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THE U.S. CLIMATE ACTION PARTNERSHIP

HEARING

BEFORE THE

COMMITTEE ON ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

JANUARY 15, 2009

Serial No. 111–1

Printed for the use of the Committee on Energy and Commerce
energycommerce.house.gov

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[1] Mr. Immelt and Ms. Claussen did not respond to submitted questions for the record.

[2] Messrs. Lash, Nolen, Rowe, Crane, Tercek, and Sterba did not present oral statements at the hearing.

[3] Mr. Rowe did not submit a prepared statement for the record.

THE U.S. CLIMATE ACTION PARTNERSHIP

THURSDAY, JANUARY 15, 2009

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The committee met, pursuant to call, at 9:15 a.m., in room 2123, Rayburn House Office Building, Hon. Henry Waxman (chairman of the committee) presiding.

Present: Representatives Waxman, Dingell, Markey, Pallone, Rush, Eshoo, Stupak, Green, DeGette, Capps, Doyle, Harman, Schakowsky, Gonzalez, Inslee, Baldwin, Matheson, Butterfield, Melancon, Barrow, Hill, Matsui, Christensen, Castor, Sarbanes, Murphy of Connecticut, Space, McNerney, Sutton, Braley, Welch, Barton, Hall, Upton, Whitfield, Shimkus, Shadegg, Blunt, Pitts, Bono, Walden, Terry, Rogers, Murphy of Pennsylvania, Burgess, Blackburn, and Gingrey.

Staff Present: Phil Barnett, Staff Director; Kristin Amerling, Chief Counsel; Karen Lightfoot, Communications Director and Senior Policy Advisor; Greg Dotson, Chief Counsel, Energy and Environment; Alexandra Teitz, Senior Counsel; Lorie Schmidt, Senior Counsel; Earley Green, Chief Clerk; Caren Auchman, Communications Associate; Zhongrui "JR" Deng, Chief Information Officer; Rob Cobbs, Policy Analyst; Matt Weiner, Special Assistant; Alex Barron, Professional Staff; Melissa Bez, Professional Staff; Carla Hultberg, Deputy Clerk for Technology and Communication; Caitlin Haberman, Staff Assistant; and Matt Eisenberg, Staff Assistant; Amanda Mertens Campbell, Minority Counsel; Andrea Spring, Minority Professional Staff; Jerry Couri, Minority Professional Staff; Peter Spencer, Minority Professional Staff; and Garrett Golding, Minority Legislative Analyst.

Mr. WAXMAN. The meeting of the Committee will please come to order. We are here today for a hearing. And before we even call our witnesses in the room, we are going to recognize members for opening statements.

Mr. Pallone, are you prepared for your opening statement?

Mr. PALLONE. Sure.

Mr. WAXMAN. The gentleman is recognized for 5 minutes.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Mr. Chairman.

I want to first thank you all for—I was going to say thank all the panel, but they are not here yet, so I will forego that.

The U.S. Climate Action Partnership, USCAP, has called for leadership in calling for national legislation to slow, stop, and reverse the growth in greenhouse gas emissions. It is encouraging to see such a broad coalition of leaders from the energy industry, financial services, and the environmental community working together to reduce carbon emissions. Everyone here understands the serious threat global climate change represents to the world.

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change predicted serious risks and damages to species, ecosystems, and human infrastructure if action is not taken to reduce emissions. It is time for Congress to pass legislation that will set the necessary emission reduction targets and will ensure we meet those targets in the short and long term. We cannot afford to wait another year to act.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Pallone follows:]

Statement of Rep. Frank Pallone
House Committee on Energy and Commerce

Hearing on "The U.S. Climate Action Partnership (USCAP)"

Thursday, January 15, 2009

Thank you Mr. Chairman, I want to first thank you all for being here today. The U.S. Climate Action Partnership has shown tremendous leadership in calling for national legislation to slow, stop, and reverse the growth in greenhouse gas emissions in the immediate future. It's encouraging to see such a broad coalition of leaders from the energy industry, financial services industry, and the environmental community, working together to reduce carbon emissions.

What is most impressive is that many of the coalition members are leading by example. For instance, in 1999, Johnson & Johnson, which is headquartered in my Congressional District, set a goal to achieve a 7 percent absolute reduction in carbon dioxide emissions

from its facilities worldwide by 2010, compared to 1990 levels. This goal was reaffirmed in 2003, when J&J adopted its Climate Friendly Energy policy. At the end of 2007, J&J's CO2 emissions were 12.7 percent below 1990 levels.

Companies like Johnson & Johnson are moving the ball forward and helping to create the momentum we need for climate change legislation.

Everyone here understands the serious threat global climate change represents to the world. The 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), predicted serious risks and damages to species, ecosystems, and human infrastructure if action is not taken to reduce emissions.

Being from a coastal district, I am deeply concerned about sea level rise due to global climate change. A 2005 report by three Princeton University researchers found that under a worst-case scenario,

global warming could cause the sea level off New Jersey's coast to rise nearly four feet by the end of the century. Such a rise would leave three percent of the state under water and reduce our shoreline by almost 500 feet, meaning that homes and businesses along the shore would be forced to move or get washed away.

It is time for Congress to pass legislation that will set the necessary emissions reduction targets and will ensure that we meet those targets in the short and long term. We cannot afford to wait another year to act.

Thanks you, Mr. Chairman.

Mr. WAXMAN. Thank you very much, Mr. Pallone.

The gentleman from Kentucky.

Mr. WHITFIELD. Thank you, Mr. Chairman. It is my understanding that we have 1-minute opening statements?

Mr. WAXMAN. No, we are giving members 5 minutes.

Mr. WHITFIELD. Oh, 5 minutes. OK. Thank you, Mr. Chairman.

Mr. WAXMAN. You don't have to take 5 minutes.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY

Mr. WHITFIELD. OK. I want to thank the chairman for having this hearing today with testimony from the United States Climate Action Partnership.

I might note that last night I was looking at the Web site of the partnership, and I noticed that, a few months ago, they conducted a poll in 46 swing congressional districts. And in that poll, they asked the question of whether or not stringent climate change enforcement efforts should be taken in the United States even though action would not be taken in China and in India. And that raised an interesting question in my own mind, because with the economy being what it is today, not only in the U.S. but around the world, I think if there is ever a time that we have to be cognizant and aware of additional costs to produce electricity, to produce energy, and particularly so if other countries are not taking the necessary steps to address this issue as well.

So I would also point out that I was reading an article in the New York Times just recently, and it was talking about the cap-and-trade system in Europe. And it points out that in Europe, which created the world's largest greenhouse gas market 3 years ago, early evidence suggests the whole approach could fail. It specifically says that, this week, the European Environment Agency reported that emissions from factories and plants that trade pollution permits rose in 2006 over the previous year, and it also rose the first 2 years of the operation of the cap-and-trade system.

So while the U.S. Climate Action Partnership is a strong advocate for some of these programs, I think at this particular time in the history of our country, with the economy being what it is, we have to move cautiously to reflect upon the additional costs that anything we might do will bear on production of energy. And if the U.S. has an undue amount of that cost, then it certainly will place us at an economic disadvantage with other developing economies around the world. So, with that, I yield back the balance of my time.

Mr. WAXMAN. Thank the gentleman for his opening statement.

Ms. Capps?

OPENING STATEMENT OF HON. LOIS CAPPS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mrs. CAPPS. Thank you, Mr. Chairman, for holding this hearing with the U.S. Climate Action Partnership.

My remarks will be limited to a minute. But I do want to thank these companies and organizations for their blueprint for legisla-

tive action, and to let them know that it makes an important contribution to helping solve the global warming problem.

Our witnesses agree that now is the time for action. They agree on the creation of a mandatory economic-wide program to address global warming. They also agree on a more aggressive emission reduction schedule with significantly narrowed ranges. What is more, the companies and groups before us today also make clear that by acting now, we can help, and not hurt, the economy.

Through global warming legislation we can drive the development of new technologies. We can create new American jobs, and we can support workers in the transition to a green economy. It will be a challenge to enact meaningful legislation, but it can be done.

And I join you, Mr. Chairman, in supporting that notion.

We must face the challenge of global warming now. It is one of the great challenges of our generation. And with the help of groups and businesses like those in the Climate Action Partnership, this is a challenge we can and we will meet. I look forward to the testimony of our witnesses, and to passing the strongest global warming bill that we can.

Thank you, and I yield back.

Mr. WAXMAN. Thank you, Ms. Capps.

Mr. Shimkus?

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. Thank you, Mr. Chairman.

A terrible start to hopefully a better year. It started yesterday. Now we are faced with a preparation time of 1 minute, now granting 5. My complaint yesterday was that it is important for USCAP to hear our comments. Of course, they are not here. And I understand they are doing a press conference. So it is more important for USCAP to do a press conference, probably with the vast majority of my colleagues on the other side of the aisle, versus hearing the concerns of over 670,000 people in my congressional district about how global climate change will cost jobs.

I am going to hold the fossil fuel Democrats accountable. If there is any place you are going to be held accountable in this Congress, it is going to be in this committee. So if you are from a coal-producing State or a petroleum-producing State, you better get prepared to defend your votes, as global climate change will destroy the fossil fuel industry.

So I am just giving you notice. If, on the floor, we can't get these amendments on the floor, you will be held accountable in this committee, if we proceed through regular order, on the movement that will destroy coal in this country. It will destroy crude oil production in this country. So be prepared for a battle.

I can't address USCAP; they are not here. It is interesting in their first release of their report, guess what they have? It is not in the new one. We only got this—this was released an hour and 15 minutes ago. In their first release, what do they have as a picture in their portfolio? They have a trading floor. A trading floor. My question is, why is that trading floor no longer in this report?

You know why? Because we are bailing out Wall Street because of traders who abused the system.

Let's develop, this is a great idea, let's develop a trading floor for U.S. emissions, and let's let the big money folks at Goldman Sachs control it. Is that a great idea in this environment? That is what is being proposed.

I have talked in this committee numerous times about a carbon tax. At least it is honest. Because climate change does a simple premise: It monetizes carbon. It puts a value to carbon. And someone is going to pay that cost. Now, the cap-and-trade system is a shell game to hide the cost from the ultimate person who is going to pay. And who is that person who is going to pay? The person who is going to pay is the individual consumer, because industry is going to pass those costs on. Great idea in a struggling economy. The best thing we can do to help the economy move forward is increase the cost of energy when we can only be competitive in a worldwide environment if we have low-cost fuel.

We saw, part of this recession is because we don't have a diversified fuel portfolio. We have been sending signals to the fossil fuel industry that, we do not want to use your low-cost fuel. And what has happened? The supply-and-demand curve increased the cost. Now we have low-cost fuel. Why? The economy is in a recession.

Do we want to continue to move in that direction? This, my friends, guarantees, guarantees rural America, coal-producing States more job loss. How do I know this? It has happened. Go back to the Clean Air Act. Go back to my congressional district. Go back to the numerous coal mines. I have a picture being produced, sent to me in Kincaid, Illinois. Great picture. All these miners, all this equipment, all these facilities, no longer there. Closed. And I know those folks who are from coal-producing States understand.

And again, I appreciate this extra time, Mr. Chairman. I fear that giving USCAP the opportunity to roll this out in a press conference instead of hearing the concerns from the people in my congressional district is a terrible, terrible, bad start on a very important issue that will take bipartisan activity. And I will again just put my fossil-fuel Democrats on record. They know the work we did in the last Congress of raising the issue of coal on the floor of the House. With new rules, we may not get that chance. I can guarantee you, I can guarantee you, coal, you will get a chance to vote in support of coal as this legislation moves forward.

I yield back.

Mr. WAXMAN. Thank you very much.

Ms. Harman?

OPENING STATEMENT OF HON. JANE HARMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Ms. HARMAN. Thank you, Mr. Chairman.

I want to say to you that I appreciate the opportunity to give a brief opening statement. I think it will afford especially our new members a chance to put their views out. And I know, based on your history, that you will conduct this committee in a way that does give the newest members an opportunity to be heard. So as a fairly old member, I want to thank you on their behalf.

One of my children's favorite books was called, "It is a Terrible, Terrible, Very Bad Day," by Judith Viorst, a wonderful Washington writer. Unlike Mr. Shimkus, I don't think it is a terrible, terrible, very bad day. I actually think it is a pretty terrific first hearing for this committee. And I look forward to being back when our witnesses will testify and to putting a few views forward.

USCAP is a partnership between public policy, nonprofits, and the private sector. And I want to say that, in my view, public-private partnerships can work, and the model is an excellent one for us to use as the basis for legislation, critical legislation, that we are going to be embarked on in the energy area.

This committee, for example, helped broker a public-private partnership on a range of energy-efficiency issues in our 2007 Energy Independence and Security Act. Congressman Upton and I were extremely active on one of those partnerships regarding energy-efficient light bulbs. We worked with leading environmental groups, like the NRDC and the lighting industry, including Philips and Mr. Immelt's General Electric. It wasn't an easy process. The parties started negotiations very far apart. But with lots of work and the willingness of all sides and both sides of the aisle on this committee to listen respectfully to each other, we managed to craft groundbreaking legislation. We banned the 100-watt incandescent light bulb and required all lighting sold in the United States to be 30 to 40 percent more efficient than it is today by 2014 and 300 percent more efficient by 2020. We laid the groundwork for bringing lighting manufacturing back to the U.S. and to overcoming concerns about mercury, which is in some of the existing light bulbs presently produced.

I think that our public-private partnership can be a model for future legislation, including legislation on the subject of climate change. And I think that USCAP will help us craft legislation that is both far-reaching and driven by consensus. I hope this committee and our witnesses will use the public-private partnership model as we move forward.

And again I thank you for the opportunity to put my views out there.

Mr. WAXMAN. Thank you very much.

Mr. Shadegg?

OPENING STATEMENT OF HON. JOHN B. SHADEGG, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARIZONA

Mr. SHADEGG. Thank you, Mr. Chairman.

I would begin by expressing my support for the comments made by my colleagues Mr. Whitfield and Mr. Shimkus.

I think we ought to talk about the procedure for this hearing, because I am deeply troubled by it. And I won't make a judgment call as to whether it is fair or appropriate. I will let the public and the people in this room make that judgment call.

To my knowledge, this is the first time that in a routine hearing before this committee, members have been compelled to give their opening statement without the witnesses present. That is one of the opportunities where we as a member of the committee get an opportunity to express ourselves to the full panel about an issue. It was a concern expressed in yesterday's debate about the denial

of opening statements to the members of the panel. But today I don't get the chance to make my concerns about this issue apparent to the members of the panel during an opening statement.

Instead, as Mr. Shimkus noted, they are holding a press conference, I understand, over in the Cannon Building, where they can't hear me express either my concerns or the concerns of my constituents about the issue, point one.

Point two, the minority was told that it could not have a minority witness on this panel. If it wanted a minority witness or a minority panel, it had to have it on a separate panel, and they had to be prepared to talk about this report, which was issued only, as my colleague Mr. Shimkus noted, an hour and 15 minutes ago. Pretty difficult to ask a witness to come before a United States congressional committee and be prepared to answer questions about a report that they have for only an hour and 15 minutes. And so the minority declined to have any witnesses. I think that is a stifling of the minority's rights.

Next we were told that these witnesses will have a very limited time, indeed that the distinguished CEOs who will be here—the Chairman of ConocoPhillips; the Chairman of Duke Energy; the President and CEO of Exelon; the Chairman and CEO of General Electric; the President and CEO of NRG; the Chairman and President of PG&E; the Chief Executive of the Energy Rio Tinto; the President and CEO of Siemens—all are on a very limited time period, and they can arrive here at 10 or 10:30 but will have to leave by 12:30.

So therefore, Congressman Shadegg, it is highly unlikely you will get to ask them any questions, but certainly Mr. Gingrey at the bottom of this dais will not get to ask them any questions. Again, a repression of the ability of the minority to express its views, forget majority-minority, just of congressmen to express their views to the members of the panel. I am deeply troubled by that.

I share Mr. Shimkus's concerns about the effect of carbon cap and trade on this economy. I worry about its impact on jobs.

I would like to, on the substance of this hearing, make the point that I believe we need to act prudently. There are many things that we can do right now to reduce greenhouse gases that will have two benefits, not just one. There are other things that we could do right now to reduce greenhouse gases that will have only one benefit and will have a significant cost. Let me explain that. If we as a Congress were to require dramatically more efficient buildings in this country, buildings that were built by landlords who didn't care about how efficient they were to make them more efficient, that would both reduce greenhouse gases and reduce our consumption of energy in general and reduce our consumption of foreign oil. Good policy, two benefits. If we were to do the same with homes, two benefits: reduce greenhouse gases and reduce our consumption of energy and our consumption of foreign oil. Same with more efficient automobiles, alternate vehicles, alternate fuels, wind, fuel, solar. There are a lot of things we can do that will have two benefits: It will reduce greenhouse gases and also reduce our use of energy in general and reduce our reliance on foreign countries, some of whom are not our friends, for energy, period.

But we don't get to discuss that today because we are only discussing cap and trade. Cap and trade, I would suggest to you, is a single-benefit strategy. It will not reduce our consumption of energy. It will not reduce our consumption of foreign oil. But I don't get to tell the executives who are coming here any of that because I don't get that chance. I want them and their lobbyists to know that I intend to submit questions in writing in them to find out if those CEOs came here by corporate aircraft, if they have calculated the carbon footprint of their corporate aircraft, if they know how much it will cost their company to buy the carbon credits to keep all of their corporate aircraft in the air, and if they are willing to report that cost to their stockholders in their annual report so that, as Mr. Shimkus points out, the cost of buying these cap-and-trade permits, which is going to be borne by the American public and is going to cost us jobs, is known.

I agree with Mr. Shimkus, a straightforward carbon tax would tell the American people what this costs. A cap-and-trade system is designed to hide that from the American consumers. And the American consumers deserve the truth.

I thank you, and I yield back.

Mr. WAXMAN. Thank the gentleman.

Just for the record, members should know the following. The purpose of a hearing is to hear what the witnesses have to say, not to tell the witnesses just what we have to say. But we will have an opportunity to ask questions of the witnesses or their designees if some of the CEOs cannot stay. So members are not going to be denied the opportunity to be questioned—members are not going to be denied the opportunity to question or make statements to the people from USCAP.

Mr. SHIMKUS. Would the chairman yield?

Mr. WAXMAN. Let me just finish this other point. We did not set any criteria for minority witnesses that they had to say this or they had to say that. We had no requests for minority witnesses. This is not the last hearing on the issue. And we certainly are going to have many witnesses with many points of view.

Who asked me to yield?

Mr. SHIMKUS. Mr. Chairman, but it is true that many of these titans of industry are leaving at 12:30. So the individual CEOs who we may want to ask questions of will not be there.

Mr. WAXMAN. That is correct. And that was an understanding we had with Mr. Barton, because they are not going to stay, each of them, for the whole hearing. But there will be their designees to answer questions who are very familiar with their proposals.

Mr. SHIMKUS. And with all due respect, I don't want to talk to the designee; I want to talk to the CEOs. I yield back.

Mr. WAXMAN. Let's see. The gentlewoman from California, Ms. Matsui.

OPENING STATEMENT OF HON. DORIS O. MATSUI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Ms. MATSUI. Thank you, Mr. Chairman.

And I thank you very much for calling today's hearing. I applaud your leadership and vision on this critical and pressing issue.

I also would like to commend Chairman Markey on his tireless work focusing our attention on the problem of climate change. I am eager to work with both of you and with all my colleagues on this committee and on the Energy and Environment Subcommittee.

In my hometown of Sacramento, we live at the confluence of two great beautiful rivers. The constant threat of flooding makes it even more urgent than ever that we address the issue of climate change. Unless we take action now, our way of life in Sacramento, in California, and across this Nation will be changed forever. I look forward to hearing from each of today's witnesses about how we can advance solutions that are effective, innovative and efficient.

I, again, thank you for your leadership on this issue, Mr. Chairman.

I yield back the balance of my time.

Mr. WAXMAN. Thank you very much.

The gentleman from Oregon.

OPENING STATEMENT OF HON. GREG WALDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

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

And I want to cover a couple of points. I had the opportunity, as did several of my colleagues last summer, to spend an evening with some of these CEOs talking about their ideas and their proposal for cap and trade. And I remember asking the CEO of General Electric at this dinner, and the others, I said, now, in order for a cap-and-trade system to work, you have to price energy higher than it is today.

And they all agreed with that.

I said, well, you have some of the smartest financial people in the world working for your companies; how much more does energy have to be priced at to create a trading market? And they hemmed and hawed a bit, and I threw out the idea of like $20 to $25 a ton of carbon, which I think is what it trades for in Europe. And they didn't disagree with that.

I said, so the price of energy will naturally be higher once you assume you have to have a higher price to create a market to trade in. And they agreed.

I said, so if the price of energy is higher as a result of the policy that Congress adopts, and I am supposed to go home and sell to my constituents, it is good for them and for the country and the globe, then would each of you, and I would ask them this today if I get a chance, commit in your companies not to chase cheaper energy elsewhere in the world for your manufacturing? I think that is a pretty simple request.

None of them would commit to that, and said so. So it strikes me as odd that, at a time when our country is facing unprecedented economic problems, that we have these CEOs asking for higher energy costs but unwilling to commit not to chase cheaper energy elsewhere in the world for manufacturing. That bothered me a lot.

Now, I am not sure what they are about, to tell you the truth. I do know, as I look at the people who are involved, they are very respected people and companies. But I also recognize some names that, frankly, the taxpayers are having to bail out right now, like AIG. And many of these companies, I think, seek—would benefit

from whatever happens in a cap-and-trade proposal, especially if you are a trader.

And in meetings I have had overseas with some of the European leaders and all, it seemed to me, over time, the people most aggressively advocating a cap-and-trade system were those who were going to be trading in it. And it bothers me, because when we look at what we are going through right now because of the way debt was traded and derivatives and all of those new instruments we are learning about, and the utter collapse of our economy as a result, it perplexes me that we are going to create in theory a new system of cap and trade by driving energy costs higher with no guarantee jobs won't go overseas.

Now, having said that, I am proud to come from the State of Oregon. I am probably the only member of my congressional delegation that drives a hybrid in Washington and one in my home district. And I believe in conservation and recycling. It is part of our heritage as Oregonians. And I think we have done a lot in the last 9 years or so on improving the environment. Renewable fuels, for example, since 2001, it is a 500 percent increase by 2022. Vehicle fuel economy, a 40 percent increase will occur by 2020. Lighting efficiency, many on this committee have supported the bipartisan effort to improve lighting, 25 to 30 percent lighting efficiency improvement by 2012 to 2014, and 70 percent by 2020. Appliance efficiency standards up 45 percent since 2001. Federal Government operations, bigger than most countries, by the way, just what operates in the Federal Government, we have already put in place a 30 percent efficiency and 20 percent renewable fuel use by 2015. Renewable power, 26 States now have that requirement, and it is a 500 percent increase to date. Building codes, we have already said, Federal Government promoting new 30 percent model code.

There are many things that we are doing that I think we can be proud of as this country in reducing our carbon emissions and improving our efficiency, reducing our use of energy.

But the thing that remains here is, there is no viable cap and trade—or I am sorry, no viable carbon capture and storage technology readily available in the commercial market today. I will get into that more later on I hope.

But before we create new standards and requirements, we better make sure we understand what is going to happen to our economy and what technology is available.

Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you, Mr. Walden.

Ms. Christensen.

OPENING STATEMENT OF HON. DONNA M. CHRISTENSEN, A REPRESENTATIVE IN CONGRESS FROM THE VIRGIN ISLANDS

Ms. CHRISTENSEN. Good morning.

Thank you, Chairman Waxman, and let me take this opportunity at our first official hearing to say what an honor it is to have been elected to serve on Energy and Commerce, and I look forward to a productive tenure on this committee working with you and my colleagues to address issues that come under our jurisdiction that are some of the most challenging in our Nation. And climate

change is one of these, and perhaps considered the greatest, challenge facing the world today.

In my district, the U.S. Virgin Islands and the entire Caribbean region, we are very concerned, of course, about its impact on sea levels, changing weather patterns and, most importantly right now, the bleaching and loss of our coral reefs, the coral reefs that are so important to our food, the health of our sea resources, the livelihood of some of my constituents, and our tourism-based economy. As a physician, a member of the Health Subcommittee, and someone who has worked for a long time on national health care issues, the predicted impacts of climate change on health are also frightening, especially because the troubling trends have already started, and we have not as a Nation taken any meaningful steps to reduce greenhouse gases and global warming.

So I look forward to the testimony of the partnership and the members who are going to be here with us today. Not surprisingly, cap and trade is a cornerstone of their recommended strategy. I would be very interested, though, in our panelists' comments and opinions on another proposal that I have recently learned about and which I find very I intriguing, cap and dividends. And so I applaud the diversity of the partnership and the hard work that I know it must have taken to reach consensus on their call for action, and I look forward to their testimony and working with them and you on these important issues.

Mr. WAXMAN. Thank you very much, Ms. Christensen.

Mr. Terry?

Mr. TERRY. I will waive.

Mr. WAXMAN. Who is next? Does it go—yes. The gentlelady from——

Ms. BLACKBURN. From Tennessee, Mr. Chairman.

Mr. WAXMAN. Yes.

OPENING STATEMENT OF HON. MARSHA BLACKBURN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TENNESSEE

Ms. BLACKBURN. Yes. Thank you so much. I want to thank you for the hearing today.

And I will be pleased that the witnesses are here to visit with us today.

I join my colleagues in wishing that they would be able to stay and answer some of the questions that we have that are specific to the issue and specific to how their industries are planning to address this issue.

Just a couple of thoughts. Number one, I am one of the ones on this committee that still has very serious reservations about the plans that we are hearing from the new President, what he is contemplating to stop the growth of greenhouse gases. I think that we have to look at some of the data that is coming in that addresses the issue of climate change and also, certainly, of cooling.

I found it very interesting that England, for example, recently has experienced temperatures 2 degrees Celsius colder than Antarctica and that they have had an average temperature in 2008 that was 1 degree Celsius less than 2007. So when we hear the talk of global warming and we experience what we have experi-

enced in my home State in Tennessee with colder temperatures and we hear data such as this, it does cause us to question the global warming science.

Secondly, the mandatory reduction in emissions on greenhouse gases through the cap-and-trade system. I think that the more we talk to those in business and industry, the more we see the impact that this is going to have and the negative impact that this is going to bring to our economy, the transfer of wealth from industries and consumers to companies that are promoting inefficient and inadequate technologies, essentially picking winners and losers in the free market.

The European emissions trading system, when you look at that trading scheme as they call it, and Mr. Chairman, I find that very appropriate, using the word, the trading scheme, it provides in my opinion ample evidence of how companies game the system for their benefit. But even if the weaknesses of a cap-and-trade system are addressed, it will still reduce the availability of energy and drive up the cost of economic development, which is something we are actually trying to reduce right now. So this is not only counterintuitive, it appears that it will be counterproductive in many ways.

I also have concerns, and I know we are not addressing this specifically in this hearing, but it is a related issue, about the EPA regulating and moving to regulate greenhouse gases and the monster of a bureaucracy that that would require and the need to get permits for everything from cows to schools to churches for greenhouse emissions and the economic slowdown that this would cause if we were all sitting around waiting for the EPA to issue a $175 tax per cow or $20 tax per hog. For our agricultural interests in our States, this just seems like a very cumbersome and counterproductive bureaucracy.

So we have plenty on our plate today, Mr. Chairman. I thank you for the hearing. I hope that it is a robust discussion of issues, and I yield the balance of my time.

Mr. WAXMAN. Thank you very much, Ms. Blackburn.

Next would be the gentleman from Ohio.

OPENING STATEMENT OF HON. ZACHARY T. SPACE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. SPACE. Thank you, Mr. Chairman.

If I could just express what an honor it is to serve on this committee that deals with so many seminal issues at this crossroads in history. I would like to begin by offering my thanks to Chairman Waxman for holding this hearing today. I am excited to have an opportunity to work with the members of this committee and organizations like USCAP to address the issues of climate change. Climate change is a very real and very pressing issue facing this country. And we as Members of Congress have a responsibility to address it.

What remains is the question of how to answer the call to action in a responsible fashion that both lowers our Nation's damaging emissions and protects the ability of our economy to grow. I believe that it is a goal that all of the members of this committee share and one we can work together to achieve.

I am greatly encouraged by the work of USCAP in assembling some of the foremost energy producers and strongest advocates for environmental protection in the Nation to proactively address this crucial challenge. I look forward to the testimony today and applaud the participating members of USCAP for the progressive, cooperative, and aggressive approach to this critical issue.

I yield back my time.

Mr. WAXMAN. Thank you very much, Mr. Space.

Mr. Gingrey?

OPENING STATEMENT OF HON. PHIL GINGREY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. GINGREY. Mr. Chairman, thank you.

And I join my new member colleagues in expressing my gratitude and excitement about serving on the committee and this being the first opportunity to utter any words on the committee. I hope they won't come across as sounding too negative, because certainly that is not my intent. But I do have some concerns, both in regarding process and policy.

And I would like to voice my strong concerns, first off, about the process by which today's hearing has been conducted by the majority. The mission statement of the United States Climate Action Partnership pledges that the organization will work with Congress on these critical environmental issues. I am deeply troubled that, despite this pledge, the majority has elected to give the members of this committee almost no time to digest the recommendations made by USCAP on climate change.

Although I firmly believe that the committee should not be dismissive, and certainly I am not, of their report, Mr. Chairman, I believe that we would be better served by the information given to members and staff less than 90 minutes ago if we were to hold this hearing on a future date. With more time, members could properly analyze and scrutinize the important work of USCAP so we could have a more engaging and productive hearing.

Unfortunately, due to what seems to me like the political expediency of this organization for the majority, we will not have that opportunity for the American people. So much of my concerns then for the process.

In regarding policy, you know, this cap and trade, which is going to be the focus of the hearing, and we heard Mr. Whitfield earlier explaining the lack of really meaningful progress in the European Nations over a 2- or 3-year period regarding cap and trade, where greenhouse gases have not been reduced, and I would hate to see cap and trade go the way of wetlands mitigation, community service in lieu of jail time, and some of these other things that sound so great on paper that really don't work out in the long run.

You know, in the report that we just got, I see in the prologue, it says, in January 2007 we issued our call for action, in which we joined together to call for prompt enactment of national legislation in the United States to slow, stop, and reverse the growth of greenhouse gases emissions over the shortest time reasonably possible.

Now, that was in January 2007. I was a member of the Science Committee at that time. Our first hearing of the year was the Honorable Nancy Pelosi. Our second hearing of the year, and it was a

joint hearing with this committee, was former Vice President Al Gore. Our economy was far different in January of 2007 than it is today.

But U.S. Cap goes on in this report to say today, U.S. leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. For this reason, action by the United States should not, should not, be contingent on simultaneous action by other countries, i.e., China and India. I say to my colleagues, and I will wrap it up with that, Mr. Chairman, that there are no Pacific Island Nations in immediate danger of being underwater because of global warming and the rise in the sea level, but there are many economies, many companies, General Motors, Chrysler, et cetera, who are under water today. And I think we have a real crisis in our economy. And this may not be the time for the United States to take that kind of a chance. Let's take this slow, and let's listen to what these folks have to say today, but let's don't jump to action too quickly, maybe like we did in the $800 billion bailout.

And I yield back the balance of my time.

Mr. WAXMAN. I thank the gentleman.

The gentlelady from Ohio, Ms. Sutton.

OPENING STATEMENT OF HON. BETTY SUTTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Ms. SUTTON. Thank you, Mr. Chairman.

Before I begin, I would like to thank you for holding this hearing and for getting us off to a quick start on an incredibly critical issue before this country and, frankly, the world at large.

I am truly honored to be a part of this body, where we are going to seek solutions for these complex issues that face us as a Nation and, certainly as a representative from Ohio, that face my constituents.

This is critically important to have these folks here today so that we can learn more about the members from the U.S. Climate Action Partnership and about how they think we can best advance our Nation's energy policy. USCAP's alliance, which includes major industrial and energy companies and environmental groups, demonstrates that business interests and environmental interests can work together to pursue policies that will meet the multidimensional challenge before us.

I am encouraged by USCAP's efforts to work together as we discuss policies that will both protect our environment and spur the development of advanced technologies and jobs. Make no mistake, it is critical that we find ways to effectively address global warming. And I am looking forward to finding the right solutions that will concurrently preserve and create jobs for today and tomorrow.

Thank you.

Mr. WAXMAN. Thank you very much, Ms. Sutton.

The Chair wishes to recognize the chairman emeritus of the committee, Mr. Dingell.

OPENING STATEMENT OF HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. DINGELL. Mr. Chairman, thank you.

I commend you for this hearing.

It is a remarkable event when we find that we have the large number of both NGO heads and the heads of American businesses coming together. I would like to point out also that the directors of Edison Electric Institute endorsed a set of points of agreement on climate change last week. All of this points to one fact: Climate change is recognized as being the most critical climate issue facing us by everybody involved.

When the USCAP's call to action was released, it made news, as well it should. For the first time, a diverse group of entities, who oftentimes are at odds on environmental matters, agreed on the critical need for action on climate change. The call to action calls for Federal climate change legislation to follow six key principles. However, for the most part, it does not get into the level of detail necessary for a complicated legislative resolution to the problem.

Today USCAP released a more detailed set of recommendations. While we have not yet had the opportunity to delve into these recommendations, I do look forward to hearing more about them when our witnesses appear today.

As earlier stated, Mr. Chairman, climate change is the most critical environmental issue facing us. Last Congress we held a number of hearings, issued a number of white papers on the subject of climate change, and in fact, Mr. Boucher and I put forward draft legislation that was written specifically to address the six goals in the call to action. All of this was intended to set us up for prompt action this year.

This hearing builds upon that record. I look forward to working with you and all my colleagues to address climate change in the manner which achieves reduction amounts that scientists agree is necessary while protecting domestic jobs.

Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you, Mr. Dingell.

Mr. Rush?

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. RUSH. Thank you, Mr. Chairman.

And I, too, want to commend you for holding this hearing, thus quick starting our activities of this committee on this very, very important issue.

Mr. Chairman, I think that we are going to be well served by the esteemed panel that you have assembled for today. And I also do want to thank each and every one of them for making such an appearance before this committee.

Among those who will be testifying today is my good friend Mr. John Rowe, who is the President and the CEO of Exelon. I have worked with Mr. Rowe on many energy-related issues, and I find him to be a very hardworking and innovative and forward-thinking individual. I look forward to hearing his remarks regarding the innovative and very, very excellent practices that Exelon has adopted

in becoming an industry leader in the production and distribution of clean and renewable energy sources.

I would also like to say that I look forward to hearing from all of our distinguished panelists as they seek to rally the Congress as well as the other industries to move us all forward in developing cleaner energy policies and technologies that we sorely need for the continuing success of our economy and of our future as a Nation and, indeed, of the world's population. I look forward to hearing them outline the steps that their own companies have enacted in order to move this Nation forward in that direction.

And Mr. Chairman, in conclusion, I just want to again thank you for gathering us together so that we can have a great beginning as we initiate this 111th Congress.

I yield back the balance of my time.

Mr. WAXMAN. Thank you, Mr. Rush.

Mr. Burgess?

OPENING STATEMENT OF HON. MICHAEL C. BURGESS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. BURGESS. Thank you, Mr. Chairman, and thank you for holding this hearing, briefing, that we are having this morning, an unusual mix of stakeholders who will come before our committee today, and I am interested to see the recommendations that this group will offer us.

From what I understand, it is a consensus blueprint to help guide future action on climate change legislation for this committee. And the vagueness of the report is an example of the nuances that exist in crafting policy to control consumer energy use without further damaging our economy, which is already under some strain.

One of the leaders in the energy industry today who is unfortunately not going to be with us, Rex Tillerson from ExxonMobil, was in Washington last week. Mr. Tillerson suggested that a carbon tax would be the fair and equitable way to transparently control carbon emissions. I think our former Chairman in the last session, the last Congress, Mr. Dingell also had a similar recommendation.

When you have an industry leader asking for an additional tax burden to simply provide a better environment for his long-term investments and business planning, you begin to appreciate some of the pressure that the CEOs are under to continue to increase revenue in such a strained economic environment. They need transparency. They need clarification to compensate for the unexpected volatility in their marketplace.

Unfortunately, clarity is not part of this 30-page report released from embargo by USCAP this morning. Somewhat vague on implementation, it is very complex in plan and would require new and integrated systems development. And that costs money and increases the number of variables in the regime. As we have seen in the financial industry, sophistication, complexity, and increased variables add distortions and volatility to the market; not to mention, variables in complexity add the opportunity for manipulation, and would require a strong Federal regulator. That is an additional burden on the U.S. taxpayers and further strain on our Federal budget.

If I had the opportunity, I would ask these individuals here today the following questions: Would a carbon tax provide a clearer signal that industry is asking for, and is it a comparable alternative to what has been outlined in this report? Secondly, do you think the implementation of this report will help turn profits and increase domestic economic activity? And are you willing to step down from your position if it does not? Has the economic downturn already slowed, stopped, and reduced carbon emissions, which makes the recommendations in this report unnecessary?

Thank you, Mr. Chairman, and I will yield back the balance of my time.

Mr. WAXMAN. Thank you, Mr. Burgess.

Mr. Green?

OPENING STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. GREEN. Thank you, Mr. Chairman.

Let me begin by saying I look forward to working with you as our new chair of the Energy and Commerce Committee. Over the years I have known you to be a tireless defender of public health and environment, qualities that will serve our committee well as we begin to tackle the many critical issues facing our Nation.

It is timely that our first full committee hearing in this Congress focuses on the U.S. Climate Action Partnership, especially since the blueprint for the legislative action was just released this morning.

President-elect Barack Obama has signaled that his administration will "help lead the world toward a new era of global cooperation on climate change."

To be truly successful, any efforts to reduce greenhouse gas emissions must be global in nature and must result from an extensive buy-in in a range of diverse U.S. stakeholders, from our industrial base to the consumers who pay the bills. That is what makes the efforts of USCAP so important.

USCAP members—from utilities and environmental groups—came together to form a call to action to reverse greenhouse gas emissions, and today I hope to learn specifics about the USCAP new "Blueprint for Legislative Action." And I commend them for attempting the difficult task of compromise on such a complex issue. And I look forward to the testimony.

Following up on my colleague from Texas, I also read the statement last week by the CEO of Exxon, and I guess our committee and the Congress has a tough decision, because I have some concerns about cap and trade, because if you do just have a carbon tax, people know how much it is, the industry can produce using that, and as consumers, we know. Whereas with a cap and trade, it is always changing. And I have to admit, with our most recent economic crisis with mortgage trading and slicing and dicing things, how much money was taken out of the market, I am a little concerned about a cap and trade. And I hope the panel will talk about that, as compared to just a straight up carbon tax that again it is tough to get the votes for in Congress, but it is also—probably also the cleanest and most transparent thing that Congress can do and just put a tax on what we should be putting in our atmosphere.

So, Mr. Chairman, thank you again for holding our first hearing on this issue.

Mr. WAXMAN. Thank you, Mr. Green.

Ms. Schakowsky?

OPENING STATEMENT OF HON. JAN SCHAKOWSKY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Ms. SCHAKOWSKY. Thank you so much, Mr. Chairman.

The science is clear: global climate change is real and poses an immediate threat to our planet and our way of life. The 2007 report of the Intergovernmental Panel on Climate Change unequivocally found that our climate is warming and that the primary cause of this warming is due to human activities. And in some ways, it is a relief to have arrived at this point, where there is such a great consensus in the scientific community, and now as we move forward in the policymaking community to address this problem.

I think for years we have squandered the time by arguing over whether this is real or not real and how we should move. Human-caused pollution has already caused drastic changes to the world's ecosystem. If emissions continue unabated, our Nation and the world will continue to experience unprecedented weather patterns, resulting in heat waves, droughts, wildfires, floods, public health threats, and the extinction of thousands of plant and animal species. This crisis warrants immediate policy response.

I heard some of my colleagues talk about moving slowly, moving carefully. I don't think those are the same things. I think we definitely need to move carefully, but I also think we need to move swiftly and boldly. The longer we wait, the harder and more costly it will be to limit climate change, and therefore I think, Mr. Chairman, it sends an excellent message that our first committee hearing of the year is on this important topic.

And I am very grateful that the panel is here today. I hope we do have a robust discussion of their recommendations.

I for one am a bit concerned about the pace that is recommended here. When they have a little chart about emission reduction targets, it looks like what they are saying is, the way it reads is that there would be an 80 percent reduction of 2005 levels of emissions by 2050. I think that is inadequate. I think we have to be talking more like an 80 percent reduction of 1990 levels and that we are going to have to move more swiftly to address these problems.

Others of my colleagues have said things like, government shouldn't pick winners and losers in the energy arena. Well, that is exactly what we have done for generations, is pick winners and losers; the winners being the big oil companies, the nuclear industry. Government has always made decisions about the most judicious way to achieve our policy goals in terms of helping industry. And now, I think, it will be our obligation to make sure that we create systems that will encourage the most efficient ways to reduce pollution and save our planet be available in the marketplace.

In the weeks and months ahead, we must continue to work together with the players that are going to be here on this panel and with all the different interests within our own Congress to put forward the most aggressive proposal possible to solve this imminent crisis.

So, again, Mr. Chairman, I thank you so much for holding this hearing and look forward to working with you.

I yield back the balance of my time.

Mr. WAXMAN. Thank you, Ms. Schakowsky.

Mr. Sarbanes?

OPENING STATEMENT OF HON. JOHN P. SARBANES, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND

Mr. SARBANES. Thank you, Mr. Chairman. I appreciate your holding this hearing. I am looking forward to serving on the committee and serving under your leadership with respect to this and many other issues.

This is the most pressing issue of our time, really of any time. And it is fitting that we are having the hearing so early in the session. I look forward to hearing from these witnesses from USCAP. I wanted to just cite some statistics about what could happen to the Chesapeake Bay. I hail from Maryland, and the Chesapeake Bay is clearly a treasure for our State and the region, but also a national treasure. And to recount some of the projections of what would happen if we don't take the steps we need to with respect to global warming as it would affect the Chesapeake Bay, I think really bringing this home: according to a report by the National Wildlife Federation, if we continue on our current course and fail to reduce carbon emissions, and this assumes an increase in 3 degrees Fahrenheit by the end of this century, global warming would cause the loss of, with respect to the Chesapeake Bay, more than 167,000 acres of undeveloped dry land; 58 percent of the beaches along the ocean coasts; 69 percent of estuarine beaches along the bay, more than half of the region's tidal swamps and wetland habitats would be replaced by more than 266,000 acres of open water, which is equal to about 415 square miles. This would be cataclysmic. And this is just one example of the effects of not addressing global warming.

What I am curious to learn more about from this report, from the panel's discussion today and from other hearings we will have on the topic is whether the targets for reducing emissions which are being set forth according to certain time frames actually correlate to the degree to which we have to slow, stop, and then reverse the global warming trend overall, because we can become seduced by the targets for reducing carbon emissions without necessarily linking them to the pace at which we actually have to stop global warming and reverse global warming. And it may be that the targets set are not aggressive enough, as the congresswoman just indicated.

Bringing the market into this enterprise, which is what the recommendation here is of USCAP, is obviously critical. That alone can't do it. I think we are going to have to have a hybrid approach in order to achieve the levels of reduction that we seek and that are going to make a real difference. So there needs to be a multi-pronged approach. But more than anything, what should come from this hearing and others that we have on the topic is the urgency with which we need to move with respect to reducing global warming and reducing our carbon emissions. We really don't have

any time to wait. And humans are, of course, very capable of delaying on all fronts. And so we have to move quickly. We have to move quickly as policymakers.

I know this committee is going to be critical to doing that. And I thank you for holding the hearing today.

Mr. WAXMAN. Thank you, Mr. Sarbanes.

Mr. Blunt?

OPENING STATEMENT OF HON. ROY BLUNT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Mr. BLUNT. Thank you, Mr. Chairman.

As it relates to this hearing today, clearly this is going to be a topic that this committee will deal with during this Congress and spend a lot of time on.

I do wish we could have had more time to look at the partnership proposal before we had a hearing on the proposal. Certainly as we look at energy this year, my view has been and will continue to be that we need to find more of it, to find more American energy, to use less of it and to invest in the future. One of my concerns as we approach this topic of climate change is that we want to be sure that we're investing in the future in a way that doesn't cost jobs and opportunity and creates new jobs and new opportunities at the same time.

Even if we knew, Mr. Chairman, where we were going to be in terms of the best way to power the economy 25 years from now, I'm not sure—as a matter of fact, I'm absolutely confident it would not be wise to try to get there in 5 years. To see the transition in the economy that could occur in a way that cost American jobs and cost American opportunity would be a huge mistake. We're all concerned about passing along a strong economy and a strong environment. I know that we have many different views on this committee as to whether or not we're in global warming caused by human activity or we're in the climate change activities that have happened throughout the history of the planet.

Clearly there's always been climate change. There's a rush to determine that somehow the current climate changes are caused by things that we can impact in a significant way by immediate action. There's less debate about whether they're all immediate actions would create lost jobs and lost economic opportunity. This needs to be dealt with in the most thoughtful possible way. I don't disagree at all with previous comments that what we can do quickly we need to do quickly. But I do disagree that everything should be done in the quickest possible time frame. Everything should be done in a time frame that makes sense for American families, for the American environment but also for the American top competitive position in the world. And those are some of the topics that I'm sure we'll cover.

In this hearing today, obviously we have lots of name plates in front of us. So if everybody who's going to be testifying gives a 5-minute opening statement, everybody that would like to ask questions of this panel today won't be able to ask all the questions we'd like to ask. But clearly this is the launching point for what will be an important debate in this committee, an important debate in this

country, and will have massive impact on the future of American opportunity if we make the wrong decisions.

And so Mr. Chairman, again, let me thank you for the way you got the committee started yesterday. I look forward to working with you personally. I know that this topic of environment and energy is one that our ranking member Mr. Barton has spent an incredible amount of time on, as I have and others have, and we are eager for the right opportunity—for opportunities to discuss what the future should look like for the American environment and American energy. And I yield back.

Mr. WAXMAN. Thank you very much, Mr. Blunt. I've asked Mr. Barton and Mr. Markey and Mr. Upton to hold off on their opening statements, along with my opening statement, before we hear immediately from the witnesses. But I want to ask if any member wishes to make, other than the four I mentioned, wishes to make an opening statement at this time?

Mr. BARTON. Mr. Chairman, did you ask for unanimous consent?

Mr. WAXMAN. No. I was asking if any Member wishes to make an opening statement. If not, I would ask unanimous consent that we—when we reconvene at 10:30 that opening statements—the only opening statements we will have will come from the chairman, the ranking member of the full committee, the chairman and the ranking member of the Energy and Environment Subcommittee.

Mr. BARTON. Reserving the right to object.

Mr. WAXMAN. The gentleman is recognized for his reservation.

Mr. BARTON. First, let me say that you have just had one of your Members come in so we may want to give him a right to make an opening statement.

Mr. WAXMAN. We certainly will.

Mr. BARTON. I will not object to the unanimous consent request. But I want to make the point that in discussions about this proceeding, I encouraged you to begin early so that members that wished to make opening statements could. And you were agreeable to that. I think we have shown this morning that opening statements are a positive part of a hearing record. And I hope that in the future, although we've changed the rules so that opening statements and hearings are now at the discretion of the Chair, that you will continue to work with me and others so that we give members that wish to an opportunity to make an opening statement, because I do think it's important that we have members that are allowed to do that.

And this committee, although it may be one of the few committees that still allows it, has always allowed every member on both sides of the aisle the opportunity to give some sort of an opening statement, maybe a 1-minute or a 3-minute before we begin the hearing process. So I want to thank you, even though it's now discretionary because of our rule change, that you did use your discretion to start the hearing early so that we could have opening statements. And I hope we continue that discretion.

Mr. WAXMAN. If the gentleman would yield, you have certainly made this point very clear to me. And I'm open to it and we'll try to work together.

Mr. BARTON. OK.

Mr. WAXMAN. I have a unanimous consent request pending. I would like to revise it by saying that if the two members who have just joined us wish to make opening statements they are able to do so at this time.

Mr. Butterfield.

OPENING STATEMENT OF HON. G.K. BUTTERFIELD, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NORTH CAROLINA

Mr. BUTTERFIELD. Mr. Chairman, I certainly apologize for being late. I figured out a lot of things from being in Washington, but one I haven't figured out is how to be in two places at one time. So thank you very much for recognizing me. Mr. Chairman, Ranking Member Barton, we certainly have a historic opportunity in this Congress and in this committee to revolutionize our energy and environmental policy. Accomplishing the monumental task of passing and implementing energy reform demands and bipartisanship in this body in cooperation between the actors involved and the crafting of the policy, which certainly includes our witnesses today from USCAP.

Transformation of our attitude to one of cooperation and recognition of a common problem is sorely needed not only to combat the climate change crisis but to mobilize every sector of our society to participate in the process to make us more economically and environmentally secure. It is certainly our responsibility to confront these issues aggressively but prudently, recognizing that in our policy, there will be winners, there will be losers. The poorest among us, those who are least responsible for greenhouse gas emissions, will be the losers in nearly any iteration of policy that puts a price on carbon. When crafting our policy, Mr. Chairman, to curb emissions, we must mitigate the rising cost of energy on Americans poor who contributed the least to the problem and can least afford to bear the weight of a costly solution. So I thank the witnesses today for their efforts to find consensus among diverse actors and eagerly anticipate the opportunity we have in the coming months to effect change. Thank you. I yield back.

Mr. WAXMAN. Thank you very much, Mr. Butterfield. Mr. Murphy, do you wish to make an opening statement?

Mr. MURPHY OF PENNSYLVANIA. Yes. Thank you, Mr. Chairman. How much time?

Mr. WAXMAN. Five minutes.

OPENING STATEMENT OF HON. TIM MURPHY, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Mr. MURPHY OF PENNSYLVANIA. Thank you. I thank you not only for the opportunity to make an opening statement but also to recognize the importance of members speaking to these issues.

Early this morning I had a chance to go over to the Senate Hart Building and listen to some of the presentations of the United States Climate Action Partnership and had a preview of some of the important things that they'll be saying today. As we look at this, as Members of Congress, I hope that this committee can add some other elements to this. Certainly we all want clean air and

clean water and clean land for coming generations. Even if there are still disputes about climate change, we need to join our hands together when it comes to making sure we keep this planet clean for following generations. But it is important as we look at these issues, we're also addressing them from the standpoint of how we do this on a global perspective and not just a local perspective. United States has lost hundreds of thousands, perhaps millions of jobs in manufacturing over the years, some of it is technologies have changed, but some of it also has come from jobs moving overseas where there are not the same pollution controls or expectations, where products can be made cheaper because they pay lower wages and don't have legacy costs or health or other elements there.

But in the area of producing energy in clean and efficient ways, it is ones we have to look at in a global perspective. I look at my area of Pittsburgh as an example. Pittsburgh in the 1800s was referred to by Charles Dickens as hell with the lid off. It continued to be a highly polluting area where people understood if they went to work, even white collar workers, they brought a couple shirts to work, and they would change them a couple times during the day because of the soot that was left on their clothes.

Health problems and that sort of dirtiness were seen as part of life, yet Pittsburgh underwent amazing transitions where now it is really a model of a city as how things have cleaned up. We have bass fishing tournaments now in rivers that were once ones where nothing seemed to live. We also have to understand however that part of the cause of that came because steel left Pittsburgh. We have a great team called the Steelers. But quite frankly, I don't think steel is made anywhere within the city limits of Pittsburgh anymore. We've replaced it with other things. There are great companies that are headquartered such as U.S. Steel and other steel manufacturers. But they make that steel throughout the world now. We also are known in that U.S. steel made a tremendous investment in its cleratin coke works by investing over $1 billion to make sure that coke—you can make steel without coal, but to make sure that that pollution is reduced there too. We applaud them for that.

But what happens with other countries with regard to how they make steel, how they make manufactured products and how they make their energy to make those products is of concern. Developing countries like China and India emit an estimated 2.5 to 5.0 metric carbons of CO_2 emissions per metric ton of crude steel. The United States averages 1.2 metric tons of CO_2 emissions per metric ton of crude steel. Cutting emissions in the U.S. has been done. But carbon emissions in other countries is two to four times that amount. That being the case, if we simply say that a cap and trade program in this country will be looked at and companies are allowed to or will continue to move their factories overseas to make their raw goods and their parts where cap and trade does not apply, we have done nothing to clean up this planet. Nothing.

In fact we've just played this massive shell game by saying, we'll make these heavy industry parts in other countries, ship them back over here, put them together and say we've cleaned up our area. We have done no such thing. We have to make sure that

whatever we do for carbon emissions and other pollution areas that we do this on a global perspective if we're going to do this at all. I'm tired of seeing our jobs go over to China. I'm tired of continuing to fund both sides of the War on Terror when we are sending things over to the Mideast when we can do so much here with our rich talent.

So I hope that we all as colleagues join together then in seeing what we can do with the United States being a leader in bringing other nations to the table on this. We have to have solutions. We cannot afford to not the have solutions. We cannot afford to ignore this and we cannot afford to simply shuffle the jobs off to other countries and turn away and pretend we did something meaningful. With that, I yield back. Thank you very much, Mr. Chairman.

Mr. WAXMAN. Thank you, Mr. Murphy. Mr. Welch.

Mr. WELCH. Thank you, Mr. Chairman and ranking member. My opening statement is, I'm glad to be here, and I look forward to working with the committee. Thank you.

Mr. WAXMAN. Thank you, Mr. Welch. Seeing no other members that wish to be recognized at this time for an opening statement, other than the four I mentioned earlier, the unanimous consent request before us is to recess until 10:30, at which point we will hear from the chairman and ranking member of the full committee, chairman and ranking member of the subcommittee, and the witnesses that are before us. Without objection that will be the order. We'll recess for another 5 or 6 minutes.

[Recess.]

OPENING STATEMENT OF HON. HENRY WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. The meeting of the committee will please come to order. I am pleased to welcome you all here today to the first hearing of the Energy and Commerce Committee in the 111th Congress. We're holding this hearing on one of the most important issues Congress will face. It concerns our children's future, our economic future, and our security as a Nation. It is also about responding to the economic crisis we face.

Today we're going to hear from some of our Nation's most prominent leaders in business and environmental community. These diverse leaders have come together in the U.S. Climate Action Partnership to call for legislation to reduce the threat of global warming. They recognize that the key to a revitalized economy and our long-term prosperity as a Nation lies in addressing climate change and transitioning to a clean energy economy.

We are struggling with a grave economic crisis. Many Americans have already lost their jobs, their homes, their retirement savings. Many more are worried about their economic future. As Congress acts to address the immediate crisis, we must also lay the foundation for sustained long-term economic growth and security.

Our environment and our economy depend on congressional action to confront the threat of climate change and secure our energy independence. U.S. industries want to invest in a clean energy future, but uncertainty about whether, when, and how greenhouse gas emissions will be reduced is deterring these vital investments.

Companies are caught in a dilemma. They are reluctant to invest in old polluting technologies because they know that tougher regulations are inevitable but they can't invest in new cleaner technologies until they know what Congress is going to require.

Our job is to extend to these industries a way to end the regulatory limbo and set our Nation on a responsible path for reducing climate change and achieving energy independence. Our committee will be acting quickly and decisively to reduce global warming and end our dependence on foreign oil. My goal as Chairman is to pass a comprehensive climate and energy legislation in the committee before the Memorial Day recess.

That's an ambitious schedule, but it's an achievable one. We cannot afford another year of delay. As of today's hearing, we will show through the testimony a consensus is developing that our Nation needs climate legislation. Our job is to transform this consensus into effective legislation. The legislation must be based on the science and meet the very serious threats we face. We are fortunate that Ed Markey, one of the most experienced legislators in Congress, will be chairing the Energy and Environment Subcommittee. We're also fortunate that we have so many skilled and knowledgeable members on both sides of the aisle on this committee.

Finding a consensus is not always easy, but I know that with the leadership that we will be able to have in our subcommittee from other members, we can succeed. Climate change, energy independence, and health care are going to be the committee's highest priorities. Passage of the children's health bill yesterday was a down payment on health reform. Today's hearing starts our work on climate change and energy independence. We'll be working on both issues at the same time. I welcome our distinguished witnesses and look forward to their testimony. But first we're going to hear from the Ranking member of the full committee, the Chairman and the ranking member of the subcommittee. Mr. Barton.

Mr. BARTON. Thank you, Mr. Chairman. Before I give my statement I want to make sure that we have on the record, members will be allowed, time permitting, to ask questions of the witnesses and if time does not permit, we will be able to give written questions and the answers will be submitted for the record.

Mr. WAXMAN. Without objection, that will be a unanimous consent request that will be adopted. Any objections? Hearing none, that will be the order.

OPENING STATEMENT OF HON. JOE BARTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. BARTON. Mr. Chairman, I'm very willing to work with you and others on the Committee to try to accomplish the goal that you just announced. I think it's good for the new chairman to have goals and that's certainly a worthy goal. Having said that, I want to make a couple of comments that are cautionary. First, several of our members, in their opening statements earlier before the panel got here, indicated that the science is settled on climate change. The science is not settled. This is not a hearing to debate the science, so I won't do that. I would point out though until Christopher Columbus discovered America in 1492 the science was

settled that the earth was flat. I will also point out that until the mid-1800s, the science was settled that if somebody was sick, you bled them, and as late as the mid-1940s the science was that airplanes couldn't exceed the speed of sound.

Science has a way of being settled status quo that turns out not to be. What I will say is that science is settled that CO_2 concentrations are increasing in the atmosphere. That's a true statement. I will also stipulate that in some parts of the globe, temperatures are going up. I'm still not sure what average world temperature means. To me, what's more important is what's the temperature in Arlington, Texas, at a time certain in a place certain. But having said that, until you show me one of these U.N. models that can predict the past with at least 50 percent accuracy, much less the future, I'm not going to stipulate that the science is settled.

Having said that, we're here today because we've got a distinguished list of panelists who have joined together to come up with a matrix on how to help our environmental and our economic issues. And they are distinguished. I know at least ⅔ of them personally. And I will stipulate that they're all men and women of honor and integrity. One of the things that they say in their statement of principles is that they want a plan that's economically viable. Let me just read the stock prices of the witnesses today that are before us. We have the CEO of Conoco-Phillips. His stock price a year ago was $75.15 a share. It closed yesterday at $48.82. That's a 35 percent reduction. Duke Energy, Mr. Rogers is with us. His stock price a year ago was $20.05. It closed yesterday at $14.89. That's a decline of 26 percent. Mr. John Rowe, who represents Exelon, his stock price a year ago was $77.49. It closed yesterday at $52.84. That's a decrease of 32 percent. Mr. Crane, who represents NRG, $40.99, $23.17 yesterday, minus 43 percent. General Electric, one of the bedrocks of American industry, $35.27 a year ago, $13.87. That's a decline of 61 percent. Unfortunately I own some of that stock.

So I want my G.E. folks to get with the program here. Rio Tinto, $402.09, closed yesterday at $81.52. A decline of 80 percent. Siemens closed yesterday 61 percent off. PNM, Mr. Sterba, who has got a new hairdo I see.

Mr. STERBA. Yes, sir.

Mr. BARTON. $20.09 a year ago, $10.31 yesterday, a decline of 49 percent. And the winner, in terms of least decline is Pacific Gas and Electric, Mr. Darbee. Their stock a year ago was $44.22. Yesterday it was $36.52 which is a decline of only 17 percent. It must be something about the California economy, Mr. Chairman, it is helping or maybe Mr. Darbee is just an unbelievably excellent leader. My point is, there's not one CEO here today whose stock price is even close to what it was a year ago. We're in a very serious economic recession. And you cannot tell me that if we adopt one of their principles of a mandatory, mandatory cap and trade program on CO_2 emissions for our economy that it's going to help their stock prices.

Now stock price is an inelegant value of the whole economy. I understand that. But we should be about protecting jobs, creating jobs. If we can do things, Mr. Chairman, that improve energy efficiency, if we get more energy or we get more output for less energy,

and there's an environmental benefit consequently because of that, that's a good thing. But if we say we have to do things to lessen CO_2 regardless of the economic consequences, in my opinion, that's a bad thing.

So I think we should start with solutions that work. Mr. Boucher has a bill that is an R&D program for CO_2 carbon capture, conversion and sequestration. There's consensus on both sides of the aisle that that bill is a good first step. We should move that bill, Mr. Chairman. Then let's look at the experience in Europe of their cap and trade program, which is not working. Which is not working. And go from there. And last thing, we don't have the CEO of ExxonMobil here. I don't know if they're a part of USCAP. But their CEO has come out and said, if we have to do something about carbon, let's have a carbon tax.

Now I'm not an advocate of a carbon tax. But I do believe that if you really, really, really want to reduce CO_2, a carbon tax is the most efficient way to do it. And we should get with our friends at Ways and Means and give that some serious consideration. With that, Mr. Chairman, I'll yield back. I do appreciate the witnesses being here. I've read the synopsis of their program. And I do agree with their conclusion that we want to do things that are sustainable, that protect the economy and show that America can be a world leader. I do agree with that.

Mr. WAXMAN. Thank you Mr. Barton. Mr. Markey.

OPENING STATEMENT OF HON. EDWARD J. MARKEY, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF MASSACHUSETTS

Mr. MARKEY. Thank you, Mr. Chairman, very much. The coalition of American businesses and environmental groups before us today represents the evolution that has occurred on the issue of global warming. We have emerged from the last decade primordial ooze of discord and delay on global warming action. We have now arrived on terra firma where hard emissions reductions targets must supplant voluntary measures that aren't up to the job. And instead of struggling to stay afloat in a mire of skepticism, we're now poised to march forward with a new climate-friendly Obama administration and congressional leadership. But evolution will only take us so far on this issue. What we now need is legislative intelligent design.

Now the hard task of enacting global warming legislation is before us. The witnesses here today, their shareholders and members and a growing majority of Americans know that the key to our economic growth, national security, and planetary survival is to pass energy and climate legislation that will finally unleash the clean energy revolution that has been building for years. The CEOs that are testifying before us today are not here to harm shareholder value. They are here to help lay out a plan, which will enhance shareholder value in the years ahead. To target where the economic growth opportunities are for our country and to create the jobs that will employ Americans for this generation and generations to come. That is why they are here. They understand the problems better than any that our country is faced with today economically.

Our country has been hit by an economic tsunami. At the same time, we are feeling the early effects of a climate storm that is growing stronger and approaching faster than predicted just a few years ago. Comprehensive clean energy and climate legislation is the solution to both of these problems. And it is a solution for the whole country. High tech hubs like Massachusetts and sunny California will benefit. But so will steelworkers in Pennsylvania and former Maytag manufacturing workers in Iowa who are building blades for wind turbines. And ranchers in Texas and South Dakota are seeing their relentless winds turned into revenue with every turn of the wind turbine sprouting on their lands. Last year I introduced iCAP, the Investing in Climate Action and Protection Act, as my contribution to the climate policy discussion. Many of the core ideas of iCAP are reflected in the discussion draft put forward by Chairman Dingell and Chairman Boucher this past October. And many are consistent with the blueprint issued by the U.S. Climate Action Partnership today. Those developments bode well for the work before us. And I look forward to working with you, Chairman Waxman, chosen newly as the chairman because you have shown such tremendous leadership on this issue. I look forward to working with the other members of the committee, the administration and the American people to enact climate legislation that will save our economy and protect the planet.

As the new chairman of the Energy and Environment Subcommittee, I am committed to moving a bill as quickly as possible in partnership with Chairman Waxman and all of the members, bipartisan, Democrat and Republican so that we can as quickly as possible deal with this issue because the urgency of the problem demands swift action. So I thank you, Mr. Chairman. I think it's very appropriate that you made this the first hearing and the quality of this first panel represents the magnitude of this issue. And I yield back the balance of my time.

Mr. WAXMAN. Thank you very much, Mr. Markey. Mr. Upton.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well, thank you, Mr. Chairman. I just hope that this hearing is not necessarily a sign of things to come. I can remember when Republicans took the majority in the 1990s and I can remember sage advice given by my friend, Mr. Markey, who said that we ought to have the subcommittee chairman of Oversight and Intel, his advice was that we not have more than one panel and not more than six or seven witnesses and always allow the minority to have an equal say in terms of the folks on that panel. And admittedly, we have one panel today, but we have far more than six or seven. And I'm not sure that the minority was afforded the opportunity to, in fact, insist on a couple different witnesses. I also wish that we had received this blueprint earlier than this morning.

Clearly it was printed before today. It would have been nice to at least have taken it home last night to be able to digest some of the summaries and the information rather than get it thrust at us literally at 9:00 this morning over in the Cannon Building.

But I would confess that climate change is real. I recognize that we have a problem, and in fact, we do need to take action. I have

never been a fan of cap and trade. We're fortunate to look at the EU's failure and their inability to reduce global gas emissions. Climate change policy must adhere to a number of different commonsense principles. It must provide a tangible environmental benefit to the American people. It has to advance technology and provide the opportunity for export. It has to protect American jobs. It has to strengthen U.S. energy security. And it does require global participation. I'll support legislation—I won't support legislation that doesn't meet those standards.

In my State of Michigan, things are really, really tough. Our governor told us last week that our unemployment offices across the state are fielding 100,000 calls an hour. By design, a cap and trade approach works by increasing energy costs and slowing down economic growth. We can't afford that in Michigan. As a former member of this committee from the other side of the aisle, Sherrod Brown, now a Senator from the State of Ohio during the Senate cap and trade debate last year, sent a letter to Majority Leader Reid who said, and I am quoting directly from his letter, that cap and trade programs developed in the Lieberman-Warner bill have the potential to raise over $7 trillion.

Much of those funds will be indirectly paid for by consumers through increased energy prices. I think he had it right. The only consensus achieved during that Senate debate was that the cap and trade approach was not appropriate. Rather than making energy more expensive, hurting our fragile economy and sending American jobs overseas, we need to be pursuing an approach that promotes and encourages clean energy, builds economic strength through exporting American technology and thus creates jobs rather than exporting them. And I propose instead of setting an arbitrary cap that isn't linked to tangible global greenhouse gas reductions or recognizable drop in global temperatures that we should begin working on a clean energy policy that spurs investments in that technology and American jobs. More nuclear.

We need to invest in clean coal technologies like carbon capture. We need to invest more in wind and solar and other renewables like hydro and we need more conservation. We must take a sector-by-sector approach that cultivates innovations in technology and efficiency rather than arbitrary government mandates. And we must meet our ever increasing energy demands as our economy begins to move forward and recover from this recession that we've been in, particularly in Michigan, for a long, long time. And you can't exclude China or India.

Mr. Chairman, I look forward to the presentation and the questions that we'll be able to afford ourselves, both in person as well as in writing. I yield back the balance of my time.

Mr. WAXMAN. Thank you Mr. Upton. Today we're honored to have with us 14 chief executive officers and presidents of a broad range of businesses and leading environmental organizations, all of whom are here as members of the U.S. Climate Action Partnership or USCAP. USCAP is a coalition of over 30 businesses and leading environmental groups with the common purpose of urging Congress to enact climate change legislation promptly. And I would note that two other members, Alcoa and Deere and Company had been invited to testify and ultimately were unable to do so. This is a truly

a distinguished panel. And I can spend a great deal of time discussing their accomplishments and their portfolios and their stock prices. But I think that since the purpose of this hearing is to hear from them and time is short, I'll forgo a full introduction.

Joining us today are Jonathan Lash, President, World Resources Institute. James Mulva, Chairman and Chief Executive Officer of Conoco-Phillips. George Nolen, President and Chief Executive Officer of Siemens Corporation. Fred Krupp, President of Environmental Defense Fund. John Rowe, President and Chief Executive Officer of Exelon Corporation. David Crane, President and Chief Executive Officer of NRG Energy. Preston Chiaro, Chief Executive Officer of Rio Tinto. Jeffrey Immelt, Chairman and Chief Executive Officer of General Electric. Frances Beinecke, President of Natural Resources Defense Council. Jim Rogers, Chairman and President, Chief Executive Officer of Duke Energy. Peter Darbee, Chairman, CEO and President of PG&E Corporation. Eileen Claussen, President of the Pew Center on Global Climate Change. Mark Tercek, President and Chief Executive Officer, The Nature Conservancy. And Jeffry Sterba, Chairman, CEO and President of PNM Resources.

STATEMENTS OF JEFFREY IMMELT, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, GENERAL ELECTRIC; JIM ROGERS, CHAIRMAN AND PRESIDENT, CHIEF EXECUTIVE OFFICER, DUKE ENERGY; FRANCES BEINECKE, PRESIDENT, NATURAL RESOURCES DEFENSE COUNCIL; FRED KRUPP, PRESIDENT, ENVIRONMENTAL DEFENSE FUND;EILEEN CLAUSSEN, PRESIDENT, PEW CENTER ON GLOBAL CLIMATE CHANGE; PETER DARBEE, CHAIRMAN, CEO AND PRESIDENT, PG&E CORPORATION; PRESTON CHIARO, CHIEF EXECUTIVE OFFICER, RIO TINTO; AND JAMES MULVA, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, CONOCO-PHILLIPS.

Mr. WAXMAN. As I understand it, we're going to hear from six witnesses—no, in agreement with the witnesses, six witnesses will waive their opening statement. And we thank them for their understanding. For the remainder, we'll hear 2-minute oral statements from each, and we have written statements from all of the witnesses, which we will enter into the record.

I would like to also forewarn members, which I have mentioned this before, that some members of the panel will have to meet prior engagements this afternoon with the incoming administration. And as Mr. Barton and I have discussed, when this group of witnesses needs to leave, they will leave behind a group of designated replacements and will stay until we have finished with all our questions from all of the members who wish to ask questions.

We're going to start a new policy in this committee that all witnesses that testify before us do so under oath. So I'd like to ask you if you would now that you are comfortably seated to please stand and raise your right hands.

[Witnesses sworn.]

Mr. WAXMAN. The record will indicate each of the witnesses answered in the affirmative. We'll turn to our first witness for a statement, Mr. Immelt from General Electric.

STATEMENT OF JEFFREY IMMELT

Mr. IMMELT. Good morning, Mr. Chairman. Thank you and Ranking Member Barton, members of the committee, good morning, and it's an honor to be here this morning. Thank you for this opportunity. I'm Jeff Immelt, chairman of G.E. I understand we might have gotten off on the wrong foot this morning. I want to apologize for any process difficulties or misunderstandings we had. But we are honored to be here and we look to being responsive. We've been briefed on what the opening comments were. And please know directly from all of us that there is no intention to be disrespectful in any manner. We are here to be helpful in this process. So let me say that from the outset. We've launched a clean energy initiative in G.E. about 5 years ago. Here's what we've learned so far. We've reduced our own carbon footprint from where we were in 2004 by 8 percent between now and then. That represents about $100 million savings per year.

So in an industrial setting, we've taken it on internally to great results. We've invested approximately $3 billion in clean energy R&D each year over that time period. That has generated $17 billion in 2008 revenue, 20 percent annual growth. Ranking member Barton, if this was our only business, our stock price would be doing much better right now. This is actually a great place to invest. And we've created competitiveness. 20 percent of our jobs inside G.E. are tied to green products. And that pulls with it another 60,000 supplier jobs.

We are a net exporter of these products. So we view this as being a core of our global competitiveness. That's just a background of how I have come here.

I represent, and we've all come together as the members of U.S. Climate Action Partnership, each one will go through some of the aspects of the blueprint that we've introduced today. But I would just make maybe four points at a very high level. One is that we really have gathered together a very diverse group of leaders. We represent industrial customers, utilities, car companies, oil companies. We really have tried to put together a representative segment of the industrial complex in the United States as well as having some of the leading NGOs in this field and experts over a long period of time.

The second point I'd make is that what we try to do is a balanced and integrated approach with the understanding that economics are important, that solving the environmental issues are important, and we've tried to link in the proposal—the right trade-offs you know that can be—should be considered as we go forward with this kind of legislation. I'd say the third thing that we try to do is represent in cap and trade a market-based approach for pricing carbon that we think over the long term will stimulate technology and make that a tremendous source of great strength as we go forward. The last comment that I would make is that we've always viewed U.S. Climate Action Partnership as a catalyst for change. We don't think we have all the answers. We think this is a starting point that can be built on and please accept that in the spirit with which it's given. We are people trying to solve what we view as a problem, trying to turn that into an opportunity and trying to do that in the context of being good citizens and being constructive in

this dialogue. So thank you very much. And I'll turn this over to Jim Rogers.

Mr. WAXMAN. Thank you, Mr. Immelt.

[The prepared statement of Mr. Immelt follows:]

STATEMENT OF
JEFFREY R. IMMELT, CHAIRMAN & CEO, GE

BEFORE THE HOUSE COMMITTEE ON ENERGY AND COMMERCE

HEARING ON
CLIMATE CHANGE AND UNITED STATES CLIMATE ACTION PARTNERSHIP

JANUARY 15, 2009

Mr. Chairman, Ranking Member Barton, and Members of the Committee:

Good morning. I am Jeffrey R. Immelt, Chairman and CEO of General Electric Company (GE).

GE is Imagination at Work - a diversified technology, media and financial services company focused on solving some of the world's toughest problems. With products and services ranging from aircraft engines, power generation, water processing and security technology to medical imaging, business and consumer financing, media content and industrial products, we serve customers in more than 100 countries, and employ more than 327,000 people worldwide.

GE is made up of four businesses, each of which includes a number of units aligned for growth. Our businesses fuel the global economy and improve people's lives. Our four global research centers attract the world's best technical minds. With more than 3,000 researchers working toward the next breakthrough, GE is positioned to continually innovate, invent and reinvent. GE is the only company listed in the Dow Jones Industrial Index that was included in the original index in 1896.

I am pleased to be here today to testify as one of the founding members of the United States Climate Action Partnership (USCAP) as we unveil our consensus *Blueprint for Legislation* to address climate change. The Blueprint is a product of two years of intensive work. We believe that it provides a framework for the 111th Congress to consider as it begins its work on this complex issue. Our proposal is not the only approach to addressing climate change, but offers a workable, balanced option on the key linked issues of targets and timelines, cost-containment and offsets, and allocation and coal that, if implemented, would result in climate protection and allow continued economic growth.

We joined with the other members of USCAP for three key reasons:

First, our company has developed a business model based on innovative environmental and energy technology that we know from our own experience can reduce energy consumption and greenhouse gas emissions, and save substantial resources.

Under ecomagination, which is what we call this business model, we committed to reduce our greenhouse gas emissions by 1% in absolute terms by 2012 versus our "business as usual," projected growth of 20 to 25%. As of the end of 2008, we have reduced our emissions by 8% from our 2004 baseline. We also estimate that we have saved about $100 million dollars by reducing our energy use and greenhouse gas emissions.

Our ecomagination revenues were $17 billion in 2008. We will reach our original $20 billion goal a year ahead of plan in 2009; therefore, we raised our goal to $25 billion by 2010. Our ecomagination order backlog is more than $70 billion. Ecomagination revenue has been growing at 20 percent a year, faster than the rest of the company. Clearly, these are positive results for our shareholders.

Ecomagination also has been good for our workforce. About 20% of our US workforce is tied to ecomagination products. We expect that percentage to increase as the number of our ecomagination products and revenues grow. In addition, about 60,000 US-based supplier jobs are tied to ecomagination products.

Second, we believe that a green business model is good for business, supports jobs and brings revenues to shareholders. Again, ecomagination has validated this premise. We believe that it can work not only for GE, but also for other companies and for the US economy as well. The energy price shock of the last year tells us that we need to take control of our destiny, and the key to doing so is for the US to become the leader in efficient, clean energy technologies. We can reduce our dependence on foreign oil and reduce greenhouse gas emissions, all the while building a platform for economic growth and good U.S. jobs.

Third, and equally important, we have participated in USCAP in recognition of the fact that any clean energy strategy can be sustainable only if the right governmental policies are in place, and green technologies are economically valued. We believe that properly structured climate legislation that balances environmental protection and the need to sustain a dynamic economy is necessary to achieve this goal.

In support of this position, I note our experience.

1. GREEN BUSINESS IS GOOD BUSINESS

After more than 130 years, we have a unique perspective on how green business can be good for the bottom line. We took some risks – but we have been rewarded. I'm pleased to share our experience with you today.

GE launched its sustainable business strategy – "ecomagination" – in 2005. It is our commitment to invest in technologies that help our customers and GE address growing climate and resource scarcity challenges. Our commitment has been grounded in the belief that what is good for the environment can be good for business, and what's good for business can be good for the environment. We like to say that "green is green": the

power of technology is going to enable environmental investing, environmental development and energy savings to drive profits for our shareholders.

We made four concrete, measurable commitments three years ago:

1) to grow cleaner revenues to $20 billion by 2010;
2) to double cleaner R&D to $1.5 billion by 2010;
3) to reduce our own GHG footprint and energy use; and
4) to keep the public informed.

We recently added a fifth commitment:

5) to reduce our water use by 20% by 2012.

We started by committing to reduce our own greenhouse gas emissions by 2012 by an absolute 1% from our 2004 baseline. We have more than 5,000 projects across the company, helping to reduce our CO_2 footprint by 8%, or 700,000 tons, thus far. We also have committed to lowering our energy intensity by 30% by 2012; we currently are down 34%.

What is equally important is that these actions have resulted in savings to the bottom line in reduced energy and fuel consumption of $100 million in 2007 and an estimated $120 million for 2008. Most of these projects have less than a two-year payback period, and many are under 6 months. Investment in energy efficiency is just smart business – and a hedge against future high-energy prices and the very real likelihood of a price on CO_2. This is good news for GE investors as it reduces risk. It is also an energizer within our company, offering employees opportunities to highlight savings within their own businesses.

The results are encouraging for our company, our employees and our shareowners. Our ecomagination revenues were $17 billion for 2008. We will reach our $20 billion goal a year ahead of plan, and therefore are raising our goal to $25 billion by 2010. Our order backlog is more than $70 billion. Ecomagination revenue has been growing at 20 percent a year, faster than the rest of the company, as customers opt for products that provide them better environmental performance and better economics.

Ecomagination also is driving innovation. We will spend $1.4 billion on "cleantech" this year, nearing our goal of $1.5 billion in annual clean R&D investment by 2010. We continue to invest in products and new technologies to make more efficient gas turbines, aircraft engines, locomotives and compression equipment with lower emissions. We continue to grow our R&D spending year over year. We are funding improvements in wind turbines and solar that will make these renewable technologies more efficient and cost effective. We have already seen a positive impact on the cost of wind power.

We are working on new technologies such as Integrated Coal Gasification Combined Cycle (IGCC), which will allow this country to use its indigenous, secure coal resources. Other technology programs include more efficient grid transmission, Smart Meters and demand side management to allow utilities to maximize existing resources The latter technologies would allow ratepayers to "talk" to their utility over power lines and use energy more efficiently.

We have invested in numerous technologies that allow industrial and municipal customers to use water more efficiently. In many industrial applications, our technologies enable 90% recovery of wastewater.

We also are exploring the potential of next generation biofuels for use in all of our internal combustion products, such as aircraft engines, gas engines, gas turbines and locomotives.

Finally, regarding our fifth, and newest, goal: a 20% water reduction. This commitment is expected to free up enough fresh water to fill over 3,000 Olympic-sized swimming pools every year. While CO_2 is a major challenge in today's environment, we believe water scarcity is the next such challenge – indeed, it is already upon us. GE technology can help.

In short, we see financial benefits from having differentiated, competitive products that are winning in the marketplace, lower operating costs due to better efficiency, and significant public recognition for our efforts. This is of exceeding value in our relationships with customers – my second point today.

2. HELPING CUSTOMERS COMPETE AND WIN IN THE NEW GREEN ECONOMY

Some proponents of sustainability believe that improving the environment and combating climate change are sufficient incentives for adoption of green technologies. We find that unless they are coupled with a realizable economic benefit, rapid implementation will not occur. With respect to the competitive advantage that green technologies can offer, some numbers make the case most clearly.

We are the number one wind turbine manufacturer in the U.S., and number two worldwide, with over 8,700 wind turbines installed. Wind will be a $6 billion business for GE this year, up from $300 million when we bought it just 6 years ago. The business has grown because we invested in technology – wind capture, reliability, and maintenance – that improved both performance and economics.

Our Evolution locomotive, 5% more efficient than the competition, was and continues to be the most successful uptake of a technology in the rail industry, where we enjoy a strong number one position.

Our GENX, GE90 and CFM aircraft engines continue to hold number one positions on all the aircraft they power, and we recently received over $4 billion in orders at the

Farnborough International Air Show. Our installed base of biomass engines, called Jenbachers, continues to grow around the world, with over 8000 engines installed. A third of those engines are in renewable applications such as landfill, biomass or coal mine methane applications.

These numbers are clearly good for GE. That is so only because they help our customers compete both technically and commercially to win in an increasingly carbon-constrained world. Whether an airline, a utility or a railway, customers need these technologies to succeed in today's changing regulatory and policy landscape.

We plan to continue making money doing this, and helping our customers to make money. We are capitalists at GE.

If a publicly traded company cannot make money for shareowners, then that company is not a "sustainable business". Nor can it be a driver for sustainable policy progress. Big solutions require big bets on big technology. Anything less will not work.

3. CLEAN R&D

There needs to be a convergence of policy and technology that will allow us to reach our goals of greater energy availability and affordability and reduced greenhouse gas emissions.

In this world, we can never be certain which technology or public policy is going to succeed. Fortunately, GE is big enough to make a number of different, big bets at the same time.

Our R&D pipeline is full of new product and white space ideas, and we have grown our eco product portfolio three times since ecomagination began. We now have more than 60 ecomagination products demonstrating both environmental and commercial benefits for our customers.

In addition to the technologies discussed above, GE has invested in technologies that help small and medium enterprises and individual consumers lower their carbon footprints, energy bills and water consumption. These technologies include the world's most efficient lighting products, such as linear fluorescent and compact fluorescent bulbs, Energy Star appliances, and energy management controls.

One interesting new offering is the Homebuilder Program, which guarantees 20% less energy and water use for certified homes. Even in this distressed homebuilders' market, this program is doing well, with close to 30,000 homes under contract.

A similar product for hospitals has been introduced. It improves both the workflow efficiency and the energy and water footprint of the hospital.

4. USCAP AND CLIMATE POLICY

USCAP began approximately three years ago, and released its *Call for Action* at the beginning of the 110th Congress. From the outset, the members recognized that climate change is a complex and difficult issue, and that any climate program must balance the demands of environmental protection with the need for economic growth if we were to be successful. Our goal has been to build a center on this issue that would result in a workable, environmentally effective and economically sustainable climate protection program. We believe that the *Blueprint* that USCAP announced today provides a path forward that will achieve that goal.

USCAP is proposing an economy-wide cap and trade program because we believe that it will provide the most reliable, cost-effective mechanism for stimulating and accelerating research, development and deployment of "sustainable" technologies over the long-term. However, we also think that there will be a transition period during which government policies and incentives will be necessary to stimulate the deployment of low carbon technologies, such as renewables, cleaner coal with carbon capture and sequestration, and low carbon fuels and transportation systems.

We know that our proposal is not the last word—we are not legislators. It is offered as a starting point in an effort to build the broad consensus that is needed to enact legislation. Our commitment as a group now is to work with Congress (both Houses, both parties), the new Administration and other stakeholders to enact this year, if possible, climate legislation consistent with the principles underlying the the Call for Action and the Blueprint: namely, that the legislation must be fair, environmentally protective and economically sustainable for our country.

In conclusion, I again thank you for this opportunity to appear before you today, and look forward to any questions you might have.

Mr. WAXMAN. Mr. Rogers.

STATEMENT OF JIM ROGERS

Mr. ROGERS. I'm Jim Rogers. I'm the CEO of Duke Energy. We serve a population of more than 11 million people in the in five States in the Midwest and in the Carolinas. On their behalf, I want to thank you for holding this hearing on USCAP's blueprint for legislative action. The song lyrics "You can't always get what you want, but if you try some time, you might find you get what you need" is not only a great line from a classic Rolling Stones song, but I suspect it is a feeling each of us have had as we created this blueprint for legislative action. We develop legislative proposals to be considered as a package, ones that seek to carefully balance the oftentimes conflicting demands of protecting our environment, our economy and our consumers. Decarbonizing our economy by 80 percent between now and 2050 would be a historic undertaking. It will not be cheap. And it will not be easy.

The sooner we pass climate change legislation, the better off our economy and the world's environment will be. If we go about it in the right way, we cannot only avoid unnecessary economic harm and dislocation, but we can also ignite a lower carbon green revolution and more rapidly put this recession in our rear view mirror. It's my judgment that if we can couple a short-term stimulus package with this longer-term climate plan, we have the ability to stimulate greater confidence from consumers, entrepreneurs and corporations and we all know recessions are put in the rear view mirror when you have the capability to build confidence in the future and make investments.

And let me quickly say, for our company, we plan to invest $25 billion in infrastructure over the next 5 years. It is critical we know the rules of the road of climate change as soon as possible to make sure that we are making the right investments. Regulatory uncertainty is postponing investments and renewables in other green technologies. It's postponing the creation of jobs from apprentices to engineers to Ph.Ds. Our one fear—and I will leave this with you—is that many in Congress will look for reasons to postpone action on climate legislation this year. As a former consumer advocate who fought rate increases of utility companies in the 1970s, I believe by starting now we have a better chance to smooth out and minimize the inevitable cost increases that will be imposed on U.S. consumers. We have important provisions in this blueprint that mitigate the cost impact on electric consumers by achieving president-elect Obama's stated objective to reduce carbon emissions by 2020. Thank you, Chairman Waxman and the committee. I appreciate the opportunity to be here today.

Mr. WAXMAN. Thank you Mr. Rogers.

[The prepared statement of Mr. Rogers follows:]

TESTIMONY OF JAMES E. ROGERS
CHAIRMAN, PRESIDENT AND CEO
DUKE ENERGY CORPORATION

BEFORE

HOUSE ENERGY AND COMMERCE COMMITTEE

JANUARY 15, 2009

Good morning Chairman Waxman, Ranking Member Barton and distinguished members of the Committee. My name is Jim Rogers and I am the Chairman, President and CEO of Duke Energy. We serve a combined population of more than 11 million people in five states in the Midwest and Southeast. On their behalf and mine, thank you for holding this hearing today to discuss USCAP's *Blueprint for Legislative Action.*

For several years now, I have been talking about the need to regulate greenhouse gas emissions. In my judgment, the science, as expressed by the Intergovernmental Panel on Climate Change and the National Academy of Science, is persuasive, and the call to action is compelling. This call to action led Duke Energy to join nearly two dozen other leading companies and environmental organizations to form the United States Climate Action Partnership (USCAP).

We went into this endeavor knowing full well that trying to find consensus on an effective climate change policy would not be an easy task for such a diverse group. And trust me when I say this, it wasn't easy. But, we also knew we had a responsibility to step up and effectively address climate change on a larger scale and the opportunity to be part of a group that could look at this issue from different perspectives and provide Congress with recommendations on how to address various regional and industry

concerns was too great to pass up. USCAP's cross-sectional and diverse membership, which many thought would be its Achilles heel, has turned out to be its greatest asset.

A popular song when I was younger included the line "you can't always get what you want, but if you try sometimes you just might find you get what you need." This quote was on the wall throughout the USCAP discussions and is a fitting description of the Blueprint. The Blueprint itself is the product of countless revisions and heated debates over several years and thousands of hours – similar to what has been, and will be, happening in Congress on this very subject. No one got everything they wanted, but we all got what we feel is needed to ensure a sound climate change policy is created.

What we have produced is a consensus document of recommendations - *The Blueprint for Legislative Action* -that all USCAP members feel is a pragmatic path forward for Congress to enact a sustainable climate policy. The foundation of this Blueprint is based on three equal tenants – protecting our environment, protecting our economy and protecting consumers.

Enacting a policy that equally protects these three areas will not be easy because the issue of climate change is so complex and impacts so many different parts of our society. The tendency of wanting to protect one area more than the others or at the expense of the others must be avoided. USCAP believes the best way to avoid this and provide a fair and balanced policy is to implement an economy-wide cap-and-trade program that includes appropriate cost-containment mechanisms - including offsets and allowances - and supports the development, demonstration and deployment of new low and zero-emission technologies.

While the environmental aspects of climate change policy are very important and are most often seen as the primary policy driver, Congress cannot forget that both cost containment and technology development are critical components of a sustainable climate change program.

The Blueprint reaffirms that an effective policy has to be a combination of various elements working together as one program. Provisions of legislation will not be effective if developed in a vacuum for implementation without consideration of how each piece works when combined with other parts of a bill. Therefore USCAP urges that the recommendations contained in the Blueprint be viewed as a whole and not have each recommendation viewed in isolation.

Why Congress Should Act Immediately

Many people ask me if I still believe, given the current economic situation, that Congress should address climate change immediately. My answer is simply yes. While it may seem counterintuitive, the current economic downturn actually provides Congress with its best opportunity to pass meaningful and sustainable climate legislation.

Protecting Consumers and the Economy

The need to protect our economy and consumers by ensuring the proper safeguards are included as our nation transitions to a new low-carbon environment will be essential, especially in this time of economic uncertainty, in order for Congress to pass, and the President to sign, climate legislation.

As the members of this Committee well know, coal is our nation's most abundant energy resource, and decisions made at both the federal and state level have led us to power half of our country with this natural resource. Congress must recognize that the infrastructure to support this choice of fuel has been built up over the last half century and cannot be replaced overnight. While we must transition to a less carbon-intensive economy as fast as possible, the physical and economic reality of dealing with very large numbers is that the transition will seem gradual. At the same time, consumers in regions of the country that depend heavily on fossil fuels for electric generation should not be punished for decisions made according to the rules of the day when this legacy infrastructure was developed.

Therefore, it is essential that Congress put forward a clear trajectory that allows companies time to invest and build. That means companies must be able to change out their current fleets in a time frame that does not stretch capital expenditures to a point where Wall Street reacts by increasing capital costs and downgrading companies. In addition, customers must have time to absorb those huge capital expenditures. Even though utilities build power plants and depreciate them over a 30-year period, the massive transformation that climate change legislation will require will mean an impact on electric rates in the near and long-term.

As an example, we are now building an Integrated Gasification Combined Cycle (IGCC) plant in Indiana, which we hope to become one of the first large-scale demonstrations of carbon capture and sequestration (CCS) technology. This single plant will increase electricity prices for our Indiana customers by 18 percent, even before we fit it with CCS. Hundreds of these plants will need to be built by the middle of the century to replace the existing coal fleet if we are to have any hope of meeting the targets Congress and the incoming Administration are now discussing. Consumers and businesses can't be expected to pay for these, nor is it physically possible to build them all, within the first 20 years of the program. But if we fail to begin now, we will miss an opportunity at being successful over the long-term.

Much of the climate debate, especially recently, has centered on how allowances to emit carbon dioxide will be distributed. Some have taken the position that allowances should be allocated to the electric sector at no cost to help dampen the additional costs consumers will be faced with in the early years of the program - similar to how allowances were distributed under the 1990 Clean Air Act Amendments. Others have taken the position that all allowances should be auctioned from day-1 of the program and the revenue used to fund federal programs – some climate related, some not.

Duke Energy believes that allocation of no-cost allowances should be viewed as a transitional measure. It is simply a bridge to the point in time at which we can de-carbonize our economy in an efficient and cost-effective manner. As I just mentioned,

our current electric power infrastructure has taken decades to build – and we won't revamp it over night. But over time, developing and deploying advanced new technologies will be the key to virtually de-carbonizing our country's electricity system. As we approach that point, the granting of allowances can be phased out.

A full auction starting on day-1 of the program, implemented as some have suggested, takes away the transitional bridge to a low-carbon economy and creates nothing more than a cap-and-tax program, which will increase the cost of the program to electricity consumers. It would disproportionately and unfairly burden those regions of our country that are most dependent on fossil fuels, such as coal, for their electricity supply. Forcing citizens in these areas of the country to bear the cost of buying allowances, while at the same time bearing the cost of replacing the existing carbon intense generation with lower carbon alternatives, would result in a double hit to those customers. A full auction at the start of the program serves no environmental purpose because the environmental integrity of the program is ensured by the cap, not whether allowances are auctioned or allocated at no cost.

Using my company as an example may help to clarify the issue. Duke Energy's customers depend on coal-fired generation for most of their electricity. Those plants were built decades ago, long before anyone raised carbon concerns. A carbon cap that becomes more stringent over time will require us to reduce the amount of carbon our plants emit. That will require us to build new, low- and non-emitting plants, and install carbon capture and sequestration technologies. Our customers will bear the burden of the cost to de-carbonize our generation fleet. And, because our current fleet is more carbon-intensive than those found in some other regions of the country, the costs to build and install this equipment will be proportionately higher than in areas that are less dependent on coal, as noted in my earlier Indiana example. Until new technology becomes available and new plants can be built, we still have to run our existing coal plants to meet the needs of our customers and keep the lights on. To run those plants, we will need allowances. Again, requiring our customers to pay disproportionately higher fleet modernization

costs, and at the same time pay the cost of purchasing auctioned allowances until the fleet can be de-carbonized, is an unfair double punch.

This debate isn't just about the electric industry. Energy intensive heavy manufacturing is centered in the states with affordable energy prices – that tends to be the industrial Midwest. A too-rapid increase in energy prices will hit these already stressed industries at a time they can least afford it. Worse, hitting these industries too hard with significant electricity price increases will cause them to shut down, moving production and emissions overseas to countries without a carbon cap, where emissions are even higher per unit of production. Perversely, our effort to lower emissions in the U.S. could increase them globally. Easing electricity consumers into a low-carbon environment not only helps households, but industries that can be unfairly disadvantaged until or unless we have a true international climate policy.

Providing the Price Signal Needed to Stimulate Large-Scale Private Investment

Bold investment in new low and zero-emitting technologies and the infrastructure needed for a low-carbon economy, are effective ways to generate the jobs and economic growth needed to address the current economic crisis while also positioning the U.S. to succeed in the low-carbon global economy of the 21st century. National climate legislation anchored by an economy-wide cap-and-trade program will create the market price signals needed to stimulate large-scale private investment. This can spark the creation of new jobs quickly while also ensuring long-term opportunity for American workers.

For example, a long-term, stable commitment to provide funding for RD&D for new energy technologies, such as CCS, renewables, and advanced nuclear technologies, would provide high quality, good-paying jobs up and down the chain from research to deployment. EPRI has said such an investment can reduce the present value cost of decarbonizing the electricity sector from approximately $1.5 trillion to $900 billion, provided the industry is permitted to build new plants.

There is also a growing view that significant capital injection in infrastructure will be necessary to pull the U.S. out of recession. It has been reported that Congress will soon start discussing a stimulus package of more than $700 billion. Climate legislation with an economy-wide cap-and-trade program that includes policies for transportation, energy efficiency, and advancing new technologies provides an opportunity to simultaneously focus both private investment and public stimulus spending toward a productive, low-carbon U.S. economy. A price for carbon will provide the market signal necessary to stimulate private investment at the large scale the economy needs. In addition to enabling a more competitive U.S. economy, this market signal and resulting investment will position the U.S. to benefit as the central engine of the global energy technology revolution – not only as the innovator, but also as the leading exporter.

Public investment is also vital for economic recovery and improved U.S. competitiveness. A comprehensive national climate change policy will stimulate economic development thereby generating new revenue at the state and local level. States, in partnership with utilities, can use these public funds, coupled with private investment, to accelerate energy efficiency and the research, development, demonstration, and deployment of new emission reduction technologies. In addition, national climate legislation is the best way to ensure that public spending for economic recovery finances the types of infrastructure that will be productive and economically competitive as the global marketplace increasingly factors in the cost of carbon.

Environmental Clarity

As the leader of an electric utility, my first obligation is to make sure that the lights come on when our customers flip a switch. And I don't mean to sound glib with that statement. Electric production and delivery require a complex network of power generation, transmission and distribution capability. Until we develop advanced storage technology we must generate electricity the instant it is required – constantly and simultaneously matching supply with demand.

We are facing significant capital decisions based on increased electricity demand, along with rising prices, environmental challenges and a national yearning for energy independence. There is no "silver bullet" that will address all of those concerns. It is our responsibility as an electric utility to balance four criteria in meeting our customers' needs – to provide them with electricity that is available, affordable, reliable and increasingly clean.

In striking that balance, it is critical that we understand the environmental expectations of those who regulate us. In short, Congress needs to replace uncertainty with clarity, and carefully consider the needs of the environment, the economy and changing customer demand in crafting climate change policy. In the electricity sector, where capital investments are large and long-lived, clear signals on the approach to climate change are critical.

With the Supreme Court decision on the EPA's ability to regulate greenhouse gas emissions, which makes the future of U.S. climate regulation even murkier, the need for certainty through Congressional action is more critical than ever before. And I believe that providing that clarity, particularly in recognition of the immense capital costs associated with changing out our current fleet of power plants to become a less carbon-intense society, is one of the most important tasks that Congress will face in the coming months and years.

Conclusion

Congress has a monumental, but very important task ahead of it – enactment of a sound climate change policy. Consistent with principles articulated two years ago, USCAP has refined its policy recommendations and believes that if combined into a legislative package the *Blueprint for Legislative Action* can provide a path forward for Congress (1) to reduce greenhouse gas emissions through an economy-wide, market-based cap-and-trade program that includes appropriate cost containment mechanisms, (2) to support the development, demonstration and deployment of new technologies that will enable us to reduce greenhouse gas emissions over the long term, and (3) to remove barriers to the

deployment of low and zero-emission technologies through the use of complementary measures.

I believe it is imperative for Congress to act on this issue immediately. The current economic downturn provides Congress with its best opportunity to pass meaningful and sustainable climate legislation that will equally protect our environment, our economy and consumers. Additionally, and because of the economic situation we are currently in, immediate action on climate change can stimulate private investment in the new technologies that will be needed in a low-carbon economy by providing a price signal for carbon and also provide the regulatory clarity industries need in order to move forward.

I want to again thank you Chairman Waxman and Ranking Member Barton and the rest of the members of the Committee for holding this hearing and I look forward to working with you and your colleagues in the House and Senate, as well as the Administration on implementing a well crafted climate change policy.

Mr. WAXMAN. Ms. Beinecke.

STATEMENT OF FRANCES BEINECKE

Mr. BEINECKE. Thank you very much, Mr. Chairman, and all members of the committee for being here today and hearing the recommendations of USCAP. I am Frances Beinecke, President of the Natural Resource's Defense Council, and I want to congratulate you for devoting the first hearing, Chairman Waxman, of your chairmanship to addressing global warming. You are demonstrating that you share our understanding of the urgency of enacting comprehensive legislation to cut global warming pollution. The scientific basis for prompt action has become even more compelling in the 2 years since USCAP issued its call for action. The Nobel Prize-winning Intergovernmental Panel on Climate Change issued its most definitive report and even more recent findings show that global warming is occurring at a pace that equals or exceeds the upper bounds of earlier predictions. We see this in higher global temperatures, in the shrinking Arctic ice sheet in the increasing acidification of the oceans and increasing sea level rise. Global warming is no longer a distant threat, but a present danger to public health to national security, to biodiversity to the planet.

Some will suggest that the current economic crisis is a reason to delay comprehensive climate legislation. I believe that the opposite is true. The work this committee has already started on economic stimulus legislation can jump-start investments in clean energy infrastructure and help get our economy back on track. These public investments will leverage much more private spending and will be far more effective if Congress follows the economic stimulus bill by promptly enacting legislation that establishes a clear roadmap for achieving the 80 percent reduction in global warming pollution that's needed by mid century.

The targets during the first decade of the program are among the most important and most challenging of a bill's design features. Since the U.S. is late in cutting emissions, we need to make up for lost time, but some stakeholders are concerned about the cost and feasibility of meeting deep emission reduction targets, particularly in the early years. This tension has led to a range of views on the appropriate near-term targets. In the blueprint, USCAP recommends emission limits for cap sources and for total U.S. emissions that would be equivalent to an 80 percent reduction by 2050, nearly 50 percent reduction by 2030 and a range of 14 to 20 percent reduction by 2020. It's important to stress that these targets are tightly linked to the other recommendations included in the blueprint as will be described by my colleagues.

I'd also like to be clear that NRDC believes the science justifies a reduction of at least 20 percent by 2020. We joined request the USCAP consensus because we believe it is critical to enact climate legislation this year, and we believe that the blueprint shows a way to marshal the support from diverse constituencies needed to achieve that goal.

Mr. Chairman and all members of the committee, we have a short window of opportunity to enact effective global warming legislation and secure our physical economic and environmental fu-

ture. We look forward to working with all of you to achieve that in the coming year. Thank you.

[The prepared statement of Ms. Beinecke follows:]

Testimony of Frances Beinecke
President, Natural Resources Defense Council

Before the
Committee on Energy and Commerce
U.S. House of Representatives

Hearing On
"The U.S. Climate Action Partnership"
January 15, 2009

Mr. Chairman and Members of the Committee:

Thank you for your invitation to testify today as a member of the United States Climate Action Partnership, or USCAP. My name is Frances Beinecke. I am the President of the Natural Resources Defense Council (NRDC). NRDC is a national, nonprofit organization of scientists, lawyers and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.2 million members and online activists nationwide, served from offices in New York, Washington, Los Angeles and San Francisco, Chicago and Beijing.

The time for action on global warming has already been delayed too long. Every day we learn more about the ways in which global warming is already affecting our planet. Climate scientists warn us that we must act now to begin making serious emission reductions if we are to avoid truly dangerous global warming pollution concentrations. Failure to pursue significant reductions in global warming pollution very soon will make the job much harder in the future—both the job of stabilizing atmospheric pollution concentrations and the job of avoiding the worst impacts of a climate gone haywire.

A growing body of scientific opinion has formed that we face extreme dangers if global average temperatures are allowed to increase by more than 2 degrees Fahrenheit from today's levels. NRDC believes we may be able to stay below this temperature increase if atmospheric concentrations of CO2 and other global warming gases are kept from exceeding 450 ppm CO2- equivalent and then rapidly reduced. However, this will require us to halt U.S. emissions growth within the next few years and then achieve significant cuts in emissions in the next decade, progressing to an approximately 80% cut by 2050.

This goal is ambitious, but achievable. But if we delay and emissions continue to grow at or near the business-as-usual trajectory for another decade, the job will become much harder. In short, a slow start means a crash finish, with steeper and more disruptive cuts in emissions required for each year of delay, or if insufficient action is taken, a seriously disrupted climate.

As a leading environmental organization, NRDC's top priority is addressing the global warming crisis immediately. Global warming is the most urgent environmental problem we face today. Stopping it will require an immense effort, spanning the globe, and lasting several decades. Because it is a problem for all mankind, no single institution or nation can expect to solve it on its own, and we will need strong, innovative leadership from all quarters. We believe congressional action will be accelerated if we can find common ground among differing interests on as many controversial issues as possible. We joined USCAP two years ago in recognition of this reality. USCAP demonstrates the ability of very diverse interests to come together to act for the common good to help solve global warming, while recognizing and addressing the complicated set of issues posed by global warming legislation.

USCAP is united in the belief that we can, and must, take prompt action to establish a coordinated, economy-wide, market-driven approach to climate protection. The members of USCAP believe that properly constructed policy can be economically viable, environmentally responsible, and politically achievable. Swift legislative action will encourage innovation and provide needed U.S. leadership on this global challenge. Given that USCAP includes major environmental groups, fossil energy producers and users, and leading members of the manufacturing sector, we believe that we have achieved a remarkable level of consensus regarding global warming legislation and we hope that this level of consensus will be helpful to the Committee and the Congress as it moves forward in crafting legislation.

USCAP launched its landmark report, titled *A Call for Action*[1], in January 2007, which lays out a framework for climate protection legislation. Today it includes 31 businesses and leading environmental organizations.[2] USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

We support enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program that places specified limits on GHG emissions, robust cost-containment measures, complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. Properly designed legislation will encourage innovation, enhance America's energy security,

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[1] *A Call for Action* available at: http://us-cap.org/USCAPCallforAction.pdf.

[2] The current members of USCAP are: Alcoa; American International Group, Inc.; Boston Scientific Corporation; BP America, Inc.; Caterpillar Inc.; Chrysler LLC; ConocoPhillips; Deere & Co.; Dow Chemical Company; Duke Energy; DuPont; Environmental Defense Fund; Exelon Corporation; Ford Motor Company; FPL Group; General Electric; General Motors Corporation; Johnson & Johnson; Marsh, Inc.; Natural Resources Defense Council; NRG Energy; PepsiCo North America; Pew Center on Global Climate Change; PG&E Corporation; PNM Resources; Rio Tinto; Shell Oil Company; Siemens Corporation; The Nature Conservancy; World Resources Institute; and Xerox Corporation.

foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge.

I will specifically address the issue of targets and timetables in my oral testimony and the need to establish a mandatory emission reduction pathway to achieve the goal of limiting global atmospheric GHG concentrations to a level that minimizes large-scale adverse climate change impacts to human populations and the natural environment.

We recognize the challenge facing this Committee in crafting comprehensive climate change legislation and we very much hope that the Committee will call upon our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult, and more costly, if Congress delays action.

Recent debate surrounding the crafting of an economic stimulus package early in the 111th Congress has included discussion of such an energy investment. We agree that such efforts can and should be taken as early as possible. Additionally, a central tenet of our *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with complementary measures, the resulting new vision and policy direction will spur the innovation through which America has always excelled. When given the proper tools, incentives and market signals, the American entrepreneurial spirit will lead to sustainability solutions required to meet our many economic, energy, environmental and national security challenges.

USCAP has attempted to help inform congressional deliberations over the past two years. Following our *Call for Action*, we have provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a greenhouse gas registry. Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Over the past six months, USCAP members have worked diligently to refine our policy objectives in order to better advise Congress and the incoming Administration on workable solutions. We have agreed upon a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation. USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. We believe that path forward exists and that we must embark on the journey with deliberate speed. Representing many sectors of the economy, we believe we are in the unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program. We look forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

Mr. WAXMAN. Thank you very much, Ms. Beinecke.
Mr. Krupp.

STATEMENT OF FRED KRUPP

Mr. KRUPP. Thank you, Mr. Chairman. I am honored to be here. This blueprint for climate security is a blueprint because it has a cap that protects the atmosphere. The cap is the legal guarantee that pollution actually goes down. But the cap does a lot more than that. The cap creates customers. And if America has ever needed customers at home and abroad both for new and existing technologies, now is that time. And thank you, Mr. Chairman, for your commitment to move legislation out of this committee by the Memorial Day recess. For the sake of our atmosphere and our economy, we really need Congress to enact this legislation this year. My role is to talk about cost control measures, the most powerful of which is the cap and trade program itself. Cap and trade creates competition that will drive costs down while amplifying the effect of any stimulus package that you've passed. These measures—other measures will also be needed.

And these measures should protect the economy, drive investment and energy efficiency and maintain the environmental integrity of the overall emissions budget. Emissions offset, that is activities that reduce greenhouse gas emissions that are not included in sectors that are not part of the cap, are a critical cost control measure recommended in the USCAP blueprint. Since USCAP is recommending stringent emissions targets, we also recommend the generous use of offsets to help moderate the compliance costs. USCAP recommends that Congress establish a board to set an overall annual upper limit for offsets starting at 2 billion metric tons with the authority to increase offsets up to 3 billion metric tons. Since the quality of offsets is an important—as important as the quantity, we also recommend that Congress direct EPA to establish a rigorous and transparent process for ensuring that all our offsets represent real and additional reductions.

In addition, the board should oversee system-wide strategic offset and allowance pool, a carbon board which includes a reserve pool with additional offsets and as a measure of last resort the ability to borrow from future compliance periods that could be released into the market to prevent undue economic harm if necessary.

Quality as far as carbon tons created by reducing tropical deforestation, would be eligible both for the international offset portion and for this strategic offset reserve. Thank you.

[The prepared statement of Mr. Krupp follows:]

Testimony of
Fred Krupp
Environmental Defense Fund
January 15, 2009
regarding
The U.S. Climate Action Partnership
submitted to
The U.S. House of Representatives
Committee on Energy and Commerce

Mr. Chairman and Members of the Committee:

Thank you for your invitation to testify today as a member of the United States Climate Action Partnership, or USCAP.

Environmental Defense Fund (EDF) believes that USCAP has played and will continue to play a key role in building the emerging consensus behind strong climate protection legislation. There is no more important environmental legislation that this Committee will ever consider than comprehensive climate change policy.

EDF is a leading national nonprofit organization representing more than 500,000 members. Since 1967, we have linked science, economics and law to create innovative, equitable and cost-effective solutions to society's most urgent environmental problems. EDF is guided by scientific evaluation of environmental problems, and works to create solutions that win lasting economic and social support because they are nonpartisan, cost-effective and fair. EDF has more than 380 scientists, attorneys, other professionals and support staff, including more Ph.D. scientists and economists working in environmental advocacy than at any similar organization. EDF's total program and supporting services expenditures for fiscal 2008 reached $100.8 million.

In January 2007, USCAP launched its landmark report, titled A Call for Action, which lays out a framework for climate protection legislation. Today USCAP includes more than 2 dozen businesses and leading environmental organizations. USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse greenhouse gas emissions to address climate change.

USCAP supports enactment of an economy-wide approach which includes a well-crafted cap and trade program that places specified limits on GHG emissions. Cost-containment measures, complementary policies and measures to supplement the cap and trade program, and a fully funded federal technology research, development,

demonstration, and deployment program for climate-friendly technologies constitute other key components recommended by USCAP.

Thoughtful and comprehensive climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with opportunity to innovate and succeed. Indeed, a cap could amplify the effect of the stimulus package with the infusion of private capital investment.

Recent debate surrounding the drafting of an economic stimulus package early in the 111th Congress has included discussion of a substantial energy investment. We agree that such efforts can and should be made as early as possible. Additionally, a central tenet of our Call for Action is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with complementary measures, the resulting new vision and policy direction will spur the innovation through which America has always excelled. When given the proper tools, incentives and market signals, the American entrepreneurial spirit will lead to sustainability solutions required to meet our many economic, energy, environmental and national security challenges.

Today I am here to talk about cost control measures. As USCAP said in the Call for Action, cost control measures are policies designed to provide capped entities with greater confidence that their cost will be limited and flexibility to manage emission reduction compliance costs. USCAP believes the most powerful cost control measure is a robust cap and trade program since markets do the best job of controlling costs over time. A cap and trade program will unleash entrepreneurs to find new low-carbon technologies and better ways of reducing emissions. With such a program we are creating performance based demand across the board, across the whole economy, to reduce greenhouse gases.

Emission offsets—that is, activities that reduce GHG emissions that are not included in the cap—are a critical component of the USCAP vision. Ensuring the high quality of offsets is essential; any offset must be environmentally additional, verifiable, permanent and enforceable. USCAP believes that offsets can play a key role in limiting and managing compliance costs.

Any cost control measures must be designed to enable a long-term price signal that is stable and high enough to drive investment in low- and zero-emitting technologies. In addition, any cost-control option considered by Congress must ensure the integrity of the emissions cap over a multi-year period and preserve the market's effectiveness in driving reductions, investment, and innovation. As policy makers weigh additional cost control options, it is important for them to consider who and what portions of the economy are impacted, the time duration of the impact and remedy, international competitiveness, the implications for international emissions trading, and how the measure impacts the price signal necessary to stimulate investment and technological innovation.

In the spring of 2008, USCAP issued a Cost Containment Discussion Paper (not a consensus document) that laid out detailed principles that should be considered in designing cost containment measures. In this paper, USCAP states that any explicit cost containment measures should be based on the following principles:

- Measures should be predictable, effective and easy to administer;
- They should achieve the legislation's overall GHG emission budget and should ensure that needed reductions are achieved in a timely manner;
- They should, to the maximum extent possible, provide objective, clear and predictable information about the factors influencing future allowance prices;
- They should not supplant or interfere with the development of commercially available financial tools and strategies for managing volatility and risk;
- They should not create opportunity for manipulation of market prices by market participants;
- The use and impact of several of the measures should be designed to diminish over time, to allow market forces to spur investment in the most cost efficient, long-term solutions for reducing GHG emissions; and
- In the context of the entire program (inclusive of complementary measures), the measures should not encourage near-term investments in significant new high-emitting sources that would "lock in" high carbon emission streams and make future emission reductions even more difficult to achieve.

I am very pleased that USCAP is announcing on January 15th information on cost containment and offsets, as well as other topics of interest.

USCAP recognizes the challenge for the Committee in crafting comprehensive climate change legislation and USCAP hopes that the Committee will call upon its unique partnership to help sort through these complexities and devise solutions.

Thank you for the opportunity to testify on this very important matter. USCAP looks forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

Mr. WAXMAN. Thank you, Mr. Krupp.
Ms. Claussen.

STATEMENT OF EILEEN CLAUSSEN

Ms. CLAUSSEN. Chairman Waxman, Ranking Member Barton, and members of the committee, my name is Eileen Claussen and I'm the president of the Pew Center on Global Climate Change. I am going to say a few words about USCAP's recommendations regarding the allocation of allowance value. Greenhouse gas emission allowances in an economy-wide cap and trade system will represent trillions of dollars in value over the life of the program. USCAP believes the distribution of allowance value should facilitate the transition to a low-carbon economy for consumers and businesses, provide capital to support new low and zero greenhouse gas-emitting technologies and address the need for humans and the environment to adapt to climate change.

USCAP recommends that a significant portion of allowances should be initially distributed free to capped entities and economic sectors particularly disadvantaged by the secondary price effects of a cap and that free distribution of allowances be phased out over time. The USCAP blueprint identifies principles to guide the fair and equitable allocation of allowances to end use consumers of electricity, natural gas and transportation fuels, low-income consumers and workers in transition, energy intensive industries that face international competition, trade exposed commodity products, competitive power generators and other nonutility large stationary sources, programs to achieve technology transformation and adaptation needs of vulnerable people and ecosystems at home and abroad.

One of our main objectives is to dampen the price impact of climate policy on the customers of electricity and natural gas, particularly in the early years of the emissions constraint. And therefore, we believe that a significant portion of emission allowance value should also be allocated to electric and natural gas local distribution companies which are cost regulated and where the prices—the price alleviation would be passed on to consumers. Thank you.

[The prepared statement of Ms. Claussen follows:]

Testimony of
Hon. Eileen Claussen
Pew Center on Global Climate Change

regarding

The U.S. Climate Action Partnership (USCAP)

submitted to
House Energy & Commerce Committee
United States House of Representatives
January 15, 2009

Mr. Chairman and Members of the Committee:

Thank you for your invitation to testify today as a member of the United States Climate Action Partnership, or USCAP.

My name is Eileen Claussen and I am president of the Pew Center on Global Climate Change. In the ten years since we at the Pew Center began our work, we have issued over 100 reports on critical scientific, technical, and economic issues facing policymakers grappling with the challenges of addressing climate change. In our search for practical, economically feasible and environmentally effective solutions, we work with 44 major companies in our Business Environmental Leadership Council. The companies together employ over 4 million people and represent over $2 trillion in combined revenues and have joined with the Pew Center in support of well-crafted mandatory climate policy.

The Pew Center's approach is based on respect for what the science tells us needs to be done, and straight talk about ways that this can be accomplished consistent with sustaining economic growth. Above all, we believe that we can and must work together to meet this critically important challenge.

Working together is exactly what the members of USCAP have done over the past two years to craft a comprehensive set of proposals aimed at jumpstarting the legislative process. The unique nature of this group, especially the diverse interests among its members, underscores the desire on all of our parts to find common ground to begin aggressively addressing climate change without further undue delay. We are proud to stand together today with our USCAP partners in urging Congressional action consistent with our proposals.

USCAP launched its landmark report, titled *A Call for Action*[1], in January 2007, which lays out a framework for climate protection legislation. Today it includes 31 businesses and leading environmental organizations.[2] USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

We support enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program that places specified limits on GHG emissions, robust cost-containment measures, complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly

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technologies. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge.

I want to specifically address one key element in the design of any cap-and-trade proposal – the allocation of allowance value. Allowances are the currency created under a cap-and-trade system. Defined as the right to emit one ton of carbon dioxide (or its equivalent), allowances are required of regulated entities covered under a cap-and-trade program. The total number of allowances permitted under the program sets the environmental target and would be phased down over time.

Because total emissions are capped and allowances are tradable, the distribution of the allowances does not affect the environmental integrity or the direct costs of a cap-and-trade program, but it does directly impact the distribution of costs among regulated entities, consumers, and others. Allowances represent a considerable source of value—in either the form of freely allocated allowances or auction revenue—which the government can distribute as a way of compensating those affected by climate change, by policies designed to address it, or for other policy objectives.

USCAP strongly supports allocating allowance value in a fair and equitable manner. It believes that allowance value can play a critical role in mitigating the transition costs to workers and consumers, regulated entities, and communities that will be relatively more adversely affected, directly or indirectly, by emission limits. Allowance value should also be used to advance new technologies that will be important building blocks to achieving our future low-carbon economy and to support measures aimed at adapting (both domestically and internationally) to climate change. Finally, USCAP

believes that, as these transitional impacts are effectively addressed, free allocation should be phased out over a reasonable period of time.

Decisions about allocating allowance value are just one of many important aspects in designing an effective cap-and-trade program. We recognize the challenge facing this Committee in crafting comprehensive climate change legislation and we very much hope that the Committee will call upon our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult, and more costly, if Congress delays action.

Recent debate surrounding the crafting of an economic stimulus package early in the 111th Congress has included discussion of such an energy investment. We agree that such efforts can and should be taken as early as possible. Additionally, a central tenet of our *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with complementary measures, the resulting new vision and policy direction will spur the innovation through which America has always excelled. When given the proper tools, incentives and market signals, the American entrepreneurial spirit will lead to the sustainable solutions required to meet our many economic, energy, environmental and national security challenges.

USCAP has attempted to help inform congressional deliberations over the past two years. Following our *Call for Action*, we have provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a greenhouse gas registry.

Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Over the past six months, USCAP members have worked diligently to refine our policy objectives in order to better advise Congress and the incoming Administration on workable solutions. We have agreed upon a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation.

USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. We believe that path forward exists and that we must embark on the journey with deliberate speed. Representing many sectors of the economy, we believe we are in the unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program. We look forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

Mr. WAXMAN. Thank you, Ms. Claussen. Our next witness to testify is Mr. Darbee from PG&E.

STATEMENT OF PETER A. DARBEE

Mr. DARBEE. Mr. Chairman, Ranking member Barton, other members of the committee, thank you for the opportunity to be here this morning. I'm going to address the issue of energy efficiency, one of my favorites. From virtually every angle, be it cost or technology or the size and value of the benefits, one of the best strategies to attack the climate problem is improving our energy efficiency. It, as Time Magazine said in a recent cover story, it's perfectly clean, remarkably cheap, surprisingly abundant and immediately available. Its cost is about 2 or 3 cents a kilowatt hour, which is I think as cheap or cheaper than any alternative energy source. USCAP hardly seconds the appraisal of Time magazine. Fortunately for 30 years, PG&E has designed and run some of the world's most effective energy efficiency initiatives. This success is just one of the many indicators pointing to the enormous benefits available naturally in this field. In USCAP's view, these include not only lower energy emissions, but also economic investment, jobs and not the least savings for our customers. The key lies in the right mix of policies, programs and incentives. With that as the goal, USCAP's specific recommendations are the following: Setting or updating codes and standards for buildings and end use technologies at the Federal and State levels, including improving efficiency in Federal buildings. Expanding tax credits, incentives and rebates for buildings that outperform energy efficiency codes. Fully funding energy efficiency outreach in education. Providing incentives to manufacturers and retailers who embrace highly efficient equipment and appliances, using tax and regulatory policies to drive consumers and manufacturers towards more energy efficiency product and processes. Developing a generally accepted approach for measuring and tracking energy reductions and corresponding emissions benefits. Encouraging State regulators to align policies so that utilities are incentivized to put a high priority on energy efficiency and demand management. A prime example of this is revenue decoupling which eliminates the incentives for utilities to sell more energy as they are currently motivated to do today. Tracking and reporting State progress on energy efficiency potentially rewarding the leaders with additional energy efficiency funding, and finally, labelling buildings to provide information on the value of energy savings and requiring that information be factored into loan applications and underwriting.

Together we believe these steps would jump start major progress towards boosting the overall energy efficiency of the U.S. economy. Thank you for this opportunity to speak before you.

[The prepared statement of Mr. Darbee follows:]

Testimony of Peter A. Darbee
Chairman, CEO, and President
PG&E Corporation

Before the

Committee on Energy and Commerce
United States House of Representatives

Legislative Hearing on the United States Climate Action Partnership

January 15, 2009

Chairman Waxman, Ranking Member Barton, and Members of the Committee: Thank you for your invitation to testify today as a member of the United States Climate Action Partnership, or USCAP.

PG&E Corporation is an energy holding company headquartered in San Francisco, California and the parent company of Pacific Gas and Electric Company. Pacific Gas and Electric Company is California's largest utility, providing electricity and natural gas to more than 15 million people throughout northern and central California. PG&E is a recognized leader in energy efficiency and has among the cleanest mixes of electric power of any utility in the country.

We have been at the forefront of the climate discussion at the state and federal levels, and our position is clear. We believe the link between greenhouse gas (GHG) emissions and the Earth's warming climate is convincing, the potential consequences are serious, and the need for action is urgent. Because emissions from the combustion of fossil fuels is the single largest contributor to global climate change, the way energy is produced, distributed and consumed has profound implications.

To combat climate change, we support the adoption of a mandatory, national, economy-wide system to reduce GHG emissions. How such a program is structured and implemented may be the single greatest factor influencing the direction of the energy industry in the decades

ahead. It will also have impacts with regard to the nature of the U.S. economy for generations.

These are among the reasons that PG&E became a founding member of the U.S. Climate Action Partnership (USCAP). USCAP launched its landmark report, titled *A Call for Action*[1], in January 2007, which lays out a framework for climate protection legislation. Today USCAP includes 31 businesses and leading environmental organizations.[2] USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, enhance the country's energy security, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide opportunities to American businesses and the nation's workforce.

We support enactment of an economy-wide, market-driven approach incorporating a well-crafted cap-and-trade program that includes specified limits on GHG emissions, robust cost-containment measures complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. We believe properly designed legislation can encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge.

We recognize the challenge facing this Committee in crafting comprehensive climate change legislation. We look forward to the opportunity to be a resource for the Committee as a unique and diverse group that can help navigate the complexities inherent in any effort to address this challenge. The need to begin the transition to a sustainable, secure, low-carbon economy is

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compelling and timely. For example, according to the Brattle Group, the electric power industry is expected to invest on the order of $1.5 trillion over the next 15 to 20 years to meet future demand and modernize the nation's electric infrastructure. These investments will be made regardless of the nation's response to the climate challenge. The important questions are where will these investments be made, and how can we ensure that they will support our future environmental, economic and energy security goals.

Recent debate surrounding the crafting of an economic stimulus and recovery package early in the 111th Congress has included discussion of proposals to spur development of renewable and clean energy solutions. We agree that such efforts can and should be taken as early as possible. Additionally, a central tenet of our *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with the necessary complementary measures, the resulting new vision and policy direction will spur innovation and technology development – a process in which America has always excelled. When given the proper tools, incentives and market signals, we believe the American entrepreneurial spirit will lead to the sustainable solutions required to meet our many economic, energy, environmental and national security challenges.

USCAP has worked to help inform congressional deliberations on these issues over the past two years. Since issuing our *Call for Action*, we have provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a greenhouse gas registry. Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Specific to energy efficiency, USCAP has released previously a set of detailed policy recommendations that expanded upon those included in the *Call for Action*. The recommendations provide extensive detail on developing stronger energy efficiency codes and standards for buildings, equipment and appliances, implementing tax policies that encourage both consumers and manufacturers to make investments in energy efficiency products and processes, establishing transparent, complete, and accurate evaluation,

monitoring and verification protocols for measuring energy reductions, and properly aligning utility incentives to pursue and promote energy efficiency.

PG&E believes the energy efficiency recommendations made by USCAP provide a critical and necessary foundation for achieving aggressive reductions in greenhouse gas emissions. With over 30 years of experience deploying energy efficiency measures, PG&E's efficiency efforts alone have saved our customers an estimated $20 billion, and avoided 125 million tons of greenhouse gas emissions. As a state, California has kept per capita energy use flat over the past 30 years, and has thereby avoided the need to build 24 large power plants. These savings have been possible through careful and focused energy efficiency regulation and legislation at the state level. Imagine the energy, cost and emissions savings we as a nation could achieve through comprehensive energy efficiency policy as part of a climate change program. The time is now to view energy efficiency as the first available fuel for energy production, because it is highly cost-effective, relatively fast to deploy, achievable with existing technology, and importantly, non-emitting.

Over the past six months, USCAP members have worked diligently to refine our policy recommendations in order to better advise Congress and the incoming Administration on workable solutions. We have agreed upon a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation.

USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. We believe that path forward exists and that we must embark on the journey with deliberate speed. Representing many sectors of the economy, USCAP believes we are in the unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program. We look forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

Thank You.

Mr. WAXMAN. Thank you, Mr. Darbee.

Now we'll hear from Mr. Chiaro from Rio Tinto. There's a button on the base.

STATEMENT OF PRESTON CHIARO

Mr. CHIARO. Chairman Waxman, Ranking member Barton, and distinguished members, members of the committee, thank you for agreeing to listen to our views this morning. I am Preston Chiaro, chief executive energy and minerals for Rio Tinto. We are a major minerals and metals producer with operations and markets worldwide. Here in the U.S., we're the second largest coal producer and we are also the world's second largest producer of uranium for nuclear power generation. Our coal and uranium together provide the fuel for about 9 percent of the Nation's electricity generation. Our U.S. businesses employ over 15,000 people in 31 States with major operations in California, Kentucky, Utah, and Wyoming.

I want to talk this morning about technology, many low greenhouse gas emitting technologies already exist. And these technologies will be important for near-term reductions. But we must also develop the long-term critical path solutions that will allow us to meet aggressive reduction targets over time. Critical path technologies such as carbon dioxide capture and storage or CCS need stable predictable funding sources not subject to annual appropriations in order to compress and accelerate the technology deployment and commercialization time frames. CCS really is a key, enabling technology to unlock an environmentally friendly future for fossil fuels.

The proposals outlined in the blueprint are intended to promote CCS technologies to levels above and beyond what a CO_2 market price signal alone will yield. Our specific recommendations include first by 2010, a comprehensive national strategy for implementing all necessary rules and removing legal barriers for CCS deployment. Second, funding for five gigawatts of projects to demonstrate full integration and viability of CCS with power production and other industrial processes.

Demonstration projects must be underway even before a cap and trade program is in place. Third, direct funding of CCS projects for sequestered CO_2 from coal and other fossil fuels made on a first come first serve basis. Funding levels must be adequate to cover the incremental costs of capturing and storing CO_2 instead of emitting it into the atmosphere, and sufficient to encourage deployment on the order of about 72 gigawatts. We believe this will keep coal in the overall generation mix and avoid a costly dash to gas within the power sector.

Once an adequate regulatory framework and financial incentives are in place and CCS technology has been successfully deployed in commercial settings, we recommend that all new coal plants meet a reasonable performance standard. We believe that these policy recommendations will go far in ensuring that coal remains a cornerstone of electricity generation in the future while responding to the imperative to reduce man-made greenhouse gases. Thank you.

[The prepared statement of Mr. Chiaro follows:]

Written Testimony of Preston Chiaro
Chief executive Energy and Minerals, Rio Tinto

Before the House Committee on Energy and Commerce
The U.S. Climate Action Partnership

January 15, 2009

Chairman Waxman, Congressman Barton and members of the House Energy and Commerce Committee, thank you for the invitation to present testimony on the subject of the U.S. Climate Action Partnership and climate change policy.

I am the Chief executive Energy and Minerals for Rio Tinto, a major mining company with operations and markets worldwide, [NYSE: RTP].[1] Rio Tinto's business is finding, mining, and processing mineral resources. Major products are aluminum, copper, diamonds, energy (coal and uranium), gold, industrial minerals (borax, titanium dioxide, salt, talc) and iron ore. In the US, we have operations and projects in: Arizona, California, Colorado, Kentucky, Montana, Texas, Utah and Wyoming.

Wherever Rio Tinto operates, the health and safety of our employees is the first priority. The Group seeks to contribute to society's transition to sustainable development. It works as closely as possible with host countries and communities, respecting their laws and customs and ensuring fair sharing of benefits and opportunities.

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[1] Rio Tinto is headquartered in the UK, combining Rio Tinto plc, a London listed company, and Rio Tinto Limited, which is listed on the Australian Securities Exchange.

As an international producer of minerals and metals, climate change and energy issues are critical to our business. We are the second largest coal producer in the US and the world's second largest producer of uranium for nuclear power generation; Rio Tinto's coal and uranium together provide the fuel for approximately nine percent of the nation's electricity generation. While some of our metals and minerals production activities are energy-intensive, they contribute products critical to energy efficiency and minimizing carbon emissions, such as copper for hybrid cars and electrification and industrial minerals used to manufacture fiberglass.

Rio Tinto supports enactment of a comprehensive climate change policy incorporating a cap-and-trade program at the national level that will eventually link to an integrated international program. Several key considerations in climate policy that are particularly important to Rio Tinto include, but are not limited to, cost containment, incentives and funding for technology development and deployment, and measures to minimize competitive disadvantage to energy and emissions intensive industries that are particularly susceptible to international competition.

Rio Tinto believes that broad international participation and cooperation are necessary to stabilize atmospheric concentrations of greenhouse gases. Nevertheless, it is entirely appropriate for the United States to take a leadership role in addressing climate change, particularly with respect to the development of low-emitting technologies which can enable widespread, cost-effective emissions

abatement. The accelerated development and subsequent transfer of low-emitting and abatement technologies to other nations can ultimately assist both developed and developing countries to manage their own greenhouse gas emissions.

Over the long-term, the U.S. and the world will require a broad portfolio of policy and technology options. This should include policies to promote energy efficiency, as well as the development and deployment of low or zero carbon energy sources, and the development, demonstration and deployment of carbon capture and storage technology (CCS) for all fossil fuels.

Rio Tinto believes the key to unlocking an environmentally friendly future for all fossil fuels is CCS. As such, the creation of a supportive regulatory environment will be necessary to encourage the rapid and widespread adoption of CCS. The success of CCS will depend on its widespread application, public acceptance and rapid commercialization. Society's ability to significantly reduce greenhouse gas emissions is directly linked to the speed with which CCS technologies can be deployed. Policies that accelerate their development and deployment are absolutely essential. This will include adequate incentives and public funding to demonstrate and deploy a substantial amount of CCS to help overcome the high cost of early demonstration plants.

Managing the transition and costs of climate policy are important to sustaining the effectiveness of the program. Until such time as there is a global approach to addressing climate change, a US climate program must include

measures that minimize the competitive disadvantage for energy-intensive trade exposed industries and to avoid migration of industrial emissions to unregulated countries. A legislatively-created cap-and-trade program allows for the introduction of measures such as targeted allowance value allocations that can ease the transition of energy-intensive industries into a global carbon constrained economy, as well as provide time and resources for the development of new technologies.

USCAP launched its landmark report, *A Call for Action*[2], in January 2007. It lays out a framework for climate protection legislation. Rio Tinto joined USCAP in September 2007 because the organization's principles and recommendations are consistent with those of Rio Tinto. USCAP has provided a valuable opportunity to work with its members to recommend comprehensive policy approaches for addressing climate change that recognize the long-term challenges and the need for new technologies in addition to market approaches. Today USCAP includes 31 businesses and leading environmental organizations.[3]

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[2] *A Call for Action* available at: http://us-cap.org/USCAPCallforAction.pdf.

[3] The current members of USCAP are: Alcoa; American International Group, Inc.; Boston Scientific Corporation; BP America, Inc.; Caterpillar Inc.; Chrysler LLC; ConocoPhillips; Deere & Co.; Dow Chemical Company; Duke Energy; DuPont; Environmental Defense Fund; Exelon Corporation; Ford Motor Company; FPL Group; General Electric; General Motors Corporation; Johnson & Johnson; Marsh, Inc.; Natural Resources Defense Council; NRG Energy; PepsiCo North America; Pew Center on Global Climate Change; PG&E Corporation; PNM Resources; Rio Tinto; Shell Oil Company; Siemens Corporation; The Nature Conservancy; World Resources Institute; and Xerox Corporation.

We support enactment of an economy-wide, market-driven approach that includes a well-crafted cap-and-trade program placing specified limits on GHG emissions, along with robust cost-containment measures, complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge.

We recognize the challenge facing this Committee in crafting comprehensive climate change legislation and we very much hope that the Committee will call on our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult, and more costly, if Congress delays action.

USCAP has attempted to help inform congressional deliberations over the past two years. Following our *Call for Action*, we have provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a

greenhouse gas registry. Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Over the past six months, USCAP members have worked diligently to refine our policy objectives in order to better advise Congress and the incoming Administration on workable solutions. We have agreed on a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation.

USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. We believe that such a path forward exists and that we must embark on the journey with deliberate speed. Representing many sectors of the economy, we believe we are in a unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program.

Again, thank you for the opportunity to provide testimony. We look forward to working with the Committee, Congress and the incoming Administration on these important issues and prompt enactment of national climate legislation.

Mr. WAXMAN. Thank you very much, Mr. Chiaro.

And finally we'll hear from Mr. Mulva from Conoco-Phillips.

STATEMENT OF JAMES MULVA

Mr. MULVA. Good Morning, Mr. Chairman and committee members. As chairman of Conoco-Phillips, the third largest, U.S.-based integrated energy company, we support the integrated set of recommendations included in USCAP's blueprint for legislative action. Greenhouse gas emissions from transportation fuel represent nearly ⅓ of U.S. total. Clearly, this sector must be covered by any comprehensive national policy. However, reducing these end use emissions is going to be complicated. It would require a systematic approach that involves fuel providers, vehicle and equipment manufacturers, consumers, public officials and policymakers. Now the blueprint offers several key recommendations specific to transportation.

First, emissions from transportation should be included in an economy-wide cap. Second, fuel providers should be responsible for securing allowances for the resulting consumer emissions. And third, coordinated performance measures should be established for all factors involved and that is vehicles, fuels and consumers. Including transportation within the cap will provide the environmental certainty that's needed. It will encourage efficiency, technological progress and more energy conscious consumer practices. Recommended performance measures include one, a greenhouse gas-based fuel performance standard that's challenging but it's also economically and technically feasible. Two, improve vehicle emission standards. And three, strong policies that would reduce emissions from travel, stimulate investments in efficiency and encourage less carbon intensive infrastructure development. These measures should be periodically reviewed and updated for their effectiveness. Our company and other USCAP members are committed to working with Congress and the new administration. We urge you to enact legislation that effectively protects the climate while also assuring the safe, secure and affordable energy supplies that sustain our economy and standard of living. Thank you.

[The prepared statement of Mr. Mulva follows:]

ConocoPhillips

USCAP TESTIMONY FOR HOUSE ENERGY & COMMERCE COMMITTEE
THE U.S. CLIMATE ACTION PARTNERSHIP HEARING
JANUARY 15, 2009

Mr. Chairman and Members of the Committee:

Thank you for your invitation to appear today as a member of USCAP. I am Jim Mulva, Chairman and CEO of ConocoPhillips. I am pleased to be here today to participate in this important hearing, and to share with you my views on the critical need for the U.S. to adopt a national legislative framework to address greenhouse gas (GHG) emissions. ConocoPhillips is an international, integrated energy company. In the United States, we are the third-largest integrated energy company, based on market capitalization, and the second largest refiner, with crude oil processing capacity of approximately 2 million barrels per day. In addition, we are a leading North American producer of cleaner-burning natural gas. We believe that we must act now in a united effort to slow, stop and reverse the growth of GHG emissions. Each year the United States delays enacting a federal framework to control its emissions, the greater the future risk. From an oil and gas perspective, we understand that this means fundamental changes in the way we operate and in the fuels we produce. As an industry and as a company, we will need to develop and deploy new technologies to address our GHG footprint, and we will need to develop and deliver the products necessary to meet the demands of a low-carbon economy. ConocoPhillips is ready to meet the challenge, but we and others need an effective, efficient and equitable federal

program in place to establish the rules and to encourage the technology development and investments necessary for change.

USCAP has been working on an integrated package on various linked policy recommendations to share with members of Congress, including a set of recommendations for the transportation sector.

USCAP launched its landmark report, titled *A Call for Action*[1], in January 2007, which lays out a framework for climate protection legislation. Today it includes a diverse group of companies representing a broad swath of the economy and leading environmental organizations. USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

We support enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program that places specified limits on GHG emissions, robust cost-containment measures, complementary policies and measures to supplement the cap-and-trade program, as well as a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership in this vital global challenge.

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[1] *A Call for Action* available at: http://us-cap.org/USCAPCallforAction.pdf.

We recognize the challenge facing this Committee in crafting comprehensive climate change legislation, and we very much hope that the Committee will call upon our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult, and more costly, if Congress delays action.

Recent debate surrounding the crafting of an economic stimulus package early in the 111th Congress has included discussion of such an energy investment. We agree that such efforts can and should be taken as early as possible. Additionally, a central tenet of our *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with complementary measures, the resulting new vision and policy direction will spur the innovation through which America has always excelled. We understand that this is not the only approach or path forward, and we stand ready to work with Congress and others to develop environmentally protective, economically sustainable and fair climate change legislation.

USCAP has attempted to help inform congressional deliberations over the past two years. Following our *Call for Action*, we have provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a greenhouse gas registry. Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Over the past six months, USCAP members have worked diligently to refine our policy objectives in order to better advise Congress and the incoming Administration on

workable solutions. We have agreed upon a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation.

USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. We believe that path forward exists and that we must embark on the journey with deliberate speed. Representing many sectors of the economy, we believe we are in the unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program. We look forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

Again, Mr. Chairman, on behalf of ConocoPhillips thank you for the opportunity to participate in today's hearing. Our company looks forward to working with you on this important issue.

Mr. WAXMAN. Thank you very much for your testimony.

I note that these are the members of your group selected to give oral statements, but we have written statements from the rest of you, and those will certainly be in the record.

[The statements of Jonathan Lash, George Nolen, David Crane, Mark Tercek, and Jeffry Sterba follow:]

Statement of
Jonathan Lash
President, World Resources Institute
To the
U.S. House of Representatives
Committee on Energy and Commerce
January 15, 2009

Mr. Chairman, distinguished members of the Committee, good morning and thank you for inviting me to testify today as a member of the United States Climate Action Partnership (US CAP), I am Jonathan Lash, President of the World Resources Institute.

The World Resources Institute is a non-profit, non-partisan environmental think tank that goes beyond research to provide practical solutions to the world's most urgent environment and development challenges. We work in partnership with scientists, businesses, governments, and non-governmental organizations in more than seventy countries to provide information, tools and analysis to address problems like climate change, and the degradation of ecosystems and their capacity to provide for human well-being.

As a proud founding member of USCAP let me start by saying that the US CAP partnership was designed to support your work. Since we launched our Call for Action in January of 2007, we have been reaching out to help Congress consider options for climate policy, we have convened workgroups designed to help ponder questions you will face, and today we are releasing our "Blueprint for Legislative Action." I am delighted to be here today to continue our joint efforts to support rapid enactment of US domestic climate policy in 2009.

The need for U.S. climate legislation is urgent. The science is unequivocal, and the need for a new economy to provide jobs and investment is urgent. US CAP businesses and non-profits alike agree that this is the moment to redefine the United States and

support the transition to a low carbon economy.

Let me first address the science: everything we thought we knew a few years ago about climate change has been superseded. All of the trends are proceeding more quickly than we anticipated. Rising temperatures and the consequent impacts are all taking place faster than the models predicted. That means that our long-range projections of what might happen are off. While of course we cannot yet know with complete certainty what will occur 20 (much less 50) years from now, according to our best current work, everything is trending to the high end. And the consequences we are observing today are the product of a mere 0.8 degrees centigrade of warming. Even very aggressive action will only barely forestall two degrees centigrade of warming. The science is telling us we have to act with extraordinary urgency – and that our action must be more than the modest marginal efforts made to date – it must fundamentally change the course of our energy infrastructure, it must address land use and forestry, and it must build a regime that can have global effect, not merely address US emissions.

WRI annually reviews the latest in climate science. This review confirms the case that our climate system is changing. For example:

> According to the National Snow and Ice Data Center (NSIDC), levels of Arctic sea ice from June through September 2007 were at a record low of 4.13 million km2.[1] In 2008, while there was some modest recovery, the world still saw the second lowest recorded ice extent since record-keeping began in 1979. Still more worrisome, the extensive losses during the past two summers have led scientists to speculate that the Arctic Ocean may be ice-free in the summertime much sooner than anticipated. Furthermore, in October 2008, scientists reported that the thickness of winter sea ice plummeted after the 2007 minimum, showing that the ice pack is not only shrinking but is decreasing in overall volume.[2]

[1] NASA "Record Arctic Sea Ice Loss in 2007" http://earthobservatory.nasa.gov/Newsroom/NewImages/Images/arctic_ams_2007259.jpg
[2] *Geophys. Res. Lett.*35, L22502; 2008

The British Columbia Ministry of Forests and Range, in their 2007 report on the mountain pine beetle outbreak,[3] show that in 2007, the impacted area had increased to 13 million hectares (from 4.2 million hectares in 2003). Mountain pine beetles prefer mature lodgepole pines and while they typically die off with cold snaps, warmer temperatures in the region have allowed them to persist. They cut off the nutrient and water supply of the trees by burrowing in trees' bark. The Ministry finds that 40% of merchantable pine volume – 12% of total merchantable volume on the timber harvesting land base in British Columbia – has been impacted from 1999 to 2006. They project that if the pine beetle outbreak continues at the same pace, it will kill off 78% of the pine volume – 23% of total merchantable volume on the province's timber harvesting land base – by 2015.

These impacts, and dozens more of the same magnitude with impacts to our oceans and marine life, to our agriculture systems – and in particular with an impact on the world's poorest and most needy, are harbingers of the future in a climate changed world that seems to be upon us much sooner than anticipated. And every year the list of damages and ecosystems in danger continues to grow. Nature and our economies are linked. But nature does not do bailouts.

If the science calls for urgency, our economy is equally in need of quick remedies.

USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

[3] B.C. Ministry of Forests and Range, Forest Analysis and Inventory Branch. 2007. "Timber Supply and the Mountain Pine Beetle Infestation in British Columbia: 2007 Update http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/Pine_Beetle_Update20070917.pdf

The U.S. needs legislation that is fast, fair and builds future value. We need legislation that jump-starts the economy and creates a signal to investors to put their money into the transition to a low carbon future. We must set the nation on a new course *immediately* to deliver economic and climate results, provide benefits to all, and prepare us for the next generation of technological competitiveness. I believe this includes action to:

(1) promote energy efficiency in buildings and homes,
(2) modernize the nation's electric grid, making it "smarter" and allowing it to facilitate new, more efficient technologies and renewable energy,
(3) stimulate a variety of low-carbon sources of electricity,
(4) demonstrate and deploy carbon capture and storage for coal-fired power plants and other large stationary sources,
(5) encourage greater use of less carbon-intensive forms of transportation and fuel, and
(6) improve the efficiency of our transportation system.

US CAP supports enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program that places specified limits on GHG emissions. The program should contain cost-containment measures, complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge. Business needs regulatory certainty to begin a fundamental transformation akin to a new industrial revolution.

I believe that if we do not create domestic markets for advanced technologies, other countries will be serving the global markets of tomorrow. The world wants the efficient, clean technologies that U.S. business can provide if a long term program is in place to

drive innovation. The world is looking to the U.S. to resume its place on the global stage – and this includes engaging developed and developing countries alike on issues such as technology transformation and adaptation. The U.S. must act domestically and must fully engage in the international negotiations to support action by other countries through a global agreement. But U.S. action can not be contingent on action by other countries, since we are the largest historical contributor to the increases in temperatures and greenhouse gas concentrations we are experiencing today.

Recent debate surrounding the crafting of an economic stimulus package early in the 111th Congress has included discussion of such a package of clean energy investments. We agree that such efforts can and should be taken as early as possible. Additionally, a central tenet of our *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with complementary measures, the resulting new vision and policy direction will spur the innovation through which America has always excelled. When given the proper tools, incentives and market signals, the American entrepreneurial spirit will lead to sustainability solutions required to meet our many economic, energy, environmental and national security challenges.

We recognize the challenge facing this Committee in crafting comprehensive climate change legislation and we very much hope that the Committee will call upon our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult, and more costly, if Congress delays action.

Since 2007, US CAP has provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a greenhouse gas registry. Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

USCAP is committed to helping Congress find environmentally sound, workable, cost-effective approaches to climate change. We believe that path forward exists and that we must embark on the journey with deliberate speed. Representing many sectors of the economy, we believe we are in the unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program. We look forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

TESTIMONY OF GEORGE NOLEN
PRESIDENT AND CHIEF EXECUTIVE OFFICER
SIEMENS CORPORATION

BEFORE THE
UNITED STATES HOUSE COMMITTEE ON ENERGY & COMMERCE

ON
THE UNITED STATES CLIMATE ACTION PARTNERSHIP
JANUARY 15, 2009

Mr. Chairman and Members of the Committee:

Thank you for your invitation to testify today as a member of the United States Climate Action Partnership, or USCAP.

I am George Nolen, President and Chief Executive Officer of Siemens Corporation. Siemens employs approximately 68,000 people across all 50 states, boosting America's economy with over $5 billion in payroll to our United States employees. We hold almost 12,000 patents in the United States. Our revenues in the states exceed $22 billion. Our products and services are everywhere: in healthcare, automation and control, power, transportation, building technologies, water technologies, and lighting.

Of particular interest to the hearing today, our energy solutions help to meet one-third of America's total electric power generation needs every day. We are the number one provider of light rail vehicles in North America, and we are one of America's leading providers of turbines for wind power. We have applied strict criteria to our products worldwide to identify a $25 billion environmental portfolio that will help our customers to reduce their impacts on the environment. Our calculations show that our environmental portfolio helped our customers to save approximately 148 million tons of carbon dioxide

emissions in 2008, or more than twenty-five times the amount of carbon dioxide that Siemens emits worldwide.

As America strives to reduce its carbon footprint, we stand ready to provide cleaner power technology, to improve the energy efficiency of the United States economy and to transport energy from the power plant to the consumer via a smarter grid that reduces electricity waste and allows our electric infrastructure to be more reliable, resilient and secure. Innovation is driven not only by smart ideas, but also by a market hungry for solutions to problems like global warming. One of the most valuable contribution Siemens can make in the fight against global warming is providing innovative, energy-saving solutions.

A well-designed carbon market will play a crucial role in providing incentives for all businesses and households to become more energy efficient. The United States, and in fact the world, needs a framework that includes a mix of short-term goals and incentives for immediate action, as well as mid and long-term goals and incentives to provide certainty for investment.

Siemens joined USCAP to develop recommendations for this framework, joining our business competitors, customers in various sectors and friends in the environmental community on a common mission to urge prompt enactment of national legislation in the United States. We sought to add the perspective of a global technology provider that knows about the technology available to the market today, for instance, to enhance the energy efficiency of buildings, as well as the promise and limitations of technologies such as carbon capture and storage that are not yet commercially viable on a widespread basis.

The United States Climate Action Partnership

USCAP launched its landmark report, titled *A Call for Action*[1], in January 2007, which lays out a framework for climate protection legislation. Today it includes 31 businesses and leading environmental organizations.[2] USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse greenhouse emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help improve our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

USCAP supports enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program that places specified limits on greenhouse emissions, robust cost-containment measures, complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed United States leadership on this vital global challenge.

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[1] *A Call for Action* available at: http://us-cap.org/USCAPCallforAction.pdf.

[2] The current members of USCAP are: Alcoa; American International Group, Inc.; Boston Scientific Corporation; BP America, Inc.; Caterpillar Inc.; Chrysler LLC; ConocoPhillips; Deere & Co.; Dow Chemical Company; Duke Energy; DuPont; Environmental Defense Fund; Exelon Corporation; Ford Motor Company; FPL Group; General Electric; General Motors Corporation; Johnson & Johnson; Marsh, Inc.; Natural Resources Defense Council; NRG Energy; PepsiCo North America; Pew Center on Global Climate Change; PG&E Corporation; PNM Resources; Rio Tinto; Shell Oil Company; Siemens Corporation; The Nature Conservancy; World Resources Institute; and Xerox Corporation.

Siemens and USCAP recognize the challenge facing this Committee in crafting comprehensive climate change legislation, and we very much hope that the Committee will call upon our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult, and more costly, if Congress delays action.

Recent debate surrounding the crafting of an economic stimulus package early in the 111th Congress has included discussion of such an energy investment. USCAP urges that such efforts be taken as early as possible. Additionally, a central tenet of the *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with complementary measures, the resulting new vision and policy direction will spur the innovation through which America has always excelled.

USCAP has attempted to inform Congressional deliberations over the past two years. Following the *Call for Action*, USCAP has provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a greenhouse gas registry. Further, the diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Over the past six months, Siemens has worked with other USCAP members to refine policy objectives in order to better advise Congress and the incoming Administration on workable solutions. We have agreed upon a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation.

USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. Siemens, along with USCAP, looks forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

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TESTIMONY OF DAVID CRANE
HOUSE ENERGY & COMMERCE COMMITTEE HEARING
JAN. 15, 2009

Mr. Chairman and Members of the Committee: Thank you for your invitation to testify today as a member of the United States Climate Action Partnership, or USCAP. My name is David Crane, and I am President and CEO of NRG Energy, Inc. NRG, which is based in Princeton, New Jersey, is NOT a rate-based utility but rather is a competitive power generation company with 24,000 megawatts of generating capacity located primarily in Texas, Louisiana, California, and across the Northeastern United States. Our existing portfolio consists of natural gas, oil, coal, nuclear, and wind plants. In June 2006, motivated in part by a desire to revitalize our aging fleet of assets and, in equal part, by a desire to reduce substantially the carbon intensity of our fleet, we began the addition of more than 10,000 MW of new low and no carbon wind, solar and nuclear generating assets in anticipation of the enactment of comprehensive federal climate change legislation. We have made slow but steady progress with our *Repowering NRG* initiative, which involves more than $15 billion worth of new energy investment.

Climate change legislation is one of our very highest corporate priorities, for three reasons. First, it is our belief that addressing climate change is the paramount challenge facing our generation of American political and business leaders and that it is a moral imperative – akin to workplace safety in the first decade of the previous century – that we act and that we act without any more delay. Second, as one of the Country's top ten carbon-emitting power generators, we know that the power sector is a major part of the climate change problem, but we also are mindful of the opportunity for the power sector to be an even bigger part of the solution through the wider adoption of carbon-free electricity as the energy source of the future for the transportation and industry sectors. Third, to be successful, climate change legislation needs to provide both the missing "stick" of a price signal to emitters, and the well-designed "carrot" of policy support to help us demonstrate and deploy the new technology needed to reduce severely greenhouse gas emissions without sacrificing the American way of life.

We are a member of USCAP because of the unique make up of its membership. Over the last two years, 26 major American corporations committed to addressing this extraordinary issue but equally committed to doing so in a way that does not compromise our customers, employees and other stakeholders. Within that framework, and seeking to harness the potent force of our free enterprise system, we came together with five of the most knowledgeable and dedicated non-governmental organizations to attempt to work though the single best way to help achieve the overriding common goal. By dint of hard work, problem solving and tough compromises, and most importantly, by never losing sight of or appreciation for what was at stake, USCAP succeeded in developing an economically sustainable, environmentally effective climate policy package that is both pragmatic and progressive. Quite simply, if we could not have reached such a compromise between major business and major environmental interests, it would have been unfair to ask Congress to do so. But we have, and we now implore Congress, and all of its members, regardless of party or geographical affiliation, to take up this issue, in all of its complexity, being mindful of its surpassing importance, and to pass comprehensive climate change legislation for consideration by the new Administration.

In January 2007, USCAP launched its landmark *Call for Action*[1], which lays out a framework for climate protection legislation. USCAP today includes 31 businesses and leading environmental organizations.[2] USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. It is my view that thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity, while providing American businesses and the nation's workforce with the opportunity to innovate and succeed.

We support enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program with specified limits on GHG emissions, robust cost-containment measures, as well

[1] *A Call for Action* available at: http://us-cap.org/USCAPCallforAction.pdf.
[2] The current members of USCAP are: Alcoa; American International Group, Inc.; Boston Scientific Corporation; BP America, Inc.; Caterpillar Inc.; Chrysler LLC; ConocoPhillips; Deere & Co.; Dow Chemical Company; Duke Energy; DuPont; Environmental Defense Fund; Exelon Corporation; Ford Motor Company; FPL Group; General Electric; General Motors Corporation; Johnson & Johnson; Marsh, Inc.; Natural Resources Defense Council; NRG Energy; PepsiCo North America; Pew Center on Global Climate Change; PG&E Corporation; PNM Resources; Rio Tinto; Shell Oil Company; Siemens Corporation; The Nature Conservancy; World Resources Institute; and Xerox Corporation.

as complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge.

I certainly recognize the challenge facing this Committee in crafting comprehensive climate change legislation and I very much hope that the Committee will call upon our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult and more costly, if Congress delays action.

Recent debate surrounding the crafting of an economic stimulus package early in the 111th Congress has included discussion of such an energy investment. NRG agrees that such efforts can and should be taken as early as possible. Additionally, a central tenet of the *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. I am convinced that this combination of policies, complementary measures and price signals will spur the innovation through which America has always excelled. When given the proper tools, incentives and market signals, the American entrepreneurial spirit will lead to sustainability solutions required to meet our many economic, energy, environmental and national security challenges.

USCAP has attempted to help inform congressional deliberations over the past two years. Following our *Call for Action*, we have provided Congress with international principles and more detailed information on the topics of cost containment, energy efficiency, geologic carbon storage technologies and a greenhouse gas registry. Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Over the past six months, USCAP members have worked diligently to refine our policy objectives in order to better advise Congress and the incoming Administration on workable solutions. We have agreed upon a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation.

USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. We believe that path forward exists and that we must embark on the journey with deliberate speed.

Representing many sectors of the economy, we believe we are in the unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program. We look forward to working with this Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

Testimony of Mark Tercek, President and CEO
The Nature Conservancy
Before the House Committee on Energy & Commerce
January 15, 2009, 10:30 AM

Mr. Chairman and Members of the Committee:

Thank you for your invitation to testify today as a member of the United States Climate Action Partnership, or USCAP.

My name is Mark Tercek, President and CEO of The Nature Conservancy. The Nature Conservancy is a leading conservation organization—working in all 50 states and over 30 countries around the world—with the mission of preserving the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

Climate change puts at risk the plants, animals and ecosystems that we are committed to protect. It knows no boundaries and so threatens all of our conservation investments, which have protected more than 115 million acres around the world.

Unequivocal scientific evidence indicates that climate change is now occurring at an unprecedented rate. Glaciers and ice caps, built up over centuries, are melting away within decades. Heat waves and wildfires are on the rise. Monsoons and other precipitation patterns are changing, causing more frequent and intense droughts in some areas and severe flooding in others. Warmer ocean temperatures are fueling more intense and damaging hurricanes. The build up of CO2 is acidifying the oceans, threatening the health of coral reefs and other marine ecosystems.

In the past, the planet has gone through natural cycles of gradual warming and cooling, but the changes seen today are happening faster than species and ecosystems can adapt.

Conservancy scientists are observing the early consequences of climate change first hand. Warmer seas are causing coral bleaching and extensive reef die-offs from the Coral Triangle and South Pacific to the Caribbean. Warming trends are pushing species to move toward the poles or up mountain slopes. Vegetation communities are shifting from tropical, temperate and boreal ecosystems. The ability of species to respond is impeded by human land use changes that limit available habitat and cut off potential migration corridors. Together, habitat loss and climate change have already been linked to the extinction of, for example, 75 amphibian species in Central American forests.

Climate change is also adversely affecting the human environment and the ecosystems on which they depend. Many of these changes will be negative. Malaria and other deadly diseases are expanding. Water stress, especially in arid regions like the African Sahel, will increase. Agricultural productivity will decline as temperatures rise by even 1 or 2 degrees. The world's poor are expected to suffer disproportionately, forcing vulnerable people to change their resource use, to migrate or to place even greater demands on the natural ecosystems around them, including protected areas.

As one of the world's largest conservation organizations, with approximately 700 scientists on staff and the largest network of private protected areas in the world, The Nature Conservancy has both a tremendous stake in avoiding the most negative impacts of climate change and a responsibility to play a significant role in pursuing solutions.

Toward those ends, we are advocating for legislative and policy solutions that can drive the rapid pace of emissions reductions that is needed to avoid the worst impact of climate change to people and to nature.

We believe that the protection, management and restoration of forests are critical for reducing emissions from deforestation and forest degradation that account for nearly one-fifth of annual global greenhouse gas emissions. Providing access to carbon markets for forest carbon activities will ensure that we are able to achieve emissions reductions at the scale needed to sufficiently address climate change while serving as a valuable cost-effective solution for U.S. companies.

We must also take measures to help make wildlife and ecosystems more resilient to adverse impacts from climate change. In our programs across the U.S. and around the world, we are leading efforts to demonstrate what works in real places to mitigate and adapt to climate change impacts. We believe any climate change policy approach must include dedicated funding for strategies that help human and natural communities adapt to the changing environment.

The U.S. in particular, as the country responsible for more historical greenhouse gas emissions than any other country and one of the world's two largest emitters, has a unique responsibility to show leadership on this issue. U.S. climate legislation is urgently needed to reduce our emissions, to show the rest of the world what can be achieved and to leverage the participation of the world's major emitters in an international climate agreement that sets us on a path to safeguarding the Earth's natural systems.

The Nature Conservancy joined the US Climate Action Partnership (USCAP) in May 2007 to address these threats and to participate in what we believe is a centrally

important coalition working to enact environmentally- and economically-effective climate change legislation. We joined USCAP to ensure that a strong policy framework was developed to address this critical challenge and to shine a spotlight on the need to reduce emissions through the protection and restoration of forests, which hold or sequester vast amounts of carbon, and on strategies to help ecosystems and wildlife adapt to an already changing planet.

We continue to believe that USCAP represents a unique and diverse grouping of some of the nation's largest companies and influential non-governmental organizations working on the issue of climate change.

USCAP launched its landmark report, titled *A Call for Action*[1], in January 2007, which lays out a framework for climate protection legislation. Today it includes 31 businesses and leading environmental organizations.[2] USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

We support enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program that places specified limits on GHG emissions, robust cost-containment measures, complementary policies and measures

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[1] *A Call for Action* available at: http://us-cap.org/USCAPCallforAction.pdf.

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to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge.

We recognize the challenge facing this Committee in crafting comprehensive climate change legislation and we very much hope that the Committee will call upon our unique partnership to help sort through these complexities. The need to begin the transformation of our economy to a sustainable, secure, low-carbon future is compelling and timely; indeed, this will only become more difficult, and more costly, if Congress delays action.

Recent debate surrounding the crafting of an economic stimulus package early in the 111th Congress has included discussion of such an energy investment. We agree that such efforts can and should be taken as early as possible. Additionally, a central tenet of our *Call for Action* is that in order to effect the change needed throughout the economy, an economy-wide cap-and-trade system is essential. When combined with complementary measures, the resulting new vision and policy direction will spur the innovation through which America has always excelled. When given the proper tools, incentives and market signals, the American entrepreneurial spirit will lead to sustainability solutions required to meet our many economic, energy, environmental and national security challenges.

USCAP has attempted to help inform congressional deliberations over the past two years. Following our *Call for Action*, we have provided Congress with international principles and more detailed information on the topics of cost containment, energy

efficiency, geologic carbon storage technologies and a greenhouse gas registry. Further, our diverse and broad-based coalition has and will continue to serve as a sounding board for policy-makers as they contemplate legislative options.

Over the past six months, USCAP members have worked diligently to refine our policy objectives in order to better advise Congress and the incoming Administration on workable solutions. We have agreed upon a framework for a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation.

USCAP is committed to helping Congress find workable, cost-effective approaches to climate change. We believe that path forward exists and that we must embark on the journey with deliberate speed. Representing many sectors of the economy, we believe we are in the unique position to work with the President-elect, Congress and all other stakeholders to enact an environmentally effective, economically sustainable and fair climate change program. We look forward to working with the Committee in the 111th Congress to ensure prompt enactment of national climate protection legislation.

Thank you for your interest in USCAP and climate change legislation. The Nature Conservancy looks forward to working with this Committee, the entire Congress, and the Administration to enact forward-looking climate legislation that protects the natural world and the people who depend on it.

Statement
Of
Jeffry E. Sterba
Chairman of the Board and CEO of PNM Resources
Albuquerque, NM
Before the
House Energy and Commerce Committee
Hearing on The US Climate Action Partnership

January 15, 2009

Summary
As CEO of PNM Resources I must balance two compelling and potentially competing interests: climate change and the consumers' need for affordable electricity. Affordable electricity fueled our nation's economy in the last century. With the right policies, clean and affordable energy can fuel the US economy in this century. Companies and states cannot achieve this balance alone. We need a federal mandate for addressing climate change that will create national and international markets, a price for carbon, and incentives for low cost and clean technologies. Without federal, economy-wide legislation with cap-and-trade as its cornerstone, and allowance allocations to protect consumers and ease technology costs, I am gravely concerned that there will be inadequate incentives to drive new, clean technologies and that costs to consumers could be prohibitive. The US Climate Action Partnership's *Blueprint for Legislative Action* is a detailed framework for climate legislation that achieves this goal.

Introduction
Thank you for the opportunity to submit a statement before the House Energy and Commerce Committee hearing on the US Climate Action Partnership. I am Jeff Sterba, Chairman and CEO of PNM Resources, the parent company of PNM, Texas-New Mexico Power, and First Choice Power.

Headquartered in Albuquerque, New Mexico, PNM Resources is an energy holding company with 2007 consolidated operating revenues of $2.4 billion. Through its utilities: Public Service Company of New Mexico (PNM) and TNMP, and First Choice Power, a retail energy subsidiary, PNM Resources serves electricity to 859,000 homes and businesses in New Mexico and Texas. Our generation resources of 2,713 megawatts reflect a balanced mix of coal, natural gas, nuclear and wind generation. In 2008, our capacity was 37% coal, 32% natural gas, 15% nuclear, 8% renewables, and 8% long-term contracts, although historically our coal generation percentage is closer to 50%. PNM Resources and its subsidiaries market power throughout the Southwest, Texas and the West. In addition, through a joint venture with Cascade Investment, the company has a 50-percent ownership of EnergyCo which owns approximately 920 megawatts of coal and natural gas generation in Texas.

Climate Change

I first joined PNM in 1977 as an intern. Excluding a year as Executive Vice President of USEC, a global energy company headquartered in Maryland, I am a lifelong employee of PNM Resources and resident of New Mexico. New Mexico is a resource rich state but the Per Capital income in 2007 for New Mexico was $31,474, ranking 44 out of the 50 states.[1] I work hard to balance New Mexico's environmental heritage and growth opportunities with the economic reality of many of our customers. Although I have been honored to serve in national leadership roles (I served as Chair of the Edison Electric Institute from 2007-2008 and Chair of the Electric Power Research Institute from 2006-2008 and am currently on the Board of the Keystone Center), I am ever mindful of our electricity consumers and their interests.

My objective and challenge as CEO of PNM Resources has been to bring affordable, clean energy to New Mexico and, since 2005, Texas. PNM Resources is not a big company. Outside joint projects through EPRI, we do not have the ability – financial or otherwise – to test technologies at the demonstration level. At the same time, we can and do take advantage of affordable clean technology as soon as it does become available. In 2003, we were the sole investor in the New Mexico Wind Center, then the third largest wind farm in the world and still one of the largest wind farms in the US today. We have long advocated extention of the Renewable Energy Production Tax Credit and we have endorsed federal and state Renewable Portfolio Standards.

In November 2005, I was one of a few US CEOs to attend the United Nations Framework on Climate Change Conference in Montreal, Canada. I was already persuaded by the findings of the Intergovernmental Panel on Climate Change and wanted to develop a better understanding of international efforts to address climate change. In April 2006, I testified in favor of mandatory climate legislation before the Senate Energy and Natural Resources Committee. In March 2007, I testified before this Committee's Subcommittee on Energy and Air Quality, again urging rapid enactment of comprehensive climate legislation. I appear before you today together with my USCAP colleagues, urging you to take action now – this year -- to address climate change in a way that brings affordable clean energy to New Mexico, Texas, and all consumers in the US.

USCAP Membership

On April 4, 2006, the Senate Committee on Energy and Natural Resources held a conference to discuss critical issues involved in the design of a mandatory greenhouse gas (GHG) program. More than 300 people attended the event and over 160 organizations and individuals submitted detailed written comments. After participating in this workshop, several things became clear to me. First, that climate change legislation was a far more complex and far-reaching initiative than many of us realized. Second, two key impediments to moving legislation

[1] Bureau of Business & Economic Research, University of New Mexico (www.unm.edu/~bber/economy.htm).

forward were a need for technical recommendations and a broad consensus among stakeholders. PNM Resources became a founding member of USCAP to advance climate legislation by addressing these two major impediments.

Our commitment to USCAP involved far more man-hours than we anticipated but the result has also been extremely worthwhile. The *Blueprint for Legislative Action* is the capstone of these efforts. We believe the Blueprint is a useful in-depth, consensus tool for policymakers in their efforts to advance climate legislation. In particular, the *Blueprint* affirms and expands on the *Call for Action's* clear linkages between targets and timetables, cost containment, allowance allocation, and technology development and deployment. As this Committee moves forward, I would urge you to rely on the *Blueprint* to address climate change in an affordable and meaningful way.

USCAP

USCAP launched its landmark report, titled *A Call for Action*[2], in January 2007, which lays out a framework for climate protection legislation. Today USCAP includes 31 businesses and leading environmental organizations.[3] USCAP recognizes that the United States faces an urgent need to reinvigorate our nation's economy, make the country more energy secure, and take meaningful action to slow, stop and reverse GHG emissions to address climate change. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

USCAP supports enactment of an economy-wide, market-driven approach which includes a well-crafted cap-and-trade program that places specified limits on GHG emissions, robust cost-containment measures, complementary policies and measures to supplement the cap-and-trade program, and a fully funded federal technology research, development, demonstration, and deployment program for climate-friendly technologies. Properly designed legislation will encourage innovation, enhance America's energy security, foster economic growth, improve our balance of trade, and provide critically needed U.S. leadership on this vital global challenge.

USCAP recognizes the challenge facing this Committee in crafting comprehensive climate change legislation and we very much hope that the Committee will call upon our unique partnership to help sort through these

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Conclusion

Thank you for the opportunity to submit this statement. I am optimistic about prospects for climate legislation this year and I look forward to working with this Committee, the entire Congress, and the Administration. For more information, please contact Jeanette Pablo, Director of Federal Affairs & Senior Climate Advisor at 202-468-9688 or Jeanette.Pablo@PNMResources.com.

Mr. WAXMAN. I want to start off the questioning by yielding to Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman, very much. This is a question to the CEOs. You've heard the concern that adopting the kind of proposals that you're putting before us today could harm your companies. I'm going to ask each one of the CEOs, do you agree with that suggestion or do you disagree? Mr. Mulva, I just need a yes or no because I have several questions.

Mr. Mulva.

Mr. MULVA. No, I don't believe what we are proposing will harm our company and its long-term prospects for opportunities in investment.

Mr. MARKEY. Thank you. Mr. Nolen.

Mr. NOLEN. I also don't believe it will hurt our company and will make it better in the long term.

Mr. MARKEY. Mr. Rowe.

Mr. ROWE. No, sir.

Mr. MARKEY. Mr. Crane.

Mr. CRANE. No.

Mr. MARKEY. Mr. Chiaro.

Mr. CHIARO. No, sir.

Mr. MARKEY. Mr. Rogers.

Mr. ROGERS. No, with respect to our company as well——

Mr. MARKEY. I am coming back to you with another question. Thank you. Mr. Darbee.

Mr. DARBEE. No, sir.

Mr. MARKEY. Mr. Sterba—Mr. Tercek. I'm sorry.

Mr. TERCEK. I'm with the Nature Conservancy.

Mr. MARKEY. Mr. Sterba.

Mr. STERBA. No, I don't. It's inappropriate.

Mr. MARKEY. Let me go to you now, Mr. Rogers. You say that the current economic downturn actually provides Congress with its best opportunity to pass meaningful and sustainable climate legislation. Can you briefly expand on that?

Mr. ROGERS. Sure. Because as I study many of the proposals for the economic stimulus and I look at sort of the green stimulus that's embedded in that, if that is passed and we have climate legislation pass this year where the economic impact won't be immediate because of the way the plan works, I think the combination of the two together provides the kind of roadmap that will allow companies like ours to start making the decision.

And let me also be very blunt about this. I don't think it's going to be cheap or easy to achieve the objectives in the blueprint. And the sooner we get started, the better. And quite frankly, I believe having a debate about this in the middle of the recession is the right time to do debate it because economic considerations will be carefully taken into account.

Mr. MARKEY. Thank you Mr. Rogers. Mr. Chiaro, you represent the second largest coal producer in the United States. And yet in your testimony, you say that legislation could encourage innovation, enhance America's energy security, foster economic growth and improve our balance of trade. Could you briefly expand on that?

Mr. CHIARO. Coal has some fundamental characteristics that I believe make it a viable and in fact essential fuel for the future. Like every other fuel source, it has environmental aspects that must be controlled. We have done a good job controlling particulate emissions from coal, sulfur dioxide emissions from coal, other aspects of coal mining and so on. And this is just simply the step in that procession of technology development to produce technology carbon capture and storage that can address the C02 emissions from coal-fired generation.

Mr. MARKEY. Thank you Mr. Chiaro.

Mr. Crane, you say in your testimony that addressing the climate legislation is the paramount challenge facing our generation and that it is a moral imperative that we act without any further delay. Please expand.

Mr. CRANE. Well, I think just from our perspective, our role as business leaders is to target our companies as to the social and economic dynamics in which we live. And this is the most compelling one. As a major carbon emitter and someone who stands ready with capital to invest in green technologies, what we really need is to work hand in hand with yourselves to provide clarity so we know where to invest.

Mr. MARKEY. Thank you.

Mr. Immelt, you testified that your wind turbine business has grown from $300 million to $6 billion in just 6 years. And you also state that GE's clean-tech ecomagination business is growing at 20 percent a year and will soon reach $25 billion and create tens of thousands of jobs. So you see this as a great economic opportunity for GE, huh?

Mr. IMMELT. Sir, I believe not just in the United States, but globally, the interest in clean technology is high. We see demand for these products on a global basis, and most importantly we are a net exporter of all these products out of the United States. So I think that investing in clean technology and innovation, clean technology is a great business proposition for many companies in this country.

Mr. MARKEY. Thank you.

Ms. Beinecke, you say that the cost of inaction is very high for our economy and our country. Could you please expand?

Ms. BEINECKE. Well, the evidence, the scientific evidence of what the consequences of global warming are, are just mounting very, very rapidly as I indicated. And so there will be not only severe ecological consequences, but severe humanitarian consequences as a result of that. And so every day that we delay in enacting climate legislation and getting on the path reducing our carbon emissions, puts not only all of our ecological systems at risk but puts literally hundreds of millions of people around the world at risk for not being able to have secure futures.

Mr. MARKEY. Chairman Waxman and I are committed to acting to deal with this urgent problem and to do so in a fashion that represents the urgency of the problem.

Thank you all for being here today.

Mr. WAXMAN. Thank you, Mr. Markey. Mr. Blunt.

Mr. BLUNT. Thank you, Mr. Chairman. If—as we put this or other things into legislation, we will of course have to come up always with cost estimates, with economic impact estimates.

Ms. Claussen, are there those estimates in the report?

Ms. CLAUSSEN. No, we do not have them in the blueprint. We have done some economic modeling and we have looked carefully at the economic modeling that's been done over the last year over pieces of legislation like the Lieberman-Warner bill.

It is our conclusion that you cannot derive point estimates that are meaningful here, but you can get a lot of insights. And we took those insights into account when we developed the blueprint. For example——

Mr. BLUNT. Let me ask a couple of questions about that. They are not here yet, we will need to look for them. Lieberman-Warner was the plan that was discussed last year and the estimates from the Energy Information Administration, from EPA, from the National Association of Manufacturers, they all had estimates that showed significant gross domestic product reductions by 2030. I know in my State alone, in Missouri, the estimate of one of those reports was that we would lose—have a net loss of 57,000 to 76,000 jobs, obviously not a loss that we would want to have at any time and particularly not at this time.

I'm wondering, Mr. Darbee, as you looked at this topic, how much of that is offset by new jobs, and what's in this report that doesn't create 140 percent increase in gas prices by 2050, for instance, that Warner-Lieberman was purported to increase. Mr. Darbee?

Mr. DARBEE. Well, Congressman, let me say that there were a lot of concerns when we started on the energy efficiency route 30 years ago in California, along the same lines. And people felt that really working hard on energy efficiency as well as choosing the route on renewables that we did would hurt the economy. And yet the California economy has grown better than average in the United States over that 30-year period. So as we look at it, there are tremendous opportunities with respect to investments in energy efficiency, in investments in renewable technology. You've heard from the CEO of GE about the opportunities there. So I think there will be many puts and takes. Some estimates have indicated that the cost would be below 1 percent of GNP. Those costs are not insubstantial. But when one thinks about the consequences of inaction, just for example in water in the West or hurricane damage in the East, they more than swamp the costs associated with dealing with climate change. And what we've learned from business is the sooner you start working on a major problem, the more degrees of freedom you have in solving that, and the solutions are cheaper. So the cost will not be inconsequential, but they will be less than the cost of inaction.

Mr. BLUNT. Where are we? I'm interested in the argument that Mr. Rogers I thought made effectively, that the sooner you start, the more you average out the ultimate cost that these things may have to have. Is that in the report somewhere? The averaging out, the goals, have we—has goals been designed in a way that we are really thinking about the incremental cost and the impact that has?

I'll let you, Mr. Darbee, answer that too, if you want.

Mr. DARBEE. I don't believe that we have that in the report, although if my colleagues can identify something that I've missed, I don't think it is there. Supporting that, we have done, as Ms. Claussen indicated, a fair amount of economic analysis, as have others like McKenzie, that suggest that the costs are manageable and less than the costs of inaction.

Mr. BLUNT. Yes. I think Ms. Claussen used the—we talked some in the hearing already in your testimony about the 2020 figure. I guess I will just go down the line, the same line that my friend Mr. Markey went down. And my question would be: Are you confident that this doesn't have negative economic impact on your companies in terms of job loss or other costs in the first decade?

And, Mr. Mulva, I think you got to lead off last. It is really just a yes or no question, is the first decade as opposed to between now and 2050.

Mr. MULVA. Addressing climate change will increase our cost structure providing energy.

Mr. NOLEN. No, it will not, as a provider of the technology.

Mr. BLUNT. Mr. Rowe?

Mr. ROWE. It will not have negative effects on my company, but if we aren't very careful to use the market mechanisms of cap and trade to limit the costs of what we do, it would have negative effects on our customers. That's why we think that cap and trade is so important.

Mr. BLUNT. Mr. Crane.

Mr. CRANE. In the near term, taken in its totality, would not impact us in the near term. In the long term it would hurt us if we don't adapt our technology, change the way we make electricity, which is part of the plan.

Mr. CHIARO. On balance we believe the opportunities will outweigh the risks and costs.

Mr. BLUNT. In the first 10 years?

Mr. CHIARO. In the first 10 years.

Mr. BLUNT. Mr. Immelt.

Mr. IMMELT. Congressman, I would agree with my colleagues.

Mr. BLUNT. Mr. Rogers.

Mr. ROGERS. In the first 10 years, if the allocation method is done appropriately, it will minimize the cost impact, but there will be cost impact on our consumers. We are the third-largest consumer of coal in the country, over 70 percent of our electricity coming from coal. And for the 25 States with more than 50 percent of their electricity from coal, it will also—if the allocation of allowances is not designed right, could result in significant increases in prices in each of those States.

Mr. BLUNT. And just very quickly, I'm over my time, Mr. Darbee and Mr. Tercek.

Mr. DARBEE. The answer is no.

Mr. TERCEK. Like Mr. Rogers, there will be cost increases that our customers will bear. But if it's not appropriately as we've laid out, we can minimize what those cost increases are.

Mr. BLUNT. Thank you. And thank you, Mr. Chairman.

Mr. WAXMAN. Thank you, Mr. Blunt.

The Chair would like to now recognize the Chairman Emeritus of the committee, Mr. Dingell, for his questions.

Mr. DINGELL. I thank you for your courtesy. This question to Dow and Dupont, I believe Mr. Green and Mr. Sterba are present here.

I have a great concern about designing the climate change program so as not to put our own American industries at a competitive disadvantage and driving jobs overseas. I am particularly concerned about USCAP's views on one issue and that is chemical companies such as Dow and Dupont. And that is about the possibility of massive fuel switching occurring from coal to natural gas. I have fears that this could create significant increases in the cost of natural gas, which is used both as a process and as a feedstock.

Could Mr. Green or Mr. Sterba comment on that and tell me whether this issue was discussed at USCAP? Gentlemen, don't be shy, the clock is running.

Ms. CLAUSSEN. They are not here.

Mr. DINGELL. Oh, they are not here.

Ms. CLAUSSEN. They are not present.

Mr. DINGELL. Could anyone, then, answer that?

Ms. CLAUSSEN. Maybe I can reassure you that we spent a great deal of time with our concerns about trying to avoid the dash for gas which would put Dupont and Dow at a disadvantage. That is why we have the cost containment mechanisms that we've put in here. And that is why we think it is important when you consider allocation that you do so to companies that could be adversely affected.

Mr. DINGELL. Would anyone else like to make a comment?

Mr. TERCEK. I would add, Mr. Dingell, the dash to gas is something, as has been said, is something we are very, very focused on. And we must try to avoid near-term price spikes in cost of carbon and that's why the—all of the mitigating mechanisms, from allocations to the Carbon Board administering a reserve fund, to the use of offsets, are a critical component of this. Otherwise we would run the risk of moving on to natural gas to the detriment not just of our chemical companies, but all consumers who use natural gas to heat their homes.

Mr. DINGELL. All right. Ladies and gentlemen, last year you will recall that Mr. Boucher and I released a discussion draft, which was our suggestions as to what the committee should consider as we proceed about this business.

I would like to have each of you give me some comments, or those of you who seem—who would prefer to do so, to tell us about the blueprint release today and how it meshes with that draft or how it would work, because I believe that this is going to be a very important tool for this committee to use to begin to arrive at a consensus. Who would like to respond?

Ms. BEINECKE. Thank you very much for the question. In our analysis, there are many elements of the discussion draft that you and Chairman Boucher prepared that is very consistent with what is in the blueprint. And I think we could answer specifically and do an analysis for you going forward. But a lot of the issues, the targets, the cost containment mechanisms, the various incentives to drive technology, I think are quite compatible in both, I think

provide a blueprint for the committee to begin their deliberations this year on how to enact climate legislation quickly.

Mr. DINGELL. Would each of you who is disposed give us some comments on the question just asked? In other words, do this please for the record. And I ask, Mr. Chairman, that the record remain open so that we may have those responses included into the record on this matter.

Mr. WAXMAN. Without objection, that will be the order.

Mr. DINGELL. Mr. Chairman, I thank you. Ladies and gentlemen, thank you.

Mr. WAXMAN. Thank you, Mr. Dingell. Mr. Upton.

Mr. UPTON. Thank you, Mr. Chairman.

I think many of you know that our electricity demands in this country are expected to grow by about 50 percent by the year 2030. Your plan as you submitted this morning will reduce—will have a reduction in emissions by 40 percent by that same year and 80 percent by the year 2050. I wonder if any of you know when the last time our country—at what year did our country actually achieve the emissions that are mandated in this legislation or proposed by 2050? In other words, an 80 percent reduction. Any of you know? Mr. Krupp.

Mr. KRUPP. Well, I would have to——

Mr. UPTON. I'm told it is about 100 years ago; that our emissions by 2050 in essence would equal what was in the early 1900s.

Mr. KRUPP. Excellent question, Mr. Upton. The historical experiences that we have in regulating emissions really most clearly is illustrated by the 1990 Clean Air Act, which called for a 50 percent reduction not in 22 years as we are calling for here, but a 50 percent reduction in only 10 years. That was achieved ahead of schedule for sulfur dioxide. And in fact under the current administration, the Bush administration, the President has ordered an additional 70 percent cut in less than another decade. So combined, the two cuts in sulfur emissions that have been ordered are greater than 80 percent, in a much shorter time frame, and have been achieved at a fraction of the cost predicted by the opponents.

Mr. UPTON. Well, this, of course, will be carbon emission reductions.

Mr. KRUPP. That's absolutely true. I think that the sulfur is very instructive experience. With carbon, the opportunities for reducing, especially when you consider offsets, are much broader than with sulfur. With sulfur you really needed end-of-the-pipe technology. With carbon, energy efficiency reducing the input from—by using offsets from farmers who can contribute to reductions opens up a wider array of possibilities. So I think there's more reason to be optimistic here.

Mr. UPTON. OK. Mr. Rogers, you indicated that unless we perfected the CCS process by—certainly by the year 2015, that it would be very difficult to achieve the proposed reductions by 2020 as well as 2030 and 2050. You know that Mr. Boucher and I introduced legislation in the last Congress that proposed a path to get that. We appreciated the industry support for sure. But that legislation languished, it did not move out of this committee. The Chairman has indicated he would like to pass this, the overall legislation, in the next 4 months. You have indicated that it would be at

least 5 years before we'd see whether this is perfected or not. Can you achieve these reductions without CCS?

Mr. ROGERS. It would be my judgment that—one, I was very supportive of that legislation.

Mr. UPTON. I know that.

Mr. ROGERS. I think it is critical. It would be my judgment that without that legislation, our comparable effort, that we would be in a place where we can achieve the targets. But I would say one other thing that I think is very important for this committee to appreciate. These targets can be met only if we have aggressive energy efficiency. These targets can only be met if we have renewables and renewables that we can actually get to market, which means eminent domain. Because renewables, without eminent domain, will not get to market given the ability to build and to build transmission.

Thirdly, in every study, and I would refer you to the EPRI study, a key component to being able to achieve these levels and to supply electricity to our economy has required significant buildout of nuclear units going forward. And if you take any of these off the table, take coal off the table or if you take nuclear off the table, our ability to hit these targets, just not a mission that can be achieved.

Mr. UPTON. Mr. Darbee, would you agree with that?

Mr. DARBEE. I agree that we need all of the different technologies that have been identified. The one thing I would say is that with a cost put on carbon, there are all sorts of new technologies that we haven't identified yet that may be available in 2020, and that they may substitute to the extent that we have——

Mr. UPTON. I want to get my last question in. I appreciate it.

Mr. Krupp and Ms. Beinecke, did you support—did you all take a stand on the CCS legislation in the last Congress?

Mr. KRUPP. We did not.

Ms. BEINECKE. Yes, we did and we supported that legislation.

Mr. UPTON. You did support it.

Ms. BEINECKE. And the CCS provisions, because we think getting CCS going rapidly is absolutely critical to solving the problem.

Mr. UPTON. My time has expired. Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you, Mr. Upton.

Now recognizing members on the rules in the order in which they appeared at the committee today, Ms. Capps you would be next.

Mrs. CAPPS. Thank you, Mr. Chairman. Part of the reason we're here today is that year after year our understanding of climate change science has grown: computer models that predicted increase in temperature, changes in ocean heat content, and decreases in Arctic sea ice, then strongly supported by subsequent observation. As this committee takes up legislation to address climate change, we need to stay apprised of the latest climate science. We also need to think through the economic effects of our actions. If history is a guide, there will be some who will argue that it is simply too expensive to take action. Each time Congress has considered adopting environmental protections in the past, we've heard the same story.

Now, Mr. Krupp, I would like to build on the interaction you just had with my colleague, Mr. Upton. And you and I have had a work-

ing relationship in my congressional district on the central coast. In a little fishing village called Morrow Bay, you helped us demonstrate that we could save that village by protect—and that protecting the environment could actually ensure business growth for those fisherman.

I know that the Environmental Defense Fund employs Ph.D. Economists, and I would like to ask you about the predictive powers of this discipline. Could you talk about the history of cost predictions for previous environmental legislation? In particular, I would like to hear some background on the accuracy of predictions about the 1990 acid rain program, part of the Clean Air Act's cap and trade system.

Mr. KRUPP. Thank you. It is an excellent question and it turns out that it is very hard for the economic models to predict the impact of a dynamic incentive to come up with new technologies. And these economic models historically have always underestimated the innovation factor.

Specifically, you ask about the Clean Air Act of 1990. Costs for removing a ton of sulfur dioxide were estimated anywhere between $800 a ton and over $2,000 a ton. In the first phase of the program, costs turned out to be—which is what the estimates were for—less than $100 a ton. So the estimates were wrong by up to a factor of 10-fold. And the reason is that the cap and trade creates buyers for the lowest-cost tech technology. It creates a hunt, it creates incentives to innovate. And that basically grinds down the cost.

And that would be my comment. Historically, economists have always overestimated the cost, without exception.

Mrs. CAPPS. Well, given our apparent difficulties in predicting how the economy would change, it is still a very vitally important topic. Do you have any advice on how policymakers could best make use of economic predictions about climate and energy policy?

Mr. KRUPP. Well, I think the models still are useful because they do tell us that the design of the program by your committee will be extremely important in terms of cost. They tell us that—I don't think they can give us a number of what the costs will be, but they say there are some things that you can do that will make a big difference, and they show us relatively they will more or less expensive.

For example, allowing the use of offsets will drive the cost down substantially. And all the models from MIT and Harvard do show that. And I do think those qualitative conclusions are correct. They show that the more trading you allow, the more flexibility between gases and between sectors that you allow, the more you will drive the cost down of the program.

Mrs. CAPPS. Let me just ask—this, I believe, is an important topic—if any of the rest of you, particularly those of you who represent an industry, would have some advice along this line, for example——

Mr. ROWE. Congresswoman Capps, I basically agree with what Mr. Krupp said. I think we should extrapolate from sulfur—which is something you didn't want to burn in the first place—to carbon, which is something you are burning by intent rather carefully. So I don't think we can be confident of that level of difference between

our hopes and our fears. But I strongly agree with Mr. Krupp on the importance of the trading system.

This is why other measures are not adequate. We know the new President will propose a stimulus package. We are all looking forward to it in hopes. We know this Congress will consider renewable portfolio standards anew. But you know, my company has tried very hard to analyze the different costs of low-carbon energy and put it in a common frame of dollars per ton of CO_2. And we know that some energy efficiency is as good as free. We just don't know how much, because nobody can do a good curve. Reducing carbon through natural gas consumption is somewhere on the order of $10 a ton per CO_2. We think nuclear is something like 40, and today's wind something like 80. Whereas solar is still above 100, and probably around 3. But solar is evolving technologically. If you do this all with a relatively crude tool like RPS, you will tend to get the more expensive solutions. Whereas if you have the cap and trade system, as Mr. Krupp has said, in the long run you will get the lower-cost solutions.

Mrs. CAPPS. Thank you very much, Mr. Chairman.

Mr. WAXMAN. Thank you, Ms. Capps. Mr. Whitfield.

Mr. WHITFIELD. Thank you, Mr. Chairman. I also would like to thank all of you for taking time from your busy schedules to be with us today as we explore options and issues related to this serious subject matter.

I notice that Mr. Markey in his questions to you, Mr. Chiaro, announced that you operate the second-largest coal producer in the U.S. It was my understanding that you all recently announced your plans to divest that coal operation in the U.S. That would lead me to believe that since you are part of an organization that wants to put a cap on carbon and you've made a decision to sell the coal-producing part of your company, that you're not optimistic about the possibility of operating a coal company in the U.S. Is that true or not?

Mr. CHIARO. I thank you for the question. The impetus behind putting a number of our assets around the world for sale was really the acquisition of a company called Alcan, major aluminum producer. And the principal reason that we bought Alcan is because they have a large proportion of the power that is required to produce aluminum, is produced by hydro, a low-carbon emitting form of energy. So only in that sense was the decision to sell a range of assets, including some of our coal assets here in the U.S., related to climate change. When we looked at the assets that we would sell, and the criteria that we used to distinguish those that we would put up for sale versus those that we would keep, climate change was indeed on the list, but it was very far down the list. It wasn't even in the top five criteria.

The principal reason for deciding to sell some of our coal assets in the U.S., by the way not all of them, really was related to profitability. And I must say the Bureau of Land Management does a good job of extracting value for the taxpayers out of the coal deposits in the Powder River Basin, so I congratulate them.

Mr. WHITFIELD. Do you all operate any coal facilities outside the U.S.?

Mr. CHIARO. Indeed we do. We are the largest coal producers in Australia and we have very active exploration programs underway to find more coal around the rest of the world.

Mr. WHITFIELD. What about China?

Mr. CHIARO. We do not have any activities underway in China right now. We don't mine coal in China. In fact we sell very little coal—of our coal into China. China, as you're aware, is the largest producer of coal in the world right now.

Mr. WHITFIELD. You know what, Mr. Immelt, when I go to the Rotary Club down in my district, the people oftentimes complain that on environmental issues that the U.S.—they're advocates that we should lead the way. And your organization is saying that we should lead the way on the cap and trade, for example. And yet in China they are bringing on two new coal-powered—one new coal-powered plant every 2 weeks. In fact, I read that last year just electricity produced by coal in China exceeded all electricity produced by every measure in Great Britain last year. Just the new. And I know that your company is certainly selling a lot of equipment to build some of those new coal-powered plants in China.

What about this criticism that we take a lead on this, that China is not following us at all, and the detrimental impact it will have on our economy, the detrimental impact it will have on—because our electricity costs will be higher—what about that argument?

Mr. IMMELT. Congressman, we spent a lot of time just trying to frame the globalization debate. You'll see an an entire section as part of the blueprint where we talk about the ability to drive competitiveness so that our industries aren't—aren't disadvantaged versus China and India. And clearly if you think about Dow, Dupont, GE, Alcoa, the people that are up here, we need to run—you know, kind of globally competitive footprint. And so we think about that.

The other counter I would make, sir, is that, you know, we are a net exporter of clean products, you know. And so I really believe that there is an export opportunity here if we lead and innovate in the area of high-efficiency engines, in the area of super-light materials and some of the entrepreneurial structure that exists.

Mr. WHITFIELD. Did you all actually sell $600 billion worth of windpower equipment last year?

Mr. IMMELT. Not $600 billion, no. I wish.

Mr. WHITFIELD. Well, Mr. Markey said that they went from $300 million——

Mr. IMMELT. About $6 billion last year.

Mr. WHITFIELD. How much?

Mr. IMMELT. About $6 billion.

Mr. WHITFIELD. Oh, OK. One final comment I would just make, I was reading this article in the New York Times basically a few moments ago, that said that in Europe, which created the world's largest greenhouse gas market 3½ years ago, early evidence suggested the whole approach could fail because emissions are going up. GAO came out in December 2008 on a study of European Union's emission and trading system. And they basically had said that available information could not substantiate emissions in reductions, could not substantiate any development in new tech-

nology, growth in the economy or any of the things that you all are saying will—can flow from a cap and trade system.

I say that simply as we move forward—obviously we're going to get into this—all of us I think have the right goals in mind. We want to be fair-minded and don't want to put the U.S. at a disadvantage economically. So I look forward to working with all of you and the other committee members as we move forward.

Mr. MARKEY [presiding]. The gentleman's time has expired. The Chair recognizes the gentlelady from California, Ms. Harman.

Ms. HARMAN. Thank you, Mr. Chairman. Not only is it huge, but it reflects the gamut of interest in this issue from fossil fuel producers to environmental advocates. And I suggest, as I did in opening remarks about an hour ago before the panel was physically in front of us, that this is the model to solve these problems. My guess is that some of you voted for the incoming administration, some of you didn't. But that doesn't matter, what all of you are doing is trying to help both I think the administration and this diverse committee solve a tough problem. And I don't think it should matter on this committee whether we supported the next administration or we didn't. I personally did. But I also think that having all of you buy into a solution is the way that solution will work. And I'm looking at nodding heads so I'm very happy to see that.

I talked earlier about what I called the public-private model and how we used it to solve one little tiny energy efficiency issue, and that is light bulbs. Mr. Immelt, you were part of our conspiracy and so was the NRDC, and it was hard to figure out a program that would really get us to much more efficient light bulbs by 2020. But guess what? We did. And we got almost unanimous support in this committee and in the Congress for what we came up with. So I just put it out that this, what I call the public-private model, is the best to solve these problems.

Now, all of the solutions will depend on something we really haven't talked about this morning and that's what I want to ask a question about and invite any of you to comment on, and that is a smart grid. If we don't have a smart grid, certainly the efficiency pieces of this solution won't work.

I just learned that in our new stimulus package there will be about $10 billion for investments in smart-grid development. But I would like to invite you to talk about, any of you—maybe, Mr. Immelt, we should start with you—the smart grid and why it is a critical piece of the solution.

Mr. IMMELT. Congresswoman, I believe that—I would talk about both a grid that is smarter and bigger. Maybe start with bigger first. It was mentioned earlier that if we're going to increase the penetration of renewables in the country we're going to need a bigger pipe to push the renewables through from a storage and efficiency standpoint. So there needs to be some accommodation there.

And as far as a smart grid—and my colleagues that run utilities here are probably even more expert than we are—there is such a huge advantage in efficiency and empowerment to consumers. And we view this as both a conservation advantage and also a tremendous advantage to reduce global warming. So I think the technology actually exists today. It is just how it gets deployed through the utility structure, you know, what consumer incentives. But the

technology exists really to empower consumers to make substantial—and industrial customers to make substantial decreases in their use of energy.

Ms. HARMAN. Thank you. Before recognizing anyone else, let me just ask if anyone disagrees that the smart grid is a critical part of the solution? OK, who else would like to comment?

Mr. DARBEE. If I can comment. My colleague to my right from Duke Energy was struggling to get the microphone, but in answer to your question——

Ms. HARMAN. I'm sure we can accommodate him too.

Mr. DARBEE. We are in the midst of PG&E deploying 10 million smart meters, and this is the enabling strategy for tremendous energy efficiency, demand management, and frankly one of the things that will solve this country's energy security issues the best. It enables the electric car that is coming down the road that we will see between 2010 and 2020. So it is critically important, we are moving on it.

It also provides the opportunity for smart appliances within the home. What we envision is people pulling up their computer on their home page, understanding how much power they are currently using, and noting if there are any deviations—if power is being used at an unusually high level in the cellar, in the bedrooms, in the attic, wherever—so they can call home and say, something's wrong here and we've got a problem, we ought to turn off the tower.

Ms. HARMAN. We only have time for one more comment but I would invite—Mr. Chairman, may I request that others can submit their answers for the record?

Mr. MARKEY. No objection, they would be welcome.

Ms. HARMAN. Before we call on our friend from Duke Energy, I would just observe too that a smart grid needs to be resilient to withstand a cyber attack or other hacking. Let's just hear one more comment.

Mr. ROGERS. We support smart grid. In fact in our 5-year capital plan, we are going to spend $1.5 billion making our grid smart. But smart grid means different things to different people. What it means to us is it means taking our analog and making it digital. At the end of the day, that will reduce line losses and will save energy.

The second thing it means to us, it means putting smart meters in. Smart meters will really allow us—and we're deploying them today to have a more sophisticated energy efficiency approach, as Peter Darbee was talking about.

Many people think of the smart grid as simply transmission lines, but the reality of that is, that is really not technically the smart grid, it is more in the distribution part of the system.

Ms. HARMAN. Thank you, Mr. Chairman.

Mr. MARKEY. The gentlelady's time has expired.

The Chair recognizes the gentleman from Oregon, Mr. Walden.

Mr. WALDEN. Thank you, Mr. Chairman. I want to touch on a couple points. I represent a very rural district. We have 10 or 11 national forests within that district and I have been real active on forest management policy.

Catastrophic wildfires account for vast amounts of greenhouse gas emissions every year. With a hotter and drier climate projected for the west and for the northern end of our country, this situation will only be exacerbated. Depending on the fire severity and forest type, up to 100 tons of carbon per acre can be released. And in 2007 alone, 10 million acres of forests burned. Now, by conservative estimates, that means that 60 million tons of carbon dioxide was spewed into the atmosphere, not to mention all the other greenhouse gasses and pollutants. That is roughly the equivalent of 12 million vehicle emissions for 1 year.

According to the EPA, 562.3 million metric tons of carbon were unleashed upon the atmosphere by forest fires between 2000 and 2005. Now there is a study out on national forests in eastern Washington that showed that those forests, left alone, will become net emitters of carbon rather than carbon sinks by the late century, due to emissions of catastrophic fire. The forest would likely burn at a rate of 1.7 percent per year, meaning the entire forest would burn in less than 100 years. Actively managed forests could lead to at least a 50 to 60 percent reduction at the current level of acreage burned, due to wildfire.

So my question to you is—and we have an obligation as stewards of these great Federal forests to better manage them. And I would like to know if anybody objects to changing Federal law to be able to more actively manage these forests along the lines of what this Congress passed several years ago with the Healthy Forests Restoration Act.

Does anybody object to moving forward over the condition class 2 and 3 lands, to give the Forest Service the authority to do what they do around our communities?

Mr. TERCEK. I'll address that.

Mr. WALDEN. Please

Mr. TERCEK. I'll address it from the Nature Conservancy.

Mr. WALDEN. Yes, sir.

Mr. TERCEK. Fire protection is not part of the scope of our blueprint, but the Nature Conservancy, certainly as a conservation organization, strongly supports those type of initiatives.

Mr. WALDEN. I appreciate that.

Mr. TERCEK. On the broad topic of forests, I would like to note that we do call for forest offset in this document, both domestically and international. Not only is it an important source of cost containment, but it is an important opportunity to protect our forests for a whole range of benefits. And we also note that the U.S. has an opportunity to be a real leader here.

Mr. WALDEN. I'm going to have to cut you off, because I only have a couple of minutes. I'm sorry, but I appreciate that and I appreciate the work. And I've toured some of your sites out in my district where you have done a terrific job doing what needs to be done.

Mr. Rowe.

Mr. ROWE. Congressman, I would point out not only do we not object, but the offset provisions in the USCAP recommendations would create an incentive for folks like us to invest in better forest management.

Mr. WALDEN. On Federal lands?

Mr. ROWE. Either way. That's the way the offset provisions would work.

Mr. WALDEN. All right. Then I want to move on to wind, because my district probably has as much wind as many others—not many other others in the country. And in fact the Bonneville grid will have up to 30 percent of its power from wind energy within the next 2 years, which I think is the highest percentage of any grid in the country.

The point I raise is that in order to smooth that load, they are now being faced with having to put gas peaking plants in place. So you all recognize the fact that there are limitations to some of these alternatives, correct?

Does anybody want to comment on that? Mr. Nolen.

Mr. NOLEN. I mean, certainly there are a couple of issues with wind. First of all, you have to move the wind to where the people are. You mentioned that your district did not have the numbers of people so——

Mr. WALDEN. Transmission.

Mr. NOLEN [continuing]. The grid comes in, a very important point with the grid. We need to do more in storage technologies of how do you store. But the facts are at the present time, wind is not a peak load source and so you need some sources behind it.

Mr. WALDEN. To firm it up.

Mr. NOLEN. To firm it up.

Mr. WALDEN. Absolutely. And in the Northwest, of course, we use hydro. And one of the issues that we have in the Northwest is what sort of credit allocation would there be in a cap and trade system for a system that has traditionally relied on hydro? And who picks the date that decides the water flowing through a dam is renewable and producing energy is renewable and the water flowing through a more modern dam isn't renewable or vice versa? How do you account for hydropower as a renewable energy source if it has been in place since Franklin Roosevelt was President? Do you include that as a renewable or not? And, if not, why?

Mr. KRUPP. Well, the beauty of the cap and trade system, Congressman, is that hydropower would not require any permits, so there would be no cost imposed on it. So although we're not proposing an RPS, so that definition is not directly relevant here, all——

Mr. WALDEN. But it would be under an RPS.

Mr. KRUPP. It would be, but that's not what we are here to propose.

Mr. WALDEN. It all melds together.

Mr. KRUPP. In the cap and trade system all hydro is advantaged.

Mr. WALDEN. So it's credited?

Mr. KRUPP. It doesn't need a——

Mr. WALDEN. New hydro is credited?

Mr. KRUPP. Old and new hydro, all generating electricity has no carbon output. Yes.

Mr. WALDEN. Thank you, Mr. Chairman.

Mr. MARKEY. The gentleman's time expired. The Chair recognizes the gentlelady from the Virgin Islands, Ms. Christensen.

Ms. CHRISTENSEN. Thank you, Mr. Chairman. And thank all of the panelists for being here and for the blueprint. I said in my

opening statement that given the diversity of the group, I really appreciate the fact that you are able to come up with a consensus document.

I have a couple of, I think, brief questions. But one of the six key principals in the call for action is to be fair to all economic sectors, geographic regions and economic groups that may be disproportionately impacted. And some of the more disproportionately impacted communities in our country would be poor and minority or—and sometimes they are the same. So were there any special considerations—I haven't had a chance to go through the entire report for low-income minority—disadvantaged populations?

Mr. DARBEE. If I might address that, what is provided for is that in the case of local distribution companies, that the benefits of allocations be passed through to customers. And what we are proposing is that they be passed to the local distribution companies, and those companies are required to pass those on to the consumers. And in the case of regulated electric utilities what we are proposing is the local utility commissions would undertake that program.

Specific to your question, in California the approach that we've taken is that we have a REACH program, and so those people who don't have the economic resources to pay for their bills in full, we provide economic support for them. We also have a program on energy efficiency where, for low-income individuals, they can contact our company. We will send people out, do an energy audit, and then the utility will pay for the improvements to their home to make it more energy efficient. So that was the way that we were thinking about addressing the particular question you raise.

Ms. CHRISTENSEN. OK, I will take one more answer, then move to my next question.

Mr. TERCEK. We also have provisions for funding for what we call adaptations to climate change, inevitable climate change, including overseas, including island countries that we can——

Ms. CHRISTENSEN. Because that was my next question, because I obviously live in the Caribbean, and we are small economies, fragile economies, and I was wondering. So if you would just expand on maybe what you were going to say about the Caribbean.

Mr. TERCEK. The Conservancy, our scientists advise us that there's great opportunity to invest in natural ecosystems that provide very important adaptation benefits to vulnerable people. And in our blueprint we recommend that funding be made available from the sale of allowances to pay for these programs, both overseas and in the U.S.

Ms. CHRISTENSEN. Thanks. At a retreat I attended last week, I came across a new concept that I also mentioned in my opening statement, which is cap and dividends as an alternative to cap and trade. And I wonder if anyone would like to comment on the differences—or the advantages of one over the other, cap and dividends?

Ms. BEINECKE. Well, that's a topic that's gotten increased interest over the last year. And one of the things that we envision is first allocations and then move it into an auction system, and that the proceeds of the auction would go towards technology develop-

ment, but the bulk of the resources over time would go back to the consumer, and that is the dividend concept.

So I think that the question for the committee to consider in drafting legislation is sort of what the time frame is for returning that very significant resource to the consumer.

Ms. CHRISTENSEN. So it doesn't have to be an either/or, it can be a——

Ms. BEINECKE. We envision a system that actually moves from one to the other over time. I think that those proponents proposing the cap and dividend system do envision going totally in one direction, but USCAP's blueprint actually envisions first an allocation and then moving to auction over time.

Mr. ROGERS. Let me say a cap and dividend has the potential of creating huge subsidies where most of the money would come from States that are heavily dependent on coal, like Indiana, Ohio, Pennsylvania, Michigan. And that, for instance, you would take $100 out of a State like Ohio and only send $40 back, d the money would go someplace else. So there is some equity issues associated with a proposed cap and dividend approach.

Ms. CHRISTENSEN. Thank you. I don't have any further questions, Mr. Chairman.

Mr. MARKEY. The gentlelady's time has expired.

The Chair recognizes the gentleman from Illinois, Mr. Shimkus.

Mr. SHIMKUS. Thank you, Mr. Chairman. I appreciate the panel being here. I wish I would have been here for a lot of the opening statements. I did find the benefit of the opening statement, though, Mr. Chairman, as I had to go do other business, had Steering Committee meetings. And since many of the members are leaving at 12:30, it was my luck that I got back in time to get around to questions. If we don't have opening statements, then we don't have a chance to talk to you.

One of the arguments I made yesterday is one of importance for you all. You are doing what you think is important for your association or your shareholders. And we have the burden of doing what is critically important to our constituents, and they are not minor. Each of us represent 660,000 voters. I was interested—one of the things I said in my opening statement was the interest in your first release, which had the trading floor as part of the debate on how a cap and trade through the trading floor could be helpful. I was very curious that in this new one, no trading floor, no picture. And I would ask for a reason. I would argue because in this cap and trade debate, which we like to liken to the Clean Air Act and the NO_x and SO_x, there are distinct differences. One is technology was available then, it's still not available now.

What is being proposed in the cap and trade under this venue is bringing in the huge money managers, the Goldman Sachs of the world into this debate, to incentivize. The other thing about cap and trade that we need to continue to talk about is the loss of value that has happened in the stock exchange in the past couple months.

Now, I want to be clear, you all know—we have met, had dinner, a lot of friends—I am opposed. But if we want to be clear to my voters, we enact a carbon tax. They know exactly what the cost is going to be to them, the consumers that are going to have to pay

for this move. Any other process, I will argue unless you can convince me, is a shell game meant to hide the cost from the consumer. And I will—we'll have a chance.

It is interesting on the association, too, and I know Rio Tinto has some mining operations, but no one else. Where is the coal mine operators?

And the other thing about the association is where is the members of organized labor? Where is the United Mine Workers? I'm a Republican, and they a lot of times don't like me, just by definition, but I have a great relationship with the operating engineers. I have a great relationship with the boilermakers. I have a great relationship, again, with the operating engineers. I have an interesting relationship with the United Mine Workers. I have a good relationship with those who build the next generation of power plants today and tomorrow. Where are they to weigh in on what this is going to effect to the membership. Because I can tell you, as I did in my opening statement, I'm going to go to them, and I am going to want them to be on board. So when there is job loss, which I predict will happen. We can talk about green jobs, but the proportional ratio of building a coal-fired power plant and putting up windmills, which are being built in my district too, there is no comparable ratio about the jobs and operating a major nuclear power plant or a coal-fired plant as a window. We can talk green jobs all we want, real jobs or in real manufacturing. I'm going to hold—as I talk to my friends on the other side, I'm going to hold that issue.

Mr. Rowe is a good friend. Illinois is a big power State: coal, marginal oil, now wind, nuclear power. Nuclear power has to be part of this debate. How can we move to nuclear power expansion, Mr. Rowe, if we did not move aggressively on the high-level nuclear waste in Yucca Mountain?

Mr. ROWE. Congressman Shimkus, you are indeed a good friend, and as you know I respect you immensely, both when we agree and on those rare occasions when we disagree. One of the things we share is a commitment to the importance of transparency so the public knows what it's getting.

I have, as several members of this panel have in the past, supported the carbon tax to deal with this problem for the transparency reason, but it never seemed to catch on. Resources for the Future did a study and found most Americans want to deal with the carbon issues. Most Americans don't like a carbon tax because they know it costs them money. They are pretty suspicious of a cap and trade system because they rightly think it will cost them money. But they think renewable portfolio standards will be free.

As I indicated, while you were called away to something else, we have at Exelon tried to study the cost of all sorts of low-carbon solutions; energy efficiency, which is free for a while, but not forever; gas, which is low cost but an awful lot to bet on one thing; nuclear, that we think costs around $40 a ton; and various forms of renewables which tend to be much higher. I believe we need nuclear in this puzzle——

Ms. DEGETTE [presiding]. Mr. Rowe, if you could finish up please, the gentleman's time has expired.

Mr. ROWE. Sorry, I took too much of your time.

Mr. SHIMKUS. Yucca Mountain?

Ms. DEGETTE. I'm sorry, the gentleman's time has expired.

Mr. SHIMKUS. So he can't answer the question on Yucca Mountain? Just yes or no?

Ms. DEGETTE. The gentleman would certainly——

Mr. SHIMKUS. That was the question.

Ms. DEGETTE. The gentleman would certainly be happy——

Mr. SHIMKUS. Mr. Rowe, if I provided for your response a question in writing?

Ms. DEGETTE. The gentleman from Ohio, Mr. Space.

Mr. SPACE. I come from one of those so-called coal districts that Mr. Shimkus identified earlier in his opening. Apart from that, it is a district that has been suffering from higher-than-average unemployment rates in a State that suffers higher-than-average nationwide. Our poverty rate exceeds 20, sometimes 30 percent in some of my counties. The jobs that we do have aren't paying enough to get many people out of poverty. Tens of thousands of people are working in poverty.

Mr. Shimkus has posed a rhetorical question about labor. Where is labor? What about organized labor? I think that raises a larger question that I'd be curious, Mr. Rogers, if you could respond. What effect would this rather sweeping measure have on the creation of jobs?

Mr. ROGERS. First, I appreciate this because, as you know, we serve Ohio also and we have many—we have over 11 million people that we serve, including many in Ohio. When I look at this legislation, this blueprint, several places where I see jobs that work in your part of the world. One is if we can successfully achieve carbon capture and sequestration, we can deploy it. That keeps coal in the mix in a low-carbon world and that means jobs. It also means jobs in terms of actually the building of coal gasification facilities in lieu of traditional coal plants. It means building jobs with respect to building the carbon capture sequestration going forward. I think it's going to mean new nuclear plants, and there will be significant jobs that come from that. I believe in terms of energy efficiency there will be jobs.

So as I look at this, I believe not just in the short term, but in the longer term, jobs will be created as we fundamentally transform our energy infrastructure.

Mr. SPACE. And has thought been given—and I apologize for not having been able to read the entire report as of yet—but has thought been given to the educational and training process and national policies that could be implemented that would help develop a workforce in a comprehensive and practical fashion to fill these potential jobs of the future?

Mr. ROGERS. We have not addressed that specific aspect of it. But I do believe, as we look at new technologies, whether they are clean tech, renewables, advanced technologies in nuclear, advanced coal technologies, advanced gas, I think in all these areas it is going to take a significant number of new engineers and technicians in order for this to happen.

So I fundamentally believe this is going to happen. I, personally, believe it is going to happen anyway, because I look at our fleet, and by 2050 every power plant we have today will be retired. So

if I know what the rules are with respect to carbon, it allows us to make investments consistent with achieving a low carbon footprint but, at the same time, of retiring and replacing. And that process alone will create significant jobs over the future period.

Mr. LASH. Jim, could I briefly correct you?

Actually, the blueprint specifically addresses, Congressman, the issue you raised and the need for training. It is one of the goals we set out for the allocation system, to provide for the training of the workforce needed to facilitate these wide-scale transitions.

Mr. SPACE. And are specific national policies suggested on how best to implement those goals?

Mr. LASH. Not in detail, sir.

Mr. SPACE. Thank you.

Mr. STERBA. Mr. Space?

Mr. SPACE. Yes, sir.

Mr. STERBA. Two of you have asked the question regarding labor unions. And I would just like to mention that—and it was not on the House side, but a year, year and a half ago, I stood with Senator Bingaman, Chairman Bingaman, with the IBEW and, I believe, the AFL-CIO—I need to verify that that was the second union—that endorsed a bill that was put forward on the Senate side, which was a cap-and-trade bill by Senator Bingaman, Senator Murkowski, and a number of others.

Mr. SPACE. Has organized labor been involved in any respect with regard to this USCAP finding?

Mr. STERBA. No.

Mr. SPACE. All right. Thank you.

I yield back.

Ms. DEGETTE. The Chair recognizes the gentleman from Georgia, Mr. Gingrey.

Mr. GINGREY. Thank you, Madam Chairman.

And thank all of you for being here and bringing us the blueprint.

I want to read from the summary overview in your final—your commitment, the last paragraph. "We, the members of the U.S. Climate Action Partnership, pledge to work with the President, the Congress, and all other stakeholders to enact an environmentally effective, economically sustainable, and fair climate change program consistent with our principles at the earliest practical date."

And I heard either one of the witnesses or maybe a member of the committee say earlier that the goal was to have legislation to the President before the Memorial Day break. So that is coming up pretty darn soon.

You know, we are obviously in a pretty tough economic environment. In this last year, what, 2.5 million jobs lost. Right now we are on the floor about to vote on a bill, the second tranche, the $350 billion of the rescue package, to try to do something about this economy, to get it back on track.

And yet what I am hearing from you, from USCAP, is that you are recommending something whose cornerstone is cap and trade, a mandatory cap-and-trade regime, and that it needs to be done with all due haste.

My question to you—and any of you can respond—is this: Are you willing to sacrifice more American jobs to achieve the goals of

your report? Are you, at this crucial time in our Nation's history, willing to push forward with all due haste, maybe by Memorial Day weekend, with legislation calling for mandatory cap and trade as its cornerstone, and at the risk of losing additional jobs?

Anyone?

Mr. CRANE. Congressman, it is a great question. And I think it speaks to an important point, which is the timing question.

If climate change legislation is passed that has to be implemented with a cap and trade in several years' time, I believe, and certainly speaking on behalf of my company, the first thing it will do is it will unleash additional investment by us in various technologies designed to prepare for the cap-and-trade system that is coming.

So, you know, this may be counterintuitive, but I think quite the contrary, in the near term it will actually unleash investment and create jobs. And we and many of the companies that sit here, we have very substantial capital. I think my company and Jeff's are the two smallest at this panel. We sit with $1.5 billion in investment capital ready to invest, but we need to know in what direction.

Mr. NOLEN. I would make one comment to say we have talked a lot this morning about cost. I think, as a group, and I know for myself that we are much better at driving costs down than we are with uncertainty. And this is what we have tried to do, is bring some certainty to our program so that we then can plan. My personal belief is that the uncertainty has caused a lot more of our stock prices and employment loss than the cost.

Mr. GINGREY. Well, I want to make sure you understand my question before we get another response. It is really a value question, a value judgment. Even if you would respond and say, well, no, you believe we won't lose more jobs, we will create jobs, but I want you to respond to me in regard to that value judgment of if, in fact, jobs will be lost.

It is a question, I guess, of collateral damage. We ask those questions all the time of our military: Is it worth the sacrifice wherever we are engaged? And so that is my question now.

And it is all about the timing and how important is it. Is this something that, in 2007, in January, was clearly appropriate to say "with all due haste," when everything looked kind of rosy out there? But right now, when things look pretty grim, is "with all due haste" really appropriate in regard to mandatory cap and trade, or is it something that might not be put too much on the back burner but could wait a couple years?

Mr. ROWE. Congressman, in your job there are no no-risk votes. In my job there are no no-risk energy supply options. We both labor as best we can to make decisions or recommendations that try to minimize risk.

In my judgment, the economic efficiency of a cap-and-trade system radically reduces the risk of dealing with climate change, which we must do. In my judgment, starting soon, with appropriate cost constraints, protects the economy better than putting off a solution and then perhaps doing something more drastic or more disingenuous. It is all a matter of trying, in our frail way, to handle risk as best we can.

Mr. WAXMAN [presiding]. Thank you, Mr. Gingrey.

Mr. McNerney?

Mr. MCNERNEY. Thank you, Mr. Chairman.

Sitting here with this panel in front of me is like a child in a candy store. So, unfortunately, I only have 5 minutes.

I would like to start with Mr. Darbee. I have a long relationship with PG&E as a customer and as a business partner, and I have always found PG&E to be a good business partner to deal with.

Now, my question for you is, you are embarking on a very aggressive program for efficiency and bringing in other technology to generate new power. Could you explain briefly how that benefits your bottom line?

Mr. DARBEE. Well, with energy efficiency we have collaborated with the State of California. And what occurs there is that the cost of new energy efficiency to our customers is about 3 cents.

What we have entered into is a framework in California of where, if demand for energy goes up, our revenues go down. It is called decoupling. So we are indifferent to the amount of power we sell. And if we create savings for our customers, what happens is that we share some of the savings, a small fraction of the savings. So on energy efficiency, which is one way that we meet increased power needs, we make money that way.

If we build new power plants—and most of the power plants are built by others—if others build new power plants and we procure that power, we make zero money. It costs X, we pay X for it, we make no money. About a third of the new power plants that we build, if we build them we earn a return on the investment, the equity investment that we have in it.

Is that responsive to your question?

Mr. MCNERNEY. It is. Thank you.

My next question will be for Mr. Immelt. GE is a leader in producing new energy technology, renewable energy technology. And I have to say, some of the work I did in the earlier life benefited the technology that you are using.

Do you see this as a growing part of your bottom line? And will cap-and-trade legislation help that bottom line grow as a part of your business model?

Mr. IMMELT. I think, Congressman, we are already maybe a $40 billion or $45 billion company just in energy. And we invest heavily in R&D as part of that. And so we have products that do coal, gas, wind, solar, nuclear. We are really almost agnostic, as to technology. We do it on a global basis. And so, even without a cap-and-trade program, we would have a prosperous energy business, because we are really technically agnostic.

What I would say as a businessman and as an American businessman is that the energy sector has been chronically underinvested for a generation, in terms of new innovation in technology. If you just look at a pie chart of where the aggregate R&D dollars have gone in this country since World War II, it is hard to find energy on that segment.

I like solving problems with technology. That is what GE does as a company. So anything that makes technology come to the fore is going to be good for GE over time. And what I believe is that a price for carbon will allow many of these technologies that have

been around for a generation—coal gasification has been around for a generation. Nuclear has been around for a generation. Elements of the smart grid have been around for a generation. We just haven't commercialized them and taken down the cost curve to make them as competitive as they can be.

You know, we all come at this with a different perspective. I view it at its core as a price for carbon is going to bring energy technology into the 21st century and give the United States a chance to lead.

Mr. MCNERNEY. Thank you.

Many of my colleagues on the other side of the aisle have decried the failure of the European cap-and-trade system. Now, when I hear Mr. Krupp and Ms. Claussen talk about offsets, I get nervous, because I am thinking about grandfathering, which, in my opinion, is largely responsible for whatever problems the European cap-and-trade system has had.

So would you be clear about whether you are including grandfathering on offsets, Mr. Krupp?

Mr. KRUPP. Well, first of all, I want to acknowledge the concerns of the members of the minority about the European ETS system. It got off to a rough start. Since then, they have corrected many of the earlier problems.

The principal problem in Europe is that they didn't have good inventory numbers for the baseline, which, in this country, thanks to legislation passed out of this committee in 1990 in part of the Clean Air Act amendments of 1990, we have long had excellent baseline information about the emissions of CO_2 from power plants. I don't think we will repeat that mistake.

In Europe, one of the mistakes, I believe, is that they have not allowed agricultural offsets in the system. And we do recommend that EPA start a process that could lead to verified, scientifically valid offsets from the agricultural sector to be part of the system.

Mr. WAXMAN. Thank you, Mr. McNerney.

Ms. Sutton?

Ms. SUTTON. Thank you, Mr. Chairman.

Thank you all for being here. I appreciate that you are coming together to try and create a solution.

In fact, Mr. Immelt, I noted in your testimony you said, on the final page near the end, "Our commitment as a group now is to work with Congress, both Houses, both parties, the new administration, and other stakeholders to enact this year, if possible, climate legislation consistent with the principles underlying the call for action and the blueprint, namely. That legislation must be fair, environmentally protective, and economically sustainable for our country."

And I would just add a couple of words as a Representative from Ohio, that after the word "country" we say, "including Ohio." OK? So, from now on when you guys are looking at that statement I want in the back of your minds to be "including Ohio." And I am sure that that is what is intended.

As a new member to the committee, I do have a question; we have heard some discussion about who is at the table and who is not at the table. Could somebody just briefly explain to me how you all came to be and whether or not there is a place at the table for

organized labor, or are they welcome at the table? Could someone answer that for me?

Mr. IMMELT. Well, I would say that, you know, we have been doing this for maybe 2½ or 3 years, and the idea was to try to get a representative sample, you know, of different industry sectors and NGOs to come together. In that sense, probably most of us have reviewed a lot of the elements of this with our own unions, our own teams inside the company. There was never a desire to exclude anyone from the table.

But I can tell you, with 31 people, it has been hard enough to get to this point, from a standpoint of how far we have gotten. And we look forward to further dialogue, under your leadership, to make sure everybody is represented. But there was always a sense that the more people we have in, the better.

Ms. SUTTON. I appreciate that and also, as a Member of Congress, the ability to work in a large group.

So a couple of you—manufacturing obviously is important to me and the considerations of manufacturing as we foster this solution that I believe can be attained. Several of you, Mr. Immelt and Mr. Nolen in particular, have talked about the timing of what we are doing—or I think, Mr. Nolen, you more specifically—and the need to pass this climate legislation quickly for several reasons: one, you said, to send the right signal to get the investment going.

Do you also have concern about the delay resulting in what would be even steeper requirements to be achieved more quickly in the future? And tell me how that would impact your organizations.

Mr. NOLEN. I think that Jeff put it correctly first, is that, just like his company, our company is in all of these spaces. We also have limited capital as to where we need to go and to make those investments. In order for me to meet Mr. Rogers' time frame to do more with sequestration and other things, we need to put more capital into that, and we need to have more certainty on the return on our investment in those areas.

We have choices as to where we put it. Do we put more in gas, do we put more in wind, do we put more in these areas? And these are all decisions that we must make. And that is why we need to speed it up, in order to make the end of the line really happen. Because it starts, really, with Jeff and ourselves and other large companies who put the capital in to build the innovation into these products.

Mr. IMMELT. Certainty in the investment world is critical to success. And what we lack today is certainty in terms of what is going to happen and when it is going to happen.

I would argue that, today, we have almost the worst of all worlds. We have 17 States that are developing their own programs. We have RPS in some areas, not in others. The fact is that the last 40-plus coal plants haven't been permitted. You know, so we have an energy policy, it is just that nobody knows what it is. And it shows up in terms of those consequences.

So, look, I am not—I say this with great respect to my colleagues—I didn't come to this as an environmentalist. I come to it as an industrialist. I am a capitalist, pure, plain and simple. And I just think the system we have today is untenable over the long term, insofar as, you know, the science is so compelling on global

warming. Something is going to happen. The more certainty you can give us, the better we can respond and be efficient on behalf of our shareholders.

Ms. SUTTON. Mr. Rogers, did you have a comment?

Mr. ROGERS. I see this from the perspective of 700,000 customers just in Ohio and the families and businesses behind them. And I am making decisions today about what to build and to get prepared. And the sooner we get started, I think the better off we will be, because Ohio is very dependent on coal. And if we can smooth out—and that was what was appealing about the compromise that was reached here. There was a recognition that we had to buffer during the transition period on the consumers of Ohio and all the consumers.

So, in a sense, as a CEO of a regulated utility, I am here really standing in the shoes of my consumers, saying let's do this in a way that minimizes cost increases and cost impacts, because there will be increased costs, and let's smooth it out. If we delay this 3 years or 5 years, it is only going to translate, I believe, in a steeper cost curve and a more draconian outcome for consumers.

Mr. WAXMAN. Thank you, Ms. Sutton.

Ms. DeGette?

Ms. DEGETTE. Thank you, Mr. Chairman.

Several of the witnesses today have mentioned the renewable portfolio standard. And I think it was Mr. Rowe who said that, as a tool for change, it is sort of a blunt instrument and that he would prefer to see a cap-and-trade system that might be more flexible.

And I was kind of struck, too, by what Mr. Immelt just said, which is that we have this patchwork of energy policies right now, different renewable portfolio standards in many of the States, nothing in some States, different standards in other States.

But I have always felt that giving people some kind of a goal for reduction is a good idea. The devil is always in the details, as to what would that standard look like. And, as many of you probably know, last year we were actually able to pass an RPS through the House, and it narrowly failed in the Senate.

So I guess I would like to ask you whether you feel that a national renewable portfolio standard could be developed that would be part of the overall framework and that would be workable at helping to set goals.

Mr. IMMELT. I would start, but then have my colleagues. I would say that that is an area where you will see different opinions on the panel. Some are in favor of it; some aren't in favor of it.

Ms. DEGETTE. Well, let's hear from somebody who is not in favor of it.

Mr. ROGERS. I would raise a question about it that hasn't been resolved. For instance, we are in the wind business. We have over 500 megawatts under operation, 5,000 under development in Texas, Oklahoma, and Colorado, because that is where the wind is. But we are not developing wind in North and South Carolina because there is no wind. We are not building it in southern Ohio or Kentucky or southern Indiana because there is no wind.

If you look across the country and you put a wind map on the country and then you put a solar map on the country, what you

see, certain regions are very attractive for making investments in either wind or solar, but it is not uniform across the country.

Ms. DEGETTE. Well, sure, and you are absolutely right about that. But, on the other hand, those other States—nobody is going to do RPS that says you have to get a certain amount of your energy from wind or a certain amount of your energy from solar.

And, in truth, as someone who has worked on these issues for a long time, I will tell you, every region of the country has some kind of renewable energy. The trick is to set the standard at a level that would be a workable level for everybody.

Mr. ROGERS. And I think you are absolutely right about that, in terms of getting the right renewable level. But what I find that has been the most difficult, I talk to people who want wind, because I am in that business, but the same people that support ITC and supporting wind are also the same people that oppose eminent domain so I can build a transmission line and get it to the customer. So, until there is some consensus, it is unrealistic to hope for wind without passing eminent domain legislation.

Ms. DEGETTE. I understand.

Let's hear briefly from somebody who supports a national RPS standard.

Mr. STERBA. Ms. DeGette, I happen to be one of those rare, maybe, utility folks who does support a national standard. And, frankly, the reason is I have seen in the West what happens when States create their own individual standards and they take the view that it is not renewable unless it is in my State. And that disadvantages renewables.

Ms. DEGETTE. Right. Right.

Mr. STERBA. Because it creates the least effective resources being built, as opposed to the most effective.

So we need to develop this system. And I 100 percent agree with Jim that, along with this, we have to address the issue of transmission, transmission access and siting. And it just doesn't make sense for natural gas pipelines to be built under one set of rules and electric transmission lines to be built under another set of rules, where we cannot get this infrastructure that is necessary.

Ms. DEGETTE. I would just say that, in Colorado, we passed, as most of you know, we passed an RPS several years ago as part of a voter initiative because all of the utilities opposed it. And within about 1 year, we had exceeded that standard. The legislature adopted a new standard that was a much more stringent standard that they worked with the utility companies to agree to.

So I hear what you are saying about some of the eminent domain issues, but I think we could arrive at something, a fairly low threshold, and then build from that.

Mr. ROGERS. I don't want to leave you with the wrong impression. While I might not support a national renewable portfolio standard, I have supported a renewable portfolio standard that was approved in North Carolina, as well as one that was approved in Ohio.

So I have actually, within the States, approved it because the local law was written in a way to reflect what the opportunities were for renewables there, rather than trying to have a national standard where one size fits all.

Ms. DEGETTE. I think, though, you could take into account the regional differences.

Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you, Ms. DeGette.

The next would be Mr. Sarbanes.

Mr. SARBANES. Thank you, Mr. Chairman.

I wanted to go back to the consumer question for a minute, because that is the one that could create the kind of political blowback that would make all of this just an academic exercise.

So I assume you built some models along with these projections. And I was curious, if you take the 2020 target, which was to get to 80 percent, to 86 percent of 2005 levels, if you went forward over this next period and up to that year without the kind of buffering that you have suggested needs to happen—and I confess I don't quite understand how the buffering would work—but without it, you know, give me an average rate payer and tell me what the percentage increase would be in their bill if you didn't have the accommodations in place. And then tell me what you think you could achieve if you did do the buffering that you mentioned.

Mr. ROGERS. We did a lot of modeling in the Lieberman-Warner bill and all the various aspects of it, so I am going to kind of recall a lot of those studies. It won't be precise, but it will give you a zip code.

If you go—and it depends, really, on the State—if you are in a State like Ohio, where 86 percent is coal, versus a State like Indiana where it is 94 percent, versus a state like South Carolina which is 24, it produces different answers. And I think, in Maryland, I think it is pretty close to 50 percent of the electricity comes from coal in Maryland. But under scenarios like that, you are looking at 20 and 40 percent increases in the price of electricity without—without—any ability to mitigate cost.

And that is why it became so critical in this blueprint that we had provisions in there that allowed for the mitigation of cost. Because, absent that, I agree with your observation that, if we could pass legislation and if it translates into 20 to 40 percent increases in the price of electricity, the backlash to that could be devastating to our ability to address climate change long-term.

And that is why it is so critical and why this group came together around allowances and came together around the recognition that 40 percent of the allowances should go to the utility sector, where 40 percent of the emissions come from, and that a significant portion of those should be used to mitigate cost increases during the transition period.

Mr. SARBANES. With the goal of getting them to what kind of level against the 20 to 40 that you——

Mr. ROGERS. We didn't agree to the specifics of that. But we all recognized, by using the words "significant portion," that we had to make sure it didn't translate into a draconian increase in prices during this interim period.

Ms. CLAUSSEN. If I could just add one thing to that, this blueprint stands as a whole. Everything is linked. Our ability to meet the kinds of targets that we put here, which are quite aggressive, is based on having some allocation to the local distribution compa-

nies. It is based on the cost containment measures that we have in here, including the use of verified real offsets.

So we sort of view this as a way, as a whole, to protect the environment and have a sustainable economy and not increase prices hugely to consumers.

Mr. IMMELT. Congressman, I would just add one other thing, is that, you know, the way to think about what we proposed, there is probably an 80 or 90 percent overlap with an energy policy and really taking control over technologies that are going to give us long-term control over energy costs.

Our electricity bills did go up by 40 percent a year ago as the spike in oil and other natural resources took place. And I think, when we execute on this plan, we are going to have, over the long term, a set of technologies that I believe are going to allow us to have more control over time and more security over time about how to think about energy technologies and productivity.

Mr. SARBANES. Did the projections of what the, sort of, unbuffered scenario would be accounted for what you hoped the new technologies will produce in terms of efficiency, or they did not?

Mr. ROGERS. It did. We did take into account the availability of the technologies, how long it would take us to bring a nuclear unit on and shut down coal units so we would reduce our CO_2 footprint, and what the cost implications would be. We looked at the prospect of bringing on carbon capture and sequestration with respect to existing facilities. We looked at energy efficiency and did scenarios on really aggressive energy efficiency and succeeding there. And we actually looked at different scenarios on renewables, in terms of the cost implications as well as the availability on a 24-7 basis and that implication.

Mr. SARBANES. My time is up. I would just say, all the more reason to be as aggressive on the energy technology as you are trying to be. I am troubled that so much of that technology is being purchased overseas, because I think we have lagged far behind.

Mr. WAXMAN. Thank you, Mr. Sarbanes.

Before I recognize other members for questioning, I know that a number of you have to leave, and I want to express my appreciation. I know you were going to leave at 12:30, and you have extended your time to be with us. And this has been very helpful. I have listened to your responses to the questions, very important and legitimate questions from the members. And I think it has been very helpful in clarifying the matter.

You do represent a remarkably diverse panel, a cross-section of American industry and environmental advocates. And your call to us is to adopt comprehensive, environmentally protective, economically sustainable, and fair legislation to address global climate change. And the economic crisis, as I have heard you all say, is not a reason to not move forward, but is a real reason why we should move forward at this time.

So I thank you so much for being here, and I appreciate all the work you have done as a panel in developing the proposals you have sent to us.

I am looking forward to working with Members of the Congress on our committee, both sides of the aisle, from various regions,

with the various stakeholders, with the new President, with Members of the House and the Senate in leadership positions on both sides of the aisle, as well, in seeing if we can accomplish this goal this year. It is a very aggressive timetable.

So I am going to excuse those who have to leave, but I know we have others that will stay behind to answer further questions from the members of the committee. Thank you so much.

In fact, it probably isn't a bad idea—if any of the witnesses that are going to be testifying want to take a quick break, we can do that.

No, no, we have a whole new group that is coming in from USCAP that are prepared to answer the questions. They are not the CEOs, but they are people who have been very involved in the issues.

We are going to pick up questions where we left off, but I want to introduce a new set of witnesses. We have Elizabeth Thompson, the Legislative Director of the Environmental Defense Fund; Betsy Moler, Executive Vice President of Government and Environment Affairs for Exelon Corporation; Ann Renee Klee, Vice President for Corporate Environmental Programs for General Electric; Daniel Lashof, Ph.D., the Director of the NRDC Climate Center for NRDC; Steven B. Corneli, Senior Vice President, Market and Climate Policy for NRG Energy; Janet Peace, Vice President for Markets and Business Strategy for the Pew Center on Global Climate Change; Steve Kline, Vice President of Corporate Environmental and Federal Affairs for PG&E Corporation; and Robert L. Bendick, Jr., Director of U.S. Government Relations for The Nature Conservancy.

We are delighted that you are all here to further answer questions from members of the committee.

As I indicated, it is going to be the practice of our committee that all witnesses testify under oath. So before you sit down and get too comfortable, I would like to ask if you would stand and raise your right hand.

[Witnesses sworn.]

Mr. WAXMAN. The record will indicate that each of the witnesses answered in the affirmative.

Mr. Rogers, you would be next in asking questions. Do you wish to be recognized?

Mr. ROGERS OF MICHIGAN. No.

Mr. WAXMAN. Ms. Schakowsky was next. She is not in the room at the moment.

Mr. Welch, you are next.

Mr. WELCH. Thank you, Mr. Chairman.

I want to go back to a line of questioning that was asked by Mr. Markey. There are two things. One, this committee, with Chairman Waxman and Chairman Markey, are intent on having a significant climate change bill by Memorial Day. It is very ambitious.

Second, Mr. Rowe, an earlier witness, pointed out the obvious, and that is: all of us have to make decisions that minimize risk. And there is a debate, and there will be an intense debate among members of this committee and in Congress as to what will be the economic consequences of the action that we take.

But the question I have for each of you—and I just want to go down—is this. And I would just like to get a yes or no answer, because this is really a threshold issue for us.

Does doing nothing to address climate change—in other words, us getting unable to resolve the debate about the consequences of action—does doing nothing to address climate change, inaction, threaten our economy, in your view, yes or no?

Mr. PERSHING. Jonathan Pershing with the World Resources Institute. Yes, it does.

Mr. WELCH. OK.

Mr. Kline?

Mr. KLINE. It does, sir.

Ms. MOLER. Yes, sir, it does.

Mr. WELCH. OK.

Mr. CORNELI. Yes, it does.

Mr. LASHOF. Yes, it does.

Ms. KLEE. Yes, sir.

Ms. PEACE. Yes, sir.

Ms. THOMPSON. Yes, absolutely.

Mr. BENDICK. Yes, sir.

Mr. WAXMAN. There are buttons on the base of the mikes, so be sure you press them.

Mr. WELCH. Well, I want to thank everyone, because the threshold question is whether we have to act. And one of the debates we are going to have is whether the risk of acting is greater than the risk of not acting. And it is that elemental.

And, as you have heard from listening to the questions of the members of the committee, there is a division of opinion, less about whether global warming is a threat, but a very lively debate about whether action will be worse than inaction. And I find it very heartening that leaders of the advocacy community and the industrial and energy community are united on urging Congress to be a partner in acting.

Let me ask—is it Ms. Klee from General Electric?

Ms. KLEE. Yes.

Mr. WELCH. Mr. Immelt was here, and your company is a pretty good size, as I understand it. What are the consequences of inaction economically, as you see it, to General Electric and the work that you do?

Ms. KLEE. I think you heard the CEOs identify some of the risks this morning. There is the lack of investment that will be made, because there is uncertainty as to where to put limited investment dollars.

There is also the fundamental fact that there will be regulation. EPA will move forward, but it may not move forward in the most cost-effective way. So we may have a lost opportunity by not pursuing legislation.

And there will be the additional cost that we believe will be incurred if we have to act more quickly later.

Mr. WELCH. I see.

Ms. KLEE. So those three things, I think, combine to make it a very costly decision one way or another.

Mr. WELCH. So I if understand what you are saying, it is not only important to act, it is important to act sooner rather than later.

Ms. KLEE. That is our belief. And it is important to act smartly.

Mr. WELCH. OK. Well, you are asking a lot for that. But I am glad you have—hope springs eternal.

Mr. Kline, how about you?

Mr. KLINE. I think one of the things that we see is that both in terms of protecting our customers from the kind of increases that the first panel talked about in terms of their electricity rates, we also see an incredible lost opportunity if we don't act now.

Mr. WELCH. That being?

Mr. KLINE. That is that there are these amazing, developing new technology centers across the United States, and we see those jobs going overseas and that technology superiority going overseas. And so, in terms of our service territory, where Silicon Valley is putting a lot of time and energy into these technologies, we are going to lose that if we don't act now.

Mr. WELCH. OK.

Ms. Moler, a lot of the critics who raise legitimate questions about cap and trade point to the experience in Europe that they cite as a failure. Your view on the European experience and how that should inform us about a cap-and-trade approach?

Ms. MOLER. We do not have substantial operations in Europe or any significant ones at all. However, as a student of climate change, I think we have learned a lot of lessons from the European experience. We need a robust cap-and-trade system. We need to deal with cost containment, as we call it. We have, in the mechanics of our proposal on cost containment, we have applied some of the lessons learned from Europe.

I would also say that, ultimately, we hope there will be a worldwide program, that it will not be just the United States and just the EUTS trading system. And so we need a program that is ultimately going to work on a multilateral basis. And we hope that, by starting here, we will get it developed.

Mr. WELCH. OK, thank you.

Ms. Peace, could you comment on that?

Mr. WAXMAN. Mr. Welch, your time has expired.

Mr. WELCH. Oh. Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you.

Ms. Castor?

Ms. CASTOR. Thank you, Mr. Chairman.

And I would like to thank Chairman Waxman and Chairman Markey for starting us off less than 1 week after the Congress was sworn in, starting us off on climate change.

And thank you to the panel for your participation.

Can you all chronicle the current research efforts in carbon sequestration, various research efforts that are showing some promise at all? Who is conducting that research? What is being done right now?

Mr. CORNELI. Well, Congresswoman Castor, Mr. Chair, that is a great question. And we actually tend to think that there are several phases on the continuum from research to deployment that are involved with all of the promising technologies.

With respect to carbon capture and sequestration, one of the exciting things is some of the technologies are very close to commercial deployment. You heard Mr. Nolen from Siemens earlier talk about part of the need of this program is to get competition and market customers established for the major developers of the technology and, with coal gasification, the technology to actually scrub the carbon out, compress it.

Ms. CASTOR. But who is conducting that research?

Mr. CORNELI. Well,that is not even research anymore. That is being done by private companies who are ready to do it.

Ms. CASTOR. OK. What is that private company?

Mr. CORNELI. Well, private companies like GE, like Mitsubishi, like Siemens, like—we can get you more information.

Ms. CASTOR. Yes, because there was a utility in my neck of the words, in Florida, that was held up very early as one of the prototypes for carbon sequestration, and they have abandoned their research project for many different reasons. So I am trying to now get a little more detail on who is conducting the research.

Mr.CORNELI. One of our views as a coalition is that we need these complementary measures that were described earlier to jump-start things like carbon capture and sequestration. Because, right now, all the technology can be put together. It hasn't gone down the cost curves, like Mr. Immelt said. It is not cheap enough or widely available enough to use everywhere. And we think creating more demand and more supply will help make those things happen quickly.

Ms. CASTOR. Can anyone else shed some light?

Mr. BENDICK. I am Bob Bendick from The Nature Conservancy. My name tag is somewhere here.

Of course there is a great deal of very specific evidence on sequestration by trees and by other natural systems. And I think we know pretty precisely what different forest types sequester, how quickly, both in the U.S. and outside the U.S.

And that is why, sort of, forest carbon issues are part of the blueprint, because we know what those are. It is a very old technology and one we can count on in very specific ways if the regulations surrounding keeping those trees in place are good ones. And that is what we advocate.

Ms. KLEE. If I could just add, we are working with our customers and have a project with Duke in Indiana for an IGCC coal plant with carbon capture and storage and other facilities to be CCS-ready. And our customers have been very receptive to that.

And we also have a lot of experience, and other companies do as well, with CO_2 injection as part of enhanced oil recovery.

So the technologies are there. It is a question of getting them to be economically feasible. And the research for large-scale projects is very, very resource-intensive, cost-intensive. And that is why——

Ms. CASTOR. So it is mostly going on in the private sector, not at universities. Or is it?

Ms. KLEE. It is going on at both, but it is very cost-intensive. And that is why getting funding is important, to ensure that we can take it to that next level.

Mr. LASHOF. I just want to say, in terms of universities, there has been quite a bit of work. Lawrence Berkeley National Labora-

tory has done work characterizing the underground geology. Mr. Chu, nominated to be Energy Secretary, has been involved in overseeing that work.

There is a lot of work at Stanford University and elsewhere in the academic community and in the Department of Energy National Labs, Battelle and other National Labs, as well as Berkeley.

Ms. MOLER. There is also a great deal of collaborative research being done by the Electric Power Research Institute in our industry. And then Harvard has a major coal research project under way, as well.

Ms. CASTOR. Do you all—go ahead.

Ms. PEACE. I would just add that a lot of folks talk about CCS as being a new type of technology. And they have been using CO_2 for enhanced oil recovery for 30 years in the Permian Basin. Granted, it is a little bit different if you want to sink it in to a brine aquifer, and it requires a lot larger cost, because you are not getting the revenue back from the oil.

Mr. WAXMAN. Thank you, Ms. Castor.

Ms. Eshoo?

Ms. ESHOO. Thank you, Mr. Chairman. And thank you for making the very first hearing in the 111th Congress of Energy and Commerce on this issue in your new chairmanship. I think that that bodes very well for the country.

And I want to compliment the USCAP team for the work that you have done. This has been a very interesting morning, to listen to all of the testimony.

Our colleague, Mr. Markey, has a saying, and that is that there is no place to take a sick planet to, no hospital to treat a sick planet. So I think that, as we talk about the internals of a national policy of how we clean up and move on in a new way to not only protect our resources but also to move on economically and everything that comes with it, that we will be making a contribution to the world community, as well. I can't think of anything more important for all of us to be working on.

I am a member of the House Intelligence Committee, as well as this one. And back, I think, 2 years ago, there was a CNA report that was issued, and it was written by admirals and generals that found that global climate change posed a significant threat to America's national security. So this isn't only an issue covering the items that you all have spoken about this morning and members have asked questions about. This is an issue that does and will continue to have an impact on America's national security.

And to that end, both myself and Mr. Markey, chairing the Select Committee on Global Climate Change, and myself as a subcommittee Chair at the Intelligence Committee, held an open hearing, a public hearing, last year on this very issue.

Here are my questions. I would like to know if any of you can tell us about where the gaps in R&D are, as to the major research and development that needs to take place on these issues. And if you have any recommendations to us about what role specifically the Federal Government should play in these investments that won't overlap with what currently is taking place with private-sector R&D that should be considered or are under way.

That is my first question. I have been here for a long time, so I am going to get all my questions in first.

I would like to know how you are all measuring your successes. There are many successes that have been mentioned this morning. And I hope you had the benefit of hearing what your forebears at the table spoke about. I would like to know about that.

And thirdly, given where we are in our country with what has happened in the private sector and the rip-offs that have taken place, I would like some of you to comment on what recommendations you would have to us on how we don't end up in the traps of not having enough oversight.

I know that Mr. Tercek, before he joined The Nature Conservancy, was with Goldman Sachs. And I think we still have someone from The Nature Conservancy here, whether you can address this or not.

So I guess my question is, do you believe that oversight of the market is really an issue in this whole debate, and what Congress can and should do and address as it designs climate legislation.

I think without effective oversight of the Congress that, most frankly—and it is not a pretty depiction of what goes on—is that there are companies and corporations, private-sector people that end up chewing their limbs off of their own corporate body in order to get a leg up. And it hurts everyone and everything. I don't think anyone wants to see a repeat of what we are experiencing now and the huge toll, the damage that it has taken on our national economy, not to speak of individuals and families and communities.

So those are my three questions. And I thank you for the work that you have done.

Mr. WAXMAN. Well, the gentlelady's time has almost expired. But I do think it is fair to have her questions responded to, so I would like to have any of you on the panel volunteer to answer some of those questions.

Ms. THOMPSON. Well, I will start with the response on the market oversight. I am speaking for Environmental Defense Fund, who believes a lot in cap and trade.

Market oversight is fundamental. That is part of what makes it work. Transparency, accountability—I think you have already heard those things throughout the day.

Now, the blueprint does not go into detail on that, in part because we did not have the experts on that. But I think that is a serious issue and one that we hope to work with Congress on.

Ms. KLEE. We would support that entirely. I mean, we feel very strongly that transparency is key to the success of this program and a strong oversight role is appropriate.

I would like to quickly address how we, from a company perspective, define success. And Mr. Immelt mentioned it this morning, but it is really our Ecomagination program. That is what has shown us that reducing greenhouse gas emissions and increasing energy efficiency is good from a business perspective.

We save over a hundred million dollars a year through what we do internally as a company. And from a product placement, product perspective, we are increasing our revenues. And we set targets for that. We will hit $20 billion in revenues next year and have a goal of hitting $25 billion by 2012.

And those are technologies that increase energy efficiency and reduce greenhouse gas emissions. So these are key measures of success for us.

Mr. CORNELI. Another measure of success I think that is important to us as a coalition as oppose to as individual companies would be measured in the things that you all measure and produce so well, and that's votes. We really are serious that we want to see this legislation pass as quickly as possible. We really want to work with you. We want to sort of provide a stimulus or a push to Congress, and we want to be pushed back by members on all sides so there can be an effective good debate and a very good policy that will be good for our environmental colleagues, good for our corporate colleagues, good for the country.

And that's how we will measure success as a coalition. In terms of the gaps, you know, of R&D, we do think there's a lot of resource—a lot of technologies ready to go now that can step into the gap and that can go down that cost curve. We think there's a whole bunch of new ones that we have not yet even really been invented yet that with the right price signal and the right kind of R&D support, we can drastically lower the cost of powering our economy, building buildings, creating building materials and information management, food, fiber without emitting carbon. And we would like to see the United States be the leader in that. That's fundamental research as well as strong assistance for continuous deployment of technologies.

Mr. WAXMAN. We have very little time left and we have two members who want to ask questions. As you think about the questions that Ms. Eshoo and other members have asked, we would like to invite to you submit additional comments for the record. Mr. Rogers.

Mr. ROGERS OF MICHIGAN. I know that Mr. Inslee has a quick question, so if I could just yield just a minute of my time to him, and then I will take the remaining time, Mr. Chairman.

Mr. INSLEE. Thank you, Mr. Rogers. Just quickly, I want to ask this issue about how the permits should be allocated for a cap and trade system. Europe had an experience where they gave them away instead of auctioning them, instead of using a market-based system, they just gave them away. And they found that very suboptimal because it did not create a price on carbon, citizens felt abused because an asset they own, which is the atmosphere, was just given away for free and simply reduced the effectiveness of the program. Many of us think that we ought to start with a mixture, heavily weighted to an auction with perhaps some accommodation for energy intensive industries to ameliorate some of these issues as a preferable way to do this. I'd appreciate any of your suggestions, particularly those who sort of agree with me.

Mr. LASHOF. Mr. Inslee, that is an excellent question. It is a very important and consequential decision that this committee and the Congress has to make about how the allocations are made. We do I think in the blueprint take notice of the experience in Europe and make recommendations to avoid it in several ways. First of all, we do recommend following the approach that you proposed with respect to energy intensive industries. So that's one area where we believe an allocation is warranted as opposed to an auction. Also

phasing out is those things—as those competitive distortions are addressed. With respect to allocations for the electric industry, rather than give allocations primarily to generators, most of the allocations that we're proposing would go to regulated local distribution companies, specifically on behalf of their customers. And we specifically talk about the need to avoid windfall profits as part of that.

And finally, with respect to merchant generators, such as NRG, we do propose some allocations. But they're limited to the net compliance cost that those companies have.

Mr. INSLEE. Thank you. And I want to thank Mr. Rogers for his assistance.

Mr. WAXMAN. Mr. Rogers.

Mr. ROGERS OF MICHIGAN. Thank you, and time is short, so I will be quick if I can. Ann from General Electric, is your company still in the appliance business? You build appliances?

Ms. KLEE. Yes, sir, it is.

Mr. ROGERS OF MICHIGAN. What percentage of those appliances by component is built outside of the United States?

Ms. KLEE. I don't have that information, but I can get it for you.

Mr. ROGERS OF MICHIGAN. It is pretty significant though, isn't it? You over time have moved quite a bit of the manufacturing, at least components?

Ms. KLEE. We have significant manufacturing in the United States.

Mr. ROGERS OF MICHIGAN. Sure. But you have also moved significant manufacturing outside of the United States?

Ms. KLEE. We have manufacturing and partnerships and sourcing outside as well.

Mr. ROGERS OF MICHIGAN. Did the Federal Government tell you that you needed to go into Ecomagination?

Ms. KLEE. No, sir.

Mr. ROGERS OF MICHIGAN. You did that entirely on your own.

Ms. KLEE. That was an entirely voluntary effort.

Mr. ROGERS OF MICHIGAN. Great program. My point here being that congratulations. I think the market is showing that you can do this on your own. And is it not true that General Electric would benefit significantly financially from their business model if we passed a cap and trade bill?

Ms. KLEE. I think what Mr. Immelt said this morning is our energy business is strong right now, and we will do well with it regardless.

Mr. ROGERS OF MICHIGAN. He's also reported as saying, and I quote—well, he has made it clear that he would be getting rid of—this is not a quote—made it clear that they would be getting rid of lower margin businesses. Manufacturing in today's day and age is a low-margin business.

Ms. KLEE. I did not see that quote but I am quite certain that he was not referring to the energy business in the United States.

Mr. WAXMAN. Mr. Rogers, will you yield to me just to point out to you that there is 2 minutes and 40 seconds left in the vote on the floor. I will let you go ahead and continue with your questions.

Mr. ROGERS OF MICHIGAN. I won't go on too much. My point here being, Mr. Chairman, I think climate change is incredibly impor-

tant as well. But there are some great industries that are voluntarily getting into the economics of the environment, which is fantastic. We all win when that happens. And I think we need to be very careful about our witness panels who are basically saying—especially a company like General Electric who has already skirted rules and regulations in the United States to make money overseas perfectly legal. If we make it more difficult to manufacture things—and that's what we do in the State of Michigan—you are going to kill a State like Michigan. And it worries me a lot that there is maybe a better approach to this rather than this very complicated cap and trade system that has brought corruption to Europe. And I think you addressed that through your transparency question, which is great. But the reason that we don't—you don't have it in your blueprint is because nobody knows how to do it, that you don't run into these corruption problems. I just hope that we take our time, we do this right, if maybe not at all, or build in an incentive for businesses to adopt what General Electric has done and is excited about in their environmental sector of business.

And if we don't do that, I think we are all certainly going to regret it. From a State that still likes to build stuff in America and build the middle class in America that is slowly eroding away because we can't build things anymore, we'd better, we'd better understand what that means for the average person who gets up and still builds things in this country. So I appreciate the opportunity, and the chairman was very gracious to let me go. And now I'm going to introduce a rule change package here in the House. Thank you very much. I appreciate your time. I am adjourning the hearing. This may be the only time I get to do this in 2 years. Hearing adjourned.

[Whereupon, at 1:30 p.m., the committee was adjourned.]

[Material submitted for inclusion in the record follows:]

b. In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.

i. What is the empirical and factual basis for making these sorts of statements?

Passing an economy-wide cap-and-trade program that provides incentives for low-carbon technologies and sets clear, long-term targets for reducing greenhouse gas emissions will provide businesses the certainty they need to make prudent investment decisions. Also by developing low carbon energy sources and using energy more efficiently, the U.S. economy will become less vulnerable to volatility in conventional energy markets, and at the same time, the U.S. will regain its role as a world leader in clean technology and can export—rather than import—climate solutions.

ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about our recommendations and we continue to work with these consultants to further refine our own internal and independent analyses.

iii. Did any of the USCAP corporate members perform their own internal or independent analyses?

Duke Energy has studied economic models of various legislative proposals and found that the overall cost to the economy of reducing carbon emissions can be mitigated with the expanded use of offsets and implementation of other cost containment measures. Additionally, Duke found that increased electricity rates to end-use electric customers can be mitigated through the allocation of allowances to local distribution companies.

c. **Did USCAP assess the economic impacts of its *Blueprint*, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?**

As stated above, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action.* The time horizon of our modeling analysis was 2015 to 2050. As noted, we also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

4. **How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?**

The cost of our proposal on American families, like any other proposal, will differ based on a series of factors, including consumption habits, regional differences such as fossil-fuel use in electricity production, and how quickly new low-carbon technology can be commercialized and deployed. As with other climate change models, we estimate that the GDP impact of well designed comprehensive climate legislation will be much lower than one that solely focuses on the environmental aspects of the program. The *Blueprint* recommends Congress implement a program that avoids extreme price volatility and provides sufficient investment in technology transformation to ensure a smooth transition and program costs to the economy are contained. USCAP continues to refine our analyses and hopes to have additional information in the near future.

a. **If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?**

As stated above, USCAP believes that well designed comprehensive cap-and-trade legislation can mitigate some of the long-term impacts on an economy-wide basis.

5. **Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?**

Yes, USCAP analyzed the international political and trade implications of a U.S. cap and trade program. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. It is important to note that USCAP believes that adoption of mandatory U.S. climate policy is an essential precondition for a full and effective international framework. This approach does not mean the U.S. should act unilaterally. Rather, Congress should consider adopting provisions and criteria for linkage of the U.S. cap-and-trade system to other existing and

emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

a. **What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?**

The USCAP *Blueprint* recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that U.S. businesses are not put at a competitive disadvantage in the global marketplace as a result of climate change policy.

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

USCAP's *Blueprint* acknowledges that coal must remain a part of our energy portfolio. It recognizes, however, that we need to develop the technologies to use this resource in a more efficient and environmentally sustainable manner. The *Blueprint* makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress address the regulatory and financial barriers that could inhibit the growth of coal with CCS. The *Blueprint* recommends Congress direct relevant federal agencies to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. In addition, the document recommends implementing a direct funding mechanism to pay for the additional costs associated with capture and geologic storage of CO2, thus lowering the initial cost of coal with CCS.

a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, USCAP's cost containment mechanisms are intended to limit high and volatile prices in the carbon market, which will protect U.S. manufacturers (both through direct exposure to CO2 allowance prices and the secondary effect of increased energy prices).

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

   USCAP has evaluated various policy options and determined that our nation's climate protection goals can be met in the most cost-effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. The cap-and-trade program will create the incentive for the market to deploy technologies which will cost effectively lower emissions. In some instances, however, the carbon price alone may not create an economic incentive to develop these technologies. Where it is not currently economical, public investment is needed for research, development and demonstration to accelerate the commercial availability of these critical technologies. Analysis from sources such as EPRI and MIT indicate the returns on such investments are substantial, making the climate program significantly more economic.

   a. **What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?**

      The Acid Rain program in the Clean Air Act provides evidence that cap-and-trade is a cost-effective, technology-driving policy. This policy mechanism was designed in the United States and is now the principle instrument used in regional programs operating or under development in the U.S. and Canada. However, while a cap-and-trade program creates a powerful economic incentive for the market to deploy commercially available technologies, robust public investment is still needed for research, development and demonstration in order to further lower the cost of technologies and the program.

   b. **What incentives does cap and trade create for individual companies to perform high risk research and development?**

      A cap-and-trade program creates a price for greenhouse gas emissions while allowing reductions to be made in the lowest cost manner available. The price signal alone may create the incentive for certain types of enterprises to perform high risk research and development. There may be barriers to technological development and deployment, however, which could offset any potential incentives for investment in high risk research and development that a price signal alone may create. Therefore, the recommendations contained in the USCAP *Blueprint* target technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies, including coal with CCS.

Duke Energy Responses to Energy and Commerce Questions

The Honorable Fred Upton

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

   It is important to note that comprehensive emissions data only exist from 1990 until now. However, based on estimates of CO_2 emissions, the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. To achieve these levels, serious investments must be made to deploy new technologies and infrastructure, including energy efficiency, renewables, new nuclear generating facilities, and coal with CCS.

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**

   The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power.

   While not discussed in detail like other zero or low-carbon technologies, Duke Energy believes nuclear must be an essential part of our future energy portfolio as we transition to a low-carbon economy. Nuclear energy is one of the only forms of baseload power generation that produces a continuous supply of electricity without emitting CO2. As various economic models indicate, in order to reduce GHG emissions and keep costs low, our nation must significantly increase the use of nuclear power generation in the near-term, as well as the long-term. To help stimulate investment in new nuclear generation Duke Energy supports increasing the volumetric capacity of the loan guarantee program authorized in the 2005 energy bill. Duke Energy is currently pursuing a license to build and operate a new nuclear facility in South Carolina and this will be a cornerstone of our efforts to reduce our existing carbon footprint, while ensuring we continue to provide a safe, secure and affordable supply of electricity to our customers.

   a. **Do you support the nuclear waste depository at Yucca Mountain?**

      USCAP does not have a position on a nuclear waste depository, but Duke Energy remains committed to finding a solution to the back-end of the nuclear fuel cycle and a place to safely and securely store our spent nuclear fuel.

   b. **Recycling spent fuel?**

      USCAP does not have a position on recycling spent fuel, but Duke Energy remains committed to finding a solution to the back-end of the nuclear fuel cycle, which should include recycling spent fuel.

3. **China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?**

   It is unclear what the exact global environmental impact would be if the U.S. makes greenhouse gas reductions and China does not. Duke Energy believes a long-term global solution will not be viable without developing countries such as China implementing a program similar in scope. But, we also believe U.S. leadership is essential for establishing an effective international policy framework for action by other countries.

4. **What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?**

   The amount of cost pass-through to consumers based on a cap-and-trade program, or other policy options that create a price for greenhouse gas emissions, would depend on factors including the relative ability of each sector of the economy to pass through costs. To protect electric consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (LDCs) to protect against sudden rate increases as a result of the policy. Additionally, USCAP recommends that the program include a variety of cost containment mechanisms to protect against volatility in the price for carbon, thus reducing sudden price increases that consumers will see. The impact on electricity consumers will be determined, in part, by the design of the program and whether allowances are distributed to LDCs or auctioned. If allowances are auctioned from the start of the program, areas that rely on coal will see significant rate increases – an allocation can make these rate increases more manageable.

   a. **Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?**

      USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009

5. **How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?**

   Robust cost containment mechanisms, as outlined in the *Blueprint*, provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Further, the *Blueprint* outlines key complementary measures to promote coal with carbon capture and storage, transportation, building efficiency and incentives for low carbon technology in sectors outside of the cap through the use of offsets, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment.

   As a way to protect against a rapid rise in energy costs for the manufacturing sector USCAP recommends allowances be allocated to LDCs. These allowances can be used to protect manufacturers against sudden and severe price increases, especially in the early years of the program.

6. **Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?**

   USCAP's *Blueprint* acknowledges that coal must remain a part of our energy portfolio. It recognizes, however, that we need to develop the technologies to use this resource in a more efficient and environmentally sustainable manner. The *Blueprint* makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress address the regulatory and financial barriers that could inhibit the growth of coal with CCS. The *Blueprint* recommends Congress direct relevant federal agencies to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. In addition, the document recommends implementing a direct funding mechanism to pay for the additional costs associated with capture and geologic storage of CO2, thus lowering the initial cost of coal with CCS.

   The *Blueprint's* desired outcome is to transform the way our nation generates, distributes and consumes energy. Prices will increase across the economy, at least initially. Duke Energy feels the best way to protect electric consumers during the transition to a low-carbon economy is by providing allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. **This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?**

   The USCAP *Blueprint* envisions implementation of a market-based, economy-wide cap-and-trade program that seeks to limit costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. We cannot say that energy prices will not increase – and this means in the transportation sector as well. But, the program we have outlined and put forth is, what we believe, the best way of ensuring consumers are protected against sudden and severe price increases. An economy-wide cap-and-trade program that includes the linkages we have indicated allows emission reductions to occur in the most cost-efficient manner across all sectors of the economy. The *Blueprint* has tried to articulate that the environment, the economy and consumers all need to be equally protected.

Duke Energy

NATURAL RESOURCES DEFENSE COUNCIL

Chairman Henry Waxman
House of Representatives
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Waxman:

Thank you for the opportunity to appear before the Committee on Energy and Commerce on January 15, 2009, at the hearing entitled "The U.S. Climate Action Partnership".

In the attached document I have respond to the written questions for the record directed to me from several Members of the Committee.

Sincerely,

Frances Beinecke

Frances G. Beinecke, President

Natural Resources Defense Council (NRDC)'s responses to the questions from the Committee on Energy and Commerce on the January 15 2009 hearing entitled "The U.S. Climate Action partnership":

The Honorable Joe Barton

1. **Regarding membership, who in USCAP represents the interests of the small business community?**

   While USCAP does not include a representative of a small business, a very large number of small businesses supply services, materials and other key inputs to USCAP member companies. Further, USCAP companies greatly value small businesses and provide them with necessary: power from electricity generators; fuel from oil and gas producers and refiners; chemicals, coatings and other products from chemical producers; equipment from manufacturers; vehicles from auto-makers; and services from these and the other USCAP entities. It is crucial for small businesses to engage in finding solutions to climate change and the impacts of climate protection policies on small businesses should be considered, especially during the transition to a low-carbon economy.

2. **Regarding membership, who in USCAP represents the interests of end-use utility customers?**

   Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers. Additionally, USCAP's electric utilities understand that their company names are on all Americans' utility bills and are especially sensitive to the interests of end-use utility customers.

3. **Regarding the USCAP analyses that went into the *Blueprint,* how were the economic impacts of this proposal evaluated?**

   USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

   a. **Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?**

      NRDC, is one of the NGO members of USCAP.

   b. **In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.**

i. What is the empirical and factual basis for making these sorts of statements?

The factual bases for passing climate protection legislation now during this economic downturn are multifold. First, a cap-and-trade program will stimulate technology and infrastructure spending. A cap implemented now would not take effect for several years (2012 for example) after our current economic downturn is expected to be reversed but the creation of a future price on carbon will provide a significant incentive for low carbon capital investment today. Further, impacts on the climate are being seen today and delay only increases the cost of adaptation and mitigation that we will face in the future.

A coherent energy policy that provides incentives for low-carbon technology and sets clear, long-term targets for reducing greenhouse gas emissions will give businesses the certainty they need to make intelligent investment decisions that will positively impact US competitiveness. Also by developing low carbon energy sources and using energy more efficiently, the US economy will become less vulnerable to volatility in conventional energy markets, and at the same time, the US will regain its role as a world leader in clean technology and can export—rather than import—climate solutions.

What we need is a way to stimulate sustained private investment in efficiency and clean energy innovation. Climate legislation that combines a firm cap on global warming pollution with significant incentives for investing in clean technology—a "cap and invest" program—will help attract private financing, provide stable funding for developing and deploying advanced technology, and ensure that clean energy investments are sustainable over the long term.

Enacting properly designed climate legislation now will encourage immediate and sustained capital investment in a new energy economy in three ways:
1. Climate legislation will sharply reduce the regulatory uncertainty that has previously limited capital investment in clean energy. Long-term emission reduction targets and expectations of an impending market price on global warming pollution will give investors the confidence to invest in lasting clean energy infrastructure.
2. The federal government can immediately scale up incentives for efficiency and clean energy innovation. Once the legislation is enacted, the implementing agency can begin granting the technology innovation and deployment incentives (e.g., loan guarantees, temporary production subsidies) set out in the legislation using, for example, a line of credit from the Treasury. This pre-cap incentives program should be over and above the clean energy investments planned in the stimulus package. When the cap takes effect, say in 2012, revenue from auctioning pollution allowances can pay back the Treasury for the investment expenditures incurred during the

2009 to 2011 ramp-up period, as well as pay for ongoing incentives. The program should include low cost financing for producers and purchasers of advanced technology vehicles, incentives and credit enhancement facilities for energy efficiency investments, and support for deployment of emerging clean energy supply technologies.

3. A well designed "cap and invest" program can help bridge the credit gap for the private sector and state governments. As soon as the bill is enacted, states and companies can use future allowances as collateral for financing investment in qualified low-carbon initiatives. This source of collateral to ease borrowing is critical at a time when states face stark budget cutbacks and private sector borrowing to make investments that create jobs has nearly ground to a halt.

Climate legislation should allocate all emission allowances or auction revenues for public purposes such as reducing emissions at the least overall cost to the economy and not for creating private windfalls. In particular, Congress should distribute the value of allowances on a performance basis to ensure that we receive the technological advancements we are committing public dollars to achieve. This can be done by tracking progress against clear benchmarks. For example, a performance-based distribution to states would reward those that improve their measured energy efficiency with additional funding over time. Similarly, an incentive for manufacturers would reward those that reduce their carbon emissions intensity relative to their direct competitors. Government incentives for developing and deploying advanced technologies should likewise be performance-based to ensure emerging technologies deliver clean energy at steadily declining costs over time.

To facilitate early investment and ensure a stable carbon allowance market, climate legislation should include a minimum reserve price for carbon allowance auctions, which in times of low allowance prices would reduce the number of allowances auctioned as needed to maintain a specified price floor. The EPA could retire the reserve allowances unused (thereby accelerating the emission reductions) or use any withheld "reserve" allowances as a cost control mechanism to be released in times of unexpected allowance price spikes.

The reserve price mechanism will assure the market that carbon allowances will have a minimum "cash value," thereby enabling firms and the government to use revenues from future carbon auctions as a form of "bankable" collateral for emissions reducing investments. In the current credit-constrained environment, this desperately needed collateral would give banks the confidence to lend to industry for investments that will improve their energy performance. Similarly, states could begin ramping up energy efficiency efforts now by borrowing against future efficiency dollars anticipated under the cap and trade system.

Well-designed carbon legislation that includes incentives for efficiency and clean energy innovation would jumpstart energy sector investments that have been stalled by a range of market barriers, all of which have recently been aggravated by the credit crisis. Important examples include:

- Scaled-up investment in energy efficiency would create the millions of green-collar jobs desperately needed across the country.
- Renewable energy companies will be better able to compete in a market that recognizes the true cost of carbon pollution from fossil-fuel-based energy sources. These same companies will have a stronger case when tapping banks for financing to pursue new technologies that can be utilized at home and exported overseas.
- Coal plant developers and operators will be able to reduce carbon emissions by deploying carbon capture and storage (CCS) systems, which could then provide a cheap source of carbon dioxide to recover stranded domestic oil through a process called enhanced oil recovery (EOR). Increasing output from existing domestic wells has the potential to displace 100 percent of U.S. oil imports for 6 years.

Passing climate legislation now that would complement the economic stimulus packages being put in place by the new administration would help ensure that efforts to jumpstart the economy also bring about a sustained recovery. Climate legislation that enables immediate investment in efficiency and clean energy innovation will help retain jobs in existing industries and drive the creation of new growth industries. A clean energy future for the United States will reduce dependence on fossil fuels and create export opportunities that boost our global competitiveness for decades to come. These investments will also lower our cost of doing business, improve our energy security, and reduce the effects of climate change.[1]

ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about our recommendations and we continue to work with these consultants to further refine our own internal and independent analyses.

[1] For further discussion see NRDC's Cap 2.0 policy briefs at http://www.nrdc.org/globalWarming/cap2.0/default.asp

iii. **Did any of the USCAP corporate members perform their own internal or independent analyses?**

NRDC, is one of the NGO members of USCAP.

c. **Did USCAP assess the economic impacts of its *Blueprint*, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?**

As stated above in answer to the chapeau of this question, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. The time horizon of our modeling analysis was 2015 to 2050. As noted, we also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. **How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?**

The cost of our proposal on American families, like virtually any other proposal, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc…), geographical differences such as fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Similar in result to modeling by EPA and EIA, our economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies like that which we recommend in the *Blueprint*. We currently estimate that the GDP impact of well designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 time frame. In other words, this amounts to less than a penny for every ten dollars of GDP. Again though, we are continuing to refine our analyses. Nevertheless, over time, we believe the cost of inaction will greatly surpass the costs of action. As is stated in the *Blueprint*, we recommend Congress take actions to avoid extreme price volatility in the short-term and provide sufficient investment in technology transformation to ensure a smooth transition and contain costs to the economy.

a. **If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?**

As stated above in #4, USCAP believes that comprehensive cap-and-trade legislation will not have significant long-term impacts on an economy-wide basis. However, as is clearly stated in our *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. We provide a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. **Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?**

Yes, USCAP analyzed the international political and trade implications of a US cap and trade scheme. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. It is important to note that USCAP believes that adoption of mandatory US climate policy is an essential precondition for a full and effective international framework. This approach does not mean that the US should act unilaterally. Rather, as stated in the first of our nine international principles that Congress should consider adopting provisions and criteria for linkage of the US cap-and-trade system to other existing and emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

a. **What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?**

The USCAP *Blueprint* recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that US businesses are not put at an undue competitive advantage in the global marketplace as a result of climate policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

USCAP's *Blueprint* states that the US must utilize responsibly our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the

Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

As explained in question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire US economy including manufacturers.

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. We have determined that our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap and trade, we also recommend other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.[2]

a. **What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?**

The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of CFCs provide evidence that cap-and-trade is a technology-driving policy, while also limiting overall cost of the program. It is important to note that this policy mechanism was designed in the United States and is now the principle instrument used in the European Union, as well as regional programs operating or under development in the US and Canada.

b. **What incentives does cap and trade create for individual companies to perform high risk research and development?**

[2] For further discussion see NRDC's Cap 2.0 policy briefs at http://www.nrdc.org/globalWarming/cap2.0/default.asp

Cap-and-trade creates a price on greenhouse gas emissions while seeking out the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

The Honorable Fred Upton

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

   It is important to note that comprehensive emissions data only exist to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. As is articulated in our *Blueprint*, these emissions levels can be achieved with modern technology and continued robust economic growth. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the US economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**[3]

   The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power. The *Blueprint* outlines a cap-and-trade program that would incentivize the lowest cost abatement options, so nuclear energy could play an important role as we move toward a low-carbon economy. USCAP has not attempted to stipulate the precise energy mix nor the technology pathway necessary to achieve our climate goals, instead we believe that with appropriate policy and resulting market signals low carbon technology will be incentivized such that the US can meet its climate goals in the most cost effective manner.

   NRDC's overall view is that the most economically efficient way to address whether nuclear will remain a significant part of our energy future is through a "carbon cap" that sets a market price on carbon emissions, rather than through additional federal subsidies.

[3] See NRDC's Testimony before the Senate Committee on Energy and Natural Resources, Thomas Cochran and Christopher Paine, March 18, 2009. http://energy.senate.gov/public/_files/CochranNRDC.pdf

While we are not unalterably opposed to new nuclear power plants under all circumstances, when compared to the opportunities presented by the new generation of renewable energy and end-use efficiency technologies, nuclear power has significant drawbacks that have proven quite intractable over the decades—high capital costs, environmental contamination from uranium mining and milling, unresolved nuclear waste disposal pathways, physical security and proliferation concerns that have been accentuated by the threat of suicidal terrorism, environmentally harmful dissipation of large quantities of reject heat to the local aquatic environment, and the continuing small risk of a high-consequence reactor accident.

At the same time, we also note that nuclear power has enjoyed a very long sojourn at the public till while proving itself quite resistant to the expected "learning curve" phenomenon and mass production "economies of scale" normally associated with public efforts to subsidize market penetration of new technologies, until the point at which they become self-propagating in the private marketplace. In view of this record, we think the time has come to give pride of place to a fast developing suite of simpler, cleaner, more flexible, sustainable and universally exportable energy technologies that are not burdened with the excess baggage of nuclear power. That said, given the enormity and immediacy of the climate change problem, we do not foresee, nor would we welcome nuclear power fading away any time soon, but given the aforementioned liabilities, we believe our modest expectations for the technology are grounded in reality. We conclude that federal low-carbon "market transformation" efforts in the electricity sector will yield both greater near- and long-term benefits if directed toward cutting-edge renewable energy, cogeneration, advanced coal with carbon capture and storage and end-use efficiency technologies.

To repeat, the strongest tonic for what ails the nuclear industry would be a cap on greenhouse gas emissions. Assuming that determined industry and regulatory efforts would yield further significant progress in reducing the liabilities noted, nuclear could conceivably play a constructive future role in replacing existing or planned coal-burning capacity in those regions of the U.S. (and other countries) that:
(a) have exhausted the potential for efficiency gains and renewable energy *available at lesser or equal cost*; and
(b) are environmentally, technologically, and geopolitically suited to safely hosting new nuclear power plants.

Very few if any areas of the world today meet this description – hence our present reluctance to either forecast or favor an expanding role for nuclear in combating climate change.

For example, the American Southeast is often cited as a region that will soon "need" the deployment of new nuclear power plants. But it is also a region with a poor record in capitalizing on opportunities for energy efficiency improvements, from which many thousands of megawatts of additional energy services may be extracted *at negative or low cost* to utilities and consumers. Nor can the already overburdened fresh water resources of the Southeast easily withstand the additional reject heat and evaporative losses from scores of new large base-load thermal power plants. In short, an economically rational

and environmentally tolerable expansion of nuclear power faces some significant challenges, even in areas that historically have been supportive of the technology.

Stepping back for a moment, both the U.S. and foreign commercial nuclear industries have received massive government support over many decades. In most foreign countries, the commercial nuclear fuel cycle is a state-owned, state-run, or heavily state-subsidized industry, and indeed most of these industries may be fairly characterized as "state-socialist" enterprises that are in fact arms of their national governments.

In the U.S. the commercial nuclear power industry has developed somewhat more independently, in keeping with the tenets of our economic system, but the government role nonetheless has been very substantial, and in recent years the distinctions between U.S. private and foreign state-supported nuclear industries have been largely eroded through mergers, acquisitions and partnerships. Westinghouse was absorbed by Toshiba, GE's nuclear division is working in partnership with Hitachi to build the next generation boiling water reactor, and the French state-owned corporation Areva is partnered with Constellation Energy while also being a player in its own right in the U.S. nuclear marketplace.

Were it not for the U.S. government's willingness beginning in the 1950's to cap private liability in the event of a serious nuclear accident and assume the remaining financial risk, it's probably fair to say that *there would not be* a commercial nuclear industry in the United States today. So in this narrow sense, commercial nuclear power in the United States has always depended on the standby support of the federal treasury for its very existence. But there are other longstanding and significant forms of federal subsidization of the nuclear industry, both past and present, which are at times difficult to quantify precisely in dollar terms, but have been of critical importance to the industry's development.

During the industry's first four decades, for example, nuclear fuel was enriched in huge government owned enterprises at Oak Ridge, TN, Portsmouth, Ohio, and Paducah, KY that have cost many billions of public dollars to construct, operate, decommission, and clean-up. Many of these costs were never recouped in the price for enrichment services sold to nuclear utilities, and thus represent a longstanding subsidy to the nuclear industry. According to the GAO, federal clean-up costs will continue until around 2044, by which time taxpayers will have spent on the order of $10 billion cleaning-up and decommissioning the first generation of uranium enrichment facilities.[4] Electricity to run these plants was supplied under long-term favorable contracts by the TVA, another quasi-

[4] "URANIUM ENRICHMENT: Decontamination and Decommissioning Fund Is Insufficient to Cover Cleanup Costs," GAO-04-692, July 2004. Since 1994, the government's *Uranium Enrichment Decontamination and Decommissioning Fund* has received a total of $9.3 billion, of which $5.3 billion (57%) has come from taxpayers, $2.7 billion (29%) has come from an assessment on utilities, and the remainder ($1.3 billion) from interest earnings on the fund balance. Appropriations from the fund to date have totaled $4.9 billion, and the GAO reported in 2004 that completing the D&D program would require another $3.5 - $5.7 billion ($6.5 billion in FY 08 dollars) through 2044, of which industry's share is likely to be on the order of 30%, based on the present rate of assessment. So the taxpayers total estimated share is $5.3 billion + (0.7 x $6.5) = $9.85 billion , and GAO considers that even this maximum estimate may be low, given the uncosted requirement for long-term environmental monitoring at some sites.

governmental public power enterprise. Mining and concentration of the natural uranium feedstock needed to feed these plants has left a huge environmental legacy of radioactive and heavy metals pollution in the U.S., Canada, and other nations, much of which still remains to be cleaned up, again requiring billions in public expenditures over several decades.

In the mid 1990's, the DOE spun off the Portsmouth and Paducah plants into a private entity, the U.S. Enrichment Corporation (USEC), but kept most of the huge environmental clean-up bill associated with these plants for the taxpayers, on the grounds that these plants once produced highly enriched material for nuclear weapons and the reactors of naval warships. Soon after privatizing USEC, DOE also transferred its most advanced centrifuge enrichment technology to the company for a small fraction of what it cost the taxpayers to develop it. In a similar vein, the Navy's continuing requirement for highly trained and carefully screened reactor operators has created a steady stream of skilled and screened personnel with much of the background needed to operate civilian plants once they leave the service

Moreover, a global U.S. and now multinational nuclear power industry, freely conducting its activities in the commercial marketplace, could not have come into being without—and continues to be sustained by—a massive governmental undertaking to ensure the nonproliferation of sensitive nuclear materials and technology. Over the decades this combined diplomatic, intelligence, export control, international safeguards, and physical security effort has cost many tens of billions of taxpayer dollars. Without these public expenditures, a global nuclear power industry would have posed too great a weapons proliferation threat, and would never have been allowed to prosper. Even despite such major public efforts to sever the links between the civil and military applications of nuclear energy, at some basic level these connections are irreducible, creating an enduring concern in the minds of many citizens and security experts alike about the wisdom of promoting nuclear power as a global solution to climate change.

While the sum total of direct and indirect financial support provided by the U.S. government to the nuclear power industry over many decades is probably not known with any degree of precision, everyone agrees it exceeds $100 billion, and when all the myriad government costs of safeguarding the civil nuclear fuels cycle against weapons proliferation are included, it exceeds at least $200 billion or possibly even as much as $500 billion in current dollars. In June 2005, the Congressional Research Service tabulated just *direct* federal research and development expenditures for civil nuclear power and came up with the figure of $75 billion through fiscal year 2004, accounting for more than half of all DOE energy R & D expenditures, far more than any other individual energy technology.[5]

Since 2004 some significant new sources of support have been added to this vast historical total, primarily by the *Energy Policy Act of 2005*. EPACT includes a 1.8 cent per kilowatt-hour production tax credit for energy generated from new nuclear power plants. This credit provides up to $125 million per 1,000 MWe of new capacity. Each

[5] Congressional Research Service, CRS-IB10041, June 2005

plant is eligible to receive the credit for eight years, which amounts to a $1 billion tax credit per 1,000 MWe of new capacity, up to a total of 6,000 MWe. IRS rules provide that this $6 billion tax credit may be distributed among all the reactors that have applied for a combined construction and operating license by the end of 2008 and begun construction by Jan 1. 2014.

EPACT also created another kind of special "regulatory risk insurance" for those engaged in building new reactors, which is intended to offset the costs of unforeseen federal, state, and local regulatory delays for as many as six new nuclear reactors built under the Nuclear Regulatory Commission's (NRC) new combined construction and operating license (COL) process. We are unaware of any other energy technology that is covered by taxpayer-paid insurance against the financial impacts of U.S. federal and state agencies and courts fulfilling their mandates to protect workers, the public, and the environment from the health, safety, and environmental impacts posed by construction and operation of power plants. This counterweight to the risk of potential delays covers 100 percent of the cost of delay for the first two new plants, up to $500 million each, and 50 percent of the delay costs, up to $250 million each, for the next three plants to be built.

Another DOE program – Nuclear Power 2010 – evenly shares the costs incurred by the first two "new-nuclear-build" consortiums to obtain NRC "Early Site Permits" and/or Combined Construction-Operating Licenses. The taxpayer's share of this effort is likely to exceed $500 million for the period 2005 -2011. No other energy technology that I am aware of merits 50/50 cost sharing from the federal government for the costs incurred in obtaining the permits necessary to site, build, and operate a plant safely.

In addition to the incentives for *new* commercial nuclear plant construction, the Energy Policy Act of 2005 contains provisions for other nuclear programs not directly related to current "new- build" commercial reactors. These provisions included authorization of over $2 billion for advanced reactor concepts, nuclear hydrogen production (for fueling our transportation system of the future), plant security, medical isotopes, and university nuclear engineering programs.

Our considered view of all this is that the longstanding federal effort to boost nuclear power has reached the point of diminishing returns, because it has proven very difficult by means of such expenditures to affect the fundamental characteristics of nuclear power that continue to limit the scope of its application:

-- high capital costs, and their corollary;

-- ever larger centralized units, to capture economies of scale;

-- the use of intrinsically hazardous materials requiring high levels of technical competence, radiation safety, and security;

-- the very small but nonetheless continuing probability of a high consequence nuclear accident;

-- the lack of a scientifically credible and politically agreed pathway for the long term isolation of spent fuel;

-- the continuing possibility of internal sabotage or external attack by a new breed of terrorists fully willing to die in the attempt, making such attacks very difficult to prepare for or defeat;

-- the persistent threat of further nuclear weapons proliferation as a consequence of the spread of nuclear power technology and expertise;

-- the vast quantities of reject heat that must be discharged into already overheated lakes and rivers, or otherwise dissipated using costly air-cooling systems;

-- the continuing harmful environmental impacts from the mining, milling, and enrichment of uranium;

-- the continuing requirement for competent, conscientious, and truly independent safety regulation and enforcement, a capacity that is in short supply around the world and sometimes even in our own country.

While none of these obstacles are immune to further incremental progress, taken together they continue to comprise a significant barrier to the further growth of nuclear power. Our view is therefore that over the next 20 years, U.S. and indeed foreign public investment in energy technology would be better spent on developing and catalyzing new markets for decentralized, clean, flexible, and environmentally sustainable energy technologies, technologies that can safely find near universal application around the world.

It's not that we believe nuclear power has "failed", but rather that it has not truly succeeded on a level that suggests it could or should become the focus of government and private investment to combat climate change.

Here at home, what nuclear needs most at the present juncture is not more federal R&D and subsidies, but a carbon cap that will significantly and permanently improve its competitive position relative to coal and natural gas. In support of this proposition I note that the period of greatest operational improvement and capacity utilization in the U.S. nuclear industry, since the mid-1990's, coincides with a period of minimal involvement by the federal government in financially supporting the activities of the commercial nuclear industry. Instead of looking to the federal government, the industry focused on getting its own house in order, and as a result made substantial improvements in the reliability and cost of its own operations. There may be a lesson here suggesting that once again enlarging the federal government's role in the industry, as the recent and pending legislation would do, may not be the best way to ensure its future viability.

Scaling-up nuclear power worldwide is not a particularly cost-effective pathway to dramatic reductions in power plant emissions, and a global nuclear build-out raises a host of *non-carbon costs and risks* that must be weighed in the balance:

- Over the course of five decades, the nuclear fuel cycle has proven itself to be a costly, technically demanding, proliferation-prone, and environmentally damaging way to supply steam to turbines that generate electricity.

- Nuclear power is the only energy technology that requires an international safeguards regime to discourage countries from diverting fuel-cycle facilities and materials to make weapons.

- It is the only energy technology for which government must assume the ultimate liability for catastrophic accidents, and

- The only one in which the waste is so dangerous and enduring that government must assume responsibility for its long-term isolation from the biosphere.

- In every country where nuclear power exists, it remains a partly or completely state-run industry. Despite more than $150 billion in direct and indirect U.S. federal support over six decades, nuclear still supplies only 19% of the nation's, and 16% of global grid-tied electricity production.

- At a currently estimated cost of $0.15-$0.18 cents per kilowatt hour, electricity from new-build nuclear power plants would appear to require a carbon price in the range of $50- $100 per ton to be competitive without subsidies, a level not likely to be reached for many years under a carbon cap and trade regime.

- In all regions of the country, the following clean energy sources are available now at less cost, lower investment risk, and fewer environmental impacts than new nuclear power plants: electrical end-use efficiency; recovered waste-heat cogeneration; biogas, and small hydro. In large areas of the country, significant wind resources are available to be tapped at less cost than new nuclear power plants. In the Western half of the United States, solar thermal and geothermal resources can be developed at or below the low end of the cost range for new nuclear power plants.

a. Do you support the nuclear waste depository at Yucca Mountain?

USCAP does not have a position on a nuclear waste depository.

b. Recycling spent fuel?

USCAP does not have a position on recycling spent fuel.

It is well recognized that there are unresolved technical issues related to environmental hazards associated with operations at nuclear power plants and nuclear fuel cycle facilities. For a summary of the some of the technical and other issues related to safety and security of nuclear power plants, the management and disposal of spent fuel, nuclear fuel reprocessing, and nuclear proliferation, see the Keystone Center report, "Nuclear Power Joint Fact-Finding," June 2007.[6] This consensus

[6] http://www.keystone.org/spp/documents/FinalReport_NJFF6_12_2007(1).pdf

report was prepared by a committee of experts from the nuclear industry, the environmental community, and various state and federal regulatory agencies. The Keystone Center report addresses technical issues associated with the security of spent fuel pools at reactor sites (beginning at p. 55), transportation of spent fuel (beginning at p. 80) and geologic disposal of spent fuel (beginning at p. 68).

3. **China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?**

   It is unclear what the exact global environmental impact would be if the US makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, US leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. US action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. **What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?**

   The amount of cost pass-through to customers or consumers based on a cap-and-trade program, or other policy options that create a price for greenhouse gas emissions, would depend on factors including the relative ability of each sector of the economy to pass on such costs. To protect consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (LDCs) such that consumer electricity impacts are minimized. Further USCAP also recommends that a cap and trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers

   a. **Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?**

      USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009

5. **How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended**

consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?

Robust cost containment mechanisms, as outlined in the *Blueprint*, provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Further, the *Blueprint* outlines key complementary measures to promote coal with carbon capture and storage, transportation, building efficiency and incentives for low carbon technology in sectors outside of the cap through the use of offsets, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment.

In some cases, as in energy-intensive industries with trade-exposed commodity products, US manufacturers will be particularly challenged by US climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. In such cases, there is risk of "leakage," by which we mean the shifting of production and GHG emissions from the US to these other countries. USCAP recommends using an adequate amount of allowance value to offset these competitive disadvantages, for instance basing such allocations on net increment costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

6. **Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?**

USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration. In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop and unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

No, the *Blueprint's* desired outcome is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse greenhouse gas emissions to address climate change. This will require a fundamental

shift in the way energy is produced, delivered, and consumed in the US and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. **This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?**

   The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. Our internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[7] Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.

[7] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

March 25, 2009

The Honorable Chairman Waxman
Committee on Energy and Commerce
U.S. House of Representatives
2125 Rayburn House Office Building
Washington, D.C. 20515-6115

Dear Chairman Waxman:

Environmental Defense Fund's CEO Fred Krupp asked that I write you on his behalf. We thank you for your letter, and appreciated the opportunity to testify to the Committee on Energy and Commerce with other members of the U.S. Climate Action Partnership.

Enclosed please find our response to the committee's questions for the record regarding the hearing entitled "The U.S. Climate Action Partnership," on January 15, 2009.

Please do not hesitate to contact me should you have any questions about our responses or if I can be of further assistance as you work on these issues.

Sincerely,

Elizabeth Thompson
Legislative Director
Environmental Defense Fund

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Responses to Questions from the Honorable Joe Barton

1. **Regarding membership, who in USCAP represents the interests of the small business community?**

   While USCAP does not include a representative of a small business, a very large number of small businesses supply services, materials and other key inputs to USCAP member companies. Further, many of USCAP companies' customers are small businesses. USCAP companies provide these small businesses with the inputs they need, including: power from electricity generators; fuel from oil and gas producers and refiners; chemicals, coatings and other products from chemical producers; equipment from manufacturers; vehicles from auto-makers; and services from these and the other USCAP entities. It is crucial for small businesses to engage in finding solutions to climate change and the impacts of climate protection policies on small businesses should be considered, especially during the transition to a low-carbon economy.

2. **Regarding membership, who in USCAP represents the interests of end-use utility customers?**

   Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers. Additionally, USCAP's electric utilities understand that their company names are on all Americans' utility bills and are especially sensitive to the interests of end-use utility customers.

3. **Regarding the USCAP analyses that went into the *Blueprint*, how were the economic impacts of this proposal evaluated?**

   USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

   a. **Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?**

   b. **In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.**

i. **What is the empirical and factual basis for making these sorts of statements?**

The factual bases for passing climate protection legislation now during this economic downturn are multifold. First, a cap-and-trade program will stimulate technology and infrastructure spending. A cap implemented now would not take effect for several years (2012 for example) after our current economic downturn is expected to be reversed. Meanwhile, the creation of a future price on carbon will provide a significant incentive for low carbon capital investment today. Further, impacts on the climate are being seen today and delay in reducing emissions will only increases the cost of adaptation and mitigation that we will face in the future.

A coherent energy policy that provides incentives for low-carbon technology and sets clear, long-term targets for reducing greenhouse gas emissions will give businesses the certainty they need to make intelligent investment decisions that will positively impact US competitiveness. Also by developing low carbon energy sources and using energy more efficiently, the US economy will increase its energy security and become less vulnerable to volatility in conventional energy markets. At the same time, the US will regain its role as a world leader in clean technology and can export—rather than import—climate solutions.

ii. **Did USCAP perform its own internal or independent analyses?**

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about our recommendations and we continue to work with these consultants to further refine our own internal and independent analyses.

iii. **Did any of the USCAP corporate members perform their own internal or independent analyses?**

c. **Did USCAP assess the economic impacts of its *Blueprint*, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?**

As stated above, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. The time horizon of our modeling analysis was 2015 to 2030 and for one model to 2050. As noted, we also evaluated various modeling results including models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. **How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?**

The cost of our proposal on American families, like virtually any other proposal, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...), geographical differences such as fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Our economic modeling estimates that GDP will grow strongly with or without climate policies like that which we recommend in the *Blueprint*. We currently estimate that the annual GDP impact of well designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 timeframe. In other words, this amounts to less than a penny for every ten dollars of GDP. As is stated in the *Blueprint*, we also recommend Congress take actions to avoid

extreme price volatility in the short-term and provide sufficient investment in technology transformation to ensure a smooth transition and contain costs to the economy. We continue to refine our analyses with new information as it becomes available. Finally, we note that all these analyses miss an important part of the cost equation, namely the economic costs of inaction. We believe these costs will greatly surpass any short-term costs of mitigating our GHG emissions.

a. **If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?**

   As stated above in #4, USCAP believes that comprehensive cap-and-trade legislation will not have significant long-term impacts on an economy-wide basis. However, as is clearly stated in our *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. We provide a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. **Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?**

USCAP recognizes that certain industries may face trade-related exposure under a domestic cap-and-trade program. The *Blueprint* recommends that Congress develop policies that safeguard environmental integrity, maintain competitiveness, and avoid carbon leakage. In cases of GHG-related competitive imbalance, the Blueprint recommends the using of allowance value to help maintain a level economic playing field for US businesses in the global marketplace. This and other policies should be designed to keep companies from moving operations off shore because of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

a. **What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?**

   USCAP recognizes that certain industries may face trade-related exposure under a domestic cap and trade program. The Blueprint recommends that Congress develop policies that safeguard environmental integrity, maintain competitiveness, and avoid carbon leakage. In cases of GHG-related competitive imbalance, the *Blueprint* recommends the using of allowance value to help maintain a level economic playing field for US businesses in the global marketplace. This and other policies should be designed to keep companies from moving operations off shore because of

climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

   USCAP's *Blueprint* states that the US must utilize responsibly our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

   a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

      USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire US economy, including manufacturers. Moreover, as explained in question #5 above, USCAP recommends the use of allowance value and/or auction revenue for trade-exposed industries, and calls upon Congress to develop policies that prevent emissions leakage as well as to create incentives for developing nations to limit their emissions.

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

   USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. We have determined that our nation's climate

protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap and trade, we also recommend other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

a. **What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?**

   The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of CFCs provide evidence that cap-and-trade is a technology-driving policy, while also limiting overall cost of the program. It is important to note that this policy mechanism was designed in the United States and is now the principle instrument used in the European Union, as well as regional programs operating or under development in the US and Canada.

b. **What incentives does cap and trade create for individual companies to perform high risk research and development?**

   Cap-and-trade creates a price on greenhouse gas emissions while seeking out the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

Responses to Questions from the Honorable Fred Upton

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

   It is important to note that comprehensive emissions data only exist to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. As is articulated in our *Blueprint*, these emissions levels can be achieved with modern technology and continued robust economic growth. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the US economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**

   The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power. The *Blueprint* outlines a cap-and-trade program that would incentivize the lowest cost abatement options, so nuclear energy could play an important role as we move toward a low-carbon economy. USCAP has not attempted to stipulate the precise energy mix nor the technology pathway necessary to achieve our climate goals, instead we believe that with appropriate policy and resulting market signals low carbon technology will be incentivized such that the US can meet its climate goals in the most cost effective manner.

   a. **Do you support the nuclear waste depository at Yucca Mountain?**

   USCAP does not have a position on a nuclear waste depository.

   b. **Recycling spent fuel?**

   USCAP does not have a position on recycling spent fuel.

3. **China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?**

   It is unclear what the exact global environmental impact would be if the US makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential

to meeting the climate challenge. Further, US leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. US action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

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   a. **Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?**

      USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009

5. **How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?**

Robust cost containment mechanisms, as outlined in the *Blueprint*, provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Further, the *Blueprint* outlines key complementary measures to promote coal with carbon capture and storage, transportation, building efficiency and incentives for low carbon technology in sectors outside of the cap through the use of offsets, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment.

In some cases, as in energy-intensive industries with trade-exposed commodity products, US manufacturers may be challenged by US climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path and Congress has not been able to resolve the GHG-related competitive imbalance. In such cases, there is risk of "leakage," by which we mean the shifting of production and GHG emissions from the US to these other countries. In cases of GHG-related competitive imbalance, the Blueprint recommends using an adequate amount of allowance value to offset these competitive disadvantages, for instance basing such allocations on net incremental costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

6. **Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?**

USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration. In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop and unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

No, the *Blueprint's* desired outcome is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse greenhouse gas emissions to address climate change. This will require a fundamental shift in the way energy is produced, delivered, and consumed in the US and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. **This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?**

   The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. Our internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[1] Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.

[1] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

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March 25, 2009

Representative Joe Barton
Ranking Member, Committee on Energy and Commerce
US House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515

Dear Ranking Member Barton:

Thank you again for providing PG&E's Chairman and CEO, Peter Darbee, with the opportunity to appear on behalf of the U.S. Climate Action Partnership before the Committee on Energy and Commerce at the January 15, 2009 hearing entitled "The U.S. Climate Action Partnership."

Mr. Darbee is currently out of the country, and in his absence, he has asked that I provide responses to questions directed to him from you and other Members of the Committee.

Attached, please find responses to the questions which you directed to Mr. Darbee and the Company.

Please do not hesitate to reach out to me or my staff if we can be of any further help.

Sincerely,

Attachment

The following are answers to questions posed to PG&E Corporation in response to the Chairman and CEO, Peter Darbee's appearance on behalf of the U.S. Climate Action Partnership at the House Committee on Energy and Commerce hearing entitled "The US Climate Action Partnership" on January 15, 2009.

Responses to Questions Posed by The Honorable Joe Barton

1. **Regarding membership, who in USCAP represents the interests of the small business community?**

   While USCAP does not include a representative of a small business, a very large number of small businesses supply services, materials and other key inputs to USCAP member companies. Further, USCAP companies greatly value small businesses and provide them with necessary: power from electricity generators; fuel from oil and gas producers and refiners; chemicals, coatings and other products from chemical producers; equipment from manufacturers; vehicles from auto-makers; and services from these and the other USCAP entities. It is crucial for small businesses to engage in finding solutions to climate change and the impacts of climate protection policies on small businesses should be considered, especially during the transition to a low-carbon economy.

2. **Regarding membership, who in USCAP represents the interests of end-use utility customers?**

   Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers. Additionally, USCAP's electric and natural gas utilities have all expressed significant concern on behalf of their customers regarding the need to mitigate cost impacts of the transition to a low-carbon energy supply.

3. **Regarding the USCAP analyses that went into the *Blueprint*, how were the economic impacts of this proposal evaluated?**

   USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

   a. **Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?**

      PG&E has done extensive analysis on various climate change policy options with a detailed focus on addressing consumer cost mitigation.

   b. **In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.**

      i. **What is the empirical and factual basis for making these sorts of statements?**

      The factual bases for passing climate protection legislation now during this economic downturn are multifold. First, a cap-and-trade program will

stimulate technology and infrastructure spending. A cap implemented now would not take effect for several years (2012 for example) after our current economic downturn is expected to be reversed but the creation of a future price on carbon will provide a significant incentive for low carbon capital investment today. Further, impacts on the climate are being seen today and delay only increases the cost of adaptation and mitigation that we will face in the future.

A coherent energy policy that provides incentives for low-carbon technology and sets clear, long-term targets for reducing greenhouse gas emissions will give businesses the certainty they need to make intelligent investment decisions that will positively impact US competitiveness. Also by developing low carbon energy sources and using energy more efficiently, the US economy will become less vulnerable to volatility in conventional energy markets, and at the same time, the US will regain its role as a world leader in clean technology and can export—rather than import—climate solutions.

ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about our recommendations and we continue to work with these consultants to further refine our own internal and independent analyses.

iii. Did any of the USCAP corporate members perform their own internal or independent analyses?

PG&E has done extensive analysis on various climate change policy options with a detailed focus on addressing consumer cost mitigation.

c. Did USCAP assess the economic impacts of its *Blueprint*, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?

As stated above in answer to the chapeau of this question, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. The time horizon of our modeling analysis was 2015 to 2050. As noted, we also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. **How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?**

The cost of our proposal on American families, like virtually any other proposal, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...), geographical differences such as fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Similar in result to modeling by EPA and EIA, our economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies like that which we recommend in the *Blueprint*. We currently estimate that the GDP impact of well designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 time frame. In other words, this amounts to less than a penny for every ten dollars of GDP. Again though, we are continuing to refine our analyses. Nevertheless, over time, we believe the cost of inaction will greatly surpass the costs of action. As is stated in the *Blueprint*, we recommend Congress take actions to avoid extreme price volatility in the short-term and provide sufficient investment in technology transformation to ensure a smooth transition and contain costs to the economy.

a. **If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?**

As stated above in #4, USCAP believes that comprehensive cap-and-trade legislation will not have significant long-term impacts on an economy-wide basis. However, as is clearly stated in our *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. We provide a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. **Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?**

Yes, USCAP analyzed the international political and trade implications of a US cap and trade scheme. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. It is important to note that USCAP believes that adoption of mandatory US climate policy is an essential precondition for a full and effective international framework. This approach does not mean that the US should act unilaterally. Rather, as stated in the first of our nine international principles that Congress should consider adopting provisions and criteria for linkage of the US cap-and-trade system to other existing and emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

a. **What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?**

The USCAP *Blueprint* recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that US businesses are not put at an undue competitive advantage in the global marketplace as a result of climate policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

USCAP's *Blueprint* states that the US must utilize responsibly our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

As explained in question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire US economy including manufacturers.

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. We have determined that our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap and trade, we also recommend other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

a. **What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?**

The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of CFCs provide evidence that cap-and-trade is a technology-driving policy, while also limiting overall cost of the program. It is important to note that this policy mechanism was designed in the United States and is now the principle instrument used in the European Union, as well as regional programs operating or under development in the US and Canada.

b. **What incentives does cap and trade create for individual companies to perform high risk research and development?**

Cap-and-trade creates a price on greenhouse gas emissions while seeking out the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

The following are answers to questions posed to PG&E Corporation in response to the Chairman and CEO, Peter Darbee's appearance on behalf of the U.S. Climate Action Partnership at the House Committee on Energy and Commerce hearing entitled "The US Climate Action Partnership" on January 15, 2009.

Responses to Questions Posed by The Honorable Fred Upton

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

   It is important to note that comprehensive emissions data only exist to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. As is articulated in our *Blueprint*, these emissions levels can be achieved with modern technology and continued robust economic growth. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the US economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**

   The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power. The *Blueprint* outlines a cap-and-trade program that would incentivize the lowest cost abatement options, so nuclear energy could play an important role as we move toward a low-carbon economy. USCAP has not attempted to stipulate the precise energy mix nor the technology pathway necessary to achieve our climate goals, instead we believe that with appropriate policy and resulting market signals, low carbon technology will be incentivized such that the US can meet its climate goals in the most cost effective manner.

   a. **Do you support the nuclear waste depository at Yucca Mountain?**

   USCAP does not have a position on a nuclear waste depository.

   b. **Recycling spent fuel?**

   USCAP does not have a position on recycling spent fuel.

3. **China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?**

   It is unclear what the exact global environmental impact would be if the US makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, US leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. US action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. **What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?**

   The amount of cost pass-through to customers or consumers based on a cap-and-trade program, or other policy options that create a price for greenhouse gas emissions, would depend on factors including the relative ability of each sector of the economy to pass on such costs. To protect consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (LDCs) such that consumer electricity impacts are minimized. Further USCAP also recommends that a cap and trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers

   a. **Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?**

      USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009

5. **How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?**

   Robust cost containment mechanisms, as outlined in the *Blueprint*, provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Further, the *Blueprint* outlines key complementary measures to promote coal with carbon capture and storage, transportation, building efficiency and incentives for low carbon technology in sectors outside of the cap through the use of offsets, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment.

   In some cases, as in energy-intensive industries with trade-exposed commodity products, US manufacturers will be particularly challenged by US climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. In such cases, there is risk of "leakage," by which we mean the shifting of production and GHG emissions from the US to these other countries. USCAP recommends using an adequate amount of allowance value to offset these competitive disadvantages, for instance basing such allocations on net increment costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

6. **Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?**

   USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration. In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop an unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

   No, the *Blueprint's* desired outcome is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse greenhouse gas emissions to address climate change. This will require a fundamental shift in the way energy is produced, delivered, and consumed in the US and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance energy savings through energy efficiency and demand reduction activities.

7. **This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?**

   The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. Our internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[1] Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.

[1] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

Rio Tinto

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The Honorable Joe Barton
Ranking Minority Member
House Committee on Energy and Commerce
Subcommittee on Energy and Environment

26 March 2009

Dear Representative Barton:

On behalf of Rio Tinto, I appreciate the opportunity to respond to the questions you have posed that were attached to the March 11, 2009 letter from Chairman Waxman. In responding to questions concerning US Climate Action Partnership (USCAP), we have generally based our responses on input developed by USCAP.

Rio Tinto is committed to work with Congress and other stakeholders to reach a cost-effective, environmentally sound approach to climate change policy.

Sincerely,

Preston Chiaro

Preston Chiaro
Chief Executive, Energy & Minerals

The Honorable Joe Barton

1. **Regarding membership, who in USCAP represents the interests of the small business community?**

   USCAP does not include a representative of small business.

2. **Regarding membership, who in USCAP represents the interests of end-use utility customers?**

   Rio Tinto's operations throughout the U.S. are end-use utility customers. Rio Tinto's business - producing metals and minerals products - is energy-intensive and a significant portion of our energy comes from purchased electricity.

3. **Regarding the USCAP analyses that went into the *Blueprint,* how were the economic impacts of this proposal evaluated?**

   USCAP used consultants to conduct independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, a variety of options regarding the stringency of greenhouse gas (GHG) emission targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

   a. **Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?**

      Rio Tinto has a structured and measured approach to understanding the financial and business implications of climate change opportunities and threats. While such assessments are proprietary, the methodology is explained in our submissions to the Carbon Disclosure Project. http://www.cdproject.net/responses/public/attachedfiles/Responses/44788/4567/CDP6_Rio_Tinto_AQ.doc

   b. **In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.**
      i. **What is the empirical and factual basis for making these sorts of statements?**

         Rio Tinto invests in long-life, world class orebodies, with an investment time horizon that can stretch to 30 years or more. A coherent energy policy that provides incentives for low-carbon technology and sets clear, long-term targets for reducing greenhouse gas emissions will give businesses the certainty they need to make intelligent long-term investment decisions that will

positively impact US competitiveness. We want our investments to be ready to handle the challenges of tomorrow's world, not yesterday's.

ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with economic consultants who used different economic models to evaluate various policy options considered for inclusion in the *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was used as part of EPA's analysis of the S.2191 (the Lieberman-Warner legislation). USCAP also used a macro energy model NEMS model that the Energy Information Agency (EIA) uses for its Annual Energy Outlook. Finally, USCAP used an electricity dispatch model called IPM that EPA used in its analysis of S.2191.

iii. Did any of the USCAP corporate members perform their own internal or independent analyses?

Rio Tinto has a structured and measured approach to understanding the financial and business implications of climate change opportunities and threats. While such assessments are proprietary, the methodology is explained in our submissions to the Carbon Disclosure Project.
http://www.cdproject.net/responses/public/attachedfiles/Responses/44788/4567/CDP6_Rio_Tinto_AQ.doc

c. Did USCAP assess the economic impacts of its *Blueprint*, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?

As stated above, USCAP worked with consultants to conduct an independent analysis of the policy options considered when developing the *Blueprint*. The time horizon of the USCAP modeling analysis was 2015 to 2050. Response #3(b)(ii) above describes other modeling results evaluated by USCAP, including:

- http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
- http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
- http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
- http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
- http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?

The USCAP analysis estimates that the GDP impact of well-designed, comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 timeframe. However, USCAP is continually working to refine its analyses. We recommend the *Blueprint* proposal as one way to avoid excessive costs from delayed action as well as cost volatility from poorly designed policies.

a. **If you do not have estimates, will you please provide us 'what USCAP believes are the best estimates to these impacts, based on your proposals?**

   See above.

5. **Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?**

   Yes, the recommendations arising from USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section, pages 3 to 5.

   a. **What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?**

      USCAP recognizes that certain industries may face trade-related exposure, which must be addressed by Congress, To remedy this situation, USCAP recommends that an adequate amount of allowance value be provided to U.S. manufacturers facing such competition..

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

   USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of low carbon electricity, including coal with carbon capture and sequestration (CCS). Coal provides and will continue to provide vital energy security for the US. For precisely this reason the USCAP *Blueprint* recommends strong government support for regulatory certainty and financial incentives to facilitate and accelerate the deployment of carbon capture and storage technology. For further information, see the *Blueprint*, Section 6, "Complementary Measures for Coal Technology", pages 18-20.

   a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

USCAP believes that adoption of mandatory US climate policy is an essential pre-condition for a full and effective international framework. But USCAP recognizes that "leakage" of emissions and jobs to countries with less stringent controls would be counter-productive, and has included principles for dealing with this issue. As explained in question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries To remedy this situation USCAP recommends that an adequate amount of allowance value be provided to US manufacturers facing such competition, and continue to be provided until such time as the policy-induced international competitiveness imbalances are reduced or eliminated. (see *Blueprint* Section 4.c., page 13, "Energy Intensive Industries with Trade-Exposed Commodity Products") .

The *Blueprint* also recommends various cost containment mechanisms intended to limit high and volatile prices in a carbon market, see *Blueprint,* Section 2, pages 3-5, *"International Principles".*

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

A price on carbon is necessary, but not sufficient, to provide a sustainable commercial incentive to invest in low carbon emitting technology. Additionally, technology requires other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation. As explained in the *Blueprint*, Section 3.b., page 6, USCAP believes "that our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors."

a. **What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?**

The Acid Rain program in the Clean Air Act and the NOx SIP call are examples of cap-and-trade programs that help drive the development and adoption of abatement technologies. The cap-and-trade policy mechanism was designed in the United States and is now the principal instrument used in the European Union, as well as in regional programs operating or under development in the US, and national trading systems under development in Canada, Australia, and New Zealand.

b. **What incentives does cap and trade create for individual companies to perform high risk research and development?**

As Rio Tinto stated in their EPA ANPR comments, two key barriers to widespread and even early deployment, for both early mover projects and wider, longer-term deployment, include: (i) policy frameworks -- the need for supportive regulatory and legal frameworks, and; (ii) the need for financial support mechanisms, including public and private funding, to advance CCS technologies through R&D and full-scale demonstrations, and to begin the process of commercial deployment. Delays in creating the policy frameworks and in providing the funding only reinforce technology barriers by slowing development and widespread deployment.

The Honorable John Shadegg

1. **How many corporate jets does your company own?**

   Rio Tinto does not own any corporate jets. Rio Tinto does own a 9.375% interest in each of two specific NetJets aircraft through NetJets' Fractional Aircraft Ownership program.

   Rio Tinto employees, including executives, typically fly commercially. However, we occasionally charter various types of aircraft and air carrier services for specific business purposes, most often for access to remote locations not served by commercial airlines

2. **How many miles do your jets fly each year?**

   Rio Tinto does not own any corporate jets. For the October 2007 to October 2008 contract year, Rio Tinto used a total of 108 hours between the two NetJets aircraft, with overage and underage for each aircraft carried over to the following contract year.

3. **How much will it cost to buy the necessary carbon credits for those jets to keep flying that many miles each year?**

   Rio Tinto does not purchase carbon credits to offset emissions associated with air travel, instead focusing its climate-related expenditures on efforts to develop low-emitting energy technologies with wide potential application globally.

4. **How much will it cost to buy the necessary carbon credits needed for you to travel each year?**

   As noted in response to #3 above, Rio Tinto does not purchase carbon credits to offset emissions associated with air travel.

5. **Will you disclose all of this information in your company's annual report?**

   Rio Tinto is a publicly traded company and both voluntarily and statutorily reports not only its costs and revenues but also its greenhouse gas emissions for its global operations. Information about Rio Tinto's 2008 greenhouse gas emissions can be found in our Annual Report at http://www.riotinto.com/annualreport2008.

6. **Do you agree that any climate change proposal must include provisions protecting U.S. laborers, including those in your industry?**

   USCAP's *Blueprint* urges careful consideration for the competitiveness of US businesses, which employ laborers. Further, direct allocation of allowances and the uses of auction revenues should be used to train the workforce needed to facilitate a wide-scale transformation to low-carbon technologies and provide opportunities for all Americans in the new energy economy.

7. **Have you explored government mandated price controls as another option for assuring low costs to the consumer as we transition into a carbon-free economy?**

   USCAP reached consensus that concerns about costs could be addressed by cost containment mechanisms proposed in the *Blueprint* (see Section 4(B).)

8. **How many acres of land do you mine in the United States? How much greenhouse gas emissions are associated with the mining on these lands (please include land use changes and the life-cycle greenhouse gas emission of the end-use product associated)? How much greenhouse gas emission would be eliminated if these acres were preserved for conservation or offsets instead of used for mining?**

   The land disturbance footprint for Rio Tinto includes land being mined, the footprint disturbance related to overburden and waste storage, plants/facilities, roads, rail and transportation facilities, as well as previously disturbed, but now reclaimed acreage.[1] For the year 2008, the land footprint for Rio Tinto's US entities included approximately 194 square kilometers (47,900 acres) in a disturbed state, plus approximately 110 square kilometers (27,200 acres) of previously disturbed, but now reclaimed land.

   Land clearing by Rio Tinto's US copper, coal, and borates operations resulted in approximately 51,600 metric tons of CO_2-e in 2008. However, avoiding this land clearance activity would not result in 51,600 metric tons fewer land-clearing emissions, because such a reduction in land clearing and mining by Rio Tinto would likely be offset by an increase in land clearing and mining of these commodities elsewhere in the world[3].

9. **Has your company analyzed its costs under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?**

   Our operations in Europe have been part of voluntary and mandated schemes to address climate change since well before 2000. In the UK, our aluminum operations have been subject to the Climate Change Levy and the associated

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[1] Rio Tinto collects and reports greenhouse gas emissions data only for managed operations, not on an equity ownership basis. The response to #8 excludes certain US non-mining assets including Rio Tinto Alcan assets; Kennecott Land Company; closed and reclaimed mines; and exploration.

[3] While Rio Tinto develops earth to gate life-cycle assessments for some of its products, it does not collect data on "life-cycle" greenhouse gas emissions from the end-use of all its products. Many of its products, such as borates, aluminum and copper have numerous end uses and consequently it would be difficult to quantitatively assess the life cycle emissions for all end uses. We can, however, make certain estimations of the end use emissions from the combustion of coal. This is not a "life-cycle" assessment but is based on the assumption that emissions associated with combusting each ton of coal produced by Rio Tinto's US operations would represent approximately 239 million metric ton of CO2e.

Climate Change Agreements underpinning the early UK Emissions Trading system.

In monitoring our climate change impact, the European Commission and its Member States have rightfully addressed the risk of carbon leakage and the potential loss of internationally competitive industries. As a result of their actions in recognition of the potential leakage problem, the impact of carbon pricing has not been significant yet, although the reduction of total GHG emissions has been significant.

10. **Has your company done its cost-benefit analysis under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?**

    Rio Tinto has a structured and measured approach to understanding the financial and business implications of climate change opportunities and threats. While the assessments are proprietary, the methodology is explained in our submissions to the Carbon Disclosure Project: http://www.cdproject.net/responses/public/attachedfiles/Responses/44788/4567/CDP6_Rio_Tinto_AQ.doc.

11. **Do you believe there will be less corruption and waste and more transparency and efficiency under a national cap-and-trade program than is apparent under the European Union's emission trading scheme? If so, what is the basis for your belief?**

    The US operates a cap-and-trade scheme for sulfur oxide emissions, and this system has been shown to be efficient and transparent. USCAP recommends establishment of a cap-and-trade system for carbon to ensure a smooth and orderly transition to a low-carbon economy. USCAP recommends a market that is transparent and efficient.

12. **Do you believe a national cap-and-trade program will cost less for the consumer than the European Union's emission trading scheme? If so, what is the basis for your belief?**

    The recommendations in the *Blueprint* were developed based on review and analysis of past regulatory programs, including lessons learned from the initial problems experienced in the EU ETS.

13. **Are you willing to absorb the overhead costs of a national cap-and-trade program or do you prefer that it be passed onto the consumer?**

    We would expect to treat costs associated with cap-and-trade the same as all other legitimate business costs. Rio Tinto believes that an economy-wide program is the best way to minimize total compliance costs, including overhead costs, of a climate program. Moreover, we believe that much of the benefit of an economy-wide, market-driven approach results directly from its ability to transmit a carbon price signal to every part of the economy.

14. Will you commit to disclose in writing the change in your company's costs and revenues before and after the implementation of a national cap-and-trade program?

Rio Tinto is a publicly traded company and annually reports its costs and revenues for its global operations. We will continue to report revenues and costs in accordance with International Accounting Standards and other legal requirements.

15. If a "Buy American" policy were included in a national cap-and-trade program, how much would your revenues decrease?

The US market looms large overall for Rio Tinto. In 2008, 22 percent of our total revenue was from sales to North America, with most of these revenues due to sales to US customers. Compliance with all applicable WTO provisions is a policy requirement. A WTO-compatible "Buy American" provision may have little impact on our revenues, but the value at risk from a poorly-designed and poorly-implemented "Buy American" provision would be large.

16. What "green" products do you sell? What are your revenues for those products? What do you estimate will be your revenues for those products after the implementation of a national cap-and-trade program?

Rio Tinto's business is finding, mining, and processing mineral resources, throughout the world. The company's major products are aluminum, copper, diamonds, energy resources (coal and uranium), gold, industrial minerals (borates, titanium dioxide, salt, talc) and iron ore. These metal and mineral products are used as components in many other products. Some of these uses are in products that contribute to better energy efficiency and lower greenhouse gas emissions. For example, copper is a critical component for high-efficiency motors and for the efficient conductivity of energy; borates are used in the manufacture of energy-efficient insulation, and aluminum contributes to light-weight transportation components.

Rio Tinto reports its revenues from all sales of its products in its annual report. The 2008 Annual Report can be accessed at http://www.riotinto.com/annualreport2008/.

The Honorable Fred Upton

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

   The question is best directed to the Department of Energy. Only recently has the US begun to collect comprehensive emissions data for all types of greenhouse gases. However, based on energy data the EIA estimates that the USCAP 2030 target is roughly equivalent to the mid-1960's and the 2050 target is the early part of the 20th century.

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**

   Rio Tinto believes that nuclear power is and will remain an important part of the energy mix for a number of countries, including the U.S.[1] Ultimately, we believe it is prudent to provide a range of energy and technology options. Affordable and reliable energy is essential for economic development and is a significant contributor to the alleviation of poverty, improved health, and a better quality of life. The current global and national energy mix, typically based on affordability, must evolve to respond to increasing environmental standards. One of the key benefits of nuclear power is that it is a relatively low emitter of greenhouse gases.

   Economic models of various climate change policies suggest that a mix of low-GHG-emitting technologies is needed to meet the long-term reduction goals by 2050. As stated in the Introduction, USCAP believes the US must "ensure the nation has an adequate supply of electricity produced from low-carbon resources, including wind, solar, next generation nuclear technology and coal with carbon capture and sequestration" (p.2).

   a. **Do you support the nuclear waste depository at Yucca Mountain?**

      Rio Tinto does not have a position on the proposed nuclear waste depository at Yucca Mountain. However, it is our view that long-term waste storage and other appropriate safeguards also need to be addressed as part of a comprehensive approach to increasing nuclear energy sources.

   b. **Recycling spent fuel?**

      Rio Tinto does not have a formal position on recycling spent nuclear fuel.

3. **China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?**

   Rio Tinto believes climate change is a global challenge that requires all countries to contribute to the solution.

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[1] Rio Tinto sells uranium as fuel for low carbon emissions nuclear electricity generation under strict international safeguards.

4. **What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?**

   USCAP specifically recommends certain measures to protect consumers, such as allocating allowances to local distribution companies (LDCs) so that consumer electricity impacts are minimized. Further, USCAP also recommends that a cap-and-trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers.

   a. **Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?**

      USCAP has worked with consultants to conduct an independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. All of the models that USCAP used looked at impacts out to 2030 and one considered impacts out to 2050. USCAP also evaluated the EPA and EIA modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009.

5. **How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would propose to guard against a rapid rise in energy costs for the manufacturing sector?**

   The *Blueprint*, proposes a number of mechanisms to contain costs of a climate change policy. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest-cost greenhouse gas emissions reductions. In addition Section 4(B) of the *Blueprint* describes other cost containment measures including ample amounts of offsets, unlimited allowance banking, and multi-year compliance periods and allowance allocations.
   In some cases, as in energy-intensive industries with trade-exposed commodity products, US manufacturers will be particularly challenged by US climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. In such cases, there is risk of "leakage," by which we mean the shifting of production and GHG emissions from the US to these other countries. USCAP recommends using an adequate amount of allowance value to offset these competitive disadvantages, such as basing such allocations on net increment costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

USCAP lists, for example, a few candidate energy-intensive, trade-exposed sectors (chemicals, oil refining, aluminum and other non-ferrous metals, iron and steel, cement, non-fuel minerals, pulp and paper, glass, ceramics, and rubber). (See the subsection of *Blueprint* Section 3(C) entitled "Energy Intensive Industries With Trade-Exposed Commodity Prices," p.13.)

Rio Tinto is a direct supplier of metals (aluminum, copper, gold, silver, molybdenum), non-fuel minerals (borates, talc, trona), and chemicals (boric acid,) as well as an upstream energy supplier to every listed sector as well as the rest of the industrial sector. As such, the issues of cost containment, leakage and the possible "dash to gas" are important to Rio Tinto's own climate change policy position.

6. **Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?**

   USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration. In order to ensure that our nation's coal reserves remain in the overall energy mix, USCAP makes a series of recommendations specifically related to coal. These include recommending that Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO_2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

   During the transition to a low-carbon economy, USCAP recommends that Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. **This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?**

   The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. As stated in the *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. The Blueprint proposes a series of coast containment mechanisms to limit

adverse economic impacts during the transition, the first of which is a cap and trade policy approach itself.

J.J. Mulva
Chairman and Chief Executive Officer

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March 27, 2009

The Honorable Henry Waxman
Chairman, Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515-6115

Dear Chairman Waxman,

Thank you for the recent opportunity to appear before the Committee on Energy and Commerce in support of the U.S. Climate Action Partnership *Blueprint for Legislative Action*. We appreciate this chance to further respond to questions from individual members of the committee regarding our participation in USCAP and the implications of the USCAP climate policy proposal. Attached you will find our responses to those specific questions.

We stand ready to help you and your staff better understand the nature of the oil and gas business, our sector-specific issues related to climate policy, the ConocoPhillips position on climate change and the integrated climate policy proposal described in the USCAP *Blueprint for Legislative Action*. We look forward to working with you and the members of your committee in the coming months on this very important issue.

Sincerely,

J. J. Mulva

The Honorable Gene Green

1. *You made the decision to join the USCAP effort on behalf of ConocoPhillips and work to develop recommendations to establish a national framework for a cap-and-trade program. Can you explain to us why you made that decision, and what do you see as the benefits and risks to your company?*

COP: ConocoPhillips recognizes that human activity, including the burning of fossil fuels, is contributing to increased concentrations of greenhouse gases (GHG) in the atmosphere that can lead to adverse changes in global climate. While uncertainties remain over the extent of human contributions and the timing and magnitude of future impacts, we are taking actions to address our own emissions and we are committed to playing a constructive role in public policy dialogue to devise practical, equitable and cost-effective approaches to stabilize the concentration of GHG in the atmosphere. We believe the energy industry has much to contribute to the U.S. climate policy dialogue.

It is the Company view that a mandatory U.S. national regulatory framework linked to other national and international programs offers the best policy approach for achieving meaningful global GHG reductions. We believe there is a firm business case for this position.

First, the alternatives to a well-designed federal climate protection program are multiple state/regional initiatives and/or use of existing environmental statutes (e.g. the Clean Air Act), which will result in a less efficient and costlier approach to addressing GHG emissions and the impacts of climate change.

Second, industry needs a consistent and enduring climate change program to provide the regulatory certainty necessary to make informed, long-term investment decisions regarding the development and use of future energy supplies.

Finally, such policy can also enhance or create business opportunities in areas such as increased use of natural gas, deployment of carbon capture and storage and development of new energy technologies.

We recognize that the impact of a federal climate program on the U.S. oil and gas industry, both as a regulated sector and as the potential point to regulation for transportation fuel emissions under a national cap, could significantly impede the ability of our industry to develop and deliver the energy necessary for economic recovery and growth. This is why we support the measures included in the USCAP *Blueprint* aimed at dampening that impact during the transition to a low-carbon economy. These measures include robust cost-containment measures e.g. the generous use of offsets, allocation to protect our sector and other energy-intensive industries from undue economic harm associated with unrecoverable compliance costs and from unregulated foreign competition, allocation aimed at easing the burden on transportation fuels consumers, and support for the rapid deployment of CO2 capture and storage. These and other measures are critical to meeting the dual challenges of climate protection and energy security.

ConocoPhillips understands that public policy to address climate change will come at a cost but in the long run we believe the benefits to American consumers and businesses will outweigh those costs.

2. *I understand the Blueprint includes recommendations regarding "Fuel-Related GHG Performance Standards" – Can you please walk me through these recommendations and explain how these*

relate to the existing Renewable Fuels Standard? Are the GHG Performance Standards and the RFS complementary programs?

COP: The USCAP *Blueprint* recommends that the EPA develop and promulgate a challenging, yet technologically and economically achievable, GHG performance standard for the transportation fuel pool only after EPA has completed the methodology and assessment work described below. Congress should assure that the RFS ceases to apply at the time that the GHG fuel performance standard takes effect.

Methodology

The extent of actual GHG reductions that will occur as a result of the GHG-based Renewable Fuel volumetric standard established under the EISA is uncertain. To address this uncertainty and to prevent the creation of conflicting regulations on transportation fuels, USCAP recommends that Congress instruct EPA to:

- Develop appropriate methodologies for determining lifecycle carbon intensities of various transportation fuels on an equivalent basis. EPA should develop this methodology in a manner that strives for both national and international alignment, including for those methodologies related to the treatment of land use changes that can be reasonably attributed to the production and use of transportation fuels;
- Develop a process for gathering data and determining the actual lifecycle GHG performance of the transportation fuel pool.

Assessment

- Congress should require EPA, in collaboration with the Department of Transportation and other federal and state and local agencies, to carry out a periodic in-depth assessment of current and projected progress in transportation sector GHG emissions reductions.
- This assessment should examine the contributions to emissions reductions attributable to improvements in vehicle efficiency and GHG performance of transportation fuels, increased efficiency in utilizing the transportation infrastructure, as well as changes in consumer demand and use of transportation systems, and any other GHG-related transportation policies enacted by Congress.
- Specifically, as part of this assessment EPA should consider the degree to which existing programs and market conditions are or are not sufficient to substantially reduce the lifecycle carbon intensity of the transportation fuel pool.

The Honorable Joe Barton

1. *Regarding membership, who in USCAP represents the interests of the small business community?*

COP: While USCAP does not include a representative of a small business, a very large number of small businesses supply services, materials and other key inputs to USCAP member companies. Further, USCAP companies greatly value small businesses and provide them with necessary: power from electricity generators; fuel from oil and gas producers and refiners; chemicals, coatings and other products from chemical producers; equipment from manufacturers; vehicles from auto makers; and services from these and the other USCAP entities. It is crucial for small businesses to engage in finding solutions to climate change and the impacts of climate protection policies on small business should be considered, especially during the transition to a low-carbon economy.

2. *Regarding membership, who in USCAP represents the interests of end-use utility customers?*

COP: In addition to being a major supplier of natural gas and transportation fuels, ConocoPhillips is also a significant end-use utility customer. In fact some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers.

3. *Regarding the USCAP analyses that went into the Blueprint, how were the economic impacts of this proposal evaluated?*

COP: USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of GHG targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

a. Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?

ConocoPhillips did not conduct its own analysis beyond the work referenced above. However, we recognize that the impact of a federal climate program on ConocoPhillips and the rest of the US oil and gas industry, both as a regulated sector and as the potential point to regulation for transportation fuel emissions under a national cap, could significantly impede the ability of our industry to develop and deliver the energy necessary for economic recovery and growth. This is why we support the measures included in the USCAP *Blueprint* aimed at dampening that impact during the transition to a low-carbon economy. These measures include robust cost-containment measures (e.g. the generous use of offsets), allocation to protect our sector and other energy-intensive industries from undue economic harm associated with unrecoverable compliance costs and from unregulated foreign competition, allocation aimed at easing the burden on transportation fuels consumers, and support for the rapid deployment of CO2 capture and storage. These and other measures are critical to meeting the dual challenges of climate protection and energy security.

b. *In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy-wide emissions caps.*

i. What is the empirical and factual basis for making these sorts of statements?

ConocoPhillips believes that a balanced, comprehensive climate policy can be designed to effectively address climate change while providing incentive for new technology and new business opportunity and while limiting the negative impacts to the economy. While no policy can guarantee specific results, a cap-and-trade program has the potential to stimulate technology and infrastructure spending. A cap implemented now would not take effect for several years (2012 for example) after the current economic downturn is expected to be reversed but the creation of a future price on carbon will provide a significant incentive for low-carbon capital investment today.

A coherent energy policy that provides incentives for low-carbon technology and sets clear, long-term targets for reducing GHG emissions will give businesses the certainty they need to make well-informed, near-term investment decisions that will positively impact US competitiveness. Also by developing low-carbon energy sources and using energy more efficiently, the U.S. can ensure its role as a world leader in clean technology and can export—rather than import—climate solutions.

It is our view that a mandatory U.S. national regulatory framework linked to other national and international programs offers the best policy approach for achieving meaningful global GHG reductions. We believe the alternatives to a well-designed federal climate protection program – multiple state/regional initiatives, use of existing environmental statutes (e.g. the Clean Air Act), or a significant delay in policy development – represent a greater risk to the environment, the U.S. economy and ConocoPhillips' shareholders.

ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE used to estimate the impact on GDP out to 2050. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). USCAP also utilized a macro energy model called NEMS to be able to take a more detailed view of the impacts on the Energy Industry in the U.S. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally USCAP utilized an electricity dispatch model called IPM able to gain insights of the impact on the Power sector on a regional basis within the U.S. Again, this model is widely used and was specifically utilized by EPA in its analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about the *Blueprint* recommendations and will continue to work with these consultants to further refine USCAP analyses.

iii. Did any of the USCAP corporate members perform their own internal or independent analyses?

ConocoPhillips did not conduct specific analysis addressing the optimal timing for the enactment of climate change legislation.

c. Did USCAP assess the economic impacts of its Blueprint, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?

As stated above, USCAP has worked with consultants to conduct its own independent analysis of the policy options considered when developing the *Blueprint*. The time horizon of USCAP modeling analysis was 2015 to 2050. As noted, USCAP also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

4. *How much will your Blueprint proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?*

COP: The cost of the USCAP proposal on American families, like virtually any other proposal, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...), geographical differences such as fossil-fuel use in electricity production, and how quickly new low-carbon technology can be put into use.

USCAP economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies like that which recommended in the *Blueprint*. USCAP currently estimates that the GDP impact of well-designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 timeframe. USCAP is continuing to refine these analyses.

ConocoPhillips did not conduct specific analysis evaluating the economic impact of the USCAP proposal on the U.S. economy.

a. *If you do not have estimates, will you please provide us 'what USCAP believes are the best estimates to these impacts, based on your proposals?*

As stated above in #4, USCAP modeling suggests that comprehensive cap-and-trade legislation will not have significant long-term impacts on an economy-wide basis. Climate policy will result in additional costs to businesses and consumers. However, as is clearly stated in the USCAP *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. The *Blueprint* includes a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. *Did USCAP analyze the international political and trade implications of a unilateral U.S. cap-and-trade scheme?*

COP: USCAP analyzed the international political and trade implications of a US cap-and-trade scheme. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. It is important to note that USCAP believes that adoption of mandatory US climate policy is an essential precondition for a full and effective international framework. This approach does not mean that the US should act unilaterally. Rather, as stated in the first of our nine international principles, Congress should consider adopting provisions and criteria for linkage of the US cap-and-trade system to other existing and emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

a. *What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?*

The USCAP *Blueprint* recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that U.S. businesses are

not put at an undue competitive disadvantage in the global marketplace as a result of climate policy and to discourage companies from moving operations offshore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

The potential for ConocoPhillips to be placed at a competitive disadvantage by imports from countries without climate programs is a major concern for our company, and we urge Congress to adequately address the international competitiveness and emission leakage concern.

6. *The United States has a 250-year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?*

COP: The USCAP *Blueprint* states that the U.S. must utilize responsibly our domestic supplies of coal, oil and natural gas and must ensure the nation has an adequate supply of electricity produced from low-carbon resources including wind, solar, natural gas, next-generation nuclear technology, and coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. The *Blueprint* also recommends funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

a. *How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?*

As explained in question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, the robust set of cost-containment mechanisms included in the *Blueprint* is intended to limit high and volatile prices in a carbon market, which will protect the entire U.S. economy including manufacturers.

7. *Has USCAP evaluated whether cap-and-trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?*

COP: USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. USCAP determined that our nation's climate protection goals can be met in a cost-effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap-and-trade, the USCAP proposal recommends other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

a. *What evidence do you have that cap-and-trade will promote the technological change necessary for global stabilization of carbon emissions?*

The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase-out of CFCs provide evidence that cap-and-trade is a technology-driving policy, while also limiting the overall cost of the program. It is important to note that this policy mechanism was designed in the United States and is now the principle instrument used in the European Union, as well as regional programs operating or under development in the U.S., Australia and Canada.

b. *What incentives does cap-and-trade create for individual companies to perform high-risk research and development?*

Cap-and-trade is one policy option for creating a price on GHG emissions that will drive GHG reduction investment towards the most cost-effective solutions. This price signal alone may create the incentive for individual companies to perform high-risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high-risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

The Honorable Fred Upton

1. *In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?*

COP: It is important to note that comprehensive emissions data only exist going back to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 U.S. emission levels and the 2050 target is roughly 1907 emission levels. As is articulated in the *Blueprint*, these emissions levels can be achieved with modern technology and continued robust economic growth. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the U.S. economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

2. *Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?*
   a. *Do you support the nuclear waste depository at Yucca Mountain?*
   b. *Recycling spent fuel?*

COP: Nuclear energy generates a larger percentage of other countries' electricity supply. ConocoPhillips believes that U.S. energy and climate policy should also encourage greater use of nuclear power. Increased nuclear power generation will be key in meeting both energy security and climate change policy goals.

To help the U.S. catch up, the government should fulfill its commitment to dispose of waste generated by nuclear power plants. It should sponsor research into advanced technology that uses the fuel more completely – while reducing waste volumes and half-life – and lowering proliferation risks.

The USCAP *Blueprint* advocates well-aligned national energy security and climate policies that, among other things, helps to ensure the nation has an adequate supply of electricity produced from low-carbon resources including wind, solar, natural gas, nuclear technology, and coal with carbon capture and sequestration.

3. *China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the U.S. makes these reductions and China does not?*

COP: It is unclear what the exact global environmental impact would be if the U.S. makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, U.S. leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. U.S. action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. *What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?*

COP: The amount of cost pass-through to customers or consumers based on a cap-and-trade program, or other policy options that create a price for GHG emissions, will depend on multiple factors including the relative ability of each sector of the economy to pass on such costs. With respect to electricity and natural gas end-use energy consumers, the USCAP *Blueprint* specifically recommends that allowances be allocated to state-regulated local distribution companies that will be required by law to pass along this allowance value to their customers.

USCAP also recommends the judicious use of allowance value to ensure that consumer's transportation fuel impacts from allowance prices are generally proportionate to their electricity and natural gas impacts. Allowance value for transportation consumers could be applied, for example, to providing vouchers or subsidies to consumer purchase of high-efficiency and electric vehicles, to public transportation and to other means of reducing transportation fuel consumption.

Finally, the *Blueprint* recommends that a cap-and-trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers.

a. *Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?*

USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint*. All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. USCAP also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009.

5. *How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?*

COP: Robust cost-containment mechanisms aimed at avoiding sustained high allowance prices and extreme allowance price volatility provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. Instruments such as allowance banking, multi-year compliance periods, use of offset credits and a strategic allowance reserve pool will serve to dampen the cost impact of climate policy on U.S. manufacturing.

In some cases, as in energy-intensive industries with trade-exposed commodity products, U.S. manufacturers will be particularly challenged by U.S. climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. In such cases, there is risk of "leakage," i.e. the shifting of production and GHG emissions from the U.S. to these other countries. USCAP recommends using an adequate amount of allowance value to offset these competitive disadvantages due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

USCAP does not recommend exempting energy-intensive industries from the cap because GHG emissions must be reduced from all major sectors in the economy. However, the *Blueprint* does recommend that a cap-and-trade program should not cover hydrocarbons used as a non-CO2 emitting feedstock material by U.S. industries (ex: conversion of hydrocarbons to plastics, chemicals, etc.),.

6. *Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric*

bills would be much higher. Does your Blueprint support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the Blueprint's desired outcome to make American's utility bills more expensive?

COP: The USCAP *Blueprint* states that the US must utilize responsibly our domestic supplies of coal, oil and natural gas and must ensure the nation has an adequate supply of electricity produced from low-carbon resources including wind, solar, natural gas, next-generation nuclear technology, and coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. The *Blueprint* also recommends funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

Although climate policy will impose costs on consumers and businesses, the goal of the *Blueprint* proposal is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse GHG emissions to address climate change. This will require a fundamental shift in the way energy is produced, delivered, and consumed in the U.S. and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies specifically to mitigate costs to electricity and natural gas consumers and to advance demand-reduction activities.

7. *This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap-and-trade, for example - that would raise the price of gasoline?*

COP: GHG emissions from the use of transportation fuels, representing nearly one-third of total U.S. GHG emissions, must be addressed as part of any comprehensive climate change policy. Fully embedding the cost of GHG emissions from the consumption of gasoline in the price of gasoline adds approximately $0.01 per gallon for every $1 per ton cost of CO2. The USCAP *Blueprint* includes mechanisms aimed at American transportation fuel consumers. These include cost-containment provisions expected to limit the overall cost of implementing the climate program and allowance value allocation directed at mitigating cost impacts on transportation fuel consumers.

ConocoPhillips recognizes that the impact of a federal climate program on the U.S. oil and gas industry, both as a regulated sector and as the potential point to regulation for transportation fuel emissions under a national cap, could significantly impede the ability of our industry to develop and deliver the energy necessary for economic recovery and growth. This is why we support the measures included in the USCAP *Blueprint* aimed at dampening that impact during the transition to a low-carbon economy. These measures include robust cost-containment measures (e.g. the generous use of offsets), allocation to protect our sector and other energy-intensive industries from undue economic harm associated with unrecoverable compliance costs and from unregulated foreign competition, allocation aimed at easing the burden on transportation fuels consumers, and support for the rapid deployment of CO2 capture and storage. These and other measures are critical to meeting the dual challenges of climate protection and energy security.

The Honorable John Shadegg

1. *How many corporate jets does your company own?*

COP: The ConocoPhillips executive fleet is comprised of five leased aircraft.

2. *How many miles do your jets fly each year?*

COP: In 2008 the ConocoPhillips executive fleet flew approximately 1.3 million statute miles. Total annual miles travelled varies year-to-year depending on business needs.

3. *How much will it cost to buy the necessary carbon credits for those jets to keep flying that many miles each year?*

COP: The GHG emissions resulting from 2008 executive travel are estimated to total approximately 13,000 metric tons CO2e. The cost to buy the necessary carbon credits to account for those emissions will depend on the nature of the GHG regulatory regime as well as the market price for carbon credits.

4. *How much will it cost to buy the necessary carbon credits needed for you to travel each year?*

COP: The cost to buy the necessary carbon credits to account for GHG emissions from CEO travel will depend on the nature of the GHG regulatory regime as well as the market price for carbon credits.

5. *Will you disclose all this information in your company's annual report?*

COP: Currently we have no plans to report this information, but we will disclose it in the future if it becomes material to an understanding of the operating results and financial condition of the company and in accordance with the requirements of U.S. securities laws.

6. *Do you agree that any climate change proposal must include provisions protecting U.S. laborers, including those in your industry?*

COP: ConocoPhillips believes a comprehensive U.S. climate protection policy should include provisions that will protect American workers during the transition to a low-carbon U.S. economy. The USCAP *Blueprint* contains provisions that will result in protection of American workers. Energy-intensive industries, and by extension American labor, will be protected first through a robust cost-containment program and second by direct allocation of allowance value to these industries during the early years of the program.

We recognize that the impact of a federal climate program on the U.S. oil and gas industry, both as a regulated sector and as the potential point to regulation for transportation fuel emissions under a national cap, could significantly impede the ability of our industry to develop and deliver the energy necessary for economic recovery and growth. This is why we support the measures included in the USCAP *Blueprint* aimed at dampening that impact during the transition to a low-carbon economy – cost-containment measures (e.g. the generous use of offsets), allocation to protect our sector and other energy-intensive industries from undue economic harm associated with unrecoverable compliance costs and from unregulated foreign competition, allocation aimed at easing the burden on transportation fuels consumers, and support for the rapid deployment of CO2 capture and storage. These and other measures are critical to meeting the dual challenges of climate protection and energy security and to protecting the health of our industry which currently employs about 1.8 million people.

7. *Have you explored government-mandated price controls as another option for assuring low costs to the consumer as we transition to a carbon-free economy?*

COP: USCAP explored government-mandated price controls as an option for cost containment within a national cap-and-trade program. USCAP believes that other cost-containment policy options, including those outlined in the *Blueprint*, can be effective at addressing both sustained high allowance price and excessive allowance price volatility during the transition to a fully functioning U.S. carbon market.

8. *How much have you allocated to litigation expenses associated with a national cap-and-trade program under your current business scheme?*

COP: ConocoPhillips is not currently allocating funds to speculative litigation expenses associated with a future U.S. national cap-and-trade program.

9. *Will you disclose this information in your company's annual report?*

COP: Currently we have no plans to report this information, but we will disclose it in the future if it becomes material to an understanding of the operating results and financial condition of the company and in accordance with the requirements of U.S. securities laws.

10. *How much will you invest in fossil fuel-based fuels in the event a cost-containment measure is not included in a national cap-and-trade program? Please provide a specific dollar amount for each year, 2009-2050.*

11. *How much will you invest in clean coal technologies in the event a cost-containment measure is not included in a national cap-and-trade program? Please provide a specific dollar amount for each year, 2009-2050.*

12. *How much will you reduce your greenhouse gas emissions if a cost containment mechanism is included in a national cap-and-trade program? Please provide a specific number.*

COP: The following answer applies to questions 10-12. ConocoPhillips supports the inclusion of cost-containment provisions in a U.S. climate protection program specifically to address both sustained high allowance price and excessive allowance price volatility during the transition to a fully functioning U.S. carbon market while maintaining the integrity of the national GHG emission cap. It is not possible at this time to estimate the impact that this one element of future U.S. climate policy will have on ConocoPhillips' future investment decisions and actions.

13. *Has your company analyzed its costs under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us. If not, do you plan to?*

14. *Has your company done its cost-benefit analysis under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?*

COP: The following answer applies to questions 13 and 14. ConocoPhillips has both Upstream and Downstream assets in Europe with regulatory compliance obligations under the EUETS. In the course of taking decisions on new or ongoing business investments the incremental effects of EUETS are of

course considered. Since such analysis is fully integrated into our operational and long-range planning processes, we cannot supply a separate stand-alone analysis of operating under the EUETS, but it should be noted that we continue to fund investment opportunities in Europe in a highly competitive global industry.

The penalty for non-compliance in the EUETS Phase II is €100 per tonne (around 125$/tonne). This is a genuine penalty rather than payment in lieu of compliance, i.e. compliance for emissions certificates not submitted in any year has to be achieved in the next year in addition to the liability for that year.

15. *Do you believe there will be less corruption and waste and more transparency and efficiency under a national cap-and-trade program than is apparent under the European Union's emission trading scheme? If so, what is the basis for your belief?*

COP: We believe that design of a U.S. national cap-and-trade system should incorporate the experience and best practices of the EUETS and the U.S. Acid Rain Program, (as well as other existing commodity trading programs). The EUETS experienced several challenges in its initial pilot phase. However, the EU has created a functioning market and a price signal to reduce emissions and the flexibility to manage climate policy cost-effectively. In 2008, the European Commission adopted a number of changes to the system to address issues that were experienced during the system's initial learning phase. These issues have provided lessons for design of similar trading systems, including any such trading system developed in the United States. The recommendations in the USCAP *Blueprint* were developed based on review and analysis of past regulatory programs, including lessons learned from the initial problems experienced in the EUETS.

16. *Do you believe a national cap-and-trade program will cost less for the consumer than the European Union's emission trading scheme? If so, what is the basis for your belief?*

COP: It is inappropriate to compare the impacts of implementing the EUETS which covers approximately 46% of emissions from the EU with the economy-wide cap-and-trade systems proposed by USCAP and in climate legislation introduced in the 110th Congress which covers 85-90% of emissions from the U.S. economy.

The near-term cost to consumers will be dictated by the national GHG reduction goals, the effectiveness of cost-containment provisions and the design of an allowance value distribution framework. In the long-run, an international agreement that facilitates the establishment of an international carbon market and the transfer of carbon reduction and low-carbon energy technology should promote a fair and equitable distribution of the cost burden associated with meeting national and international GHG reduction goals.

17. *Are you willing to absorb the overhead costs of a national cap-and-trade program or do you prefer that it be passed onto the consumer?*

COP: ConocoPhillips seeks to responsibly provide energy products to our customers at a fair and competitive price and to offer our shareholders an attractive return on their investment.

18. *Will you commit to disclose in writing the change in your company's costs and revenues before and after the implementation of a national cap-and-trade program?*

COP: ConocoPhillips includes an explanation of issues and events that make a material difference to company financial results in our annual report.

19. *If a "Buy American" policy were included in a national cap-and-trade program, how would your revenues decrease?*

COP: It is not possible at this time to estimate the impact of a "Buy American" policy.

20. *What "green" products do you sell? What are your revenues for those products? What do you estimate will be your revenues for those products after the implementation of a national cap-and-trade program?*

COP: ConocoPhillips does not currently generate any material revenues from the sale of "green" products. The company has four core activities worldwide:

- Petroleum exploration and production.
- Petroleum refining, marketing, supply and transportation.
- Natural gas gathering, processing and marketing, including a 50 percent interest in DCP Midstream, LLC.
- Chemicals and plastics production and distribution through a 50 percent interest in Chevron Phillips Chemical Company LLC.

In addition, the company is investing in several emerging businesses — power generation, carbon-to-gas/liquids (gasification of coal/petroleum coke), technology solutions, and emerging technologies such as renewable fuels and alternative energy sources — that provide current and potential future growth opportunities.

It is premature to estimate how any of these emerging business would be advantaged or disadvantaged under a national U.S. climate protection program.

Response to questions from the Honorable Joe Barton
Submitted by Jonathan Lash
President, World Resources Institute

March 25, 2009

1. Regarding membership, who in USCAP represents the interests of the small business community?
While USCAP does not include a representative of a small business, a very large number of small businesses supply services, materials and other key inputs to USCAP member companies. Further, USCAP companies greatly value small businesses and provide them with necessary: power from electricity generators; fuel from oil and gas producers and refiners; chemicals, coatings and other products from chemical producers; equipment from manufacturers; vehicles from auto-makers; and services from these and the other USCAP entities. It is crucial for small businesses to engage in finding solutions to climate change and the impacts of climate protection policies on small businesses should be considered, especially during the transition to a low-carbon economy.

2. Regarding membership, who in USCAP represents the interests of end-use utility customers?
Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers. Additionally, USCAP's electric utilities understand that their company names are on all Americans' utility bills and are especially sensitive to the interests of end-use utility customers.

3. Regarding the USCAP analyses that went into the *Blueprint*, how were the economic impacts of this proposal evaluated?
USCAP utilized consultants to conduct independent modeling analysis. In addition, we reviewed the economic analyses conducted by others, including the U.S. government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

a) Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?
WRI is not aware if any members of USCAP performed their own internal analysis.

b) In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy-wide emissions caps.
i. What is the empirical and factual basis for making these sorts of statements?
A cap-and-trade program will stimulate technology and infrastructure spending as firms make plans now for investments in low carbon technologies and review operational practices to reduce energy and climate-related costs. Although a cap adopted through legislation today would not take effect for several years, the certainty of a future price on carbon will provide a significant incentive for low carbon capital investment. The costs of climate change are real, and can be minimized if we act today to avoid the mounting costs associated with adaptation. Water scarcity and distribution, disruptions in agricultural output, eco-migration and conflict over resources are all costs that are real

and growing. Delay only increases the cost of adaptation and mitigation that we will face in the future.

Clear, long-term targets for reducing greenhouse gas emissions will give businesses the certainty needed to make investments to improve the global competitiveness of U.S. industry. By developing low carbon energy sources and using energy more efficiently, the U.S. economy will become less vulnerable to volatility in conventional energy markets. Imposing a cost on carbon will provide an early price signal for rising fossil fuel costs and constraints, potentially improving future competitiveness of domestic industries. In a global, carbon-constrained future, fundamental shifts within the economy to low-carbon energy technologies and more efficient practices will be needed.

The U.S. has witnessed lost competitiveness in renewable energy and efficient vehicle technologies because other governments have created markets and invested in those technologies. U.S. companies need a strong domestic market to move products at scale and to be able to export domestically developed and manufactured products abroad. Uncertain policy structures stall investments here while other countries will build markets for the products and services that will be required in a low-carbon world. Such concerns have led USCAP members, as well as many other major companies, to call for strong, mandatory U.S. climate policy.

ii. Did USCAP perform its own internal or independent analyses?
USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we ran an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP continues to work with independent consultants and their economic models to further refine our own internal and independent analyses.

iii. Did any of the USCAP corporate members perform their own internal or independent analyses?
WRI is not aware if any members of USCAP performed their own internal analysis.

c. Did USCAP assess the economic impacts of its *Blueprint*, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?
As stated above in answer to the chapeau of this question, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. The time horizon of our modeling analysis was to 2050. As noted, we also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-

Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?
a) If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?
The cost of our proposal on American families, like virtually any other proposal, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc…), geographical differences including fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Similar in result to modeling by EPA and EIA, our economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies similar to those outlined in the *Blueprint*. We currently estimate that the GDP impact of well designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 timeframe. Over time, we believe the cost of inaction will greatly surpass the costs of action.

5. Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?
Yes, USCAP analyzed the international political and trade implications of a U.S. cap-and-trade scheme. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. It is important to note that USCAP believes that adoption of mandatory U.S. climate policy is an essential precondition for a full and effective international framework. This approach does not mean that the U.S. should act unilaterally. Rather, as stated in the first of our nine international principles, Congress should consider adopting provisions and criteria for linkage of the U.S. cap-and-trade system to other existing and emerging cap-and-trade systems and create incentives for developing countries to limit their GHG emissions.

a) What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?

International climate negotiations begun in 1992 under the United Nations Framework Convention on Climate Change emphasized that countries have common but differentiated responsibility to mitigate greenhouse gas emissions. In the past, this has been interpreted to be focused on timing rather than on differential approaches. This means that their relative obligations may be staggered – dates and reduction levels may vary based on development levels and historic and current contributions to global emissions levels. This was one concern voiced by the U.S. Congress: if major emitting countries were not required to take action, would that place undue burdens on the U.S.?

The "Bali Action Plan" that emerged in 2007 offers a significant step forward from the traditional Kyoto Protocol approach, because it seeks to find "nationally appropriate" measures and actions that can be measured, reported and verified. As the U.S. and China work to develop appropriate national approaches to mitigation, the policies they adopt will vary in form and stringency. As a result, the costs they impose on manufacturers are unlikely to be uniform. American manufacturers fear that the imbalances created by aggressive climate policy in the U.S. could contribute significantly to the "offshoring" of jobs and relocation of industry to countries with lower standards and production costs.

For most industries, these fears are overstated. In industries such as transportation equipment and electronics manufacturing, energy accounts for less than one percent of total production costs. For such industries, transnational imbalances in wages, health care costs and transportation costs dwarf the potential difference in environmental compliance costs stemming from climate policy. [1]

Nevertheless, according to WRI's analysis with the Peterson Institute for International Economics, for specific groups of sectors, including pulp and paper, chemicals, nonmetallic mineral products, and ferrous and non-ferrous metals, energy costs can reach 20 percent of total production costs. Initial observations in Europe and preliminary modeling of American policies indicate that, in the absence of mechanisms to address relative differences in compliance costs, these sectors would face pressure to relocate to nations with less stringent climate policies.[2]

Since these exposed industries are a discrete portion of the economy, targeted policies hold the potential to offset the impact of differentiated national approaches to climate policy. WRI's work groups these policies into three categories:

1) *Cost containment mechanisms* aim to reduce the pressure on carbon intensive industries by limiting the cost of complying with climate legislation. The most direct methods proposed have sought to use allowance allocations to reimburse exposed sectors for the costs of complying with the legislation. Although such

[1] Leveling the Carbon Playing Field, International Competition and U.S. Climate Policy Design, http://www.wri.org/publication/leveling-the-carbon-playing-field.
[2] Morgenstern, Richard, et al. *Competitiveness Impacts of Carbon Dioxide Pricing Policies on Manufacturing*, Resources for the Future, Washington DC, 2007.
EU ETS impacts on profitability and trade: A sector by sector analysis. Carbon Trust, London, 2008.

policies could shield industries from newfound competitiveness concerns, they must be carefully structured to maintain incentives for continued production and emissions mitigation as well as avoid overcompensating firms.

2) *Trade measures* do not limit costs on the covered companies but seek to indirectly apply similar costs to competing companies in other countries through the treatment of traded goods at the border. Although this policy mechanism found widespread support in legislation during the 110th Congress, it is unclear whether these policies would provide the necessary level of protection for all manufacturers. For example, border price adjustments of imports would negatively impact downstream manufacturers such as the automobile industry by increasing costs of raw materials. Furthermore, these policies would do little to protect important export markets, as adjustments would only apply to the U.S. market. Finally, trade measures may damage important international negotiations to create a multilateral agreement to address climate change.

3) *Coordinated international actions* seek to reduce the pressure on carbon-intensive industries by encouraging major trading partners to impose similar costs or policies. Commonly cited international mechanisms to address competitiveness and leakage concerns include sectoral agreements and the successful negotiation of a global climate agreement under the UNFCCC that would include mandatory action by developing countries. When looking to China, their official negotiating position in climate debates has focused on ensuring that developed countries make reduction commitments. Nevertheless, China's support for the Bali Action Plan, and its National Climate Change platform, indicates that the Chinese may be willing to make commitments to regulate specific, heavily polluting industries. However, perfect coordination of national actions is unlikely in the immediate future, so the U.S. is likely to consider the first two approaches as China phases in its emissions requirements. [3]

The USCAP *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that U.S. businesses are not put at an undue competitive advantage in the global marketplace as a result of climate policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

Careful application of cost containment mechanisms and trade measures should enable the domestic policy process to advance in parallel to international negotiations. This combination of domestic mechanisms and international coordination will allow the U.S. to pursue aggressive mitigation targets while protecting domestic employment and industry. Indeed, many legislative proposals have already adopted these policies as potential solutions to this concern. In particular, Representatives Inslee and Doyle have championed output-based allocation schemes to address the concerns of carbon intense

[3] Leveling the Carbon Playing Field.

manufacturers, while trade measures resembling a proposal by American Electric Power and the International Brotherhood of Electrical Workers have been included in most recent cap-and-trade proposals.

6. The United States has a 250 year supply of coal – the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?
However quickly we deploy technologies and programs for renewable energy and energy efficiency, coal will continue to power a sizable proportion of American industry, commerce, and homes for several decades to come. So, to be effective, cap-and-trade must be complemented by efforts to reduce coal consumption and/or negate its greenhouse gas effect. The latter goal can be achieved through carbon dioxide capture and storage (CCS), a fast-developing technology for which global research and development has been underway for more than a decade.

The USCAP *Blueprint* acknowledges that we must responsibly use our domestic resources of coal and natural gas. Further, the proposal offers a complementary strategy needed for coal technologies. WRI's research and analysis indicates that a substantial amount of information is known about how to responsibly use CCS technologies; (http://www.wri.org/publication/ccs-guidelines) additional funding and complementary policy development will be needed to commercialize the technology.

USCAP recommends that Congress provide substantial financial incentives and needed regulatory certainty to facilitate and accelerate the early deployment of CCS technology. Specific steps that should be taken in the 2009 calendar year include:

- Direct all relevant federal agencies to develop a unified, comprehensive national strategy and by no later than January 1, 2010, promulgate all necessary rules to implement a strategy to address the key legal and regulatory barriers, as well as any other issues that, if not addressed proactively, could impede commercial-scale CCS deployment.
- Increase funding to complete, by no later than January 1, 2013, a national assessment of the capacity for geologic storage of CO_2.
- Increase funding for early grants to fully demonstrate the viability of CCS in commercial practice. This program should establish at least five (5) gigawatt (GW) of CCS-enabled coal fueled facilities operating with an emissions rate of no more than 1100 lbs/megawatthour (MWh) (or an equivalent rate for synthetic natural gas facilities), including at least one pulverized coal retrofit, by no later than 2015.

USCAP also acknowledges that CCS will require substantial investment and recommends Congress establish a program for direct cash payments for sequestered CO2 from coal and other fossil fuels in both power generation and certain industrial operations (e.g., cement or hydrogen production facilities). These payments should be made on a first-come, first-serve basis for the first ten years of operation. The payments should be set using a sliding scale payment per ton of CO2 sequestered, based on the level of capture

achieved. Payment levels should be adequate to cover the incremental cost of CCS, which is currently estimated to be $90/ton for high levels of capture at the first few projects. In addition there should be a provision for a floor payment of up to $30 per-ton in years 11-20, depending on the level of capture achieved. The program should be divided into tranches of generating capacity, with an initial tranche of 3 GW at the highest payment level, with successive tranches receiving lower per-ton payments. Eligibility for payments should terminate for CCS projects commencing operation after approximately 72 GW of CCS have been deployed in the United States. Payments should be available for all CCS projects, whether they are new construction, re-powering, or a retrofit of existing facilities.

USCAP recommends that the emissions of new coal plants be limited to 1100 lbs of CO_2 per MWh for those initially permitted after 2015 and 800 lbs of CO_2 per MWh for those initially permitted after 2020, however this recommendation is made contingent on the adoption of a cash payment program for sequestered CO_2 and the agency's successful promulgation of regulations that enable the permitting of CO_2 transport and geologic storage (outlined above). If the target dates are not met, these standards should come into place 3 years after the establishment of a payment program and promulgation of regulations.

A federal cap-and-trade program can provide a platform to fund CCS commercialization, while at the same time guaranteeing steady emissions reductions, encouraging innovation, and ensuring a measure of fairness to low income consumers and coal dependent regions.

a) How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven off shore to countries with more relaxed carbon emission standards?
As explained in the response to question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Furthermore, USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire U.S. economy including manufacturers.

7. Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?
USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. We have determined that our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all U.S. emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap-and-trade, we also recommend other

complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

a) What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?
The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of CFCs provide evidence that cap-and-trade is a technology-driving policy, while also limiting overall cost of mitigation. This U.S. policy innovation is now the principle instrument used to encourage reductions in greenhouse gas emissions in the European Union, as well as regional programs operating or under development in the U.S. and Canada.

b) What incentives does cap-and-trade create for individual companies to perform high risk research and development?
Cap-and-trade creates a price on greenhouse gas emissions to encourage the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms that find innovative ways to reduce emissions will benefit from lower compliance costs. Companies that are able to provide goods and services that enable emission reductions will benefit from new demand for their products. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

Response to questions from the Honorable Fred Upton
Submitted by Jonathan Lash
President, World Resources Institute

March 25, 2009

1. In what year did the United States have the level of emissions you're seeking by the year 2030? 2050?

USCAP's *Blueprint* calls for emission reduction targets that can be achieved with modern technology and continued robust economic growth. These targets are:
-- 58% of 2005 levels by 2030; and
-- 20% of 2005 levels by 2050.

A straightforward comparison to historic emissions levels is difficult due to the limited availability of greenhouse gas (GHG) emissions data. For example, the U.S. Environmental Protection Agency (EPA) reports a comprehensive, economy-wide inventory of U.S. GHGs going back to only 1990. The Carbon Dioxide Information Analysis Center (CDIAC) at Oak Ridge National Laboratories reports estimates of U.S. carbon dioxide (CO_2) emissions from fossil fuel combustion from 1800-2005, but these totals exclude emissions of methane (CH_4), nitrous oxide (N_2O), and other GHGs that would be included under the proposed cap. Annual estimates of non-CO_2 GHGs are, quite simply, not widely available prior to 1990.

With this caveat, a calculation that addresses ONLY CO_2 emissions from fossil fuel combustion (the most robust and temporally available data) results in the following estimates:

According to the latest EPA inventory,[1] U.S. CO_2 emissions from the combustion of fossil fuels in 2005 were 5,731.0 $MtCO_2$.[2]

For 2030: .58 * 5,731.0 $MtCO_2$ = 3,324.0 $MtCO_2$
For 2050: .20 * 5,731.0 $MtCO_2$ = 1,146.2 $MtCO_2$

Equating these totals to annual estimates of CO_2 emissions from the combustion of fossil fuels (as reported by CDIAC), results in a 2030 emissions level that is approximately equivalent to U.S. CO_2 emissions in the year1965, and a 2050 emissions level that is approximately equivalent to U.S. CO_2 emissions in the year 1909.

Again, these calculations do not represent the full accounting of GHGs across the U.S. economy and results should be considered tenuous. However, it is worth noting that even at these rates of emissions reductions, per capita U.S. emissions in 2030 would be approximately nine metric tons of CO_2 per year,[3] a value that is still higher than the EU's present-day CO_2 per capita total of eight metric tons.

2. Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?

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[1] *U.S. Inventory of Greenhouse Gas Emissions and Sinks 1990-2006* (EPA, 2008).
[2] $MtCO_2$ is million metric tons of CO_2
[3] Using population estimates from the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. 2007. *World Population Prospects: The 2006 Revision.* New York: United Nations.

The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power. The *Blueprint* outlines a cap-and-trade program that would incentivize the lowest cost abatement options, so nuclear energy could play an important role as we move toward a low-carbon economy. USCAP has not attempted to stipulate the precise energy mix nor the technology pathway necessary to achieve our climate goals. Instead we believe that with appropriate policy and resulting market signals, low carbon technology will be incentivized such that the U.S. can meet its climate goals in the most cost-effective manner.

a. Do you support the nuclear waste depository at Yucca Mountain?
USCAP does not have a position on a nuclear waste depository.

b. Recycling spent fuel?
USCAP does not have a position on recycling spent fuel.

3. China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the U.S. makes these reductions and China does not?
WRI's international climate policy work is extensive and has examined a variety of possible paths forward on climate protection. Today, China, the United States and the European Union are among the world's major emitters of greenhouse gases, together accounting for almost ¾ of the total. What matters to the planet, of course, is how much we reduce, not who does the reducing. But no climate solution will be environmentally effective over the long term if all countries are not engaged in taking action.

In total volume China and the United States emit comparable levels of greenhouse gases today. But two important differences remain: per capita emissions, and cumulative historical emissions. On a per capita basis, each U.S. citizen emits more than four times more greenhouse gases than a Chinese citizen. On a cumulative historical basis (since 1850), the U.S. is responsible for 29% of the current increase in atmospheric concentrations. China, in contrast, is only responsible for 8% of cumulative emissions.

China is stepping up to the plate with a series of its own national policies. It has in place a target to reduce its energy intensity by 20% by the end of 2010, as well as a target to increase its renewable energy capacity to 15% by 2020. These are not easy targets to meet, and China has struggled to meet its energy intensity target in 2008 (it is worth noting that the U.S. under George W. Bush had first focused on energy intensity reductions). China still faces significant development challenges and a much poorer population, yet health, water and climate adaptation costs are anticipated to be real problems with a "BAU" growth pattern for China. Yet, many Chinese do not have adequate heat in their homes or access to safe and comfortable transportation and energy needs will continue to grow.

USCAP's Blueprint for Legislative Action (BLA) states that climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, U.S. leadership is essential for establishing an

equitable and effective international policy framework for robust action by all major emitting countries. U.S. action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?
The share of climate policy compliance costs felt by customers or consumers would depend on factors including the relative ability of each sector of the economy to pass on its compliance costs. To help protect consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (with oversight functions performed by PUCs) such that consumer electricity impacts are minimized. Further, USCAP also recommends that a cap-and-trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers.

a) Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?
USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009.

5. How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector – we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would propose to guard against a rapid rise in energy costs for the manufacturing sector?
International climate negotiations begun in 1992 under the United Nations Framework Convention on Climate Change emphasized that countries have common but differentiated responsibility to mitigate greenhouse gas emissions. In the past, this has been interpreted to be focused on timing rather than on differential approaches. This means that their relative obligations may be staggered – dates and reduction levels may vary based on development levels and historic and current contributions to global emissions levels. This was one concern voiced by the U.S. Congress: if major emitting countries were not required to take action, would that place undue burdens on the U.S.?

The "Bali Action Plan" that emerged in 2007 offers a significant step forward from the traditional Kyoto Protocol approach, because it seeks to find "nationally appropriate" measures and actions that can be measured, reported and verified. As the U.S. and China work to develop appropriate national approaches to mitigation, the policies they adopt

will vary in form and stringency. As a result, the costs they impose on manufacturers are unlikely to be uniform. American manufacturers fear that the imbalances created by aggressive climate policy in the U.S. could contribute significantly to the "offshoring" of jobs and relocation of industry to countries with lower standards and production costs.

WRI's work with the Peterson Institute on International Economics indicates that for most industries, these fears are overstated. In industries such as transportation equipment and electronics manufacturing, energy accounts for less than one percent of total production costs. For such industries, transnational imbalances in wages, health care costs and transportation costs dwarf the potential difference in environmental compliance costs stemming from climate policy. [4]

Nevertheless, for specific groups of sectors, including pulp and paper, chemicals, nonmetallic mineral products, and ferrous and non-ferrous metals, energy costs can reach 20 percent of total production costs. Initial observations in Europe and preliminary modeling of American policies indicate that, in the absence of mechanisms to address relative differences in compliance costs, these sectors would face pressure to relocate to nations with less stringent climate policies.[5]

Since these exposed industries are a discrete portion of the economy, targeted policies hold the potential to offset the impact of differentiated national approaches to climate policy. WRI's work groups these policy options into into three categories:

1) *Cost containment mechanisms* aim to reduce the pressure on carbon intensive industries by limiting the cost of complying with climate legislation. The most direct methods proposed have sought to use allowance allocations to reimburse exposed sectors for the costs of complying with the legislation. Although such policies could shield industries from newfound competitiveness concerns, they must be carefully structured to maintain incentives for continued production and emissions mitigation as well as avoid overcompensating firms.

2) *Trade measures* do not limit costs on the covered companies but seek to indirectly apply similar costs to competing companies in other countries through the treatment of traded goods at the border. Although this policy mechanism found widespread support in legislation during the 110th Congress, it is unclear whether these policies would provide the necessary level of protection for all manufacturers. For example, border price adjustments of imports would negatively impact downstream manufacturers such as the automobile industry by increasing costs of raw materials. Furthermore, these policies would do little to protect important export markets, as adjustments would only apply to the U.S.

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[4] Leveling the Carbon Playing Field, International Competition and U.S. Climate Policy Design, http://www.wri.org/publication/leveling-the-carbon-playing-field.

[5] Morgenstern, Richard, et al. *Competitiveness Impacts of Carbon Dioxide Pricing Policies on Manufacturing*, Resources for the Future, Washington DC, 2007.
EU ETS impacts on profitability and trade: A sector by sector analysis. Carbon Trust, London, 2008.

market. Finally, trade measures may damage important international negotiations to create a multilateral agreement to address climate change.

3) *Coordinated international actions* seek to reduce the pressure on carbon-intensive industries by encouraging major trading partners to impose similar costs or policies. Commonly cited international mechanisms to address competitiveness and leakage concerns include sectoral agreements and the successful negotiation of a global climate agreement under the UNFCCC that would include mandatory action by developing countries. When looking to China, their official negotiating position in climate debates has focused on ensuring that developed countries make reduction commitments. Nevertheless, China's support for the Bali Action Plan, and its National Climate Change platform, indicates that the Chinese may be willing to make commitments to regulate specific, heavily polluting industries. However, perfect coordination of national actions is unlikely in the immediate future, so the U.S. is likely to consider the first two approaches as China phases in its emissions requirements. [6]

The USCAP *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that U.S. businesses are not put at an undue competitive advantage in the global marketplace as a result of climate policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

Careful application of cost containment mechanisms and trade measures should enable the domestic policy process to advance in parallel to international negotiations. This combination of domestic mechanisms and international coordination will allow the U.S. to pursue aggressive mitigation targets while protecting domestic employment and industry. Indeed, many legislative proposals have already adopted these policies as potential solutions to this concern. In particular, Representatives Inslee and Doyle have championed output-based allocation schemes to address the concerns of carbon intense manufacturers, while trade measures resembling a proposal by American Electric Power and the International Brotherhood of Electrical Workers have been included in most recent cap and trade proposals.

6. Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your Blueprint support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the Blueprint's desired outcome to make American's utility bills more expensive?

However quickly we deploy technologies and programs for renewable energy and energy efficiency, coal will continue to power a sizable proportion of American industry, commerce, and homes for several decades to come. So, to be effective, cap-and-trade

[6] Leveling the Carbon Playing Field.

must be complemented by efforts to reduce coal consumption and/or negate its greenhouse gas effect. The latter goal can be achieved through carbon dioxide capture and storage (CCS), a fast-developing technology for which global research and development has been underway for more than a decade.

The U.S. Climate Action Partnership *Blueprint for Action* acknowledges that we must ensure the nation has an adequate supply of electricity produced from low-carbon resources, including wind, solar, next generation nuclear technology, **and** coal with carbon capture and sequestration. In the near-term (until 2025), however, CO2 prices under a cap-and-trade program with effective cost containment measures may be too low to fully cover the higher initial costs of these technologies. WRI's work on CCS concludes that although good information is known about how to responsibly use CCS technologies, (http://www.wri.org/publication/ccs-guidelines) a substantial commitment will be needed in terms of appropriated funding, and complementary policy development will be needed to commercialize the technology.

The USCAP *Blueprint* offers a series of complementary measures, including a plan for coal technology.

Specifically, USCAP recommends that Congress provide substantial financial incentives and needed regulatory certainty to facilitate and accelerate the early deployment of CCS technology. Specific steps that should be taken in the 2009 calendar year include:

- Direct all relevant federal agencies to develop a unified, comprehensive national strategy and by no later than January 1, 2010, promulgate all necessary rules to implement a strategy to address the key legal and regulatory barriers, as well as any other issues that, if not addressed proactively, could impede commercial-scale CCS deployment.
- Increase funding to complete, by no later than January 1, 2013, a national assessment of the capacity for geologic storage of CO_2.
- Increase funding for early grants to fully demonstrate the viability of CCS in commercial practice. This program should establish at least five (5) gigawatt (GW) of CCS-enabled coal fueled facilities operating with an emissions rate of no more than 1100 lbs/megawatthour (MWh) (or an equivalent rate for synthetic natural gas facilities), including at least one pulverized coal retrofit, by no later than 2015.

USCAP also acknowledges that CCS will require substantial investment and recommends Congress establish a program for direct cash payments for sequestered CO2 from coal and other fossil fuels in both power generation and certain industrial operations (e.g., cement or hydrogen production facilities). These payments should be made on a first-come, first-serve basis for the first ten years of operation. The payments should be set using a sliding scale payment per ton of CO2 sequestered, based on the level of capture achieved. Payment levels should be adequate to cover the incremental cost of CCS, which is currently estimated to be $90/ton for high levels of capture at the first few projects. In addition there should be a provision for a floor payment of up to $30 per-ton in years 11-20, depending on the level of capture achieved. The program should be

divided into tranches of generating capacity, with an initial tranche of 3 GW at the highest payment level, with successive tranches receiving lower per-ton payments. Eligibility for payments should terminate for CCS projects commencing operation after approximately 72 GW of CCS have been deployed in the United States. Payments should be available for all CCS projects, whether they are new construction, re-powering, or a retrofit of existing facilities.

USCAP recommends that the emissions of new coal plants be limited to 1100 lbs of CO_2 per MWh for those initially permitted after 2015 and 800 lbs of CO_2 per MWh for those initially permitted after 2020, however this recommendation is made contingent on the adoption of a cash payment program for sequestered CO_2 and the agency's successful promulgation of regulations that enable the permitting of CO_2 transport and geologic storage (outlined above). If the target dates are not met, these standards should come into place 3 years after the establishment of a payment program and promulgation of regulations.

A federal cap-and-trade program can provide a platform to fund CCS commercialization, while at the same time guaranteeing steady emissions reductions, encouraging innovation, and ensuring a measure of fairness to low income consumers and coal dependent regions.

The USCAP *Blueprint's* desired outcome is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse greenhouse gas emissions to address climate change. This will require a fundamental shift in the way energy is produced, delivered, and consumed in the U.S. and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures – like cap and trade, for example – that would raise the price of gasoline?

The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. Our internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[7] Because of the relatively

[7] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation, including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.

March 25, 2009

The Honorable Henry Waxman
2204 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Waxman:

Please find enclosed responses to the questions from Representatives Barton, Upton, and Shadegg. Siemens Corporation is very appreciative of the opportunity to provide input to this important legislative issue.

The Honorable John Shadegg

1. How many corporate jets does your company own?

   Siemens Corporation does not own corporate jets. Siemens AG owns a small fleet used by select management. Total emissions from this fleet (not utilized in the US) were 2500 tons of carbon dioxide in 2008.

2. How any miles do your jets fly each year?

   See response to question number one.

3. How much will it cost to buy the necessary carbon credits for those jets to keep flying that many miles each year?

   See response to question number one.

4. How much will it cost to buy the necessary carbon credits needed for you to travel each year?

   Worldwide, Siemens estimates business travel emissions at approximately 10% of overall emissions. In the US, Siemens Corporation and its subsidiaries spent about $171 million on air travel in 2008; that number is likely to be at least 20% lower in 2009. Siemens does not have a program to purchase offsets for all travel, although offsets are purchased for some travel.

   Siemens' overall goal is to reduce carbon dioxide emissions relative to revenue by 20% by 2011.

5. Will you disclose all of this information in your company's annual report?

   This information is covered in detail in Siemens' annual Corporate Responsibility Report, and Siemens' goals for reducing emissions are covered in the Annual Report.

   Siemens also reports and updates emissions data, including travel emissions, on its website. Siemens worldwide emissions in 2007 totaled 5.1 million tons of CO_2 equivalent. This figure includes all emissions attributable to the consumption of energy, direct emissions of Kyoto gases (SF_6, HFC, PFC, CH_4, N_20 and CO_2 [technical]), emissions resulting from business travel, and estimates of the emissions of recently acquired company locations as well as smaller locations.

   Siemens also reports to the Carbon Disclosure Project and the Dow Jones Sustainability Index.

6. Do you agree that any climate change proposal must include provisions protecting U.S. laborers, including those in your industry?

   USCAP's Blueprint urges careful consideration for the competitiveness of US businesses, which employ laborers. Further, direct allocation of allowances and the uses of auction revenues should be used to train the workforce needed to

facilitate a wide-scale transformation to low-carbon technologies and provide opportunities for all Americans in the new energy economy.

7. Have you explored government mandated price controls as another option for assuring low costs to the consumer as we transition into a carbon-free economy?

   We have not explored this option.

8. Please provide the number of domestic manufacturing employees and foreign manufacturing employees within your company.

   Siemens Corporation and its subsidiaries employ approximately 68,000 people in the United States. Eighty percent of those employees directly produce or sell products and services and the remaining 20% administratively support these employees. Approximately 95% of the total employee population in the United States is United States citizens. There are over 85,000 Siemens manufacturing jobs outside of the United States in 50 countries; of the worldwide Siemens manufacturing jobs, the second highest number of manufacturing jobs is in the United States.

9. Has your company analyzed its costs under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?

   Four Siemens AG locations participated in the initial phase of EU emissions trading (2005-2007). These were relatively small facilities which, in total, accounted for 2 percent of Siemens' fossil fuel emissions. For two of these installations, Siemens AG acquired allowances at a minimal cost of less than 5,000 Euros per year during this period.

   For the current trading period (2008-2012) the number of installations covered by the program is three (one no longer meets the threshold criteria). Siemens AG will pay only verification costs for this second period (less than 10,000 Euros per year). Siemens does not anticipate a need to purchase allowances in this phase unless production increases significantly at one of these three facilities.

10. Has your company done its cost-benefit analysis under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?

    Siemens has not performed a cost-benefit analysis. As stated in response to Question No. 9, Siemens AG costs were minimal as the company is not a major emitter. The company experienced strong market interest during the first phase of the EU ETS in its steam turbine modernization and other measures to improve efficiency at power plants.

11. Do you believe there will be less corruption and waste and more transparency and efficiency under a national cap-and-trade program than is apparent under the European Union's emission trading scheme? If so, what is the basis for your belief?

USCAP recommends establishment of a cap-and-trade system that will ensure a smooth and orderly transition to a low-carbon economy. Further, through the establishment of a carbon market board, USCAP recommends a market that is transparent and efficient. We should learn from the experiences of the EU's emission trading scheme, which has significant differences from that which USCAP is recommending.

12. Do you believe a national cap-and-trade program will cost less for the consumer than the European Union's emission trading scheme? If so, what is the basis for your belief?

    The recommendations in the Blueprint were developed based on review and analysis of past regulatory programs, including lessons learned from the initial problems experienced in the EU ETS (including problems in the various "phases," limited scope of coverage, excessive free allocation and a lack of complementary policies and measures). The Blueprint applies these lessons, by specifically including robust cost containment measures such as banking and multiyear compliance that will result in allowance prices that are more stable and reasonable.

    With regard to consumers in the U.S., the cost of USCAP's proposal or virtually any other proposal for each consumer to implement will differ based on a series of factors, including each consumer's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...) and geographical differences such as fossil-fuel use in electricity production.

13. Are you willing to absorb the overhead costs of a national cap-and-trade program or do you prefer that it be passed onto the consumer?

    We assume that by "overhead" costs you may be referring to costs of compliance to the company. Siemens does not anticipate a need for significant operational changes within its own facilities as a result of a national cap and trade program. The price of raw material, such as steel, is not within Siemens' control and indeed may increase as may energy costs. Siemens, a consumer of raw goods and energy, expects that any program that curtails greenhouse gas emissions may result in increased cost to the business and household consumer. However, a rational transition to a low carbon economy that includes a market-based cap and trade approach, as well as the targets and timelines and cost containment measures recommended by USCAP should not necessitate significant burden to the consumer.

14. Will you commit to disclose in writing the change in your company's costs and revenues before and after implementation of a national cap-and-trade program?

    Siemens' revenue information is disclosed in quarterly financial reports, the annual shareholders' meeting, the annual Corporate Responsibility report, and the company's Annual Report.

15. If a "Buy American" policy were included in a national cap-and-trade program, how much would your revenues decrease?

Siemens cannot quantify the effect of a hypothetical "Buy America" provision on revenues. The specific materials and products to which such a provision applies must be better understood. This is an understanding that has yet to take shape as to the "Buy America" provision in the American Recovery and Reinvestment Act of 2009.

As for our presence in the United States, Siemens is significantly invested in the United States. In addition to large United States employment (see response to Question No. 8), Siemens' annual revenue in the United States in fiscal 2008 was $22.4 billion. Our exports from the United States in 2008 totaled over $6 billion. Siemens invests $1.6 billion annually in research and development in the United States. Nine of Siemens' global businesses are headquartered in the United States. Siemens holds 11,700 United States patents. We are one of America's leading providers of turbines for wind power. We are the number one provider of light rail vehicles in North America and we purify one in ten glasses of water Americans drink every day.

As a general proposition, Siemens opposes "Buy America" or similar restrictions. They induce retaliation from abroad which, in turn, may reduce United States' jobs. To achieve greenhouse gas reductions on the timeline to which we have subscribed in the USCAP Blueprint, Americans need a choice of products and covered sources need effective, available technology. To limit these choices is likely to limit the emissions reductions that are necessary to slow, stop and reverse global warming. Such restrictions would have a major negative impact on the efficacy of a United States cap and trade program by imposing complex Administrative burden as well as confusion in the trading market. Would allowances be restricted to emissions reductions achieved by American products, for instance? How would this be tracked and enforced? How would the Congress take this restriction into account in setting caps (or fees) on emissions?

With such a provision, we would also anticipate difficulty in bringing United States' trading partners from developed and developing countries into a global climate change regime. The provision also may invite "mirror image" restrictions from trading partners.

16. What "green" products do you sell? What are your revenues for those products? What do you estimate will be your revenues for those products after the implementation of a national cap-and-trade program?

In 2007, Siemens designated an Environmental Portfolio comprised of Siemens' energy-efficient products and solutions spanning the entire energy chain from power generation and distribution to power consumption. The Portfolio was audited by Price Waterhouse Coopers for quality of information on both revenues and projected customer carbon dioxide reductions. Worldwide revenues in 2007 were $25 billion. Siemens' goal is to increase those revenues to approximately $38 billion by 2011. Siemens is dedicating more than $1.3 billion per year in the Research and Development budget to achieve this goal.

The Honorable Joe Barton

1. Regarding membership, who in USCAP represents the interests of the small business community?

   USCAP does not include a representative of a small business.

2. Regarding membership, who in USCAP represents the interests of end-use utility customers?

   Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, manufacturers like Siemens make energy-efficient products geared toward large and small end-use utility customers.

3. Regarding the USCAP analyses that went into the *Blueprint*, how were the economic impacts of this proposal evaluated?

   USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the United States government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

   a. Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?

      Siemens did not perform such an analysis.

   b. In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.

      I. What is the empirical and factual basis for making these sorts of statements?

         Siemens believes that a cap-and-trade program will stimulate technology and infrastructure spending because a price signal for carbon brings certainty to the market and enables the long-term planning essential for large and long-term capital investments such as those in the power sector.

         Impacts on the climate are being seen today and delay only increases the cost of adaptation and mitigation that we will face in the future.

By developing low carbon energy sources and using energy more efficiently, the United States economy will become less vulnerable to volatility in conventional energy markets.

The UNFCCC meeting in Copenhagen is fast approaching. Siemens believes that the United States' productive cooperation in this meeting is essential to global agreement. The United States can most credibly demonstrate its productive cooperation by enacting its own program to slow, stop and reverse greenhouse gas emissions.

II. Did USCAP perform its own internal or independent analyses?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in the Blueprint. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's analysis of the S.2191 (the Lieberman-Warner legislation). USCAP also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally USCAP utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in its analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about its recommendations and USCAP continues to work with these consultants.

III. Did any of the USCAP corporate members perform their own internal or independent analyses?

Siemens did not perform its own analysis.

c. Did USCAP assess the economic impacts of its *Blueprint*, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?

Yes, USCAP has worked with consultants to conduct its own independent analysis of the policy options considered when developing the Blueprint for Legislative Action. The time horizon of the modeling analysis was 2015 to 2050. USCAP also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?

   The cost of the proposal on American families, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...), geographical differences such as fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Similar in result to modeling by EPA and EIA, USCAP's economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies like that recommended in the Blueprint. USCAP currently estimates that the GDP impact of well-designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 time frame, or less than a penny for every ten dollars of GDP.

   a. If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?

      USCAP believes that comprehensive cap-and-trade legislation will not have significant long-term impacts on an economy-wide basis. However, as is clearly stated in the Blueprint, ensuring a smooth and orderly transition to a low-carbon economy is imperative. USCAP provides a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?

   Yes, USCAP analyzed the international political and trade implications of a United States cap and trade scheme. The recommendations based upon USCAP's deliberations on this subject are found in the Blueprint's "International Principles" section. It is important to note that USCAP believes that adoption of mandatory United States climate policy is an essential precondition for a full and effective international framework. USCAP recommends that Congress should consider adopting provisions and criteria for linkage of the United States cap-and-trade system to other existing and emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

a. What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?

The USCAP Blueprint recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the Blueprint recommends the direct allocation of allowances and the use of auction revenues to ensure that United States businesses are not put at an undue competitive advantage in the global marketplace as a result of climate policy.

6. The United States has a 250 year supply of coal – the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?

USCAP's Blueprint states that the United States must utilize responsibly our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration (CCS). USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

a. How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven off shore to countries with more relaxed carbon emission standards?

USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire United States economy including manufacturers.

7. Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?

USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. USCAP's conclusion is that our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a

cap-and-trade program as a core element. In addition to cap and trade, USCAP also recommends other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

a. What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?

   The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of chlorofluorocarbons provide evidence that cap-and-trade is a technology-driving policy. Siemens' recent experience with the EU ETS is further evidence (see response to next question).

b. What incentives does cap and trade create for individual companies to perform high risk research and development?

   In countries covered by the EU ETS, Siemens is seeing signs of the change in the marketplace that result from establishing a price signal for carbon. As our customers are factoring carbon pricing into business planning, they are considering and making longer-term investments in technology that require greater capital investment. This, in turn, creates greater incentive for companies like Siemens to perform high risk research and development. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies. Siemens also encourages policymakers to be aware of the need to preserve intellectual property and assets that are essential to the development of the technologies needed to reduce greenhouse gas emissions.

The Honorable Fred Upton

1. In what year did the Untied States have the level of emissions you're seeking by the year 2030? 2050?

   It is important to note that comprehensive emissions data only exist to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the United States economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

2. Why is there so little mention of Nuclear power in this blueprint? What role should nuclear play? Can these reductions be met without Nuclear power?

   The USCAP Blueprint is a consensus document with unanimous support from its members who have varying positions on nuclear power. Siemens encourages a diverse energy supply, including nuclear power.

   a. Do you support the nuclear waste depository at Yucca Mountain?

      Neither Siemens nor USCAP has position on a nuclear waste depository.

   b. Recycling spent fuel?

      Neither Siemens nor USCAP has a position on recycling spent fuel.

3. China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?

   It is unclear what the exact global environmental impact would be if the United States makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. As stated in the USCAP Blueprint, United States action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?

   The amount of cost pass-through to customers or consumers based on a cap-and-trade program, or other policy options that create a price for greenhouse gas emissions, would depend on factors including the relative ability of each sector of the economy to pass on such costs. To protect consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (LDCs) such that consumer electricity impacts are minimized. Further USCAP also

recommends that a cap and trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers.

a. Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?

USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the Blueprint for Legislative Action. All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009. Siemens has not performed independent modeling.

5. How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector – we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?

Siemens supports cost containment mechanisms, as outlined in the Blueprint. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Further, the Blueprint outlines key complementary measures to promote coal with carbon capture and storage, transportation, building efficiency and incentives for low carbon technology in sectors outside of the cap through the use of offsets, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment.

Where there is the risk of shifting of production and GHG emissions from the United States to other countries, USCAP recommends using an adequate amount of allowance value to offset these competitive disadvantages, for instance basing such allocations on net incremental costs that are attributable to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

6. Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?

USCAP's Blueprint states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration. USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop and unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

No, the Blueprint's desired outcome is not to make American's utility bills more expensive. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures – like cap and trade, for example – that would raise the price of gasoline?

   The USCAP internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[1] *Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.*

[1] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

EXELON CORPORATION'S RESPONSES TO QUESTIONS FOR THE RECORD

The Honorable Joe Barton

1. **Regarding membership, who in USCAP represents the interests of the small business community?**

   USCAP does not include a member representative of a small business. Even though there are no small business members of USCAP, we believe that it is crucial for small businesses to engage in finding solutions to climate change and the impacts of climate protection policies on small businesses should be considered, especially during the transition to a low-carbon economy.

2. **Regarding membership, who in USCAP represents the interests of end-use utility customers?**

   Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers. Additionally, USCAP's electric utilities understand that their company names are on all Americans' utility bills and are especially sensitive to the interests of end-use utility customers.

3. **Regarding the USCAP analyses that went into the *Blueprint,* how were the economic impacts of this proposal evaluated?**

   USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

   a. **Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?**

      Exelon analyzed the impact on our customers' rates based on various allocation schemes and GHG allowance prices.

   b. **In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.**

i. What is the empirical and factual basis for making these sorts of statements?

The bases for passing climate protection legislation now during this economic downturn are multifold. First, a cap-and-trade program will stimulate technology and infrastructure spending. A cap implemented now would not take effect for several years (2012 for example) after our current economic downturn is expected to be reversed but the creation of a future price on carbon will provide a significant incentive for low carbon capital investment today. Further, impacts on the climate are being seen today and delay only increases the cost of adaptation and mitigation that we will face in the future.

A coherent energy policy that provides incentives for low-carbon technology and sets clear, long-term targets for reducing greenhouse gas emissions will give businesses the certainty they need to make intelligent investment decisions that will positively impact US competitiveness. Also by developing low carbon energy sources and using energy more efficiently, the US economy will become less vulnerable to volatility in conventional energy markets, and at the same time, the US will regain its role as a world leader in clean technology and can export—rather than import—climate solutions.

ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about our recommendations and we continue to work with these consultants to further refine our own internal and independent analyses.

iii. **Did any of the USCAP corporate members perform their own internal or independent analyses?**

As stated above, Exelon analyzed the impact on our customers' rates based on various allocation schemes and GHG allowance prices. However, we did not do a macroeconomic analysis of the blueprint.

c. **Did USCAP assess the economic impacts of its *Blueprint,* going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?**

As stated above in answer to question #3, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. The time horizon of our modeling analysis was 2015 to 2050. As noted, we also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. **How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?**

The cost of our proposal on American families, like virtually any other proposal, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...), geographical differences such as fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Similar in result to modeling by EPA and EIA, our economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate

policies like that which we recommend in the *Blueprint*. We currently estimate that the GDP impact of well designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 time frame. In other words, this amounts to less than a penny for every ten dollars of GDP. We are continuing to refine our analyses. Nevertheless, over time, we believe the cost of inaction will greatly surpass the costs of action. As is stated in the *Blueprint*, we recommend Congress take actions to avoid extreme price volatility in the short-term and provide sufficient investment in technology transformation to ensure a smooth transition and contain costs to the economy.

a. **If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?**

As stated above in answer to question #4, USCAP believes that comprehensive cap-and-trade legislation will not have significant negative long-term impacts on an economy-wide basis. However, as is clearly stated in our *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. We provide a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. **Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?**

Yes, USCAP analyzed the international political and trade implications of a US cap and trade scheme. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. It is important to note that USCAP believes that enactment of mandatory US climate policy legislation is an essential precondition for a full and effective international framework. This approach does not mean that the US should act unilaterally. Rather, as stated in the first of our nine international principles we believe that Congress should consider adopting provisions and criteria for linkage of the US cap-and-trade system to other existing and emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

a. **What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?**

The USCAP *Blueprint* recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that US businesses are not put at an undue competitive advantage in the global marketplace as a result of climate

policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

   USCAP's *Blueprint* states that the US must utilize responsibly our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

   a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

      As explained in answer to question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire US economy including manufacturers.

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

   USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. We have determined that our nation's climate protection goals can be met in the most cost effective manner through an

economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap and trade, we also recommend other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

a. What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?

The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of CFCs provide evidence that cap-and-trade is a technology-driving policy, while also limiting overall cost of the program. It is important to note that this policy mechanism was designed in the United States and is now the principle instrument used in the European Union, as well as regional programs operating or under development in the US and Canada.

b. What incentives does cap and trade create for individual companies to perform high risk research and development?

Cap-and-trade creates a price on greenhouse gas emissions while seeking out the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

The Honorable Fred Upton

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

   It is important to note that comprehensive emissions data only exist to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. As is articulated in our *Blueprint*, these emissions levels can be achieved with modern technology and continued robust economic growth. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the US economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**

   The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power. Exelon is the largest operator of nuclear power plants in the country and the third largest in the world. Nuclear power today provides the vast majority of low carbon energy in the U.S. Exelon believes the expansion of nuclear power is essential to meeting the increasing demand for electricity and provides an emissions-free source of baseload power, which will be increasingly important to reduce our emissions as our electricity needs grow. The nation's 104 operating plants are running safely and efficiently and the new, more passive plants will be safer and more efficient. We believe that at least 25 to 30 new reactions will be necessary to meet the kinds of carbon challenges in the *Blueprint* by 2030.

   a. **Do you support the nuclear waste depository at Yucca Mountain?**

   USCAP does not have a position on a nuclear waste depository. However, Exelon believes that the Obama Administration has made it clear that the Yucca Mountain nuclear waste depository is not politically acceptable and that a Blue Ribbon panel of scientific experts is the best next step to determine how best to assure that the Federal government can meet its obligation to permanently dispose of used nuclear fuel. In the near term, Exelon and other companies can continue to safely store used fuel on-site.

   Exelon believes that the U.S needs a robust research and development program to examine the feasibility of an economic and proliferation-resistant reprocessing technology and open a handful of regional interim storage sites.

   In the long-term, the U.S. needs to deploy a reprocessing facility and a permanent repository site for storage of used nuclear fuel.

b. Recycling spent fuel?

USCAP does not have a position on recycling spent fuel.

3. China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?

It is unclear what the exact global environmental impact would be if the US makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, US leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. US action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries. The United States can and must play a leadership role by enacting its own climate change legislation and taking steps as necessary, consistent with our international trade obligations, to strongly encourage other nations, including China, to do so as well.

4. What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?

The amount of cost pass-through to customers or consumers based on a cap-and-trade program, or other policy options that create a price for greenhouse gas emissions, would depend on factors including the relative ability of each sector of the economy to pass on such costs. To protect electricity consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (LDCs) such that consumer electricity impacts are minimized. Further USCAP also recommends that a cap and trade program have a variety of mechanisms to contain costs, plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers

a. Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?

USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. All of the models that USCAP used looked at impacts out to 2030 and one considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and

Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009

5. **How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?**

   Robust cost containment mechanisms, as outlined in the *Blueprint*, provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Further, the *Blueprint* outlines key complementary measures to promote coal with carbon capture and storage, transportation, building efficiency and incentives for low carbon technology in sectors outside of the cap through the use of offsets, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment.

   In some cases, as in energy-intensive industries with trade-exposed commodity products, US manufacturers will be particularly challenged by US climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. In such cases, there is risk of "leakage," by which we mean the shifting of production and GHG emissions from the US to these other countries. USCAP recommends using an adequate amount of allowance value to offset these competitive disadvantages, for instance basing such allocations on net increment costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

6. **Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?**

   USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity

produced from low-carbon resources, including coal with carbon capture and sequestration. In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop and unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

No, the *Blueprint's* desired outcome is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse greenhouse gas emissions to address climate change. This will require a fundamental shift in the way energy is produced, delivered, and consumed in the US and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. **This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?**

The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. Our internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[1] Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.

[1] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

The Honorable John Shadegg

1. **How many corporate jets does your company own?**

   Exelon utilizes NetJets Fractional Aircraft Ownership, for its corporate jet use. As a fractional aircraft owner, we actually purchase an undivided interest in a specific, serial-numbered aircraft. We own interests in three separate aircraft, with a 15/16 total interest. This interest allows us to fly 750 hours per year.

2. **How many miles do your jets fly each year?**

   In 2008, Exelon used 701 hours of flight time and flew approximately 259,000 miles.

3. **How much will it cost to buy the necessary carbon credits for those jets to keep flying that many miles each year?**

   Under most cap-and-trade proposals we have examined, airplanes are not regulated by the program. The point of regulation is at the fuel source, so we would not have to purchase carbon credits for the jets but would expect to see fuel cost increases.

4. **How much will it cost you to buy the necessary carbon credits needed for you to travel each year?**

   Consistent with the previous answer, we do not expect that Exelon will have to purchase any carbon credits, but would see increased costs for travel due to increased fuel costs as a result of carbon legislation.

5. **Will you disclose all of this information in your company's annual report?**

   The company will disclose information relative to corporate travel to the extent that it is material and otherwise required by SEC reporting requirements. Currently there is no requirement to disclose information about corporate jets, except to report personal travel as income in the proxy statement. As stated above, Exelon would not be required to obtain carbon credits for corporate travel, so no disclosure would be required. Should increased fuel prices result from carbon legislation, and it results in material expense increases to the company, then this would be discussed in the annual report.

6. **Do you agree that any climate change proposal must include provisions protecting U.S. laborers, including those in your industry?**

   USCAP's *Blueprint* urges careful consideration for the competitiveness of US businesses, which employ laborers. Further, direct allocation of allowances and the uses of auction revenues should be used to train the workforce needed to facilitate a wide-scale transformation to low-carbon technologies and provide opportunities for all Americans in the new energy economy.

7. **How much have you allocated to litigation expenses associated with a national cap-and-trade program within your current business scheme?**

   Exelon has not allocated any resources for litigation expenses associated with a national cap-and-trade program.

8. **Will you disclose all of this information in your company's annual report?**

   As set forth in Answer 7, there is no internal allocation of litigation expenses, and therefore we have nothing to disclose.

9. **Has your company analyzed its costs under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?**

   No, and no.

10. **Has your company done its cost-benefit analysis ender the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?**

    No, and no.

11. **Do you believe there will be less corruption and waste and more transparency and efficiency under a national cap-and-trade program than is apparent under the European Union's emission trading scheme? If so, what is the basis for your belief?**

    USCAP recommends establishment of a cap-and-trade system that will ensure a smooth and orderly transition to a low-carbon economy. Further, through the establishment of a carbon market board, USCAP recommends a market that is transparent and efficient. We should learn from the experiences of the EU's emission trading scheme, which has significant differences from that which USCAP is recommending.

12. Do you believe a national cap-and-trade program will cost less for the consumer than the European Union's emission trading scheme? If so, what is the basis for your belief?

The recommendations in the *Blueprint* were developed based on review and analysis of past regulatory programs, including lessons learned from the initial problems experienced in the EU ETS (including problems in the various "phases," limited scope of coverage, excessive free allocation and a lack of complementary policies and measures). The Blueprint applies these lessons, by specifically including robust cost containment measures such as banking and multiyear compliance that will result in allowance prices that are more stable and reasonable.

With regard to consumers in the U.S., the cost of our proposal or virtually any other proposal for each consumer to implement will differ based on a series of factors, including each consumer's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...) and geographical differences such as fossil-fuel use in electricity production.

13. Are you willing to absorb the overhead costs of a national cap-and-trade program or do you prefer that it be passed onto the consumer?

A national cap-and-trade program will have costs to all sectors of the economy including, business and consumers. This is why Exelon has always supported strong cost containment measures, such as those contained in the *Blueprint*, to protect the economy. Additionally we strongly support the provisions in the *Blueprint* and advocated by the Edison Electric Institute that recommend that 40% of the allowances be given away for free to local distribution companies for the benefit of their customers. These allowances can be used to help mitigate rate impacts and invest in customer energy efficiency which will keep customer costs down.

14. Will you commit to disclose in writing the change in your company's costs and revenues before and after the implementation of a national cap-and-trade program?

As a publicly traded company, Exelon's costs and revenues are publicly reported on a quarterly basis to the Securities and Exchange Commission. These reports can also be found on our corporate website, www.exeloncorp.com.

15. If a "Buy American" policy were included in a national cap-and-trade program, how would your revenues decrease?

We have not analyzed the impact of a Buy-American provision; however, we would not expect our revenues to decrease as a result of a Buy-American provision.

16. What "green" products do you sell? What are your revenues for those products? What do you estimate will be your revenues for those products after the implementation of a national cap-and-trade program?

Exelon Corporation is a public utility holding company that is comprised of Exelon Generation and our utilities ComEd and PECO. Exelon Generation has a total capacity of 31,292 MW of electricity. Exelon is the largest producer of nuclear energy in the United States and nuclear represents 93% of our total output for 2008. In addition to our nuclear plants we also generate electricity from coal, natural gas, landfill gas, and hydroelectricity.

Exelon provides three "green products" to our customers: renewable energy credits, PECO WIND and Emission-Free Energy Certificates (EFECS).

During 2008, Exelon Generation sold approximately 1 million renewable energy credits (RECs) from its portfolio. These were driven by increasing compliance demand pursuant to state renewable portfolio standards laws.

PECO WIND, a product offered by our Philadelphia utility, sold more than 1720,000 MWh of wind-generated electricity to nearly 36,000 customers in 2008.

Earlier this month, we introduced a new pilot program for EFECS for 100 existing customers. There is no charge associated with the pilot program.

The revenues from these products are very minor compared to our overall revenues. We have not done an analysis on the impact of a national cap-and-trade program on revenues from these products.

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March 26, 2009

The Honorable Henry Waxman
Chairman, House Energy and Commerce Committee
2125 Rayburn House Office Building
Washington, DC 20515 - 6115

Dear Chairman Waxman:

Attached please find NRG Energy's responses to the questions raised by members of your committee, which you forwarded to my attention on March 11. I appreciate the opportunity to testify before your committee regarding the USCAP *Blueprint*, and look forward to continuing to work with you and Committee members to develop and pass pragmatic, effective and broadly supported climate change legislation.

Sincerely,

David Crane
President & CEO

cc: Early Green, Chief Clerk, Energy and Commerce Committee

NRG Energy answers to the questions of the Honorable Gene Green:

1. **You said in your written testimony that you are planning to spend around $15 billion on low carbon technology development in your company, and that it could cost around $1 trillion to fix the C02 emissions from your current coal fleet. In your opinion, could your company and others like yours make those kinds of investments under a cap and trade system that started out by auctioning off 100% of the allowances? Why or why not?**

Starting with 100% auctions will make it difficult for our company and others like it to invest in low and no carbon technologies. This is because buying all of the allowances in the early years would impose very large net costs on such companies, which cannot pass through the full cost of allowance purchases into higher power prices. These net costs would use up a very substantial portion of the cash that we would otherwise plow back into investments in low and no-carbon technologies. Under a 100% auction, the situation facing these companies would be very much like that facing a consumer who wants to buy a home but just got a large pay cut – they don't earn enough to qualify for the mortgage. By contrast, a cap and trade system that starts out allocating enough allowances to companies like ours to just cover the portion of allowance costs that cannot be recovered in higher prices would allow us to continue our aggressive low carbon investment program – and phasing these free allowances out over the next 15 or so years would give us a very strong incentive to make those investments while we still can.

2. **As I understand it, one reason many people want a 100% auction of allowances is that they want to avoid the windfalls that may have happened in the European Union, which gave away 100% of the allowances to emitters. In your view, will the USCAP recommendations create similar windfalls?**

The USCAP recommendations are initially to allocate just a portion of the allowances, and to do so in ways that avoid creating undue economic gains (i.e., windfalls) or losses. Over time, even these "no windfall" allocations would phase out and be replaced by a full auction. Windfalls would be avoided by allocations in each sector that are based on estimates of the net impact of allowance prices on companies' bottom lines. This approach would help protect against job loss and impairment of regulated emitters' ability to invest in low and no carbon projects and technologies. In the merchant generation sector, these allocations would initially be based on the portion of allowance costs that generators cannot recover in higher power prices. In other sectors, such as the chemical manufacturing sector, it would be based on the potential for foreign competition from entities that do not face higher costs from a domestic carbon cap. In all cases, allocations following the USCAP recommendations will avoid creating windfalls, while giving the heaviest emitters a window of opportunity to invest their own money in aggressive decarbonization. This is far superior to the approach used by the European Union in their initial allowance allocation scheme.

3. **In your opinion, as someone who wants to invest billions in low carbon technology, will the USCAP proposal for allocations lead to the kind of investment we need to take the carbon out while keeping power prices reasonable for our economy?**

Yes. The USCAP proposal is a balanced mix of auctions and initial, no-windfall allocations. Both are critically important for aggressive private sector investment. The auctions raise revenue to help buy down the above-market cost of new low-carbon technologies like carbon capture and sequestration and electric cars. The initial, "no windfall" allocations temporarily preserve the ability of emitters to invest billions of their own money in these technologies. Together, these two aspects of the Blueprint should maximize private sector investment while, at the same time, getting the biggest bang for the buck from any public sector investment.

NRG Energy answers to the questions of the Honorable Joe Barton:

1. Regarding membership, who in USCAP represents the interests of the small business community?

There is no specific, direct small business membership. However, small businesses are important customers of a number of USCAP members, and were considered in the development of USCAP's mechanisms to buffer the financial impact of a cap and trade system on consumers. For example, small business utility customers would benefit from the allocation of some allowances to local distribution electric and gas companies, who would be required to pass the value of those allowances through as a reduction in cost of service rates charged to such customers.

2. Regarding membership, who in USCAP represents the interests of end-use utility customers?

There is no specific, direct end use utility customer representative. However, end use customers are important customers of a number of USCAP members, and were considered in the development of USCAP's mechanisms to buffer the financial impact of a cap and trade system on consumers. For example, end use utility customers would benefit from the allocation of some allowances to local distribution electric and gas companies, who would be required to pass the value of those allowances through as a reduction in cost of service rates.

3. Regarding the USCAP analyses that went into the Blueprint, how were the economic impacts of this proposal evaluated?

USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

a. Did any of the corporate members perform analyses on the impact to their I respective companies and customers, and/or the economy at large?

NRG regularly uses a carbon price curve, and considers carbon sensitivity, in all of its long term capital investment decision-making. We cannot speak for other corporate members.

b. In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.

i. What is the empirical and factual basis for making these sorts of statements?

NRG considers the following factors in calling for cap and trade legislation at this time:

a) Delay is likely to create greater concerns about environmental damage from climate change and more drastic and costly policy measures to control it.
b) Action by the EPA in response to Mass. v. EPA is on track impose much more costly and less effective regulations on the power sector than well-designed cap and trade, so we think well-designed legislation must be enacted now to avoid this economically and environmentally inferior result.
c) The current economic recession should be over and recovery well under way by 2012, which is the earliest we think cap and trade regulation could be established if the Congress

acts this year. At that time, we support a climate change program that is modest in its initial cost impact but becomes increasingly costly over time for companies and sectors which do *not* act to reduce the carbon intensity of their activities.

d) A well-designed cap and trade program that focuses more on stimulating efficient private sector investment than on simply punishing emitters, for example by making them immediately buy all of their allowances in an auction, can help enhance economic recovery.

ii. Did USCAP perform its own internal or independent analyses?

USCAP did not perform or sponsor analysis of the relationship of cap and trade to the business cycle and other factors related to recession and recovery. More generally, USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our Blueprint. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). USCAP also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about its recommendations and continues to work with these consultants to further refine USCAP's analyses.

iii. Did any of the USCAP corporate members perform their own internal or independent analyses?

See NRG's answer to question 3(a). We cannot speak for other corporations.

c. Did USCAP assess the economic impacts of its Blueprint, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?

As noted above, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the Blueprint for Legislative Action. The time horizon of this modeling analysis was 2015 to 2050. USCAP also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. How much will your Blueprint proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?

It is not possible to answer this question with precision. USCAP economic modeling suggests that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies like those we recommend in the Blueprint. This suggests that the GDP impact of well designed comprehensive climate legislation could be very small. All modeling results are indicative rather than predictive, and actual results could entail higher or lower economic growth. One result which was common to many modeling exercises was that the overall cost to the American economy of achieving long term reductions in greenhouse gas emissions was considerably reduced in scenarios that assumed considerable deployment of advanced nuclear and clean coal (with carbon capture and sequestration) power plants.

NRG is optimistic, in that we think American ingenuity and market forces tend to create economic growth and reduce costs dramatically over time. Further, we think it is likely that the cost of inaction will greatly surpass the costs of action.

a) If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?

To NRG's knowledge, USCAP as an organization does not have a position on what are the best estimates.

5. Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?

USCAP members carefully considered the international political and trade implications of a US cap and trade scheme. The recommendations in the Blueprint's "International Principles" section reflect this careful consideration. It is important to note that USCAP believes that adoption of mandatory US climate policy is an essential precondition for a full and effective international framework.

a. What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?

The USCAP Blueprint calls for a price on carbon, complementary measures to accelerate the commercialization of low and no carbon technology, and transitional allocations to buffer the impact on consumers and businesses. The combined effect of these policies should help reduce US consumers' overall energy costs, even if the price of carbon-intensive energy itself increases. For example, the Blueprint policies would create incentives for increased nuclear, electric car, and energy efficient end-use technology deployment, all of which could lower the cost to consumers and to our economy of electricity, transportation, and heating, lighting, and cooling the building sector. Despite these potential competitive gains for the US economy, USCAP also recognizes that strong diplomatic and other efforts will be needed to ensure a level global playing field, and suggests the transitional use of allowances and other approaches to help achieve that level playing field.

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

The Blueprint contains strong incentives and other complementary policies to accelerate the commercial deployment, at scale, of carbon capture and sequestration technology for coal. Given the severity of the climate problem and the strong link to it of increasing emissions from coal use, NRG believes the USCAP proposal is likely to offer the best approach to ensuring that US coal can continue to be utilized economically and responsibly. As we often say, "you can't solve global warming with just clean coal, but without clean coal, you cannot solve global warming."

   a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

Please see the answer to question 5a above. In addition, a cap and trade system will create demand for technologies whose manufacturing, design, assembly, operation and maintenance will take place here. For example, NRG's 2 unit nuclear development project in Texas will create some 7,000 direct jobs during development and construction. This development will enhanced by a well-designed US cap and trade program.

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

USCAP views transforming our country's core technologies to emit few or no greenhouse gases as essential to preventing harmful climate change. To best achieve this, the Blueprint recommends a comprehensive climate policy that includes cap and trade, complementary measures, and use of auction revenues to help jump-start the commercial deployment of low and no carbon technologies in the key emitting sectors of the economy. This integrated package is, in our view as a USCAP member, the best approach to rapidly and economically achieve the emission reductions that we believe a responsible national program should achieve.

   a. **What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?**

      The Acid Rain program in the Clean Air Act shows that cap-and-trade promotes technology deployment and cost minimization.

   b. **What incentives does cap and trade create for individual companies to perform high risk research and development?**

Cap-and-trade creates a price on greenhouse gas emissions while seeking out the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell, if the cap and trade program includes a fair measure of free allocation as USCAP recommends. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP also recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

NRG Energy answers to the questions of the Honorable Fred Upton:

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

Based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels.

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**

The USCAP Blueprint mentions nuclear twice, while it only mentions biomass and hydropower once each. On its very first page of its introduction, the Blueprint calls for America to "ensure the nation has an adequate supply of electricity produced from low-carbon resources, including wind, solar, next generation nuclear technology, and coal with carbon capture and sequestration."

In NRG's view, nuclear power is a critical part of the solution to climate change, and we have spent over one hundred million dollars of NRG shareholder capital developing two advanced boiling water reactors in Texas. We expect our project to be one of the first new nuclear projects built in the U.S. in 30 years and we wholly support any and all action which Congress may take to accelerate or expand the "nuclear renaissance."

   a) **Do you support the nuclear waste depository at Yucca Mountain?**

NRG supports Yucca Mountain but, perhaps more importantly, believes that dry cask storage is sufficient for additional development of nuclear in the short term, and offers an interim solution until a permanent waste management solution is developed. In other words, NRG believes strongly that the current impasse over Yucca Mountain is *not* a valid reason for delaying or derailing the completion of advanced nuclear plants in the United States.

   b) **Recycling spent fuel?**

NRG's view is that, in the future, recycling of spent fuel may offer a suitable means to more economically handle spent nuclear fuel.

3. **China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?**

It is unclear what the exact global environmental impact would be if the US makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, US leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. US action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. **What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?**

In the power sector, some costs are passed through to consumers and some are absorbed by shareholders of competitive or merchant coal-fired electric power generators. In general, cost-regulated utilities can pass through the full cost of any allowances they purchase, while merchant generators can only do so when their plants are setting market prices. Since merchant coal plants

only set the price a fraction of the time, they cannot pass through the full cost of buying all their allowances. As a rough rule of thumb, retail electricity prices are likely to increase from roughly 33% to perhaps 90% of the cost of an allowance per MWH in various parts of the country, depending on how often different types of power plants are setting wholesale prices. This suggests that if allowances cost $20 per ton, retail electric prices could increase, absent any allocations, from about 7/10 of one cent per kWh to about 2 cents per kWh. The USCAP Blueprint, however, recommends that a substantial portion of the allowances be allocated for free to regulated local distribution companies (LDCs), that is, the wires companies that distribute electricity to retail consumers, and that these regulated utilities would have to sell the free allowances and use the revenue to reduce their cost of service rates for customers. Importantly, every retail customer is served by a regulated LDC, whether in a "regulated" or "deregulated" state and whether the utility is an investor owned utility, a co-op, or a municipal utility. Because of this, such LDC allocations offer a way to mitigate the cost increases in a regionally sensitive way, and should protect all customers from excessive early cost increases. In the transportation sector, the Blueprint similarly calls for allowance revenues to be used to buffer the impact on transportation customers, through a combination of tools like incentives for using or buying low-carbon transportation alternatives, specific tax cuts, etc.

a. Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our Blueprint. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). USCAP also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about its recommendations and continues to work with these consultants to further refine USCAP's analyses. The time horizon of this modeling analysis was 2015 to 2050. USCAP also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

5. How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would propose to guard against a rapid rise in energy costs for the manufacturing sector?

USCAP members share that concern, and accordingly the Blueprint has multiple provisions to prevent a rapid rise in energy costs for the manufacturing sector. First, it allows the generous use

of offsets for compliance, and authorizes a Carbon Market Board to introduce more offsets into the market as needed to protect against excessive fuel switching and other economic harm that could result from GHG allowance prices becoming too high. Second, it directly allocates a portion of emissions to regulated electric and gas distribution companies, who would be required under their cost of service regulations to pass the value of these allowances through to their customers to mitigate increases in electricity or gas prices. Third, it allocates additional allowances to energy intensive manufacturers who face international competition from countries without a carbon cap. Fourth, it would use some revenues from allowance auctions to help jump start the deployment of low carbon technologies, which will reduce the exposure of manufacturers to high GHG allowance prices, while significantly reducing the incentives for a "dash to gas" that would increase natural gas prices. Fifth, it would avoid charging manufacturers who use carbon intensive fuels as a feedstock for products which themselves sequester carbon. These policy recommendations have been carefully designed to maintain the health of the US manufacturing sector.

6. Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your Blueprint support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the Blueprint's desired outcome to make American's utility bills more expensive?

The Blueprint includes comprehensive complementary policies for coal that are intended to jump-start the commercial deployment of very large amounts (nearly 80,000 MW or roughly one – quarter of the current coal fired power fleet in the US) of coal power with carbon capture and sequestration. NRG believes this is the best way to assure that affordable coal-based power continues to be available to the American people and economy.

As discussed above, the Blueprint's recommendations for allocations to LDCs is designed to mitigate or buffer the impact of cap and trade on American utility bills.

7. This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures -like cap and trade, for example - that would raise the price of gasoline?

The USCAP Blueprint envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. USCAP's internal modeling analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[1] Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency. USCAP also calls for a federal technology transformation effort that will help the private sector retool and deploy innovative, low emission technologies in the transportation sector. This includes federal support for vehicle battery systems, advanced technologies and materials for the transportation sector, and federal support for early demonstration and deployment of a variety of emerging low or zero-emission vehicle technologies.

[1] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

NRG Energy answers to the Honorable John Shadegg:

1. How many corporate jets does your company own?

None.

2. How many miles do your jets fly each year?

None.

3. How much will it cost to buy the necessary carbon credits for those jets to keep flying that many miles each year?

Nothing.

4. How much will it cost to buy the necessary carbon credits needed for you to travel each year?

There will be no cost due to NRG not owning corporate jets. More generally, in a cap and trade system such as that recommended by the USCAP Blueprint, aviation fuel would be regulated "upstream" and the emission allowance costs would be included, to a degree based on market factors, in the price of aviation fuel. Under such upstream regulation, individual travelers would not be required to purchase carbon allowances to travel. The ultimate cost to the traveling customer is not possible to determine, but it could be reduced by more efficient jet engines, low carbon fuels, or other means.

5. Will you disclose all of this information in your company's annual report?

Because we own no corporate jets, we will have nothing to disclose regarding their cost or the impact of a cap and trade system on their costs.

6. Do you agree that any climate change proposal must include provisions protecting U.S. laborers, including those in your industry?

The USCAP Blueprint calls for creating opportunities for the nation's workforce, and for workforce training and transitional support. We agree and support these provisions.

7. How much have you allocated to litigation expenses associated with a national cap and-trade program within your current business scheme?

We do not allocate for future litigation expenses that may or may not result from as yet to be determined laws.

8. Will you disclose all of this information in your company's annual report?

NRG consistently discloses its greenhouse gas related risks in its various SEC filings and will continue to do so.

9. How much will it cost for you to transition to a 100% emissions-free fuel source throughout your entire fleet?

NRG currently has plans to invest more than $15 billion dollars in lower or no carbon investments to augment and revitalize our generation fleet. As one of the leading developers of nuclear and other carbon-free energy sources, NRG sees such technologies as an investment opportunity. A

properly structured cap and trade program will help make investments in such technologies pay returns for investors, rather than impose a net cost.

10. How much more do you expect to pay for natural gas after enactment of an international climate change regime?

Our natural gas price expectations do not extend out to the period when we anticipate enactment of a binding global cap and trade regime. We expect natural gas prices to remain healthy during a domestic cap and trade program, but with the provisions of the USCAP Blueprint regarding cost containment and complementary measures for coal and transportation, we do not think cap and trade needs to drive natural gas prices to excessive levels.

11. Has your company analyzed its costs under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?

Our analysis suggests that under a full free allocation approach such as that used Phase 1of the EU-ETS, NRG would have received significant windfalls from receiving too many allowances. This is because, as a merchant coal company, we can pass through a little more than half of our allowance costs in higher energy prices. If we received 100% of our allowances for free, and also get half of their cost back in higher energy prices, we would end up getting about 50% of the allowance value as a windfall. As a result of this analysis, we have consistently advocated for partial allocations that phase out to a full auction, because we think it is inappropriate for large emitters to actually make money from getting too many allowances for free.

Our analysis also shows that, under a 100% auction of allowances, such as has been generally adopted for Phase 2 of the EU-ETS, we would suffer dramatic losses, again, because we cannot pass through a little less than half of our allowance costs. Again, this leads us to call for a partial allocation, that would initially award about half of the allowances to a company like ours for free, and for those allocations to phase out over time. This would allow us to continue to invest billions of our own money in building new, low carbon technologies rather than having to spend those same billions buying allowances, without creating windfalls. And the knowledge that the free allocations would phase out over time would provide us with a strong incentive to make those investments while we can, rather than wait and face a world of hurt with our heavy-emitting fleet after the allocations go away.

We think one of the most important lessons learned from the EU program is that starting with full allocations is a mistake, and starting with full auctions is also a mistake. The USCAP Blueprint recognizes this and offers a sensible middle way.

12. Has your company done its cost-benefit analysis under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?

As a business, NRG does not conduct cost-benefit analyses, which are primarily of use in estimating the aggregate social benefits and costs of government policies. However, based on our understanding of the potential magnitude of the economic and environmental damage that climate change could inflict, we do expect the benefits of addressing climate change thoughtfully to exceed the costs of not addressing it at all.

13. Do you believe there will be less corruption and waste and more transparency and efficiency under a national cap-and-trade program than is apparent under the European Union's emission trading scheme? If so, what is the basis for your belief?

NRG is not aware of particularly high levels of corruption or waste in the EU-ETS. One of the major problems with Phase 1 was there was essentially no accurate knowledge of how many tons of CO2 were emitted from power plants, so the caps were set at a level that turned out to be too high. As the emitters and traders learned how much CO2 really was being emitted, they found out they didn't need to hold so many allowances, and began selling them. This led to a price crash. The US has much more accurate data on CO2 emissions, and much more transparency surrounding those data, so we are confident these mistakes will be avoided. In addition, the US has a strong federal government, which the EU lacks. As a result, a federal US program should be more transparent, clear and effective.

14. Do you believe a national cap-and-trade program will cost less for the consumer than the European Union's emission trading scheme? If so, what is the basis for your belief?

Yes, if it follows the recommendations of the USCAP Blueprint. The Blueprint calls for allocating a significant portion of the allowances to regulated local electric and gas distribution companies. Because these companies are regulated under cost of service rules, they can be required to pass through the value of the free allowances they receive as a reduction to their consumers' energy bills, either directly or through increasing customers' energy efficiency. This approach should effectively mitigate the consumer energy costs in the US, in a way that the EU failed to do. The USCAP Blueprint calls for comparable steps to mitigate the cost impact on consumers of transportation fuels.

15. Are you willing to absorb the overhead costs of a national cap-and-trade program or do you prefer that it be passed onto the consumer?

NRG suggests that the national overhead costs, such as those of the EPA and other agencies that must administer aspects of the cap and trade program, being recovered through a reasonable combination of the federal budget and user fees.

16. Will you commit to disclose in writing the change in your company's costs and revenues before and after the implementation of a national cap-and-trade program?

NRG makes comprehensive disclosure of its financial performance on a regular basis in conformance with SEC requirements, and will continue to do so.

17. If a "Buy American" policy were included in a national cap-and-trade program, how much would your revenues decrease?

We cannot determine the answer to this question. Our low carbon investment program, however, is already beginning to create thousands of American jobs.

18. What "green" products do you sell? What are your revenues for those products? What do you estimate will be your revenues for those products after the implementation of a national cap-and-trade program?

We sell electricity. Currently, we do not differentiate or market "green electricity" from our power plants.

Responses to Questions from The Honorable Fred Upton to Mark Tercek, The Nature Conservancy

1. **In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?**

   It is important to note that comprehensive emissions data only exist to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. As is articulated in our *Blueprint*, these emissions levels can be achieved with modern technology and continued robust economic growth. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the US economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

   The U.S. has undertaken similar reductions of other types of industrial emissions. By way of example, the Acid Rain program enacted under the 1990 Clean Air Act Amendments reduced sulfur dioxide emissions by 43% between 1990 and 2007. This was done at modest cost and with little adverse impact on the U.S. economy, while providing significant health and environmental benefits to the American public and protecting fragile environments. A 2005 study of the Acid Rain program estimated annual benefits of the program in 2010 at $122 billion and costs for that year at $3 billion (in year 2000 dollars).

2. **Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?**

   The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power. The *Blueprint* outlines a cap-and-trade program that would incentivize the lowest cost abatement options, so nuclear energy could play an important role as we move toward a low-carbon economy. USCAP has not attempted to stipulate the precise energy mix nor the technology pathway necessary to achieve our climate goals, instead we believe that with appropriate policy and resulting market signals low carbon technology will be incentivized such that the US can meet its climate goals in the most cost effective manner.

   a. **Do you support the nuclear waste depository at Yucca Mountain?**

      Neither The Nature Conservancy nor USCAP has a position on a nuclear waste depository.

b. Recycling spent fuel?

Neither The Nature Conservancy nor USCAP has a position on recycling spent fuel.

3. China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?

It is unclear what the exact global environmental impact would be if the US makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, US leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. US action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?

The amount of cost pass-through to customers or consumers based on a cap-and-trade program, or other policy options that create a price for greenhouse gas emissions, would depend on factors including the relative ability of each sector of the economy to pass on such costs. To protect consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (LDCs) such that consumer electricity impacts are minimized. Further USCAP also recommends that a cap and trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers.

USCAP also recommends a set of cost containment provisions, such as offsets and an allowance and offset reserve that are designed to minimize the overall cost of a strong cap-and-trade program. Conservation-oriented programs such as offsets for measurable and verifiable activities that reduce emissions from deforestation or sequester additional carbon through reforestation or improved forest management can play an important role in mitigating the economic impact on consumers.

a. Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?

USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing

the *Blueprint for Legislative Action.* All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009

5. **How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?**

Robust cost containment mechanisms, as outlined in the *Blueprint*, provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Another critical component of the *Blueprint's* cost containment provisions is the opportunity to use offsets in significant quantities. EPA estimated that the modest offset provisions contained in the Senate's Lieberman-Warner bill would reduce the cost of the marginal cost of compliance with that bill by nearly half. The *Blueprint* would allow a greater number of total offsets into the system than that bill.

Recent analysis suggests that over the next few decades more than 1.5 billion tons per year of emissions reduction could be obtained from efforts to halt deforestation and reforestation at a price of approximately $20 per ton, and potentially several hundred million tons would be available at a price of approximately $10 per ton. Including domestic and international forest offsets in a U.S. cap and trade policy would allow these reductions to be used to meet a significant share of the near term emission reductions needed, and would allow the U.S. to meet strong emission reduction targets at a manageable cost, while providing significant benefits to rural communities and unique ecosystems.

Further, the *Blueprint* outlines key complementary measures to promote carbon capture and storage, transportation, and building efficiency, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment. In some cases, as in energy-intensive industries with trade-exposed commodity products, US manufacturers will be particularly challenged by US climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. USCAP recommends

using an adequate amount of allowance value to offset these competitive disadvantages.

6. **Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your *Blueprint* support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the *Blueprint's* desired outcome to make American's utility bills more expensive?**

   USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration. In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop and unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. USCAP also recommends funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

   The *Blueprint's* desired outcome is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse greenhouse gas emissions to address climate change. This will require a fundamental shift in the way energy is produced, delivered, and consumed in the US and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. **This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?**

   The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. Our internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton

would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[1] Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.

[1] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

Responses to Questions from The Honorable Joe Barton to Mark Tercek, The Nature Conservancy

1. **Regarding membership, who in USCAP represents the interests of the small business community?**

   While USCAP does not include a representative of a small business, a very large number of small businesses supply services, materials and other key inputs to USCAP member companies.

2. **Regarding membership, who in USCAP represents the interests of end-use utility customers?**

   Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers.

   The interests of end use customers were considered critical to the development of the Blueprint. These interests are a factor in the Blueprint's cost containment proposals, which are designed to protect both individual entities and the larger economy from unanticipated challenges. For example, offsets, such as those from activities that reduce deforestation and restore forests can help to maintain costs at a moderate level.

   In addition, one of the principles of USCAP's proposal for allowance allocation is to reduce overall energy costs for residential, commercial and industrial consumers of energy by promoting end-use energy efficiency and demand management in all sectors.

3. **Regarding the USCAP analyses that went into the *Blueprint,* how were the economic impacts of this proposal evaluated?**

   USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

   a. **Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?**

      We would respectfully suggest that you direct this question to the corporate members of USCAP. The Nature Conservancy did not conduct

independent analyses of the impact of the proposal, and relied in its evaluation on the analysis described above and public analyses of other climate proposals.

b. In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.

i. What is the empirical and factual basis for making these sorts of statements?

The science of climate change supports the need to act quickly to establish an economy-wide cap-and-trade program in the US.

The most recent report by the Intergovernmental Panel on Climate Change (IPCC) makes it clear that delay is dangerous. The science shows that to have a reasonable chance of keeping temperature changes below dangerous levels, global emissions need to peak no later than 2015 and begin falling thereafter (WGIII Table TS.2). The United States, as the largest cumulative emitter in the world by far, has a responsibility to lead, and act quickly. The impacts of climate change are already being observed, and the risks associated with inaction are extreme. We need to act quickly to minimize these risks.

Finally, it is important to note that while a cap-and-trade program implemented now would stimulate technological and infrastructure spending immediately, provide certainty to industries who need to plan for the future, and provide a significant incentive for low carbon capital investment now, the actual cap would not take effect for several years (starting in 2012 for example) after our current economic downturn is expected to be reversed.

ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about our

recommendations and we continue to work with these consultants to further refine our own internal and independent analyses.

iii. Did any of the USCAP corporate members perform their own internal or independent analyses?

The Nature Conservancy did not perform its own internal analysis of the impacts of climate policy on the economy. As noted, we relied on the modeling described above and on public analyses of other similar proposals.

In our assessment of the need to enact climate legislation this year, we have been guided by our understanding of the impacts of climate change, and the urgency to act before we commit to more serious impacts. These impacts are spelled out in great detail in the Intergovernmental Panel on Climate Change's Fourth Assessment Report (2007). We have also been guided by our conservation practitioners assessments of the anticipated effects of climate change on specific ecosystems, for example, the effects of sea level rise, which we are observing in the Florida Keys and North Carolina's Albermarle Peninsula; the bleaching effects of warmer ocean waters on coral reefs, which we are observing around the world; the development of a nearly year-round fire season in the Western United States because of changes in temperature and soil composition clearly attributed to climate change; bark beetle infestations across the pine forests of the West, attributable to warmer winters.

We would respectfully recommend that you direct the question of whether corporate members performed their own analyses to those members.

c. Did USCAP assess the economic impacts of its *Blueprint,* going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?

As stated above in answer to the preface to this question, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action.* The time horizon of our modeling analysis was 2015 to 2050; however, we have made reasonable inferences about 2012 prices from the 2015 and 2020 results. As noted, we also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency

(EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
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http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. How much will your *Blueprint* proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?

The cost of the USCAP proposal to an American family, like virtually any other proposal, will vary based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc…), geographical differences such as fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Similar in result to modeling by EPA and EIA, USCAP's economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies like that which we recommend in the *Blueprint*. USCAP currently estimates that the GDP impact of well designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 time frame. In other words, this amounts to less than a penny for every ten dollars of GDP. USCAP is continuing to refine its analyses. Nevertheless, over time, we believe the cost of inaction will greatly surpass the costs of action. As is stated in the *Blueprint*, we recommend Congress take actions to avoid extreme price volatility in the short-term and provide sufficient investment in technology transformation to ensure a smooth transition and contain costs to the economy, while assuring the overall environmental outcomes of the program. This can be done, for example, through strong cost-containment measures such as those recommended in the Blueprint.

a. If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?

As stated above in #4, USCAP believes that comprehensive cap-and-trade legislation will not have significant long-term impacts on an economy-wide basis. However, as is clearly stated in our *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. We

provide a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. **Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?**

Yes, USCAP analyzed the international political and trade implications of a US cap and trade scheme. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. USCAP believes that adoption of mandatory US climate policy is an essential precondition for a full and effective international framework. This approach does not mean that the US should act unilaterally. Rather, as stated in the first of our nine international principles, Congress should consider adopting provisions and criteria for linkage of the US cap-and-trade system to other existing and emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

a. **What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?**

The USCAP *Blueprint* recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that US businesses are not put at an undue competitive advantage in the global marketplace as a result of climate policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

6. **The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?**

USCAP's *Blueprint* states that the US must utilize responsibly our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede

commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO_2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

a. **How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?**

As explained in question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire US economy including manufacturers.

7. **Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?**

USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. We have determined that our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. A cap and trade program can provide the "demand pull" that is needed to stimulate demand for energy efficient and low-carbon technologies and practices in the land use sector, such as forest and agricultural conservation. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap and trade, we also recommend other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

a. **What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?**

The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of chlorofluorocarbons provide evidence that cap-and-trade is a technology-driving policy, while also limiting overall cost of the program. It is important to note that this market-oriented policy mechanism was designed in the United States and is now the principal instrument used in the European Union, as well as regional programs operating or under development in the US and Canada.

b. What incentives does cap and trade create for individual companies to perform high risk research and development?

Cap-and-trade creates a price on greenhouse gas emissions while seeking out the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

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Jeffry E. Sterba
Chairman
President & CEO

PNM Resources

March 25, 2009

The Honorable Henry A. Waxman
Chairman
Committee on Energy and Commerce
2125 Rayburn House Office Building
US House of Representatives
Washington, DC 20515

Dear Chairman Waxman:

Thank you for the opportunity to testify before the Committee on Energy and Commerce, January 15, 2009, on the US Climate Action Partnership's *Blueprint for Legislative Action.*

Attached are my answers to the written questions for the record directed to me from certain Members of the Committee.

Thank you for your leadership on the issue of climate change. I look forward to working with you in the future. For questions or additional information, please contact me or Jeanette Pablo, Director of Federal Affairs & Senior Climate Advisor for PNM Resources at 202-468-9688 or Jeanette.Pablo@PNMResources.com.

Sincerely,

Jeffry E. Sterba

The Hon. Gene Green

1. Does the Blueprint contain sufficient consumer protections, proper allowance distributions, and cost containment mechanisms to help keep electricity affordable while we transition to cleaner energy sources?

PNMR believes that the Blueprint – as a total package – contains more effective cost containment mechanisms than any other climate change proposal that achieves meaningful GHG emission reductions. Key features include an economy-wide program with cap and trade as its cornerstone, initial free allowance allocations to mitigate energy prices, banking and borrowing, multi-year compliance periods, an allowance reserve, and ample use of offsets.

The Honorable Joe Barton

1. Regarding membership, who in USCAP represents the interests of the small business community?

While USCAP does not include a representative of a small business, a very large number of small businesses supply services, materials and other key inputs to USCAP member companies. Further, USCAP companies greatly value small businesses and provide them with: power from electricity generators; fuel from oil and gas producers and refiners; chemicals, coatings and other products from chemical producers; equipment from manufacturers; vehicles from auto-makers; and services from these and the other USCAP entities. It is crucial for small businesses to engage in finding solutions to climate change and the impacts of climate protection policies on small businesses should be considered, especially during the transition to a low-carbon economy.

2. Regarding membership, who in USCAP represents the interests of end-use utility customers?

Some of the nation's largest end-use utility customers are members of USCAP, including large manufacturers. Further, some of these manufacturers make energy-efficient products geared toward large and small end-use utility customers. Additionally, USCAP's electric utilities understand that their company names are on all Americans' utility bills and are especially sensitive to the interests of end-use utility customers.

3. Regarding the USCAP analyses that went into the Blueprint, how were the economic impacts of this proposal evaluated?

USCAP utilized consultants to conduct its own independent modeling analysis and reviewed the economic analyses conducted by others, including the US government and other private sources. The USCAP analysis included, but was not limited to, different options regarding the stringency of greenhouse gas emission (GHG) targets and the relative impact of different offset levels. Policy options were further analyzed using alternative assumptions about the availability and costs of key technologies and the degree to which targeted funding for energy efficiency reduced energy demand.

3. a. Did any of the corporate members perform analyses on the impact to their respective companies and customers, and/or the economy at large?

PNMR has tracked the analyses of the major legislative proposals to address climate change, including the Bingaman-Specter and Lieberman-Warner bills. In addition, we have submitted an integrated generation resource plan to the New Mexico Public Regulation Commission which included analysis of the effects of CO2 costs of $8 - $40 per metric ton. In determining whether to endorse the Blueprint, an economy-wide program with a well-designed cap and trade component and robust cost containment mechanisms, we also have taken into consideration the fact that New Mexico is a participant in the Western Regional Climate Initiative, and the possible action by the Environmental Protection Agency in the wake of the Supreme Court decision in Massachusetts v. EPA.

3. b. In hearing testimony, USCAP maintained that despite the troubled economy this is the time to impose economy wide emissions caps.
/
3. b. i. What is the empirical and factual basis for making these sorts of statements?

There are several factual bases for passing climate protection legislation now during this economic downturn. The electric utility industry is expected to invest over $1 trillion in infrastructure investments in the US over the next 15 years. These investments have a significant lifespan; for example, a baseload generation plant can last over 60 years. Our industry needs a concrete price signal today to ensure that our investment decisions will not be rendered regulatorily obsolete and to justify investment in cleaner, greener infrastructure. In addition, a cap-and-trade program will stimulate technology and infrastructure spending. A cap implemented now would not take effect for several years (2012 for example) after our current economic downturn is expected to be reversed but the creation of a future price on carbon will provide a significant incentive for low carbon capital investment today. Further, impacts on the climate are being seen today and delay only increases the cost of adaptation and mitigation that we will face in the future.

A coherent energy policy that provides incentives for low-carbon technology and sets clear, long-term targets for reducing greenhouse gas emissions will give businesses the certainty they need to make intelligent investment decisions that will positively impact US competitiveness. Also by developing low carbon energy sources and using energy more efficiently, the US economy will become less vulnerable to volatility in conventional energy markets, and at the same time, the US will regain its role as a world leader in clean technology and can export—rather than import—climate solutions.

3. b. ii. Did USCAP perform its own internal or independent analyses?

USCAP worked with three highly respected economic consultants who utilized three different economic models to evaluate various policy options considered for inclusion in our *Blueprint*. One model was a computable general equilibrium (CGE) model called ADAGE. This model was separately used as part of EPA's own analysis of the S.2191 (the Lieberman-Warner legislation). We also utilized a macro energy model called NEMS. The NEMS model is the same model that EIA uses for its Annual Energy Outlook. Finally we utilized an electricity dispatch model called IPM. Again, this model is widely used and was specifically utilized by EPA in their analysis of S.2191. USCAP has worked with independent consultants and their economic models to make decisions about our recommendations and we continue to work with these consultants to further refine our own internal and independent analyses.

3. b. iii. Did any of the USCAP corporate members perform their own internal or independent analyses?

We have primarily relied on publicly available analyses, USCAP analyses, and the analysis we did for the NMPRC.

3. c. Did USCAP assess the economic impacts of its Blueprint, going out ten, twenty, and thirty years? If not, did USCAP rely upon any economic impact modeling at all? What are they and please provide us with those citations?

As stated above in answer to the chapeau of this question, USCAP has worked with consultants to conduct its own independent analysis of the policy options we considered when developing the *Blueprint for Legislative Action*. The time horizon of our modeling analysis was 2015 to 2050. As noted, we also evaluated various modeling results including the official models used by Congress and the Executive Branch, specifically the EPA and Energy Information Agency (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills (see sample citations below). USCAP is currently contracting additional modeling based on updated emission forecast information provided by the EIA for 2009.

Sample Citations include:
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf
http://www.epa.gov/climatechange/economics/pdfs/S1766_EPA_Analysis.pdf
http://www.epa.gov/climatechange/downloads/s1766analysispart1.pdf
http://www.epa.gov/climatechange/downloads/s280fullbrief.pdf
http://www.eia.doe.gov/oiaf/servicerpt/s2191/index.html
http://www.eia.doe.gov/oiaf/servicerpt/lcea/index.html

4. How much will your Blueprint proposal, if enacted, cost each American family to implement? How much will it cost the American economy in GDP growth and/or jobs?

The cost of our proposal on American families, like virtually any other proposal, will differ based on a series of factors, including each family's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...), geographical differences such as fossil-fuel use in electricity production, and how quickly new low carbon technology can be put into use (the faster and cheaper we can deploy low carbon technology the lower the cost to the entire economy). Similar in result to modeling by EPA and EIA, our economic modeling estimates that GDP will grow approximately 120% between 2015 and 2050 with or without climate policies like that which we recommend in the *Blueprint*. We currently estimate that the GDP impact of well designed comprehensive climate legislation will be in the hundredths of a percentage point over the 2015-2050 time frame. In other words, this amounts to less than a penny for every ten dollars of GDP. Again though, we are continuing to refine our analyses. Nevertheless, over time, we believe the cost of inaction will greatly surpass the costs of action. As is stated in the *Blueprint*, we recommend Congress take actions to avoid extreme price volatility in the short-term and provide sufficient investment in technology transformation to ensure a smooth transition and contain costs to the economy.

4. a. If you do not have estimates, will you please provide us what USCAP believes are the best estimates to these impacts, based on your proposals?

As stated above in #4, USCAP believes that comprehensive cap-and-trade legislation will not have significant long-term impacts on an economy-wide basis. However, as is clearly stated in our *Blueprint*, ensuring a smooth and orderly transition to a low-carbon economy is imperative. We provide a series of cost containment mechanisms to limit adverse economic impacts during this transition, the first of which is a cap-and-trade policy approach itself.

5. Did USCAP analyze the international political and trade implications of a unilateral U.S. cap and trade scheme?

Yes, USCAP analyzed the international political and trade implications of a US cap and trade scheme. The recommendations based upon USCAP's deliberations on this subject are articulated in the *Blueprint*'s "International Principles" section. It is important to note that USCAP believes that adoption of mandatory US climate policy is an essential precondition for a full and effective international framework. This approach does not mean that the US should act unilaterally. Rather, as stated in the first of our nine international principles that Congress should consider adopting provisions and criteria for linkage of the US cap-and-trade system to other existing and emerging cap-and-trade systems and to create incentives for developing countries to limit their GHG emissions.

5. a. What is the basis for the assumption that U.S. action to increase its carbon energy costs will not increase the incentives of other countries to take advantage of the United States?

The USCAP *Blueprint* recognizes that certain industries may face trade-related exposure, which must be addressed by Congress. Specifically, the *Blueprint* recommends the direct allocation of allowances and the use of auction revenues to ensure that US businesses are not put at an undue competitive advantage in the global marketplace as a result of climate policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such allocations could, for example, be based on net incremental costs (e.g., direct compliance costs and other direct and embedded allowance costs such as in energy pricing).

6. The United States has a 250 year supply of coal - the largest energy reserve inside the borders of any nation in the world. How does your proposal ensure that this reserve will not be squandered and American industry will not suffer through the resulting higher cost of coal and/or alternative fuel sources?

USCAP's *Blueprint* states that the US must utilize responsibly our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration (CCS). In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop a unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

6. a. How does your proposal ensure that we preserve the entire United States manufacturing base and that America's industry will not be driven offshore to countries with more relaxed carbon emission standards?

As explained in question #5 above, USCAP recommends specific measures such as allocation of allowances and/or auction revenue to trade-exposed industries. Further, USCAP's robust set of cost containment mechanisms is intended to limit high and volatile prices in a carbon market, which will protect the entire US economy including manufacturers.

7. Has USCAP evaluated whether cap and trade is a necessary requirement to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure? If so, would you share your evaluation with us?

USCAP has evaluated various policy options to foster technological innovation of sufficient scale to produce the enabling technologies necessary for transforming our energy infrastructure. We have determined that our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all US emissions are not included in the cap, the legislation should also include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors. In addition to cap and trade, we also recommend other complementary policies and measures to overcome other market imperfections and create incentives for rapid technology transformation.

7. a. What evidence do you have that cap and trade will promote the technological change necessary for global stabilization of carbon emissions?

The Acid Rain program in the Clean Air Act, the NOx SIP call, and the phase out of CFCs provide evidence that cap-and-trade is a technology-driving policy, while also limiting overall cost of the program. It is important to note that this policy mechanism was designed in the United States and is now the principle instrument used in the European Union, as well as regional programs operating or under development in the US and Canada. We recognize that the EU ETS has significant problems including issues in the various "phases," limited scope of coverage, excessive free allocation and a lack of complementary policies and measures; however, these design issues are not essential characteristics of cap and trade, and the Blueprint is designed to exclude them.

7. b. What incentives does cap and trade create for individual companies to perform high risk research and development?

Cap-and-trade creates a price on greenhouse gas emissions while seeking out the lowest cost reductions in the economy. The price signal alone may create the incentive for individual companies to perform high risk research and development. Under cap-and-trade, firms are rewarded for technological innovation because the more they can reduce emissions, the fewer allowances they have to purchase or conversely the more allowances they will be able to sell. However, there are well-known barriers to technological development and deployment that may lead the private sector to under-invest in high risk R&D. Therefore, USCAP recommends targeted technology policies in addition to a cap-and-trade program, including federal support for pre-commercial and emerging low and zero-emitting technologies.

The Honorable Fred Upton

1. In what year did the United States have the level of emissions you're seeking by the Year 2030? 2050?

It is important to note that comprehensive emissions data only exist to 1990. However, based on estimates of CO_2 emissions (not all greenhouse gases), the USCAP 2030 target is roughly equivalent to 1967 emission levels and the 2050 target is roughly 1907 emission levels. As is articulated in our *Blueprint*, these emissions levels can be achieved with modern technology and continued robust economic growth. To put these figures in perspective, according to the Energy Information Administration, the energy intensity of the US economy measured by the ratio of energy to gross domestic product fell by more than half between 1949 and 2004, while the nation's output of goods and services increased more than six-fold.

2. Why is there so little mention of Nuclear power in this blueprint? What role should Nuclear play? Can these reductions be met without Nuclear power?

The USCAP *Blueprint* is a consensus document with unanimous support from its members who have varying positions on nuclear power. The *Blueprint* outlines a cap-and-trade program that would incentivize the lowest cost abatement options, so nuclear energy could play an important role as we move toward a low-carbon economy. USCAP has not attempted to stipulate the precise energy mix nor the technology pathway necessary to achieve our climate goals; instead we believe that with appropriate policy and resulting market signals low carbon technology will be incentivized such that the US can meet its climate goals in the most cost effective manner.

2. a. Do you support the nuclear waste depository at Yucca Mountain?

USCAP does not have a position on a nuclear waste depository.

2. b. Recycling spent fuel?

USCAP does not have a position on recycling spent fuel.

3. China has surpassed the United States as the world's largest emitter of greenhouse gases. What is the global environmental impact if the US makes these reductions and China does not?

It is unclear what the exact global environmental impact would be if the US makes greenhouse gas reductions and China does not. Climate change presents a global problem that requires global solutions and international action is essential to meeting the climate challenge. Further, US leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. US action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

4. What is the economic impact on consumers? How much would energy prices increase as a result of this plan? Are costs passed on to customers?

The amount of cost pass-through to customers or consumers based on a cap-and-trade program, or other policy options that create a price for greenhouse gas emissions, would depend on factors including the relative ability of each sector of the economy to pass on such costs. To protect consumers, USCAP specifically recommends that allowances be allocated to local distribution companies (LDCs) such that consumer electricity impacts are minimized. Further USCAP also recommends that a cap and trade program have a variety of mechanisms to contain costs plus complementary policies for energy efficiency to reduce potential energy cost impacts on consumers

4. a. Did USCAP assess the economic impacts of its blueprint, going out ten, twenty, thirty years? If not, did you rely upon any economic impact modeling at all? What are they and would you provide us those citations?

USCAP has worked with consultants to conduct its own independent economic analysis of the policy options we considered when developing the *Blueprint for Legislative Action.* All of the models that USCAP used looked at impacts out to 2030 and one actually considered impacts out to 2050. We also evaluated various modeling results including the official models used by Congress and the Executive Branch specifically the EPA and Energy Information Administration (EIA) modeling of the Lieberman-Warner, Bingaman-Specter and other bills. USCAP is currently contracting additional modeling based on updated energy and emissions information provided by EIA for 2009

5. How climate legislation treats the manufacturing sector is a critical issue that's often overlooked. One specific concern of mine is how legislation avoids unintended consequences in the manufacturing sector - we can't pass a bill that creates huge disincentives against future growth in manufacturing. How would you propose to guard against a rapid rise in energy costs for the manufacturing sector?

Robust cost containment mechanisms, as outlined in the *Blueprint*, provide the first line of defense against a rapid rise in energy costs for the manufacturing sector. These cost containment provisions start with use of a cap-and-trade system which seeks to find the lowest cost greenhouse gas emissions reductions. Further, the *Blueprint* outlines key complementary measures to promote coal with carbon capture and storage, transportation, building efficiency and incentives for low carbon technology in sectors outside of the cap through the use of offsets, which will help ensure emissions reductions in areas where the allowance price from the cap and trade program alone may not be sufficient to spur technology deployment.

In some cases, as in energy-intensive industries with trade-exposed commodity products, US manufacturers will be particularly challenged by US climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. In such cases, there is risk of "leakage," by which we mean the shifting of production and GHG emissions from the US to these other countries. USCAP recommends using an adequate amount of allowance value to offset these competitive disadvantages, for instance basing such allocations on net increment costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity.

6. Currently, coal provides 50 percent of America's electricity, including 46% of the electricity supplied by LADWP, the utility serving Chairman Waxman's district, in 2006. Without it, electric bills would be much higher. Does your Blueprint support the idea that coal-fired electric generation is needed in order to provide affordable electricity for the American people? Is the Blueprint's desired outcome to make American's utility bills more expensive?

USCAP's *Blueprint* states that the US must responsibly utilize our domestic supplies of coal and ensure the nation has an adequate supply of electricity produced from low-carbon resources, including coal with carbon capture and sequestration. In order to ensure that our nation's coal reserves will not be squandered and American industry will not suffer, USCAP makes a series of recommendations specifically related to coal. These include, among other provisions, recommending Congress direct the Administration to develop and unified, comprehensive national strategy to address key legal and regulatory barriers, as well as any other issues that, if not addressed, could impede commercial-scale CCS deployment. We also recommend funding a national assessment of geologic storage of CO2 and funding for early grants to fully demonstrate the viability of commercial-scale CCS.

No, the *Blueprint's* desired outcome is not to make American's utility bills more expensive. Rather, the *Blueprint* is intended to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse greenhouse gas emissions to address climate change. This will require a fundamental shift in the way energy is produced, delivered, and consumed in the US and around the globe. During the transition to a low-carbon economy, USCAP recommends Congress provide allowances to utility local distribution companies (LDCs) to mitigate costs and advance demand reduction activities.

7. This past summer we had some of the highest gasoline prices in U.S. history. Folks had to choose between filling their tanks and filling their refrigerators. High gasoline prices hurt everyone, especially those with low incomes. High gasoline prices weaken the economy overall. Why would you support any measures - like cap and trade, for example - that would raise the price of gasoline?

The USCAP *Blueprint* envisions implementation of a cap-and-trade program that limits costs for the whole economy as our nation makes a fundamental shift in the way energy is produced, delivered, and consumed. Our internal analysis was consistent with that of others and found that a modest price on GHG emissions would have a very minor impact on the price of gasoline. The Congressional Budget Office (CBO) found for example, that a CO_2 price of $28 per metric ton would raise gas prices by about 25 cents per gallon. They note that this impact is far less than the increase consumers felt during recent years and that it resulted in little behavioral change (between 2003 and 2007, gas prices increased from $1.50 to more than $3.00 per gallon).[1] Because of the relatively minor impact on gasoline prices associated with a cap-and-trade program, USCAP recommends a series of complementary measures for transportation including fuel-related greenhouse gas (GHG) performance standards, vehicle-related GHG performance standards and reducing carbon-intensive travel, educating consumers, and improving transportation system efficiency.

[1] Congressional Budget Office Director's blog - http://cboblog.cbo.gov/?p=175

The Honorable John Shadegg

1. How many corporate jets does your company own?
PNM Resources does not own any corporate jets

2. How many miles do your jets fly each year?
N/A

3. How much will it cost to buy the necessary carbon credits for those jets to keep flying that many miles each year?
N/A

4. How much will it cost to buy the necessary carbon credits for you to travel each year?

As noted in the answer to Question 1, PNM Resources does not own any corporate jets. The Company also does not track the mileage flown by its employees on commercial airlines and has not evaluated the feasibility of purchasing carbon credits to offset the carbon emissions associated with these commercial flights.

5. Will you disclose all of this information in your company's annual report?

PNM Resources disclosed the following climate change information in our 2008 annual report:

Climate Change Issues

In May 2007, the U.S. Supreme Court held that the EPA has the authority to regulate GHG under the Clean Air Act. This decision, coupled with an increased focus in Congress on legislation to address climate change, has heightened the importance of this issue for the energy industry. Although there continues to be debate over the details and best design for state and federal programs, increased state and federal legislative and regulatory activities calling for regulation of GHG indicate that climate change protection legislation and regulation are likely in the future.

On July 30, 2008, EPA published the Greenhouse Gas Advanced Notice of Proposed Rulemaking. This notice represents EPA's next step in responding to the Supreme Court case. The notice identified, but did not choose among, options for GHG regulation and requested comments on the options presented. Absent Congressional action, in due course we would expect the EPA to adopt regulations relating to GHG.

In addition, several legislative initiatives are under consideration in Congress that would regulate GHG. These initiatives range from general limitations on GHG to the imposition of a so-called "cap and trade" system to the imposition of a tariff on GHG. It is unclear whether or when legislation will be passed, although the new administration and several leading members of Congress have expressed their intent to pass legislation as soon as practicable.

Approximately 82.6% of PNM's owned and leased generating capacity consists of coal or gas-fired generation that produces GHG. All of Optim Energy's owned generation produces GHG. Based on our current plans, we do not expect our output of GHG to increase significantly in the near-term. Many factors affect the amount of GHG,

including plant performance. For example, if PVNGS experienced prolonged outages, it may require PNM to depend on other power supply resources such as gas-fired generation, which could increase GHG. Because of our dependence on fossil-fueled generation, any legislation that imposes a limit or cost on GHG will impact the cost at which we produce electricity. While we expect to be entitled to recover that cost through our rates, the timing and outcome of proceedings for cost recovery is uncertain. In addition, to the extent that we recover any additional costs through rates, our customers may reduce their demand, relocate facilities to other areas with lower energy costs or take other actions that ultimately will adversely impact us.

Given the geographic location of our facilities and customers, we generally have not been exposed to the extreme weather events, , and other physical impacts commonly attributed to climate change, with the possible exception of drought conditions periodically, and we generally do not expect physical changes to be of material consequence to us in the near-term. Drought conditions in northwestern New Mexico could impact the availability of water for cooling the coal plants. Water shortage sharing agreements have been in place since 2003 although no shortage has been declared due to sufficient snow pack in the San Juan Basin. PNM also has a supplemental water contract in place with the Jicarilla Tribe to help address any water shortages from primary sources. The contract expires December 31, 2016.

In 2006, the Company became a founding member of the United States Climate Action Partnership ("USCAP"), a coalition currently consisting of 35 businesses and national environmental organizations calling on the federal government to enact national legislation to reduce GHG at the earliest practicable date. USCAP released *A Call To Action*, a set of principles and recommendations outlining a policy framework for federal climate protection legislation in January 2007, and released its *Blueprint for Legislative Action to the U.S. Congress and the Obama Administration* in December 2008. As a member of USCAP, it is the Company's position that a mandatory, economy-wide, market-driven approach that includes a cap and trade program, combined with other complementary state and federal policies, is the most cost effective and environmentally efficient means of addressing GHG reductions. The Company intends to continue working with USCAP, government agencies, and Congress to advocate for federal action to address this challenging environmental issue that is closely linked with the U.S. economy, energy supply, and energy security.

In 2008, PNMR's interests in generating plants, through PNM and Optim Energy, emitted approximately 7.9 million metric tons of carbon dioxide, the vast majority of its GHG. By comparison, the total GHG in the United States in 2006, the latest year for which the EPA has compiled this data, were approximately 7 billion metric tons, of which approximately 6 billion metric tons were carbon dioxide. Electricity generation accounted for approximately 2.3 billion metric tons of the carbon dioxide emissions.

PNM has several programs underway to mitigate its GHG, and thereby to reduce its climate change risk. These include the release of two RFPs in mid-2008 for additional renewable generation capacity and the launch of customer-owned solar generation programs. PNM expects to produce approximately 35,000 GWh of electricity from renewable resources over the next 19 years avoiding nearly 20 million metric tons of GHG. Also in 2008, PNM filed requests for approval to implement additional electric energy efficiency and load management programs with the NMPRC and expects approval this year. Over the next 19 years, PNM projects the expanded energy efficiency

and load management programs will provide the equivalent of approximately 15,000 GWh of electricity, which will avoid about 8.5 million metric tons of GHG. These estimates are subject to change given that it is difficult to compute estimated avoidance accurately because of the many variables that impact it, including changes in demand for electricity.

The Board is updated by management and regularly considers the issues around climate change, our GHG and potential financial consequences that might result from climate change and the possible regulation of GHG. In particular, our management periodically reports to the Board on all of the matters discussed in this section. On December 9, 2008, the Board established a new stand-alone committee, the Public Policy and Sustainability Committee, and approved a charter of its delegated responsibilities. This committee will review Company practices and procedures to assess the sustainability impacts of our operations and products on the environment. This committee will also have responsibility to review the Company's environmental management systems, monitor the implementation of the Company's corporate environmental policy, monitor the promotion of energy efficiency, and our use of renewable energy resources. The committee will advise the Board on a regular basis regarding the Company's activities and initiatives in these areas.

Pursuant to New Mexico law, each utility must submit an integrated resource plan to the NMPRC every three years to evaluate renewable energy, energy efficiency, load management, distributed generation and conventional supply-side resources on a consistent and comparable basis. The integrated resource plan is required to take into consideration risk and uncertainty of fuel supply, price volatility and costs of anticipated environmental regulations when evaluating resources options to meet supply needs of PNM's customers. The NMPRC issued an order in June 2007, requiring that New Mexico utilities factor a standardized cost of carbon emissions into their integrated resource plans using prices ranging between $8 and $40 per metric ton of CO_2 emitted and escalating these costs by 2.5% per year. Under the NMPRC order, each utility must analyze these standardized prices as projected operating costs in 2010 and thereafter. Reflecting the developing nature of this issue, the NMPRC order states that these prices may be changed in the future to account for additional information or changed circumstances. PNM is required, however, to use these prices for purposes of its integrated resource plan, and the prices may not reflect the costs that it ultimately will incur. PNM's integrated resource plan was filed with the NMPRC on September 16, 2008. The analysis showed that incorporation of the NMPRC required carbon emissions costs did not significantly change the dispatch of existing facilities nor the resource decisions regarding future facilities over the next 20 years. Much higher GHG costs than assumed in the NMPRC analysis are necessary to impact the dispatch of existing resources or future resource decisions. The primary consequence of GHG costs was an increase to generation portfolio costs.

In 2007, five western states (Arizona, California, New Mexico, Oregon and Washington) entered into an accord, called the Western Regional Climate Action Initiative (the "WCI"), to reduce GHG from automobiles and certain industries, including utilities. Since then, Montana, Utah, British Columbia, Manitoba, Ontario, and Quebec have joined as partners in the WCI. The WCI released design recommendations for elements of a regional cap and trade program on September 23, 2008, and has created several subcommittees to develop detailed implementation recommendations. The subcommittees are slated to complete their work in 2010. Under the WCI

recommendations, GHG from the electricity sector and fossil fuel consumption of the industrial and commercial sectors will be capped at then current levels and subject to regulation starting in 2012. Over time, producers will be required to reduce their GHG. Implementation of the design elements for GHG reductions will fall to each state and province. In New Mexico, PNM believes this will require new legislation and rulemaking. The Company expects to participate in the legislative and rulemaking processes in New Mexico and will not be able to fully assess the implications of New Mexico regulation of GHG until the legislative and rulemaking processes have progressed significantly.

In December 2008, New Energy Economy ("NEE"), a non-profit environmental advocacy organization, petitioned the New Mexico Environmental Improvement Board ("EIB") to amend existing regulations and adopt new regulations requiring a cap on GHG, including a statewide GHG limit of 25% below 1990 levels by 2020. The program provides for an absolute cap without the ability to trade capacity with others. The EIB ordered legal briefs to be filed on the issue of the EIB's authority to regulate GHG. The EIB has agreed to conduct a hearing in August 2009 on the NEE petition. We do not know whether, when or how the EIB will respond to the NEE petitions and have not determined what the impact would be on us.

Also in February 2009, legislation was introduced in the New Mexico legislature proposing to require the implementation by EIB of a cap and trade system designed to reduce GHG. We do not know whether, when or how the legislature will act upon the proposed legislation and have not determined what its impact would be on us.

The regulation of GHG is expected to have a material impact on the utility industry both in terms of increased costs associated with fossil fuels and increased opportunities associated with fuels other than fossil fuels, but it is premature to attempt to quantify the possible costs and other implications of these impacts on the Company.

6. Do you agree that any climate change proposal must include provisions protecting U.S. laborers, including those in your industry?

USCAP's *Blueprint* urges careful consideration for the competitiveness of US businesses, which employ laborers. Further, direct allocation of allowances and the uses of auction revenues should be used to train the workforce needed to facilitate a wide-scale transformation to low-carbon technologies and provide opportunities for all Americans in the new energy economy.

7. Has your company analyzed its costs under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?

PNM Resources is a member of the US Climate Action Partnership (USCAP) and Edison Electric Institute (EEI). Both organizations have endorsed economy-wide proposals with cap and trade as their cornerstone. To understand high-level potential cost impacts of climate change, PNMR has primarily relied on analyses of major cap and trade proposals by entities such as the Department of Energy's Energy Information Administration, the General Accounting Office, and Congressional Budget Office, as well as modeling performed by private entities such as ICF and the Nicholas Institute. PNM

Resources plans to conduct in-depth, company-specific cost analyses once more specificity about climate change legislation is developed.

8. Has your company done its cost-benefit analysis under the European Union's emission trading scheme or any other similar cap-and-trade program? If so, will you please provide that analysis to us? If not, do you plan to?

As mentioned in the answer to Question Number 5, PNM submitted an integrated, generation resource plan to the New Mexico Public Regulation Commission (NMPRC) last fall. The plan included analysis of the effects of CO_2 costs of $8 to $40 per metric ton, as mandated by the NMPRC, plus a higher CO_2 cost of $53 per metric ton. These costs were escalated by 2.5% per year after 2010. The results of the analysis showed that incorporation of these levels of carbon emissions costs did not significantly change the dispatch of existing facilities or the resource decisions regarding future facilities over the next 20 years. Much higher GHG costs than these are necessary to impact the dispatch of existing fossil-fueled resources or future resource decisions. The primary consequence of incorporating these CO_2 costs was an increase to generation portfolio costs. The plan may be found at http://www.pnm.com/regulatory/irp_electric.htm

9. Do you believe there will be less corruption and waste and more transparency and efficiency under a national cap-and-trade program than is apparent under the European Union's emission trading scheme? If so, what is the basis for your belief?

USCAP recommends establishment of a cap-and-trade system that will ensure a smooth and orderly transition to a low-carbon economy. Further, through the establishment of a carbon market board, USCAP recommends a market that is transparent and efficient. We should learn from the experiences of the EU's emission trading scheme, which has significant differences from that which USCAP is recommending.

10. Do you believe a national cap-and-trade program will cost less for the consumer than the European Union's emission trading scheme? If so, what is the basis for your belief?

The recommendations in the *Blueprint* were developed based on review and analysis of past regulatory programs, including lessons learned from the initial problems experienced in the EU ETS (including problems in the various "phases," limited scope of coverage, excessive free allocation and a lack of complementary policies and measures). The Blueprint applies these lessons, by specifically including robust cost containment measures such as banking and multiyear compliance that will result in allowance prices that are more stable and reasonable.

With regard to consumers in the U.S., the cost of our proposal or virtually any other proposal for each consumer to implement will differ based on a series of factors, including each consumer's consumption habits (travel, dwelling energy use and efficiency, type of vehicle, etc...) and geographical differences such as fossil-fuel use in electricity production.

11. Are you willing to absorb the overhead costs of a national cap-and-trade program or do you prefer that it be passed on to the consumer?

We have endorsed the distribution of free allocations of allowances to electricity consumers through the local distribution customers to offset costs associated with a climate change program. In addition, we have endorsed cost containment mechanisms including multi-year compliance, borrowing and banking, a reserve, and ample use of offsets. Our regulated utilities will have to pass on the costs of compliance with such a program, as with all environmental programs as they are cost-regulated. This is why we are very focused on managing the costs of this transition to minimize adverse consumer impact.

12. Will you commit to disclose in writing the change in your company's costs and revenues before and after the implementation of a national cap-and-trade program?

Once a climate change program is enacted and implemented, we will be able to calculate the exact impact on electricity prices and will release them accordingly.

13. If a "Buy American" policy were included in a national cap-and-trade program, how much would your revenues decrease?

PNM Resources has not performed an analysis of the impact of a "Buy American" policy on its supply chain; however, to the extent that such a policy would increase costs for items purchased by PNM, we would anticipate an impact.

14. What "green" products do you sell? What are your revenues for these products? What do you estimate will be your revenues for those products after the implementation of a national cap-and-trade program?

PNM currently offers several renewable energy programs, including: PNM Sky Blue - wind energy to retail electric customers at cost; small and large solar rooftop PV programs – PNM purchases the renewable energy credits produced by the PV systems to satisfy its renewable portfolio standard requirements; and, residential and commercial energy efficiency programs – primarily focused on rebates for energy efficient lighting, air conditioning and appliance replacement. PNM does not make a profit on these programs.

February 19, 2009

The Honorable Henry Waxman
Chairman
House Committee on Energy & Commerce
2125 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Waxman:

Attached is the response for the Record from The U.S. Climate Action Partnership (USCAP) to the request from Representative Dingell to compare the USCAP *Blueprint for Legislative Action* to the Dingell-Boucher Discussion Draft.

Representative Dingell made this request during the January 15, 2009, Energy & Commerce Committee Hearing titled "The U.S. Climate Action Partnership."

If you have any questions, please contact me by phone at 202-822-2000 or via email at mayres@lighthouseconsultinggrp.com.

Sincerely,

Merribel Ayres
USCAP Coordinator for Political Outreach

cc: The Honorable John Dingell, US House of Representatives

February 19, 2009

The Honorable John Dingell
U.S. House of Representatives
2328 Rayburn House Office Building
Washington, DC 20515

Dear Representative Dingell:

The U.S. Climate Action Partnership (USCAP) would like to thank you for your questions during the January 15, 2009, hearing in the Energy and Commerce Committee.

In particular, you asked USCAP to compare its *Blueprint for Legislative Action* to the *Discussion Draft* greenhouse gas (GHG) cap-and-trade bill you and Rep. Boucher released during the 110th Congress. Your discussion draft greatly advanced the debate on cap-and-trade, and includes many measures that align with USCAP's recommendations. We believe it will be helpful in the development of cap-and-trade legislation that can be enacted as soon as possible.

The *Blueprint* represents a marked evolution of USCAP positions from the 2007 *Call for Action*. Our recommendations are more specific than in the *Call for Action*. Moreover, the proposals in the *Blueprint* are linked and interdependent, and designed to show a possible path forward in the development of environmentally protective, economically sustainable and fair climate change legislation. Below is a narrative comparison of the BLA and the Discussion Draft. For ease of reference, also attached is a "side-by-side" chart.

Targets and Timetables

The Dingell-Boucher discussion draft (hereafter "the Draft") establishes the following targets and timetables for its cap-and-trade program:

- 105% of 2005 levels by 2012
- 98% of 2005 levels by 2020
- 58% of 2005 levels by 2030
- 20% of 2005 levels by 2050

Whereas the *Blueprint for Legislative Action* (hereafter "the BLA") calls for the following emissions reductions from cap-and-trade:

- 97%-102% of 2005 levels by 2012
- 80%-86% of 2005 levels by 2020
- 58% of 2005 levels by 2030
- 20% of 2005 levels by 2050

As can be seen, while the Draft and the BLA share essentially the same GHG reduction targets and timetables from 2030 – 2050, the BLA calls for faster reductions from 2012 – 2020. In addition, the Draft's targets apply to only covered, capped portions of the economy, whereas the BLA's reduction targets are intended to apply both to total U.S. emissions and to emissions from capped sectors. However, the economy-wide targets in the *Blueprint* will be achieved through reductions that will occur as a result of a combination of a cap-and-trade program that includes robust use of offsets and complementary policies and measures that are applied in specified circumstances, in some cases to capped sectors in other cases to uncapped sectors.

As mentioned, USCAP believes the BLA reduction schedule is feasible, provided it is combined with the allowance value distribution, offsets and other cost containment measures, and complementary policies and other measures described in the BLA. These measures, particularly the expanded use of offsets for compliance, in our view make it possible to achieve the more aggressive reduction schedule at manageable costs to the economy.

Distribution of Emissions Allowance Value

In assessing the Draft and the BLA provisions regarding distribution of emissions allowance value, we recognize that the Draft proposed four allocation options. Both the Draft and BLA allocate allowance value to local distribution companies (LDCs) for the benefit of ratepayers; the BLA recommends allocating a significant portion (e.g., 40%) of emission allowance value directly to LDCs for the benefit of electricity and natural gas consumers. The Draft has four options for allocating this percentage and specifies electricity LDCs. Of the allocations to the power sector, the BLA, like the Draft, would allocate a relatively small amount directly to merchant coal. While the Draft contains various schedules for reducing or phasing out these allocations, the BLA goal is to have free private sector allocations phase-out as low-carbon technologies become the investment alternative

The BLA, unlike the Draft, does not specify exactly how much allowance value should be distributed to other entities and purposes, nor does it specify exactly how many allowances should be distributed for free, though it does propound as a principle that the allocations should not create undue economic gain or harm, and contains more specific recommendations regarding allocations to energy intensive industries subject to international competition.

Further, the BLA recommends that the free distribution of allowances should be phased out over time, whereas the Draft reserves a portion of allowances for allocation through 2025, the last year for which it specifies an allocation schedule. Both the BLA and the Draft support using

allowance value to support clean technology, industrial and worker transition, adaptation, international obligations, consumers, and supplemental emissions reductions. The Draft would use allowance value for deficit reduction, which the BLA does not mention.

The BLA is more expansive than the Draft in providing credit for early action in reducing GHGs, recommending that allowances be given to holders of state and private program allowances and offsets, as well as other verifiable reductions. The Draft would give allowances only to holders of state and private program allowances and offsets.

Cost Containment

The BLA would allow more offsets than the Draft—the BLA proposes a two billion ton system-wide limit initially, with no more than 1.5 billion tons from either international or domestic offsets. The BLA provides for a Carbon Market Board (CMB) with discretion to increase the number of offsets from 2 to 3 billion ton level if needed to keep allowance prices at levels necessary to avoid economic harm. However, the Draft would only allow offsets to be used up to 5% of each entity's compliance at the start of the program, increasing to up to 35% post-2025, with separate restrictions for international and domestic offsets. This would result in a cumulative offset limit through 2050 of between 78 and 117 billion tons in the BLA, versus around 35 billion tons in the Draft. The Draft and the BLA contain the same requirements for offset sources and quality.

Both the Draft and the BLA would allow unlimited banking of emissions allowances. Although the BLA does not explicitly mention firm-level borrowing as the Draft does, the BLA does call for "effective multi-year compliance periods," which could be a form of short-term firm-level borrowing.

Both the Draft and the BLA propose setting a floor price for allowance auctions. However, the BLA recommends a price of approximately $10 per ton at the outset of the program, whereas the Draft would allow the EPA to set the price.

Both the Draft and the BLA would use a strategic offset and allowance reserve pool as a way to mitigate price spikes and sustained high prices in the carbon market. Unlike the Draft, however, which relies solely on allowances borrowed from the future to initially capitalize this reserve pool and replenishes the pool in the future with offsets, the BLA does the opposite and initially capitalizes the reserve pool with program based offsets purchased and certified by the federal government, as well as offsets that are part of government-to-government bi-lateral agreements and avoided deforestation. Additionally, the BLA indicates that borrowed allowances should only be used as a measure of last resort if, for some reason, there are not enough offsets in the pool to ensure a reasonable price for carbon.

Both the Draft and the BLA propose that offsets or allowances from the reserve pool should be auctioned when carbon prices reach a pre-determined price. The Draft sets a provisional range

of beginning reserve prices for these auctions, $20-$30/ton, whereas the BLA gives a proposed Carbon Market Board (CMB) the authority to set the price at levels needed to avoid undue economic harm. The Draft limits the number of allowances that can be sold from the Strategic Reserve each year, and makes no provisions regarding limits for the sale of international offset credits from forest carbon activities. The BLA similarly calls for, but does not specify, limits on the amount of allowances that can be placed in the strategic reserve and that can be sold in a one or several year period. The BLA, however, departs from the Draft by expressly calling for a "very large" number of offsets in the strategic reserve, calling for the reserve pool to be filled and replenished as needed, and provides no limits on the total number of allowances plus offsets that can be released from the strategic reserve to limit price spikes in a given year. In addition, the BLA allows private individuals to also hold and trade registered and certified forest carbon tons that can be used for compliance whenever the CMB's threshold price for releasing offsets from the strategic reserve has been reached. In effect, this creates a private reserve pool to further aid in preventing excessively high prices.

The CMB recommended in the BLA would have limited powers to set reserve auction prices, adjust the number of offsets allowed for compliance, and to establish and maintain the reserve pool to limit detrimental effects from excessively high allowance prices on the economy. The Draft has detailed provisions covering the operation of the carbon market under the purview of FERC, but does not create a similar entity.

Complementary Policies

The Draft and the BLA contain a number of complementary policies to reduce GHG emissions outside of the cap-and-trade system. The provisions for technology research, development, and deployment support, as well as for buildings and energy efficiency are largely similar.

With regard to the complementary measures for transportation, both the BLA and the Draft include provisions for a GHG intensity-based performance standard for transportation fuels – referred to as a Low Carbon Fuel Standard in the Draft. The BLA recommends that the existing Renewable Fuel Standard should cease to apply once a GHG performance standard is in place. The BLA includes provisions for reducing carbon intensive travel, educating consumers and improving the overall efficiency of the transportation system – as well as calling for a periodic assessment of the transportation sector GHG management – which are either more extensive than, or not included in the Draft.

With regard to complementary policies for coal technology, the BLA and the Draft both recognize that potential barriers to widespread deployment of CCS need to be addressed in the near-term. Like the Draft, the BLA includes a tranche system of financial incentives for early deployment of CCS and language encouraging federal agencies to address the regulatory issues regarding CCS. Both the Draft and BLA include provisions to ensure that new coal-fired facilities permitted after 2008 will employ technology to capture and store carbon emissions. The Draft proposes that compliance with CO_2 emission standards would begin in 2025. The BLA proposes

that if certain regulatory, financial and technical milestones are met then compliance with CO_2 emission standards should begin with initial operation of units permitted after 2014, and that units permitted between 2009 and 2015 should be required to comply after a specified amount of capacity with CCS is in operation.

Emissions Tracking and Regulation

For emissions tracking and regulation, the Draft and the BLA are largely identical. The Dingell-Boucher Bill contains specific provisions for hydrofluorocarbon (HFC) gases used as products. While the BLA is silent on the specific treatment of (HFCs) CAP members agree HFCs should be controlled for their global warming potential. HFC process emissions would be regulated as a facility emission under the BLA.

The Draft explicitly modifies the Clean Air Act and integrates its cap-and-trade system into the Act. The BLA, by contrast, make no such explicit provisions, but simply holds that State, regional and federal programs can and must be complementary, that there should be one unified GHG market, and that compliance costs should be minimized.

International Cooperation

Both the Draft and the BLA contain provisions concerning international cooperation with developing countries. The BLA recommends that allowance value may be used to support international cooperation and actions to reduce emissions by developing countries through technology transfer, avoided deforestation and adaptation. The BLA also recommends providing incentives for developing country action, including preferential treatment in U.S. GHG markets, technology development and deployment. The Draft does permit allowance value to be used for international obligations, such as assistance to developing countries, but in our opinion, the BLA calls for greater engagement.

The BLA calls for any measures to combat leakage to be consistent with WTO rules and for allowance value used to compensate energy-intensive, trade-exposed industries. The Draft would impose an international reserve allowance requirement on certain goods from countries not taking equivalent abatement measures to the U.S. The Draft also institutes output-based allowance allocation to all industrial sources. The congruence of the Draft's measures with the BLA recommendations depends on whether the international reserve allowance program or one similar to it, is ultimately found to be consistent with the WTO.

The BLA recommends that some allowance value be directed to help developing countries adapt to the physical impacts of global climate change. The Draft does not specifically direct funds to international adaptation, though allowance value directed to international obligations could, depending on treaty law, include international adaptation.

The Draft and the BLA both include calls for U.S. engagement within the United Nations Framework Convention on Climate Change, although the Draft is more specific in its recommendations. The Draft also encourages other countries with GHG reduction commitments to adopt adjustments similar to the reserve allowance program, while the BLA does not include this recommendation.

The Draft and the BLA also include similar support for reducing emissions from deforestation, although the BLA's recommendations are less specific than provisions in the Draft.

We hope you find this statement helpful and look forward to working with you to advance a comprehensive climate policy.

If you have any questions, please contact Merribel Ayres, USCAP Coordinator for Political Outreach, at 202-822-2000 or mayres@lighthouseconsultinggrp.com.

Sincerely,

United States Climate Action Partnership

Alcoa
Boston Scientific Corporation
BP America Inc.
Caterpillar Inc.
The Chrysler Group
ConocoPhillips
Deere & Company
The Dow Chemical Company
Duke Energy
DuPont
Environmental Defense Fund
Exelon Corporation
Ford Motor Company
FPL Group, Inc.
General Electric
General Motors Corp.
Johnson & Johnson
Marsh, Inc.
Natural Resources Defense Council
The Nature Conservancy
NRG Energy, Inc.
PepsiCo
Pew Center on Global Climate Change
PG&E Corporation
PNM Resources
Rio Tinto
Shell Oil Company
Siemens Corporation
World Resources Institute
Xerox Corporation

Side-by-side comparison of the Dingell-Boucher *Discussion Draft* and USCAP's *Blueprint for Legislative Action*

Program Category	Design Element	D-B *Discussion Draft*	*Blueprint*	Comparison
Targets	Targets and Timetables for cap and trade program	Absolute emissions caps specified in the draft, representing: • 105% of 2005 levels by 2012; • 95% of 2005 levels by 2020; • 58% of 2005 levels by 2030; • 20% of 2005 levels by 20500	• 97%-102% of 2005 levels by 2012; • 80%-85% of 2005 levels by 2020; • 58% of 2005 levels by 2030; • 20% of 2005 levels by 2050	USCAP targets are tighter before 2030 and identical from 2030 onward. D-B more closely resembled USCAP 2007 *Call For Action*.
Targets	Targets and timetables for total US emissions	None, targets only apply to capped portions	Same as cap and trade program targets above	Different
Emissions tracking and regulation	National GHG registry	Yes, mandatory reporting no later than 2011	Yes (year not specified)	Same
Emissions tracking and regulation	Compliance start date	2012 with some sources phased in later	As soon as practically possible, 2012	Same
Emissions tracking and regulation	Coverage and point of regulation	• Large stationary sources emitting >25K tonnes per year (and other specified sources) • Carbon content of all petroleum fuels produced or imported (refineries) • Carbon content of residential and commercial natural gas sales (LDCs) • Producers of F-gases	• Large stationary sources emitting >25K tonnes per year (10K for new sources) • Carbon content of all petroleum fuels produced or imported (refineries) • Carbon content of residential and commercial natural gas sales (LDCs) • "Other covered GHG emissions" aside from CO2 mentioned but not defined	Broadly similar
Emissions tracking and regulation	Periodic program assessments	yes	yes	Same
Emissions tracking and regulation	Treatment of non-emissive use of feedstocks	Allowance allocation provided for covered non-emissive use of feedstocks	Cap and trade program should not cover non-emissive use of fossil energy	Similar, both avoid a price signal on non-emissive uses of fossil energy just in different ways

Program Category	Design Element	D-B Discussion Draft	Blueprint	Comparison
Emissions tracking and regulation	HFC regulations	Separate program capping consumption and production	HFC Process emissions regulated. HFC products envisioned as regulated for Global Warming Potential (GWP) but no specific provisions.	Different
Allowance value	Allowance value distribution to the electric power sector	* Allocates allowances to ELDCs for the benefit of ratepayers * Amounts vary based on options * Some allowances go directly to merchant coal	* Allocates allowance value to LDCs for the benefit of electricity and natural gas consumers "significant portion" of allowances (e.g. 40%) * Some allowances go directly to merchant coal	Similar, though no alternative options or schedules; initial amounts and distribution methods may vary
Allowance value	Allowance value distribution to others	* Amounts and recipients vary based on options * Shift to 100% rebate to taxpayers in 2028 * Supports clean technology, industrial and worker transition, adaptation, international obligations, consumers, supplemental reductions and deficit reduction	* No amounts specified * Some allowances should be distributed for free moving towards a full auction * Supports clean technology, industrial and worker transition, adaptation, international obligations, consumers, supplemental reductions, infrastructure investment, and direct rebate to households	Some similarities, no alternative options, key features may differ
Allowance value	Credit for early action	* Allowances from under the cap given to holders of state and private program allowances and offsets	* Allowances from under the cap given to holders of state and private program allowances and offsets as well as other verifiable reductions	USCAP is more expansive
Interaction with existing programs	Interaction with state/regional programs	* Preempts state cap and trade programs * Limits state authority for setting regulatory standards * Options for allowing or preempting state authority on GHG standards for vehicles	* State, regional and federal programs can and must be complementary * One unified GHG market * Minimize compliance costs Emphasizes state role in transportation, buildings, and public utility regulation	USCAP less specific
Interaction with existing programs	Interaction with Clean Air Act	* Clarifies EPA authority on GHG regulations * Requires GHG performance standards for certain sources and not others	* USCAP does not directly address CAA	Different

Program Category	Design Element	D-B *Discussion Draft*	*Blueprint*	Comparison
Cost containment	Compliance periods	• One year but effectively multi-year with unlimited next year borrowing	• Multi-year	Similar, but no explicit borrowing in USCAP
Cost containment	Offset sources and quality requirements	• Any source outside the cap • Domestic and international • Real, additional, verifiable, permanent, enforceable	• Any source outside the cap • Domestic and international • Real, additional, verifiable, permanent, enforceable	Same
Cost containment	Annual offset limits	• Up to 2% of compliance to start increasing to up to 35% post-2025 (separate restrictions for international and domestic)	• 2 billion tonne system wide limit initially with authority to increase up to 3 billion tonnes (1.5 billion tonne limit on both international and domestic)	USCAP allows more offsets on an annual basis
Cost containment	Cumulative offset limits over the life of the program (through 2050)	• ~35 billion tonnes	• 78-117 billion tonnes	USCAP allows more offsets over the life of the program
Cost containment	Banking and borrowing	• Unlimited banking • Unlimited next year borrowing • Firm level borrowing up to 10% of compliance obligation over 5 years at 8% interest	• Unlimited banking • Does not specifically speak to firm level borrowing • Multi-year commitment period	USCAP same on banking less explicit on borrowing
Cost containment	Auction reserve price	• Allows EPA to set price	• ~$10/ton, initially	Similar, USCAP more specific
Cost containment	Strategic offset and allowance reserve	• Reserve initiated with 2.7 billion allowances taken from under the cap • Sale of allowances funds forest and projects that replenish reserve • Auction reserve price set between $20 and $30	• Reserve to be stocked with offset credits as well as allowances taken from under the cap • Offset credits to be used first, with borrowed allowances as a last resort • Carbon Market Board given the authority to set the auction reserve price, determine the size of reserve pool, and control the number of offsets and allowances to be released if needed	Similar, USCAP less specific
Cost containment	Carbon Market Board	None	• Oversees strategic offset and allowance reserve and oversees auction of reserve tons	Different

Program Category	Design Element	D-B Discussion Draft	Blueprint	Comparison
Complementary policies	Technology research, development and deployment support	• Allowance value directed towards research development and deployment	• Allowance value directed towards research development and deployment	Same
Complementary policies	Measures for coal	• All electric generating units permitted after 2008 must capture and sequester 60% of CO2 by 2025 • Direct payments for CO2 capture and storage • Funding for CCS RD&D • CO2 storage site certification standards	• No free allowances allocated to new facilities permitted after 2008 • New facilities permitted after Jan 1, 2010 subject to a performance standard of 1100 lbs CO2 per MWh, standard decreases 500 lbs CO2/MWh for facilities permitted after Jan 1, 2020 • Permit requirement for facilities permitted after Jan 1, 2009, contingent upon commercialization of CCS • Direct payments for CO2 capture and storage • Funding for CCS RD&D • EPA and other agencies charged with promulgating regulations for CO2 transport and storage	Similar. USCAP more stringent.
Complementary policies	Measures for transportation	• Allowance value for GHG related land-use planning • Low carbon fuel standard development • RD&D support • Clarification of EPA, CA and DOT authority on fuel economy • Set-aside for other mobile sources (e.g. aircraft)	• GHG performance standard for the entire fuel pool • Existing RFS ceases to apply at the time that the GHG fuel performance standard takes effect • Coordinated transportation sector GHG management policy • RD&D support • Call for measures in mobile conversions and travel demand	B-A stronger, particularly in the sector wide GHG management policy and also in the call for mobile conversions and travel demand
Complementary policies	Measures for energy efficiency	• RD&D support • Increase building code standards • Support for state efficiency programs	• RD&D support • Increasing building and appliance standards • Support for state efficiency programs • Align tax and regulatory policies to reward EE	Similar

Program Category	Design Element	D-B *Discussion Draft*	*Blueprint*	Comparison
International components	Linking of emissions trading systems	• Unlimited use of allowances from approved, comparable trading systems for compliance • Allows for use of international offsets	• Adopt criteria and provisions within a domestic program that would facilitate linking to other systems	Similar, USCAP less specific
International components	Developing country engagement	• Allowance value may be used for international obligations such as assistance to developing countries	• Allowance value may be used to support international cooperation and actions to reduce emissions by developing countries through tech transfer, avoided deforestation and adaptation • Incentives for developing country action including preferential treatment in US GHG markets, technology development and deployment	Similar, USCAP calls for greater engagement
International components	Competitiveness and emissions leakage	• Border tax adjustment placed on certain goods from countries not taking equivalent action relative to the US • Output based allowance allocation to all industrial sources with some generous allocation to energy intensive sources or some allocation for actions	• Any measures to combat leakage should be consistent with WTO rules • Allowance value used to compensate energy intensive trade exposed industries	Different depending on border tax consistency with WTO
International components	Adaptation support	• None, allocation value directed to domestic adaptation only • Some allocation value could go to international obligations which could include international adaptation	• Some allocation value should be directed to helping developing countries adapt	Different
International components	Multilateral agreements and the UNFCCC	• Calls for constructive engagement within the UNFCCC to get all major emitters to contribute equitably to global GHG reductions • Encourage other countries with GHG reduction commitments to adopt border tax adjustments	• Calls for engagement within the UNFCCC as the primary forum for including other factors, binding and effective multilateral agreement • Create incentives for developing countries to reduce emissions • Reduce deforestation	Similar, USCAP less specific

Program Category	Design Element	D-B Discussion Draft	Blueprint	Comparison
International components	REDD support	• Strategic reserve includes forest carbon tonnes from avoided tropical deforestation • Forest carbon tonnes eligible as international offset credits • Could also be supported under international Obligation allowance pool	• Strategic reserve includes forest carbon tonnes from avoided tropical deforestation • Forest carbon tonnes also eligible as international offset credits • Allowance value should support international commitments such as reduced deforestation programs	Same