Progress Act. I also support recommendations of the Twenty by Twenty Coalition. As before, I again commend and embrace the biofuels initiative of the Natural Resources Defense Council:

- **Invest in a package of research, development and demonstration.** Producing a cheap and reliable alternative to oil will be lucrative business, but the industry alone will take too long to develop the new technologies needed. The government can spur the development along -- and ensure that biofuels are affordable for American consumers -- by investing about $1.1 billion between 2006 and 2015 in biofuels development.

- **Offer incentives for deploying the first billion gallons of cellulosic biofuels.** With oil prices skyrocketing and greenhouse gas emissions piling up, we need to shift to biofuels today, not in the distant future. To make sure that at least 1 billion gallons of cellulosic biofuels are produced by 2015, the government should offer $1 billion in incentives to production facilities.

- **Give consumers a meaningful choice at the pump.** Today, drivers have a choice between oil and oil when they wheel up to the gas pump. To change that -- to provide a choice between oil and biofuels -- will take robust markets and infrastructure. And to that end the government should require that all vehicles sold by 2015 be able to use both

traditional fuels and biofuels and that at least one-quarter of gasoline stations have at least one pump dedicated selling to biofuels.

Finally, in addition to enhancing domestic production and use of biofuels, I laud the goal of the President's recently announced US-Brazil Biofuels Partnership to establish ethanol as a global commodity to displace oil. However, I caution that we need to maintain the 54-cent tariff on imported ethanol, and encourage increased imports only as a function of an expanded RFS as we ramp-up domestic cellulosic capacity. Otherwise, we will jeopardize energy independence by substituting foreign oil with foreign ethanol.

In conclusion, BioEnergy International LLC demonstrates that small businesses can – and must – play a dramatic role in combating global climate change. Our ultimate goal is to deliver alternative fuels and higher value products directly to market to fuel a biorefinery industrial revolution and energy independence.

Through innovation, we have proven that the science is here. As a low cost renewable sugar platform, traditional corn-based ethanol is the low hanging fruit to get biofuels into the consumer market, strengthen existing systems, and generate new jobs and revenues for economic patriotism. With an expanded RFS and Federal support to commercialize cellulosic ethanol, we achieve energy independence with distributed biomass co-generation plants that provide cleaner, efficient energy/electricity with lignin and biomass boilers. This in turn will lead to expansion of specialty fuels and chemicals that would provide optionality in a range of new environmental products. Bottom line, cellulosic technology changes the game for small businesses to spur $2-3 trillion in new value worldwide.

BioEnergy International has a slogan – *The Best Way to Predict the Future Is to Invent It Yourself.* We thank you for your leadership, and look forward to working closely together to stem global warming to ensure we all have a future.

Sincerely,

Stephen J. Gatto
Chairman and CEO
BioEnergy International LLC

Written Testimony of
Andrew J. Kruse
Executive Vice-President/Co-Founder of Southwest Windpower

Before the
Committee on Small Business and Entrepreneurship United States Senate

March 21, 2007

Chairman Kerry, Ranking Member Snowe, honorable members of the committee, my name is Andrew Kruse and I am the Executive Vice-President and Co-Founder of Southwest Windpower. It is an honor for me to submit written testimony and share my thoughts on how small entrepreneurial companies such as mine can contribute to meeting the challenge of Climate Change.

It has become obvious to most Americans and a large majority of the scientists around the world that the current changes occurring in our climate are a direct result of human interaction. There are many contributors to the changes we are experiencing in our environment. These range from the burning of rainforests in Central America to the processing of oil in the tar sands of Northern Canada. One of the greatest contributors however is the burning of fossil fuels for the generating of electricity.

Our society is heavily dependent on electricity. According to the EPA, the production of electricity is by far the largest contributor to Co2 emissions.[1] However, neither I nor anyone could imagine a world without electricity. Its use is a fundemental part of our society. Fortunately for all of us, innovation has and will contribute to making those critical changes necessary to reduce our impact on the planet while at the same time not alter our way of living. Small entrepreneurial companies such as mine are capable of leading this change.

According to the SBA, 50% of America's GDP comes from small business, of that 30% are from manufacturing and mining (excluding farming). However, since 2001, the number of manufacturing jobs has been on the decline[2]. Small renewable energy companies are sprouting up across the country, with the right federal policy, this could grow exponentially.

There is a long list of tasks our Government could implement and many of those were stated in Al Gore's speech to the Senate hearing on Wednesday. I will keep this to just a few points.

1) Research Investment: Historically, the federal government has used programs such as SBIR and direct assistance by DOE to work with small companies to develop products. There are countless products started through government/small businesses ventures of which America has to be proud.

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[1] http://epa.gov/climatechange/emissions/co2_human.html#fossil
[2] http://www.sba.gov/advo/research/rs218tot.pdf

Unfortunately, in the past few years, much of the money that once helped small companies (specifically for small distributed wind) has been eliminated.

2) Consumer Investment incentives: Investment incentives are critical to the development of a new industry such as residential renewable energy systems. They help by driving down the cost of technology for a period while the industry ramps up production. Current legislation such as Senator Salazar's S.673, the "Rural Wind Energy Development Act" and S.590 "Securing America's Energy Independence Act" do just that.

3) National Net-metering and Interconnection policy: The PURPA law of the late 1970's initiated the use of distributed energy technologies. However, utilities often block individuals and small businesses from connecting solar and small wind systems to the grid through the requirement of exorbitant fees. A universal net-metering and interconnection policy such as the one recommended by Congressman's Jay Insley's Home Energy Generation Act would accomplish such as task.

American homes are responsible for approximately 15% of the total Co2 emissions. Today, according to the Solar Energy Industry Association, enough grid connected solar PV and small wind has been installed to power over 80,000 homes. In terms of Co2 savings, this is equivalent to 7.7 Million metric tons. As many as 40 million homes in America could use solar and/or small wind technologies eliminating millions of tons of Co2 emissions.

Southwest Windpower is an example of what small businesses can do. We are a 20 year old business that began in a small garage north-east of Flagstaff, Arizona with a focus on developing innovative small wind generators that are used to supply electricity in rural parts of the world. Today, we are the world's leading manufacturer with over 100,000 machines produced to date. We have distributors in over 88 countries with half of our business in exports. In 2002, the Export/Import Bank of America awarded us "Small Business Exporter of the year". Since then we have won numerous awards for excellence and design.

Senator Kerry and Senator Snowe, I again would like to thank you for your invitation to allow me to submit this testimony. Should you have any questions, please feel free to contact me at any time.

Respectfully,

Andrew Kruse
Vice President of Business Development

Testimony by Scott Sklar, President, The Stella Group, Ltd.
Invited Submission to -
The Senate Committee on Small Business and Entrepreneurship
March, 2007, Washington, DC

TESTIMONY STATEMENT –

I wish to thank the Committee for exploring impacts of Small Business in addressing challenges of our changing global climate.

I have three basic points, I wish to convey.

First - As we know, unless we make the market function, all these rules and whims won't work. Even a tiny fee on carbon fuels will send important market signals. So at the end of this testimony, scores of businesses have signed onto a letter to this effect to show it would not end life as we know it if we add small fees onto carbon fuels. I've always felt both environmental and energy issues are better moved forward if they become less politically-charged, emphasize moderate actions that both individuals and businesses can latch onto. I also believe that while we fixate on bigger corporations rather than focus on to where most of the jobs and economic vitality come from -- small and medium size businesses.

Second – Congress should empower the Small Business Administration (SBA) to act in two areas. First, develop specialized lending windows to alternative energy manufacturers, distributors, and installation and service companies – so as to 'jump start' the delivery mechanisms of cleaner energy technologies and applications. Second, establish lending programs geared towards small businesses who are facing increased energy bills, frequent loss of energy. mercurial pricing, poor electric power quality which causes loss of digital equipment and business, as well as increased pollution and greenhouse gas output. When I asked SBA if they focus on energy and can help businesses in the aftermath of Katrina – they responded "no". It's time to enhance the Agency to be more creative and more relevant to energy and environmental needs.

Third – we must "harden" our critical infrastructure due to more intense weather patterns, changes in water tables and tides, loss of energy and water due to human error, terrorism, embargoes, and effects of climate change. This means greater use of energy efficiency and renewable and distributed energy resources by small businesses.

The federal government through successive administrations has promoted energy efficiency, and the leas so far has been in the US Department of Defense.\ These successes come from a diverse set of professionals within the Defense structure – at all levels from technical to analytical professionals, commanders at the theater of war, base commanders and logistical staff, to politically-appointed program leaders spanning five

Administrations. They deserve to be thanked, and I so do, as well as further supported, funded, and encouraged.

Additionally, five Administrations have issued Executive Orders, the most recent under President Bush are:

- May 16, 2003: #13212 Expedited Energy-Related Projects: to increase energy production and conservation and includes DOD

- September 30, 2001 #13138 PCAST Executive Order:

- July 31, 2001: Standby Power Devices: Watt for Standby Power which can include On-Site Power augmentation

The commercial markets are growing at 30 percent per year for these new energy technologies and products. As a result, we now have the commercial technology now for practical utilization:

Recyling - vehicle lubricating oil – to be reused at the highest grade and with a diesel fuel byproduct rather than the lower grade recycled fuel with no. 6 fuel oil used now. Waste cooking and seed oils – small on-site biodiesel units sized to the oil seed or waste oil stream. Waste heat – using heat from pipeline pumps, diesel engines, and compressors for water heating and electricity. And, unused wood and paper packaging – small biomass gasifiers for onsite electricity production from wooden moving pallets to demolition waste

Remote power and critical infrastructure – small device battery charging, battery charging, uninterruptible cellular or perimeter security, pipeline water and fuel pumps, powering tents, 'drop and play' units, solar lighting, and wind and solar generator units. Super light weight photovoltaics materials for tarps and tents, fuel cells, and other DG devices

Diagnostics, assessment and performance: - through using WIFI, beeper and cellular technologies can remotely track actual energy system performance, anticipate technical problems, and also assess future capacity performance of installed systems through advanced renewable resource assessment.

Building-based energy - solar water heating, solar air-conditioning either driving compressors or thermally-driving absorption coolers, ground-coupled heat pumps, thermal barrier paints and coated windows, smart controls and thermostats, and A/C ready small wind systems,

and building integrated photovoltaics, bundled LED lighting, etc., microhydropower, modular biomass, and combined heat and power systems.

The clean technology options are endless and most emanate from small businesses. The installation and service sector is entirely small business. The greatest and most beneficial endusers are also small businesses because they are exposed to the highest energy rates and the greatest harm due to loss of energy.

I implore the Senate Committee on Small Business and Entrepreneurship to periodically track progress of energy lending by the Small Business Administration and urge the Congressional Appropriations Subcommittee involved with SBA to also become more attentive in this area. Collaborate with DOE on establishing a fuel portfolio which will ensure the small business sector is more agile, has lower logistical support needs, and far more resilient against challenges. Thank you.

RESPECTFULLY SUBMITTED -

Scott Sklar
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The Stella Group, Ltd.. is a strategic marketing and policy firm for clean distributed energy users and companies which include advanced batteries and controls, energy efficiency, fuel cells, heat engines, minigeneration (natural gas), microhydropower, modular biomass, photovoltaics, small wind, and solar thermal (including daylighting, water heating, industrial preheat, building air-conditioning, and electric power generation). The Stella Group, Ltd. blends distributed energy technologies, aggregates financing (including leasing), with a focus on system standardization. Scott Sklar, the Group's founder and president, lives in a solar home in Arlington, Virginia and his coauthored book:The Forbidden Fuel will be re-released in 2007 for its 2nd printing, and A Consumer Guide to Solar Energy, was re-released for its third printing. His Q&A Column appears on the largest clean energy web portal: www.renewableenergyaccess.com.

Scott Sklar serves as Steering Committee Chair of the Sustainable Energy Coalition, composed of the renewable energy and energy efficiency trade associations and analytical groups, and sits on the national Boards of Directors of the non-profit Business Council for Sustainable Energy, Renewable Energy Policy Project, and the Sustainable Buildings Industry Council.

ADDENDUM #1

PRESIDENT CLINTON -
Presidential Documents
Federal Register
Vol. 64, No. 109

Tuesday, June 8, 1999
Title 3—
The President
Executive Order 13123 of June 3, 1999
Greening the Government Through Efficient Energy
Management
By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Energy Conservation Policy Act (Public Law 95–619, 92 Stat. 3206, 42 U.S.C. 8252 et seq.), as amended by the Energy Policy Act of 1992 (EPACT) (Public Law 102–486, 106 Stat. 2776), and section 301 of title 3, United States Code,

Section 101. Federal Leadership. The Federal Government, as the Nation's largest energy consumer, shall significantly improve its energy management in order to save taxpayer dollars and reduce emissions that contribute to air pollution and global climate change. With more than 500,000 buildings, the Federal Government can lead the Nation in energy efficient building design, construction, and operation. As a major consumer that spends $200 billion annually on products and services, the Federal Government can promote energy efficiency, water conservation, and the use of renewable energy products, and help foster markets for emerging technologies. In encouraging effective energy management in the Federal Government, this order builds on work begun under EPACT and previous Executive orders.

PART 2—GOALS
Sec. 201. Greenhouse Gases Reduction Goal. Through life-cycle cost-effective energy measures, each agency shall reduce its greenhouse gas emissions attributed to facility energy use by 30 percent by 2010 compared to such emissions levels in 1990. In order to encourage optimal investment in energy improvements, agencies can count greenhouse gas reductions from improvements in nonfacility energy use toward this goal to the extent that these reductions are approved by the Office of Management and Budget (OMB).
Sec. 202. Energy Efficiency Improvement Goals. Through life-cycle cost-effective measures, each agency shall reduce energy consumption per gross square foot of its facilities, excluding facilities covered in section 203 of this order, by 30 percent by 2005 and 35 percent by 2010 relative to 1985. No facilities will be exempt from these goals unless they meet new criteria for exemptions, to be issued by the Department of Energy (DOE).

ADDENDUM #2
LETTER:

IT IS TIME TO ENACT A FEE ON THE CARBON CONTENT OF FUELS

AS PART OF THE MIX OF STRATEGIES FOR ADDRESSING CLIMATE CHANGE

March 20, 2007
Members
U.S. Senate, U.S. House of Representatives
Washington, D.C. 20510/20515
Attn: Climate Change, Energy, or Environmental Policy Staff Person
Dear Senator/Representative:
We, the undersigned business, environmental, consumer, faith-based, energy policy, and other organizations and individuals are writing to urge the U.S. Congress to enact some form of fee on the carbon content of fuels as part of a larger mix of strategies for addressing climate change.
Given the immense scope and immediacy of the problem of global climate change, it is necessary to employ a broad range of strategies to significantly reduce total energy use and to encourage the rapidly expanded use of non-fossil and non-nuclear renewable sources of energy. The mix of policies should include much tighter mandatory efficiency standards for vehicles, appliances, lighting, buildings, electricity generation, and industrial processes as well as the required use of renewable energy for electricity, transportation fuels, and heating and cooling.
Greatly increased tax incentives to encourage the use of energy efficient and renewable energy technologies as well as much higher levels of funding for research, development, and – particularly – procurement and deployment of sustainable energy technologies are also needed.
In addition, however, some form of user fee based on the carbon content of fuels is essential.
A carbon fee is arguably the most transparent, universal, equitable, understandable, and immediate way to internalize the true environmental cost of consuming the fossil fuels that contribute to climate change.
Such a fee is also relatively easy to administer and makes the best use of the marketplace to encourage a rapid shift in energy use away from coal, oil, and gas towards more energy-efficient and/or renewable energy sources.
We recognize the concern that such a fee could, initially, pose some hardship for lower-income consumers and therefore believe that it should be accompanied by tax-shifting – and possibly revenue-neutral - offsets such as reductions in payroll or other taxes, larger tax credits for lower-income citizens, or increases in programs such as weatherization and mass transit that directly assist citizens to reduce their total energy use. Thoughtfully crafted offsets could actually produce net benefits for recipients.
In addition, a portion of a carbon fee could be earmarked for a dedicated fund to invest in, and encourage, expanded use of energy-efficient and renewable energy technologies or for other important social purposes such

as deficit reduction.
However designed, though, we believe that some form of carbon fee must be made a key element of a wider strategy for addressing climate change and it should be among the measures considered and enacted by the U.S. Congress in the very near term.
We appreciate your consideration of these views and look forward to working with you on this most important issue.

Sincerely,
(Organizational Signers – Listed by Organization Name)
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