CLIMATE CHANGE: COMPETITIVENESS CONCERNS AND PROSPECTS FOR ENGAGING DEVELOPING COUNTRIES

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND AIR QUALITY

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

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CLIMATE CHANGE: COMPETITIVENESS CONCERNS AND PROSPECTS FOR ENGAGING DEVELOPING COUNTRIES

WEDNESDAY, MARCH 5, 2008

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

The subcommittee met, pursuant to call, at 10:40 a.m., in room 2322 of the Rayburn House Office Building, Hon. Rick Boucher (chairman) presiding.

Members present: Representatives Boucher, Butterfield, Melancon, Barrow, Markey, Wynn, Doyle, Harman, Inslee, Baldwin, Matheson, Dingell (ex officio), Upton, Hall, Whitfield, Shimkus, Shadegg, Bono Mack, Walden, Burgess, and Barton (ex officio).

Staff present: Sue Sheridan, Bruce Harris, Laura Vaught, Chris Treanor, Rachel Bleshman, Alex Haurek, Erin Bzymek, David McCarthy, Kurt Bilas, Tom Hassenboehler, Garrett Golding, and Michael Beckerman.

OPENING STATEMENT OF HON. RICK BOUCHER, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF VIRGINIA

Mr. BOUCHER [presiding]. The subcommittee will come to order. In preparation for the drafting in the coming months of a mandatory control program for greenhouse gases, Chairman Dingell and I have been posting on the Committee's Web site a series of position papers. These papers address in detail the essential elements of a cap-and-trade control program.

Our purpose in exploring these issues in depth is to stimulate discussion and responses from interested parties as a key step in a consensus building for the legislation to come. Our goal is to develop a measure that will enjoy bi-partisan support, that industry will support, and that will enjoy support from environmental advocates.

In my view, the only legislation which can pass the Congress and be signed into law will be a measure that enjoys such a broad consensus.

And in determining to construct a consensus-supported measure, let me note that this Committee is following its time-honored and successful tradition of drafting and passing clean air legislation. The three major clean air enactments passed in 1970, in 1977, and in 1990, originated in this committee, were bipartisan, were sup-

ported both by industry and by environmental advocates, and passed both Houses of Congress with large, bi-partisan majorities. Two of those bills were signed into law by Republican presidents. One of those bills was signed into law by a Democratic president.

In view of the reality that an economy-wide cap-and-trade program for greenhouse gas control will be far more complex than any of the three preceding major clean air enactments and potentially have significant implications for the economy beyond any of those three previous enactments, there is an even greater need to take our time, to build consensus, and to ensure that our measure will not cause economic disruption. And that is what we intend to do.

That said, it is our goal to move a cap-and-trade measure through the Subcommittee, through the Full Committee, to have it be considered by and pass the House in time to be conferenced with the Senate and presented to the President prior to the close of congressional session, and we are working to meet that timetable.

The discussions which our position papers are stimulating will help to build the essential consensus that is necessary in order to achieve that result.

Before we turn our attention to bill drafting, we will release additional position papers, and the Subcommittee will conduct additional hearings on some of them, focusing on the alternatives before us that address key elements of a cap-and-trade control measure.

This morning's hearing focuses on the competitiveness of American industry following the adoption of a U.S. greenhouse gas control program. It explores ways that our legislation imposing controls can ensure maximum participation from developing countries in a global effort to address greenhouse gas emissions.

In my view, the inclusion of a provision in our legislation which ensures developing country participation is essential to achieving that goal. We are all mindful of the 98 to 0 advisory vote in the U.S. Senate by which the Senate expressed disapproval of the Kyoto Treaty in the 1990s, and the primary reason that was announced by Senators for casting that rare, unanimous vote on a key, controversial measure was the absence of any imposition of responsibility in Kyoto Treaty on developing countries to reduce greenhouse gas emissions. We will not have such an omission in the legislation we move through this Subcommittee.

Three leading proposals have been advanced in order to achieve our goals, each of which has been examined in our position paper on the subject; and this morning I want to say thank you to American Electric Power and the IBEW, the steel industry, Environmental Defense, and others for advancing these proposals for public discussion. They are thoughtful suggestions, and we will focus on those during our hearing today.

As we examine these alternative approaches in today's hearing, we hope to focus on these core questions, and I hope that our witnesses in their prepared testimony and their oral statements perhaps in answer to questions will perhaps enlighten us on these measures. First of all, which proposal is more likely to lead to developing country emission reduction for greenhouse gases? Secondly, which is more likely to level the playing field and neutralize any competitive advantage the legislation might unintentionally

create for industry in developing countries? And third, which is more likely to withstand scrutiny under trade treaties to which the U.S. is a party? These are the core concerns that we hope to address during today's hearing.

I want to say thank you to each of our witnesses for taking some time to join us here. We will turn to their testimony shortly, but before doing that, we will welcome statements from other members of the Subcommittee.

Mr. BOUCHER. I would first like to recognize the ranking Republican member of our Subcommittee, the gentleman from Michigan, Mr. Upton.

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

Mr. UPTON. Well, I would like to thank you and Chairman Dingell, my friends, certainly for holding this hearing on your second climate change white paper, Competitiveness Concerns and Prospects for Engaging Developing Countries. This white paper does indeed hit a critical aspect of the climate change debate, and it will have a substantial impact on how we proceed with legislation. I welcome all of the witnesses, and look forward to their testimony this morning.

Before we begin, I would like to submit for the record a letter from Ranking Member Barton and then Ranking Member Hastert to Vatslav Kalus along with his reply regarding global warming, and I would like to quote President Kalus' response to the question of the moral obligation of the developing countries to the developing countries, and this is what he said. "The moral obligation of the developing countries to the developing countries is to create such an environment which guarantees free exchange of goods, services, and capital flows, enables utilization of comparative advantages of individual countries and thus stimulates economic development of the less-developed countries. Artificial administration barriers limits and regulations imposed by developed countries, discriminating against the developing world, affects its economic growth and prolonged poverty in underdevelopment." Climate change is indeed a serious issue and one that this Congress must address. But climate policy must also mirror sound, responsible energy policy because it is technology rather than government mandates that foster environment benefit.

I said that I am not a fan of cap-and-trade schemes currently being circulated because they could indeed harm the economy and send jobs overseas, and I would like to take this opportunity to associate myself with the Chamber of Commerce's Six Core Climate Change Principles outlined in their testimony today. One, preservation of American jobs in a competitiveness of U.S. industry. Second, promotion of accelerated development and deployment of greenhouse gas reduction technology. Third, the reduction of barriers to the development of climate-friendly energy sources. Four, maximum flexibility. Five, international economy-wide solutions with minimal impact on industry and regional economies which developing nations, and last, promotion of energy conservation and efficiency.

Unlike other environmental issues that we have tackled over the years, climate change is global and requires a totally new playbook. Even if the U.S. devised the strictest regime to reduce greenhouse gases, these reductions could be dwarfed and negated by emission increases coming from the developing world. We cannot place enough emphasis on the fact that this is a global issue requiring a global solution. Energy demand is going to increase rapidly in the next couple of decades. In fact, 74 percent of the increase in global energy use will come from developing countries. According to a 2007 report by the International Energy Agency, developing countries will account for more than three-quarters of the increase in global CO_2 emissions between 2005 and 2030.

I am pleased that this white paper recognizes that we cannot act without China and India's full support and their participation. China and India have hundreds of millions of citizens living in abject poverty, getting by day-to-day without electricity. We have heard testimony before this Committee that China and India's first priority will be to raise the standard of living for their people. When you are talking about populations living on less than $1 a day, burning cow dung for heat, reducing CO_2 emissions perhaps is not their top priority. How can we force action on a developing country that is still generations away perhaps from reaching the standards of living that we have enjoyed for many years? The proposal outlined in this white paper will have real consequences on American jobs and industry. Trade sanctions are not always the best tool to compel greenhouse gas reductions, and even if these proposals prove to be WTO compliant, they could prove detrimental to our already battered manufacturing sector. WTO compliance is important certainly, but retaliation will occur before even the WTO has a chance to rule on climate-related trade sanctions. No matter how well we write the regulations or how clever we are within the WTO framework, unwilling partners will often find some ways around those requirements. According to the World Bank, by removing tariffs and other barriers to green technologies, trade could increase by an additional 7 to 14 percent annually. Increasing our green technology expertise will also significantly reduce greenhouse gas emissions in the developing world.

Complicating matters, many of my colleagues on both sides of the aisle view climate change and energy policies as two separate issues. Well, I do not believe they are. I believe we must address climate change through a global framework that focuses on innovation and technology and efficiency, rather than a government mandate. We should pay more attention to exporting American ingenuity and green technologies to developing the world rather than perhaps setting up a regulatory framework that will only increase trade barriers.

I look forward to this ongoing discussion and working in a constructive manner with members on both sides of the aisle, and I yield back my time.

Mr. BOUCHER. Thank you very much, Mr. Upton. I am pleased at this time to recognize for 5 minutes the Chairman of the Full Committee, the gentleman from Michigan, Mr. Dingell.

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

Mr. DINGELL. Mr. Chairman, I thank you for the recognition. I want to commend you for the superb leadership you have been showing in leading us forward to a resolution of the problems we confront on climate change and global warming. I particularly want to commend you for this hearing, and I look forward to working with you and the other outstanding members of this Subcommittee on both sides of the aisle on drafting legislation limiting the U.S. emissions of greenhouse gases through an economy-wide cap-and-trade system.

I am pleased to welcome Mr. Morris and our old friend, Jim Slattery, as a part of the distinguished panel before us. Mr. Slattery, as you will recall, was a distinguished member of this Committee and a friend of many of us here in this room, and I would like to welcome him back. I also am pleased to note that this Subcommittee and Committee have now issued three white papers that focus on design of a cap-and-trade program on, among other things, international competitiveness, which is most important here. I would note why these white papers are issued, which some of the folks around here seem to have a misunderstanding of our purposes—to see to it that we elicit comments and responsible discussion of the issues associated with cap-and-trade and the other questions that this Committee must address with regard to global warming and climate change, I would note that these papers have most recently focused on the roles of different levels of government in carrying out such programs. Today's hearing is the first on these white papers which are intended to lay out our initial conclusions on various topics and, as importantly, to solicit comments from other members and from stakeholders and ordinary citizens who might be concerned.

The subject of today's hearing is two-pronged. First, how does the adoption of cap-and-trade legislation to limit U.S. emissions of greenhouse gases affect the competitiveness of U.S. goods sold at international trade? Second, what are the best legislative alternatives or combination of tools for mitigating negative effects? We look forward to the views of the witnesses on these important matters. In the white paper on international competitiveness released in late January, three main concerns were raised. First, absent corresponding action by developing countries, the adoption of limits on greenhouse gas emissions by the U.S. and other developed countries will not achieve the goal of protecting the global environment. Second, if the U.S. were to cap its own emissions without corresponding actions by developing actions with whom we compete internationally, the relative cost to American products would increase and would cause U.S. jobs and industry to migrate to other nations that do not limit their emissions. Third, past debate on climate change suggests that the Congress would be unlikely to adopt legislation committing the United States to limiting its own greenhouse gas emissions in the absence of assurances that developing countries will take similar action. And I would note that the rejection of the Kyoto Treaty in the Senate and in popular acceptance tends to support that statement very strongly. Of course, crafting

legislation to address these concerns presents Congress with a unique challenge since its actions cannot unilaterally bind other countries. Like the underlying U.N. Framework Convention on Climate Change, the recent Bali roadmap for negotiating a post-Kyoto international agreement reflects differing roles and intentions between developed and developing nations in fulfilling the 1992 Rio Treaty's goals. With this in mind, the white paper outlines several options suggested in prior testimony before this Subcommittee, some of which have been incorporated into legislation under consideration in the Senate. The white paper also solicits comments on different approaches. I am interested to learn whether our witnesses believe a hybrid approach that combines both carrots and sticks with respect to developing countries could best achieve the goal of limiting carbon emissions without harming the U.S. economy. I would note that this is one of the most difficult issues the Congress faces in crafting climate change legislation and that we welcome not only the ideas that will be presented by today's witnesses but also the views of others who might wish to comment on the questions raised in the white paper.

Finally, I would offer three observations about this aspect of the legislation which we intend to draft. First, the bill should include provisions to induce developing countries to limit their emissions growth on a timetable that meets both environmental and trade competitiveness concerns. Second, the bill must be crafted in a manner that is reasonably certain to withstand a challenge before the World Trade Organization, the WTO, which realistically we must expect to be filed. And three, we must be clear-eyed in understanding that success in any such WTO proceeding is not assured and to craft legislation so that in that event the risks to the United States' economy are minimized and are held to acceptable levels.

With that, Mr. Chairman, I thank you for holding this hearing, and I look forward to the testimony and the comments of my colleagues. Thank you, Mr. Chairman.

[The prepared statement of Mr. Dingell follows:]

STATEMENT OF HON. JOHN D. DINGELL

Chairman Boucher, thank you for holding this hearing. I want to commend you for your leadership on the critical issue of addressing climate change, and I look forward to working with you and other members of the Subcommittee in drafting legislation limiting U.S. emissions of greenhouse gases through an economy wide cap-and-trade system.

I am pleased to note that we have now issued three White Papers that focus on the design of a cap-and-trade program, on international competitiveness, and most recently on the roles of different levels of government in carrying out such a program.

Today's hearing is the first of the White Papers, which are intended to lay out our initial conclusions on various topics and, as importantly, to solicit comment from other Members and stakeholders.

The subject of today's hearing is two pronged. First, how does the adoption of cap-and-trade legislation to limit U.S. emissions of greenhouse gases affect the competitiveness of U.S. goods sold in international trade? Second, what are the best legislative alternatives—or combination of tools—for mitigating any negative effects? We look forward to the views of our witnesses on both of these matters.

In the White Paper on international competitiveness released in late January, three main concerns were raised:

First, absent corresponding action by developing countries, the adoption of limits on greenhouse gas emissions by the U.S. and other developed countries will not achieve the goal of protecting the global environment;

Second, if the U.S. were to cap its own emissions without corresponding action by developing countries with whom we compete internationally, the relative cost of American products could increase and cause U.S. industry and jobs to migrate to nations that do not limit their emissions;

Third, past debate on climate change suggests that Congress would be unlikely to adopt legislation committing the U.S. to limiting its greenhouse gas emissions in the absence of assurances that developing countries will take similar action.

Of course, crafting legislation to address these concerns presents Congress with a unique challenge, since its actions cannot unilaterally bind other countries. Like the underlying U.N. Framework Convention on Climate Change, the recent "Bali road map" for negotiating a post-Kyoto international agreement reflects differing roles and inherent tensions between developed and developing nations in fulfilling the 1992 Rio Treaty's goals.

With this in mind, the White Paper outlines several options suggested in prior testimony before this Subcommittee, some of which have been incorporated in legislation under consideration in the Senate. The White Paper also solicits comments on different approaches. I am interested if our witnesses believe a hybrid approach that combines both "carrots" and "sticks" with respect to developing countries could best achieve the goal of limiting carbon emissions without harming the U.S. economy.

I would note that this is one of the most difficult issues Congress faces in crafting climate change legislation, and that we welcome not only the ideas that will be presented by today's witnesses, but also those views of others who wish to comment on the questions posed in the White Paper.

Finally, I would offer three additional observations about this aspect of the legislation we intend to draft:

(1) The bill should include provisions to induce developing countries to limit their emissions growth on a timetable that meets both environmental and trade competitiveness concerns;

(2) The bill must be crafted in a manner that is reasonably certain to withstand a challenge before the World Trade Organization (WTO), which realistically we must expect to be filed; and

(3) We must be clear-eyed in understanding that success in any such WTO proceeding is not assured; and to craft the legislation so that, in that event, the risks to the U.S. economy are acceptable.

With that, I thank the Chairman for holding this hearing and look forward to the testimony.

Mr. BOUCHER. Thank you very much, Chairman Dingell. At this time, I am pleased to recognize the Ranking Republican Member of the Full Committee, the gentleman from Texas, Mr. Barton, for 5 minutes.

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

Mr. BARTON. Thank you, Mr. Chairman. It is a little before 11:00. This is my third Energy and Commerce Subcommittee hearing of the day, so what a joy it is to be on a committee that is engaged in trying to find solutions to our Nation's problems. The O&I Subcommittee issued a subpoena on unanimous vote to compel testimony of the president of the company that just had the largest meat recall in our Nation's history. Mr. Markey's TelCo Subcommittee is wrestling with the vexatious problem of whether we should mandate more sports programming on the basic tier, and up here, we are holding a hearing on a white paper about climate change and whether we should force the rest of the world to do as we say they should, whether we do it ourselves or not. And of course, we haven't even firmly established that there is a problem we can do something about. So we are at solution stages when I still think we ought to be in the fact finding. I will say this, and it is only my opinion, but it is based on a fair number of hearings

and quite a bit of reading of the literature, the probability that mankind through its emissions is significantly affecting the temperature of the earth is much closer to zero than it is to 100 percent. And I mean, I would almost say it is less than 1 percent, but that is just my opinion.

Having said that, I want to commend you and the staff for the white papers. They are thoughtful. A lot of effort has gone into developing them, and I do agree with you, Mr. Chairman, that if we are going to attempt to do something legislatively, we need to be very, very careful how we do it because this is not a video game, and we can literally wreck the world's dominant economy with all the best intentions for protecting our environment and our climate; and then we will look back 20 or 30 or 40 years from now when we are, you know, last year's great power and say, what happened?

I agree with the Chamber representative whose testimony I have reviewed that if we do anything at all, it ought to be within a framework on working on an international voluntary basis to do things that have technological relevance and also help in terms of reducing the so-called greenhouse gas emissions. I am not at all opposed to doing things that make economic sense and also have an environmental positive impact. I can say with all honesty that the U.S. economy is doing that. Our energy intensity, our carbon intensity, all the metrics that actually have a component that has an output variable show that we are leading the world and have been for the last 10 to 15 years. I do not think that we can force the developing nations to limit their emissions on a purely emotional appeal. You know, if the choice is running water and heated homes or air-conditioned homes and mobility versus none of the above, they are going to choose the former, and all the environmental emotionalism in the world is not going to change that basic decision. I have had numerous conversations on-camera and off-camera with my friends on the majority, and I am sincere in saying that I know that you folks are sincere in trying to do things that are better for our country. I just hope that before we act, we do begin the process of making sure that it does not wreck our economy and have no measurable environmental benefit as a consequence of that.

With that, Mr. Chairman, I yield back.

Mr. BOUCHER. Thank you very much, Mr. Barton. Any member who decides to waive an opening statement under the rules of the Committee will have 3 minutes of questioning time added to the questioning of witnesses, and the Chair would like to encourage members to keep that rule in mind as we go through the process this morning.

That said, I am pleased at this time to recognize the gentleman from Louisiana, Mr. Melancon, for 3 minutes.

OPENING STATEMENT OF HON. CHARLIE MELANCON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF LOUISIANA

Mr. MELANCON. Thank you, Mr. Chairman. I do not think I will use my whole 3 minutes, but let me start off with Budrow Joe. Budrow was standing on his front porch when the levees broke and a boat came by and said, get in the boat, we will save you, Budrow.

And he says, no, do not worry about me. The Lord will take care of me. Second boat came by when he was up on the second floor, and they said, come on, Budrow, get in the boat. He said, nope. Do not worry about me. The Lord will save me. The next time the boat came by, he was on the roof and he told the people in the boat the same thing, do not worry about me, the Lord will save me. When the helicopter came by to pick him off the chimney, he said the same thing, do not worry about me, I will be just fine. The Lord will save me. Well, Budrow met the Lord face to face at the Pearly Gates, and he was mad as hell. And he says, Lord, what the hell are you doing? He says, you left me down there. The Lord looked at him and said, for heaven's sakes, Budrow. I sent three boats and a helicopter. What are you thinking?

I guess my point is that the indicators are out there. The Great Barrier Reef is dying, the ice shelf is melting, we have got these extreme weather conditions, and I am sure there are a lot of other things that scientists can tell us about. If the scientists are 90 percent wrong, we still need to act. I would like to think that when I leave this earth, that it will be a place that my grandchildren and future generations will have a place to live and breathe and enjoy. So I think it is inherent upon us to illustrate to the world that we are willing to participate in trying to make the changes, and I agree with Mr. Barton on the fact that I do not want to wreck the economy of this world or this country particularly, but we need to 'fess up to regardless of who we work for, that we all have an obligation to the next generations. And with that, I yield back my time.

Mr. BOUCHER. Thank you, Mr. Melancon. The gentleman from Kentucky, Mr. Whitfield, is recognized for 3 minutes.

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

Mr. WHITFIELD. Thank you, Chairman Boucher, and we look forward to this hearing. We all know that Washington is a town that reacts to whatever the current issue is, and certainly global warming is that issue today. But I think we recognize that there are significant questions, for example, about the effectiveness of the cap-and-trade system operating in Europe today. I for one am quite concerned that we might adopt a cap-and-trade system when we do not have the technology available to achieve the targets that we hear about, and if we proceed, then we definitely will place a great disadvantage the industries in our country that would jeopardize our jobs, jeopardize our economy, and I think create more unemployment.

So I think it is imperative that we move cautiously and as one of our witnesses, Mr. Slatterly, in his testimony says today, we must have a program with a truly global approach involving major greenhouse gas emitting countries and must be verifiable and enforceable; and to ensure a global approach and to protect the competitiveness of domestic products, we must include legislation that would require maybe products sold in the United States, whether domestic or imported, that they meet a carbon-intensity performance standard.

So we have to move cautiously. I think we have to be very careful on what we do here because the impact will be quite dramatic on our economy. I yield back.

Mr. BOUCHER. Thank you very much, Mr. Whitfield. The gentlelady from Wisconsin, Ms. Baldwin, is recognized for 3 minutes.

OPENING STATEMENT OF HON. TAMMY BALDWIN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WISCONSIN

Ms. BALDWIN. Thank you, Mr. Chairman. I am really pleased to be here today to kick off our Subcommittee's series of hearings on legislation to address climate change. The information garnered from our sessions over the coming weeks and months will help us formulate what I hope will be a sound cap-and-trade program that will allow us to reduce our greenhouse gas emissions and preserve our planet for future generations. Our nation is the lone superpower in an increasingly interconnected and interdependent world, and with this stature comes unique responsibilities to set an example and to model behaviors as we would like other nations to emulate. Unfortunately, when it comes to reducing greenhouse gas emissions, we have not set much of an example until quite recently. With only 5 percent of the world's population, the United States is responsible for almost 25 percent of greenhouse gas emissions, and our emissions are projected to rise at at least 8 percent above 2004 levels by the year 2010 and by 28 percent in 2025. Now it is true that emissions are rising fastest in developing countries and developing economies. China's emissions are projected to continue rising rapidly, another 65 percent to 80 percent by the year 2020. India is in a similar situation. But these are not the countries that put a man on the moon like we did or ushered in the Marshall Plan to rebuild Europe like we did. These are not the countries that the world looks to for leadership. We cannot use the behavior of developing economies as an excuse to defer action. Rather, we must demonstrate that it is possible to rise to this challenge, to enact meaningful legislation creating efficient, effective, and environmentally friendly climate change programs.

That said, we also have a responsibility to our Nation, our businesses, our workers, and our consumers to ensure that American industries remain competitive, that good jobs remain right here in this country, and that prices and costs are reasonable and affordable. To ensure this, I agree that we must include a provision in our cap-and-trade bill designed to encourage developing countries to curb their greenhouse gas emissions. Such a provision can and should coincide with bold efforts to reduce our own emissions. And while, yes, the policy options that have been presented and are going to be presented are highly complex, I think we all look forward to that challenge, and I am hopeful that between the white papers and the hearings we will really shine a light on the appropriate way to address these issues.

Again, thank you, Mr. Chairman. I look forward to this hearing and hearing from our witnesses.

Mr. BOUCHER. Thank you, Ms. Baldwin. The gentleman from Texas, Mr. Burgess, is recognized for 3 minutes.

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 today. I want to commend the Committee for taking the time to support the white papers, to allow members, industry, and environmental consumer advocates the opportunity to evaluate any broad climate change policy. Now, according to the second white paper, our Committee has reached a consensus that efforts to reduce greenhouse gas emissions will be fruitless if we do not engage developing countries in the process. It is reported that China and India are expected to account for 56 percent of the projected increase in emissions between 2005 and 2030. So if these emissions are a cause of global climate change, then logically, should not China and India take some responsibility for a similar percentage of any efforts to limit the effects of climate change in the future? China and India are not likely to sacrifice manufacturing jobs nor needed economic development in their society in exchange for new regulations. Why would China or India want to comply with the U.S. Congress in its attempts to handcuff their progress? Instead of investing in global climate change initiatives this week, China reportedly increased their yearly defense budget by 20 percent. Clearly China's concerns as far as global climate change is concerned, is not on their to-do list.

Newton's Third Law: for every action there is an equal and opposite reaction. Well, we need to make certain that any action we take here does not spark unforeseen and unfortunate consequences. For example, the 36 billion gallon alternative fuel mandate has had unintended consequences on the developing world. Saturday morning's Washington Post: Soaring food prices putting U.S. emergency aid in peril. The USAID officials said that a 41 percent surge in prices for wheat, corn, rice, and other cereals over the past 6 months has generated a $120 billion budget shortfall that will force the agency to reduce international efforts to end hunger. According to the article, prices have increased as more grains go to biofuel production or are consumed by fast-emerging markets as China and India. Deeper into the body of the article, look at what has happened to wheat prices alone, up 25 percent in one day last week, said Josette Sheeran, Executive Director of the World Food Program. "This is really the first emergency that we faced without a drought, war, or natural disaster. We will have to cut the amount of people being served or the amount of food being served if we do not get more funds." I will submit that disaster has been brought to them courtesy of the U.S. Congress and its energy policy over the past year.

Capital is a wonderful thing. It is powerful, but it is not necessarily courageous. Capital, if you mistreat it, will go someplace where it thinks it will be treated better; and I am concerned, Mr. Chairman, if we continue on this path of cap-and-trade, we are going to drive the equation of unintended consequences much further than we already have. I think that will be deleterious for our country and the world at large.

I will yield back.

Mr. BOUCHER. Thank you, Mr. Burgess. The gentleman from Utah, Mr. Matheson, is recognized for 3 minutes.

Mr. MATHESON. Mr. Chairman, I thought your opening statement was more than adequate, and I will associate myself with that and waive my time.

Mr. BOUCHER. Thank you so much, Mr. Matheson. The gentleman from Illinois, Mr. Shimkus, is recognized for 3 minutes. Mr. Shimkus is not here at the moment. The gentleman from Pennsylvania, Mr. Doyle, is recognized for 3 minutes.

OPENING STATEMENT OF HON. MIKE DOYLE, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Mr. DOYLE. Thank you, Mr. Chairman. Mr. Chairman, as we continue our debate on global warming legislation, we need to keep remembering this important fact, that it is global warming that we are talking about, not just United States warming. This is not a problem that this Congress or this government can unilaterally address. We are going to need the cooperation of the world community, and it is imperative that any bill we pass recognizes this fundamental point.

While it is true that the rest of the world and certainly developing nations will not do anything if we do not act first, we must be sure that by acting first we do not put our economy at an undue risk. We need to find a balance, where we can lead the world's efforts to combat global warming but also simultaneously strengthen American industry to deal with the challenges of a carbon constrained world. I think it is important to recognize the magnitude of the challenge if we are ever going to be able to adequately address it. China is now arguably the world's number one emitter of greenhouse gases. It is adding to its economy every 2 years the equivalent of the entire U.S. steel production while opening a new coal-fired plant, most with little environmental controls, every 2 weeks. It is critical that our policies at home address those environmental challenges abroad.

I believe the question of how to best structure incentives, mandates, standards, or fees designed to bring about international acceptance of U.S. environmental benchmarks is one of the most fundamental questions before us as we craft this bill. With an eye to the limits on our options due to the World Trade Organization compliance standards, I think it is critical that we explore every option available because much like the greater bill, there is no silver bullet to address this question.

Now, let me be clear. I am in no way referring to the WTO, but I am stating that compliance with the WTO will be critical in giving industry the tools they need to compete. I think the performance standard idea that we will see proposed by our witnesses today is an innovative idea that should be examined further, as are the options presented from using our tax code or trade policies to put a real cost on carbon. These new innovative ways of thinking outside the box are going to be crucial to moving this debate forward, and I look forward to hearing the thoughts of our witnesses on this matter.

In conclusion, Mr. Chairman, today we are really getting into the real meat of this global warming debate. I hope all my colleagues will use this opportunity to learn more about the very real con-

sequences of the policies we will be writing so that together we can put the best possible bill forward. As always, Mr. Chairman, I stand ready to work with you and any member of this Committee who is serious about addressing this challenge before us, and with that, I yield back the balance of my time.

Mr. BOUCHER. Thank you, Mr. Doyle. The gentleman from Oregon, Mr. Walden, is recognized for 3 minutes.

Mr. WALDEN. Thank you, Mr. Chairman. I am going to waive my opening statement and have to step out for a few minutes but will be back.

Mr. BOUCHER. Thank you, Mr. Walden. The gentleman from Maryland, Mr. Wynn, is recognized for 3 minutes. Not here? The gentleman from Georgia, Mr. Barrow, is recognized for 3 minutes.

Mr. BARROW. Thank you, Mr. Chairman. Like Mr. Matheson, I cannot improve on the comprehensiveness of the Chairman's statement or on the eloquence of Budrow, so I, too, will yield the balance of my time.

Mr. BOUCHER. Thank you, Mr. Barrow. The gentleman from Arizona, Mr. Shadegg, is recognized for 3 minutes.

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

Mr. SHADEGG. Thank you, Mr. Chairman, and I want to echo the concerns of my colleagues on this Committee who have already spoken of the need to proceed cautiously. As you know, Mr. Chairman, I have repeatedly complimented you for your conduct of this Subcommittee and for the thoughtful hearings we have had on the issue of climate change. One option before us clearly is the issue of a cap-and-trade program. However, the evidence on the viability of a cap-and-trade program and its usefulness and success is extremely mixed. The experiment performed in Europe has not led to single-sided evidence of success. Having watched them implement a cap-and-trade program, it is fairly clear that two things have occurred. One, the cost of energy has unquestionably gone up in certain countries, and two, it is fairly clear that there has not been a reduction in greenhouse gases. I think we are all aware of the testimony regarding industries that cannot operate in portions of the European Union because they cannot get reliable energy to operate, even though those companies are extremely environmentally sensitive. And we are aware of the testimony with regard to, for example, companies that have left, some companies that manufacture or previously manufactured cement, for example, in Europe now moving manufacturing operations to, for example, Morocco. I would simply suggest that it is important that we proceed with caution. If the U.S. Congress pursues the same remedy with the same result, I believe the American electorate will not be happy and will not reward us.

In regard to that, I want to note that in this very Committee at prior hearings we heard testimony from a representative of the government in India who made it very clear that the struggling or developing economy of India and of other countries in a similar economic position simply cannot adopt a greenhouse gas emissions program until they improve the standard of living in those countries and that to expect them to do so is unrealistic. I believe it is

not in our interests to punish the people in those countries or the people in emerging economies and that we need to proceed with great caution; and while the discussion here is that we are going to help them, I believe they will perceive it not so much as help.

I think it is important that we proceed with caution. I would echo the remarks of the Ranking Member of the Full Committee that we look at those places where we can improve efficiency and also limit greenhouse gases at least at this stage of the operation. With that, I yield back.

Mr. BOUCHER. Thank you, Mr. Shadegg. The gentlelady from California, Ms. Harman, is recognized for 3 minutes.

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

Ms. HARMAN. Thank you, Mr. Chairman. I apologize for my late arrival, but I had a competing hearing. I apologize in advance for my early departure but I have a competing hearing.

I would like to echo or endorse some of the things Mr. Shadegg just said and make an additional point or a related point. Climate change, as everyone has said, is a world-wide problem, but the United States is still today the world's number one emitter of greenhouse gases, and we must lead. We must not use the problems of the developing world as an excuse to avoid leading. Let me just quote from the Papua New Guinea representative who said, "We seek your leadership, but if for some reason you are not willing to lead, leave it to the rest of us. Please get out of the way." Imagine this statement coming from a small Pacific island nation which cares about this issue.

So my bottom line is that leadership includes helping others to cooperate with us, and that is what we should be doing. If we can help others to cooperate with us, we can slow down and hopefully turn back the emission of greenhouse gases and save our planet, and if we do not, we will not. I think the United States is tested. I think this Committee is tested. We have to be courageous. We have to figure out how to get this right in the first place, and I applaud the fact that we are having this careful series of hearings to explore that.

Thank you, Mr. Chairman.

Mr. BOUCHER. Thank you very much, Ms. Harman. The gentlelady from California, Ms. Bono Mack, is recognized for 3 minutes. Well, she was here and is no longer. The gentleman from Illinois, Mr. Shimkus, is here and is recognized for 3 minutes.

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

Mr. SHIMKUS. Thank you, Chairman. I would like to help you out with the time but we did not even get a chance to talk and debate and get on record on this issue. Really, it is a national media debate now, and so this is one of a few times that we can actually go on record on some of the issues.

Facts, as we say here, are very stubborn things. The electricity generation in this country, we are close to capacity now, and the Energy Information Services says we will need 35 percent more electricity by 2030. Thirty-five percent more. Think about that,

folks. We have all supported bills on efficiency, on renewable, solar, wind, but this is 35 percent increase over what is being generated today and that is all talking about base load generation. And look at our own houses. Look at the electricity consumption in our own houses.

I just also went to the competing hearing. Talked about buying my wife a laptop for Christmas. You know, a very emotional Christmas present. It was not a toaster, it was not a coffee maker. We also made it so that it is portable around the house so she can carry it around and get on the Internet. It is more energy. Because of our ability to have all these great advances, we as individuals are consuming more electricity use.

So you take where we are at today, and we meet our demands. I love the energy debate, and everybody knows who has served with me on this Committee, the folks get it confused. We got electricity and then we got fuels, a liquid fuel debate. And this is electricity. And we are for the most part independent. We are not importing a lot of electricity generation for use. My fear is some day we may be based upon this. Today our portfolio is 50 percent coal. We know what the climate change debate will do to coal. It stops it. In fact, last year 30 coal-fired plants went off the drawing board. And we have got states and governors saying no more, not even when we talk about capture and sequestering. So how do you meet this 35 percent increase in demand without the lowest, cheapest, most cost-effective use? And what does that do for the individual consumer? You talk about prices going up today. Across the board, electricity, liquid fuels, in this economy, manufacturing, I just hope the manufacturing sector and organized labor, they had better link arms on this because this is a job killer if done improperly. I have got great respect for the Chairman of this Committee. Our districts are very similar, and he has promised me that we are going to do no harm. I am a trust but verify guy in this debate because I fear there will be great harm done.

I yield back my time, Mr. Chairman. Thank you.

Mr. BOUCHER. I am happy about the trust part. That is a good place to begin. Thank you very much, Mr. Shimkus. The gentleman from Maryland, Mr. Wynn, is recognized for 3 minutes.

Mr. WYNN. Thank you, Mr. Chairman. I will waive my opening.

Mr. BOUCHER. The gentleman waives his opening statement. The gentleman from North Carolina, Mr. Butterfield, is recognized for 3 minutes.

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

Mr. BUTTERFIELD. Thank you very much, Mr. Chairman, for yielding this time. Thank you for your leadership on this Committee. You have tireless energy, and I thank you for all that you do.

I am looking forward, Mr. Chairman, to this discussion about how we can achieve what I call the concurrent objectives of lowering America's greenhouse gas output while at the same time protecting America's industry and jobs. And I would like to welcome and to thank former Congressman Jim Slattery for coming today

and for testifying on behalf of the U.S. steel industry and Nucor. Nucor is very special to me. It is located in my district in North Carolina, and I thank them for all that they do on a day-to-day basis.

I want to commend all of you for your constructive suggestions. I am sure that they will come. I am ready to hear from each one of you about how we can approach the three legislative approaches that have been offered in the second white paper that I just got a copy of a few days ago and what suggestions the industry may have in this relation. And so thank you for coming, thank you for convening this hearing.

I yield back.

Mr. BOUCHER. Thank you very much, Mr. Butterfield.

Seeing no additional members who have not been recognized for opening statements, we at this time will receive statements from our panel of witnesses. And without objection, your prepared written statement will be made part of the record. We would welcome your oral summary of approximately 3 minutes. I will just say a brief word of introduction about each of our witnesses.

Mr. Mike Morris is the Chairman, President, and Chief Executive Officer of American Electric Power, and it is noteworthy on the topic of today's hearing, that in coordination with the International Brotherhood of Electrical Workers, AEP has made a proposal with regard to engaging developing countries, and that is one of the three alternative proposals that have been made to this subcommittee with regard to addressing that critical element of cap-and-trade legislation.

The Honorable Jim Slattery is a former colleague of ours and former member of this Committee who served with distinction. Jim and I were elected the same year and began our service on this Committee at approximately the same time. I think Jim may have preceded me on this Committee by 2 years. He was a better lobbyist for that assignment at the time than I was. He served with distinction here, and we welcome him back today. He is speaking today on behalf of a proposal made by the Nucor Steel Corporation.

Mr. Richard Morgenstern is a Senior Fellow at Resources for the Future. Mr. David Doniger is the Policy Director for Climate Change for the National Resources Defense Council. Mr. Gary Hufbauer is with the Peterson Institute for International Economics. And Mr. Christopher Wenk is the Senior Director for International Policy of the U.S. Chamber of Commerce.

We welcome each of you, and Mr. Morris, we will begin with your oral statement and would ask that each of our panel members try to keep their statements to approximately 5 minutes. Mr. Morris?

STATEMENT OF MICHAEL G. MORRIS, CHAIRMAN, PRESIDENT, CHIEF EXECUTIVE OFFICER, AMERICAN ELECTRIC POWER

Mr. MORRIS. Thank you very much Chairman Boucher and Ranking Member Upton. Thanks much for being here. I really appreciate the opportunity to address this sub-issue of a very large challenge, and I must admit, I was quite impressed by all of the comments that were offered by your colleagues on this Subcommittee because it is clear that there is a great appreciation of

the magnitude of the potential trade impact of a misinformed and misapplied global warming plan.

To your opening comments you mentioned that the International Brotherhood of Electrical Workers and American Electric Power have brought forth what we obviously believe is an appropriate way to address that issue. President Ed Hill of the IBEW was instrumental in putting together the concepts that we have developed and surely have submitted to your Committee, and we know and we are pleased that, along with other ideas, it will be given great consideration. The whole notion of putting an impact on the U.S. economy in the manufacturing sense, without giving those other competing manufacturing countries an opportunity to join us, and if they choose not to join us, then an opportunity to pay an international credit allowance before they can import products into this country we think is well-balanced. We have spent a great deal of time trying to think through the concept of how one would put something like that together and answer the question that was asked by the Chair of the overall Committee, as well as the questions that you asked of us. We think in fact that it is WTO-compliant. When we went to the professionals who do that work, then I can assure you that is way above my pay grade, they said to us, no one has ever come and asked for how would you do something WTO-compliant. Most clients come and say, I have a problem or I think somebody is violating WTO, would you help me figure that out? We went in and said, here is the issue. This is a global environmental issue that needs to be addressed globally or the environmental calamity, whatever it is and whenever it is, will continue to come our way. And we need to be fair and balanced in trying to find a way to go about doing that.

In its simplest of terms, the IBEW-AEP approach addresses the issue on an economy-wide basis of carbon intensive products that would be manufactured in our country or in other countries, the programs would be the same, the International Reserve Allowance would be very similar to one of our carbon credits, and if your country did not have a comparable program and it is easy to poke holes in that and say, well, how would you ever determine that, we will leave that to the work of the Committee. But nonetheless, if they have no program, then before that product could be imported into our country, it would have to purchase one of those International Reserve Allowances. And that would be set at the same price as the carbon credit is set to the U.S. manufacturer. We think that goes a long way to try and make certain that there is balance to the question that you asked. We believe as I said before that it is in fact WTO-compliant. We know as the Chairman said that would be challenge. We think the timeline when one could go about doing that could sink in with the actual implementation of a cap-and-trade program developed not only by the House but the Senate, then coming out of conference, hopefully signed into law by the President. So we feel very strongly about the notion of addressing this issue because I join my colleague from Louisiana. There is something going on here. There is technology that we can employ to help the performance of the power plants. I surely agree with your colleague from Illinois. We need to build additional base load power plants. They need to be fired by coal. We need to do that in

the most environmentally responsible way that we can. A cap-and-trade bill that has a timeline that allows that technology to be developed, that has some type of price coordination in it so that we don't have a negative effect right off the bat on the U.S. economy and that addresses the global nature that almost every one of your colleagues mentioned in their comments is the answer, and we can develop that and we would be in strong support of that.

I thank you very much for the chance to be here. I look forward to the questions and answers.

[The prepared statement of Mr. Morris follows:]

Summary of Testimony of Michael G. Morris, Chairman, President, and CEO
American Electric Power before the House Subcommittee on Energy and Air Quality

American Electric Power (AEP) is one of the nation's largest electricity generators with over 5 million retail consumers in 11 states. AEP has a diverse generating fleet – coal, nuclear, hydroelectric, gas, oil and wind. But of particular note, AEP is one of the largest coal-fired electricity generators in the U.S. We are committed to working with you to pass federal legislation that is well thought-out, achievable, and reasonable. A well-designed federal regulatory program will allow AEP to obtain recovery of our costs for the commercialization and deployment of advanced technology to reduce our greenhouse gas emissions. We believe legislation can be crafted that does not impede AEP's ability to provide reliable, reasonably priced electricity to support the economic well-being of our customers, and includes mechanisms that foster international participation and avoid creating inequities and competitive issues that would otherwise harm the U.S. economy. AEP is one of a small handful of companies that have publicly endorsed actual cap-and-trade legislation, as introduced in Congress, to reduce greenhouse gas emissions across the U.S. economy.

AEP and the International Brotherhood of Electrical Workers (IBEW) urge Congress to include in federal climate change legislation a provision to encourage rapidly developing countries to also curb their greenhouse gas emissions, and to address the potential impacts of that domestic reduction program on U.S. trade and competitiveness in a world economy. Our proposal has been included in both the Lieberman-Warner and Bingaman-Specter bills that are now pending in the Senate. This proposal is also supported by the AFL-CIO; the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers; and the United Mineworkers of America. We believe any international strategy must prevent the undue shifting of U.S. jobs to foreign countries – such as China and India – which have yet to take comprehensive steps to limit their greenhouse gas emissions. This is of concern to AEP because 38% of our electricity generation serves industrial customers who would be potentially impacted if we fail to include this provision. In addition, any greenhouse gas reductions that AEP and our nation make in isolation will be overtaken – literally swallowed up – by the huge and rapidly increasing emissions coming from the fast-growing, developing countries. We must address emissions from rapidly developing countries, or we face the worst of both worlds, namely the loss of American jobs and industries, along with rampant growth in greenhouse gas emissions in those nations.

The IBEW-AEP proposal seeks to equalize the adverse trade impacts discussed above by requiring that importers submit international reserve allowances to cover the emissions attributable to greenhouse gas intensive goods they are importing. The allowance requirement only applies to imports from countries that have opted to <u>not</u> take "comparable action" to limit their greenhouse gas emissions, as compared to those achieved in the U.S. Failure to submit such allowances would bar entry of covered goods into the U.S. We have designed this allowance requirement for compatibility with World Trade Organization (WTO) rulings. International reserve allowances are derived from a pool that is entirely separate from the allowances provided under the domestic cap-and-trade program. This means that the demand for, and use of, international reserve allowances cannot impact the availability, price or use of domestic allowances. We also have designed the allowance requirement to maximize its effectiveness in limiting greenhouse gas emissions and not affecting U.S. competitiveness by focusing on imports with the greatest carbon foot print -- greenhouse gas-intensive goods whose greenhouse gas emissions can be quantified and tracked with reasonable accuracy and administrative ease.

The international allowance requirement would only apply as a measure of last resort. The U.S. would first make good faith efforts to persuade other countries to limit their greenhouse gas emissions. WTO jurisprudence under the GATT exception for conservation measures suggests that if we negotiate with one affected party, as we almost certainly will, then we must negotiate with all parties directly affected by the provision. These negotiations can begin during the time required to perfect domestic regulations, and conclude before the domestic cap takes hold. International negotiations would not delay application of the international provision. Consistent with WTO jurisprudence, America would inform the affected nations of a clear and knowable standard for application in the near future. We are not required to delay application of the allowance requirement on imports until eight years after the start of the domestic cap-and-trade program, as proposed in Senate legislation. We believe that nations could be notified of the standard, and the international provision applied, at about the same time as the domestic cap takes effect. Finally, the proposal provides U.S. climate negotiators with essential leverage to persuade major emitting nations to participate. The global political pressure for action on climate change is growing. That change in global opinion on this issue, and the need for all major emitting nations to reduce their own domestic emissions -- when coupled with the leverage provided by the IBEW – AEP proposal -- will likely mean that this proposal will never actually have to be implemented against any major emitters.

TESTIMONY OF
MICHAEL G. MORRIS
CHAIRMAN, PRESIDENT, AND CHIEF EXECUTIVE OFFICER,
AMERICAN ELECTRIC POWER
BEFORE THE
HOUSE ENERGY AND COMMERCE
SUBCOMMITTEE ON ENERGY AND AIR QUALITY
March 5, 2008

Good morning Mr. Chairman and distinguished members of the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce.

Thank you, Chairman Boucher, for inviting me here today to offer the views of American Electric Power (AEP) on how the United States can effectively engage developing countries to limit their greenhouse gas emissions. Ensuring that these nations take actions that are comparable to our own is essential to achieving a global solution to the most important environmental and energy challenge facing the United States and indeed, the world.

My name is Mike Morris. I am the Chairman, President, and Chief Executive Officer of American Electric Power (AEP). Headquartered in Columbus, Ohio, we are one of the nation's largest electricity generators -- with over 36,000 megawatts of generating capacity -- and serve more than five million retail consumers in 11 states in the Midwest and south central regions of our nation. AEP's generating fleet employs diverse sources of fuel – including coal, nuclear, hydroelectric, natural gas, and oil – and wind power to meet our customers' energy needs. Furthermore, coal plays a prominent role in our energy portfolio, with AEP using more coal than any other electricity generator in the western hemisphere. AEP recognizes coal must continue to play an important role for providing reliable and affordable electricity to our customers, and indeed, virtually all Americans. To that end, we are working to perfect new advanced coal technologies that capture or otherwise reduce the CO_2 emissions from our generating fleet.

Over the past decade, AEP has implemented a broad portfolio of voluntary actions to reduce, avoid or offset greenhouse gas (GHG) emissions. In addition, we continue to invest in new clean coal technology plants and R&D that will enable AEP and our industry to meet the challenge of significantly reducing GHG emissions over the long term. For example, AEP is designing and will build two new generating plants using Integrated Gasification Combined Cycle (IGCC) technology in West Virginia and Ohio, as well as a highly efficient new generating plants using the most advanced (e.g., ultra-supercritical) coal combustion technology in Arkansas. AEP has announced the first commercial scale project to capture and store CO2 from a coal-fired power plant in Oklahoma.

AEP Support for Federal Climate Legislation

We are committed to working with you to pass federal legislation that is well thought-out, achievable, and reasonable. A well-designed federal regulatory program will allow AEP to obtain recovery of our costs for the commercialization and deployment of advanced technology to reduce our greenhouse gas emissions. We believe legislation can be crafted that does not impede AEP's ability to provide reliable, reasonably priced electricity to support the economic well-being of our customers, and includes mechanisms that foster international participation and avoid creating inequities and competitive issues that would otherwise harm the U.S. economy. AEP is one of a small handful of companies that have publicly endorsed actual cap-and-trade legislation, as introduced in the Congress, to reduce greenhouse gas emissions across the U.S. economy. AEP supports reasonable legislation, and is not calling for an indefinite delay until advanced technology such as carbon capture and storage (CCS) is developed. However, as the requirements become more stringent and we move beyond the ability of current technology to deliver those reductions, it is essential that requirements for deeper reductions coincide with the commercialization of advanced technology. Although the technologies for effective carbon capture and storage from coal-fired facilities are developing, they are not yet commercially prepared to meet America's sustained production needs, and cannot be artificially accelerated through unrealistic reduction mandates. For these reasons, we do not believe that applying performance standards on new sources are compatible with our needs or the needs of our customers, regulators, and the nation. Such standards have the potential to eviscerate the cap-and-trade program and would significantly undermine the essential genius of this proven least-cost concept.

A sound national policy for reducing GHG emissions, based on a cap-and-trade type approach, should include the following design elements:

- The cap should apply to all sectors of the economy and cover all greenhouse gases.

- An unfettered cap-and-trade framework should be used to maximize flexibility and minimize the costs of the program.

- The reduction levels should be gradually phased in over time to reflect the lead-time necessary for demonstrating and deploying new low-and zero-emitting technologies on a broad commercial scale. Setting reasonable and achievable emissions caps is critical to ensure that the power industry can still provide reliable electricity and ensure the continued economic competitiveness for U.S. workers and industries.

- An effective mechanism for containing costs that sets a price ceiling to ensure the U.S. is not unduly harmed by a transition to a carbon-constrained economy. Such a mechanism assures that consumers will not be excessively burdened, especially as environmental markets are developing.

- An appropriate allocation of allowances, at no cost, to the electric power sector in order to blunt otherwise inevitable electricity price spikes.

- As part of a comprehensive cap and trade system, all allowances should be allocated based on historic emissions without cost to the electric power sector. At most, only a small number of the allowances (less than five percent) should be distributed through auctions or set-asides for general public benefit purposes. This approach is essential to minimize the cost burden to retail consumers, to safeguard competitiveness of U.S. industries, and to avoid harm to the U.S. economy.

- Adequate federal incentives to support the demonstration and deployment of CCS and other advanced technologies for curbing greenhouse gas emissions from existing and new generating capacity. Given the enormity of this technology challenge, federal incentives for the electric power sector must be substantial and should include the distribution of bonus allowances and auction revenues to further the rapid deployment of such advanced technologies.

- Full use of domestic and international offset credits in addition to the allowances allocated under the emission cap, so long as those offsets are accurately quantified and properly verified.

How these and other aspects of the program are crafted is also critical for ensuring the design of a cost-effective federal program that will not impose disproportionate or excessive costs on consumers, or particular regions of the country.

Need for Global Solution

I am, and many others are, heartened by your strong interest in including in federal climate change legislation a provision to encourage rapidly developing countries to also curb their greenhouse gas emissions. This is matter that has profound ramifications for our global environment, and huge consequences for our national economy. This long-standing concern inspired my friend, Mr. Edwin D. Hill, International President of the International Brotherhood of Electrical Workers (IBEW), and I to develop what we believe to be an effective policy response to the international aspects of federal climate change legislation. Notably, our joint legislative proposal on the regulation of imported goods – the key details of which I will discuss later – has been included in both the Lieberman-Warner and Bingaman-Specter bills that are now pending in the Senate. This proposal is also supported by the AFL-CIO; the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers; and the United Mineworkers of America.

The need for a global solution to climate change should be apparent to all. While the United States must do its share, any greenhouse gas reductions that we make in isolation will be overtaken – literally swallowed up – by the huge and rapidly increasing emissions coming from the fast-growing, developing countries. Let me offer a few startling facts that graphically illustrate this point:

- The International Energy Agency (IEA) projects world-wide energy-related CO_2 emissions will increase by 57 percent between 2005 and 2030, with the developing countries driving more than three-quarters of this CO_2 growth during that period.

- China and India alone are expected to account for 56 percent of the worldwide increase in CO_2 emissions during the 2005-2030 timeframe.

- China's CO_2 emissions are growing faster than any other country. Recent reports suggest that China is now the world's number one emitter of CO_2 annually.[1]

[1] CRS Report for Congress, *China-U.S. Relations: Current Issues and Implications for U.S. Policy*, at page 25 (December 21, 2007).

- China's use of coal as a percentage of world consumption increased from about 20 percent in 1985 to over 29 percent in 2003. By 2025 China will likely be consuming almost 40% of the world's coal.

- Coal accounts for at least two-thirds of China's current energy consumption, with demand exceeding 2 billion tons of coal per a year which, by way of comparison, is nearly twice the present demand for coal in the United States. [2]

- China's ravenous appetite for fossil fuels has resulted from rapid increases in energy-intensive industries. China steel, for example, has increased its share of the global steel production from 13 percent in 1996, to 35 percent in 2005. As a result, China is now by far the world's largest steel producer, making more steel than the next six producers (Japan, the United States, Russia, Korea, Germany, and Ukraine) combined.

- Other energy-intensive industries in China also have experienced rapid growth in recent years. As a result, China now makes about one-half of the global production of cement and flat glass, and about one-third of the global production of aluminum. In the case of aluminum, an industry report indicates that China has built the equivalent total aluminum capacity of the U.S. and Great Britain combined in only the last three years.

- Much of China's rapid industrial growth is fueled by electricity generated by new coal-fired power plants. In 2006 alone, for example, China brought into service 90,000 megawatts of new coal-fired generating capacity – which amounts to two large coal-fired generating units per week. Notably, this also is equivalent to about one-third of the total U.S. coal-fired capacity in operation today.

- China's greenhouse gas emissions are rapidly increasing with this strong growth in coal use, combined with very robust economic growth. Emissions have increased by 80 percent since 1990 and are projected to rise by another 65 percent by 2020.

The magnitude of these emissions trends only underscores the need for action by the United States, in concert with China, India and the other fast-growing developing countries. A failure to effectively engage these

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[2] These figures are likely to be overly conservative estimates in light of a recent New York Times article that reports: "Last year, China burned the energy equivalent of 2.7 billion tons of coal, three-quarters of what experts had said would be the maximum required in 2020. To put it another way, China now seems likely to need as much energy in 2010 as it thought it would need in 2020 under the most pessimistic assumptions." New York Times, *As China Roars, Pollution Reaches Deadly Extremes* (December 26, 2007).

developing countries means that even if the United States imposes a stringent emissions cap on our entire economy, this cap will accomplish very little to reduce global greenhouse gases. This means that such a domestic reduction program – unless coupled with effective international measures to ensure rapidly developing nations also promptly address this problem – is flawed environmental policy. If Congress does not to address emissions from fast-growing developing nations, it would be inadvertently encouraging the shift of economic activity from the United States to other countries that would not be doing their part in reducing greenhouse emissions. Furthermore, unless a viable mechanism is established to ensure that our friends in fast-growing developing nations join us, there would be no net global reductions in greenhouse gas emissions which are recognized to be necessary to adequately address the risks of climate change. Thus, such a provision is absolutely essential to America's and the world's success in tackling global warming, and I commend you for your interest in it.

Linkage of Trade and Climate

Viewed in this context, it is apparent that trade is a key to developing an effective federal climate change policy. The United States cannot fully develop an effective domestic greenhouse gas reduction program unless we also create a parallel federal policy to address the potential impacts of that domestic reduction program on U.S. trade and competitiveness in a world economy. This clear linkage between climate and trade requires that we combine our domestic reduction program with an effective, defensible, international strategy. That international strategy must prevent the undue shifting of U.S. jobs to those foreign countries – such as China and India – which have yet to take comprehensive steps to limit their greenhouse gas emissions. This is of concern to AEP because 38% of our electricity generation serves industrial customers who would be potentially impacted if we fail to include this provision. When factories close and move to foreign nations, we lose industrial customers, and our residential customers, who are employed at those facilities, lose their jobs and their families are hard hit as a result. In addition, if jobs are lost in this country as a result of unilateral carbon reduction measures, not only will this have a deleterious effect upon the economy, but the production of currently-produced, greenhouse-intensive products will be shifted from the U.S. to countries with already less-efficient power plants, thereby exacerbating the effect upon the environment.

Put in its simplest terms, this strategy must keep America's jobs and economy on an equal footing with other major-emitting nations as we move forward to achieve a world-wide environmental benefit. To do less would result in the worst of both worlds, namely the loss of American jobs and industries, along with rampant growth in greenhouse gas emissions elsewhere in the world.

The IBEW and AEP have proposed a credible approach for addressing these trade and competitiveness concerns arising from a stringent domestic reduction program. In developing this, we strived to craft mechanisms that would not jeopardize U.S. competitiveness and American jobs, relative to developing nations. We would also do this in a manner that complies with the Agreement Establishing the World Trade Organization (WTO). Specifically, we recommend that you require that allowances accompany energy-intensive imported goods from rapidly developing countries that do not promptly take comparable action to limit also their greenhouse gas emissions.

Core Elements of IBEW-AEP Proposal

The IBEW-AEP proposal seeks to equalize the adverse trade impacts discussed above by requiring that importers submit international reserve allowances to cover the emissions attributable to certain greenhouse gas intensive goods they are importing. Failure to tender such allowances would bar entry of such covered goods into the United States. We have designed this allowance requirement for WTO-consistency. We also have designed the allowance requirement to maximize its effectiveness in limiting greenhouse gas emissions and not affecting U.S. competitiveness by focusing on imports with the greatest carbon foot print.

First, the allowance requirement is narrowly focused on greenhouse gas-intensive goods, such as iron, steel, aluminum, cement, glass, paper and other such products whose greenhouse gas emission can be quantified and tracked with reasonable accuracy and administrative ease.

Second, the allowance requirement only applies to imports from those countries that have opted to not take "comparable action" to limit their greenhouse gas emissions, as compared to the emissions reductions achieved in the United States. Comparable action may include cap-and-trade programs or other measures that foreign countries may implement to achieve greenhouse gas reductions and which are recognized to be comparable in effect to the levels achieved here. In addition, our proposal focuses only on those countries that contribute significantly to global emissions and would not burden the poorest developing countries with low emissions or low standards of living. This corresponds to a long standing principle that has guided international climate negotiations. Namely, we suggest that least developed countries that suffer from widespread poverty and low levels of emissions should not be saddled with such restrictions. This also comports with WTO rules explicitly recognizing the least developed countries as a unique category. The allowance requirement therefore

does not apply to imports from least developed nations and those countries whose greenhouse gas emissions are below a *de minimis* percentage of total global emissions.

We believe that determinations, such as which nations are covered by the provision, the definition of comparability, and establishing the allowance requirement for each sector in another nation, may well be best left to a future determination by an independent agency or the President. Dynamic issues such as these will likely significantly change in the future, and some statutory flexibility is probably both prudent and necessary.

And third, the allowance requirement would only apply as a measure of last resort. This ensures consistency with WTO rulings. Notably, our proposal contemplates that the United States would first make good faith efforts to persuade other countries to limit their greenhouse gas emissions. Only if these efforts fail with a particular foreign country would the President be authorized to apply the allowance requirement to covered goods imported from that non-participating country. WTO jurisprudence under the GATT exception for conservation measures suggests that if we negotiate with one affected party, as we almost certainly will, then we must negotiate with all parties directly affected by the provision. These negotiations can begin once the legislation is enacted, and continue during the four or five years required to write domestic regulations, and conclude before the emissions cap is placed on U.S. industry. The negotiations therefore would not cause any delay regarding the application of the international provision at about the same time as the beginning of the domestic cap.

I, however, am very hopeful that the allowance requirement – if adopted – would never actually be applied to the U.S.-bound exports from fast-growing developing countries. Our proposal provides U.S. climate negotiators with considerable leverage that they can draw upon to achieve comparable action by these developing countries. In fact, the use of the IBEW-AEP proposal as a "stick" to achieve international action has already been "field-tested." As widely reported in the press, the President's top environmental representative specifically referenced the IBEW-AEP "stick" during the recent Bali Climate negotiations in his ongoing effort to cajole developing countries into action. As global political pressure for action on climate change intensifies, the effectiveness of the IBEW-AEP "stick" is becoming increasingly apparent. This suggests, as I hope, that a measure of last resort – requiring allowances for imports – may never actually have to be applied to any country.

Timeframe for Implementation

Another key aspect of our proposal is the timeframe for implementation. In addition to providing sufficient time for international negotiations, as just described, our proposal requires the United States to take several other steps before we would impose the allowance requirement on imports. Most importantly, the United States must make a determination that a country is not taking "comparable action" to limit its greenhouse gas emissions.[3] This determination will require the President to quantify the annual emissions reductions that the United States has actually achieved under the domestic cap-and-trade program, and then to compare those reduction levels to the emissions in the other country. In assessing whether, and to the extent that, other countries are taking comparable action, the President cannot focus on the precise form of the country's measures to limit its greenhouse gas emissions, but rather, the reductions actually achieved by those measures.

It is not necessary for WTO-consistency to delay application of the allowance requirement on imports until eight years after the start of the domestic cap-and-trade program, as proposed in the Bingaman-Specter and Lieberman-Warner bills that are pending in the Senate. Given that the writing of such regulations will likely require approximately five years, the United States will have considerable time in the interim to gather relevant baseline data from other countries necessary to make the comparability determination for each nation. This suggests that you could easily narrow or perhaps eliminate the eight-year delay that was proposed in the two Senate bills. The key point, based on WTO jurisprudence, is that we inform the affected nations of a clear and knowable standard that can then be applied in the near future. We believe that this could be done at about the same time as the application of the U.S. cap on domestic industry.

Finally, this proposal cannot be dismissed as "protectionist" even under an accelerated timeframe for implementation. In this example, I just described, the allowance requirement on imports would not actually be applied to any country outside of the United States until about five years after the enactment of domestic cap-and-trade legislation. The Congress appears unlikely to pass such legislation until 2009 at the earliest, suggesting that the international provision would not be applied until 2014 or 2015. The date of implementation of the IBEW-AEP provision upon the exports to the United States of a foreign nation's depends on the date of enactment of U.S. climate legislation, and how long it takes to promulgate regulations for the entire economy-wide domestic program. Such an extended timeframe rebuts suggestions that the intent of the U.S. international

[3] As already noted, a comparability determination need not be performed for certain countries that are otherwise excluded from the allowance requirement. These excluded countries include least developed nations and those countries with whose greenhouse gas emissions are below a specified *de minimis* percentage of total global emissions.

allowance requirement is to protect the U.S. industries, particularly given that protectionist trade measures generally take effect almost immediately.

Relationship to the Domestic Program

Another important aspect of our proposal is that it works in conjunction with, but will not detract from, the domestic cap-and-trade program it mirrors. Importers comply with the allowance requirement using allowances tied to other recognized cap-and-trade programs, or by purchasing "international reserve allowances" from the U.S. government. The international reserve allowances come from a pool that is **entirely separate** from the allowances provided under the domestic cap-and-trade program. This means that the demand for, and use of, international reserve allowances for imports under the international program cannot distort the availability, price or use of allowances within the domestic program. Similarly, this separate allowance allocation cannot breach the U.S. emissions cap or otherwise undermine the environmental goals of the domestic program. Importantly, international reserve allowances can never be used to comply with the domestic cap-and-trade program. Rather, importers can only use them for meeting their allowance-holding requirements that apply to imported covered goods, in the event that their government is not doing its part to reduce greenhouse gas emissions.

To ensure WTO compliance, we have designed a parallel emission trading mechanism for importers which mirrors the one established for the domestic program. International reserve allowances, for example, may be traded or banked for future use. Importers also have alternative compliance options that are identical to those provided to regulated entities under the domestic program. This flexibility allows importers to achieve compliance by obtaining – in lieu of international reserve allowances – either foreign allowances that are issued pursuant to another country's cap-and-trade program or emissions offsets from domestic or international projects that meet certain minimum criteria. Finally, the price of the international reserve allowances would be pegged at the U.S. price for domestic allowances. This is intended to further assure close correlation between the cost of compliance under the international and domestic programs.

WTO Compliance

As I have noted throughout my testimony, we have strived to design a program that complies with WTO law. We have carefully crafted a parallel allowance system for imports that is intended to:

- Avoid discrimination between countries where the same conditions prevail; and
- Maintain rough comparability in the burden on imported and domestic allowances.

Although the particulars of WTO law are beyond the scope of my testimony, let me say here that the United States would be in a strong position to defend our program if it were subject to a WTO challenge by another country. Furthermore, the proposal provides the President with authority to adjust the international program to ensure consistency with WTO rulings.

I am providing detailed support for our conclusion on WTO compliance in the legal analysis that is attached as an appendix to my testimony. Generally speaking, the attached legal analysis explains the grounds for WTO compliance based on the fact that the allowance requirement for imports is consistent with each of the following WTO criteria.

- The allowance requirement is clearly linked to the environmental objective of addressing global climate change by reducing otherwise unfettered greenhouse gas emissions attributable to imports from other countries, in a fashion closely similar to what the U.S. will itself implement.

- Our program would establish a flexible measure for imports that is adaptable to and respectful of the circumstances of each exporting country, and therefore devoid of arbitrary or unjustifiable discrimination. Each exporting country would have our much-preferred choice of implementing credible greenhouse gas emission reduction program as an alternative to compelling importers' into acquiring and presenting allowance certificates, and our trading partners would be given a predictable standard in advance with which to achieve compliance.

The design, architecture, and structure of such an international allowances requirement would demonstrate that the system has no purpose other than to cause the reduction of greenhouse gas emissions and does not operate as a trade barrier or protectionist measure.

Concluding Remarks

AEP strongly supports your efforts to enact into law federal climate change legislation. This legislation should establish reasonably achievable targets and timetables for reducing greenhouse gas emissions on an

economy-wide basis. An essential element of the legislation is an international provision that requires fast-growing, developing countries to take comparable action. This would help to ensure that American jobs are not disadvantaged and that our domestic initiatives to address the environmental risks of climate change are not negated by rampant growth of greenhouse gas emissions elsewhere in the world.

Inclusion of such an international provision is essential to ensure the passage of mandatory federal climate change legislation. The Senate strongly signaled its objections to unilateral U.S. action to cap domestic emissions with its unanimous passage of the Byrd-Hagel resolution. This resolution stated that no treaty mandating greenhouse gas reduction commitments for developed countries should be ratified unless it also "mandates new commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period." Given that the Congress is now considering concrete actions to limit its greenhouse gas emissions prior to the ratification of such a treaty, it is paramount that the federal legislation must also contain an effective provision for encouraging China, India and other fast-growing developing countries to comparably curb their greenhouse gas emissions. I believe that the most effective way to achieve this objective – and to address the underlying policy concerns raised in the Byrd-Hagel resolution – is by imposing an allowance requirement on imports from non-participating nations, which incorporates the essential thrust of the IBEW-AEP proposal, and respects WTO jurisprudence.

Mr. Chairman, I hope that these suggestions will be helpful to you and your Committee colleagues in developing a solution for engaging developing countries to actually join with America in meeting the climate challenge.

Summary of WTO Analysis

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Summary of WTO Consistency of the IBEW — AEP Proposal

The IBEW-AEP proposal ("proposal") is **legal under WTO** because it applies to imports of carbon-intensive products the same types of environmental measures as the United States would apply within the United States under a cap-and-trade program. Indeed, the proposal **explicitly requires** that the requirements on imports be adjusted to ensure **consistency with international agreements** (e.g., section 502(f)(7) of the Bingaman-Specter bill (S.1766)).

The proposal **hits the mark set by WTO case law** under either the GATT national treatment obligation or the GATT exception for measures relating to the conservation of exhaustible natural resources.

The ultimate goal of the proposal is that the proposed import measures never take effect – that the leverage offered to U.S. negotiators equipped with the credible threat of WTO-compliant measures will induce large emitters to take effective action promptly on their own and through international negotiations to limit GHG emissions.

To serve that goal, the proposal meets **all applicable WTO requirements** of the exception for environmental measures, including:

(1) securing a **close "ends-means" relationship** with the overall environmental objectives of the cap-and-trade program;
(2) implementing measures **in conjunction with limitations on US production,** in an **"even-handed"** fashion so that foreign goods are not treated worse than domestic goods;
(3) adjusting import requirements to **take into account different conditions among countries**;
(4) allowing time for **good faith negotiating efforts** with **all** affected countries; and
(5) allowing time to **measure U.S. emissions reductions** before imposing trade measures.

Each of these elements is discussed below:

(1) The proposal provides a real solution to the conservation objective of reducing greenhouse gas ("GHG") emissions.

- GATT Article XX(g) provides a general exception to the GATT's substantive obligations only for those government measures that are "primarily aimed at" the conservation of exhaustible natural resources.
- In *US – Shrimp*, the WTO Appellate Body recognized that a government measure was primarily aimed at the conservation of an exhaustible natural resource because

"a close and genuine relationship of ends and means" existed between the measure and the conservation objective.

- Under the current proposal, importers could meet the requirements by providing allowances from recognized cap-and-trade programs outside the United States, or by securing international reserve allowances from the U.S. Government.

- **In contrast, a carbon tax on imports would have no direct relationship to the reduction of emissions abroad.**

(2) The proposal, which would place restrictions on the importation of certain foreign products, is implemented in parallel with restrictions on domestic production.

- GATT Article XX(g) applies "if such measures are made effective in conjunction with restrictions on domestic production or consumption" -- language that the WTO Appellate Body has interpreted as requiring "even-handedness."

- In other words, as explained by the Appellate Body in *US – Gasoline*, restrictions on imported products must be "promulgated or brought into effect together with restrictions on domestic production or consumption of natural resources."

- However, the Appellate Body also made clear in *US – Gasoline* that GATT Article XX(g) does not require "identical treatment of domestic and imported products."

(3) The proposal is structured so as to take into consideration the different conditions that may exist in affected exporting countries.

- According to the Appellate Body in *US – Shrimp*, the *chapeau* of GATT Article XX requires that a government measure "be designed in such a manner that there is sufficient flexibility to take into account the specific conditions prevailing in any exporting Member."

- **In contrast, a single carbon-intensity standard for all products in a particular sector could not meet this requirement.**

- In *US – Shrimp*, the Appellate Body found unacceptable government measures that "require other [WTO] Members to adopt essentially the same comprehensive regulatory program, to achieve a certain policy goal, as that in force within that Member's territory, without taking into consideration different conditions which may occur in the territories of those other Members."

- Moreover, the Appellate Body has found a government measure that "condition[s] market access on the adoption of a programme comparable in effectiveness" (versus the same program) satisfies the *chapeau*'s requirements because the measure permits sufficient flexibility in its application.

(4) The proposal provides sufficient time for the U.S. Government to engage in serious negotiations with all affected countries to curb GHG emissions before the international allowance requirement would enter into effect.

- The Appellate Body rejected the government measure at issue in *US – Shrimp* in part because of "[t]he failure of the United States to engage the appellees, as well as other Members exporting shrimp to the United States, in serious, across-the-board negotiations with the objective of concluding bilateral or multilateral agreements for the protection and conservation of sea turtles, before enforcing the import prohibition against the shrimp exports of those other Members."

- Moreover, in *US – Shrimp*, the Appellate Body found a violation of the anti-abuse provisions in the *chapeau* because "the United States negotiated seriously with some, but not with other Members" that were similarly situated.

- To be clear, the Appellate Body has not interpreted GATT Article XX to require that WTO Member government negotiate with other governments before it imposes an environmental measure is imposed. Rather, the *chapeau* of GATT Article XX requires non-discrimination, so that if a WTO Member government chooses to negotiate with some countries, it must negotiate with all countries that would be affected by a measure.

    - The United States is already negotiating climate issues with other nations, and the United States will discuss the application of the international allowance provision with some of the nations that are affected by it. To meet the GATT Article XX criteria, therefore, the United States will be obligated to negotiate with all of the countries to which the provision will be applied (but not those exempted from the measure), because the United States will be negotiating with some of them.

- The United States is not required to conclude negotiations – only to make serious, good-faith efforts with all affected countries (probably less than 20 large emitting nations). The negotiations could commence immediately upon passage of the legislation and enactment into law. Thus, the requirement to negotiate does not affect the date on which the allowance requirement would be imposed on imports from affected countries.

(5) The proposal imposes the international allowance requirement on imports at about the same time as the application of the cap-and-trade requirements to domestic production, and importers will be provided in advance the standard of comparability of action.

- In US – *Tuna I*, the GATT 1947 Panel noted (in an unadopted report) that because the United States had "linked the maximum incidental dolphin-taking rate which Mexico had to meet during a particular period in order to be able to export tuna to the United States to the taking rate actually recorded for United States fisherman during the same period," the "Mexican authorities could not know whether, at a given point of time, their conservation policies conformed to the United States conservation standards." The Panel concluded that "a limitation on trade based on such unpredictable conditions could not be regarded as being primarily aimed at the conservation of dolphins."

- As proposed, the allowance requirement would be applied on imports after the U.S. Government measured emissions reduction in the United States and provided that standard of "comparability" to producers in and importers from affected countries. Under WTO jurisprudence, the United States must apply the measure to affected countries in an "even-handed" manner as compared to the manner in which it is applied to U.S. production or consumption. If the United States requires concrete verification and measurable results in exporting countries, it will be difficult for the United States to justify not doing so with respect to the results achieved domestically under the cap.

- On the other hand, if the United States were to apply the allowance requirement on imports without any measurement or verified results of GHG emissions reductions inside the United States, then "even-handedness" would appear to require the United States to treat affected foreign countries in a similar fashion – without any measurement or verification of GHG emissions abroad.

WTO Background Analysis

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WTO Background Analysis of International Provisions of U.S. Climate Change Legislation

The United States Congress is contemplating legislation that would impose a mandatory cap-and-trade program for U.S. greenhouse gas (GHG) emissions. This legislation must also provide leverage to ensure that emissions in other countries, particularly rapidly developing countries such as China or India, do not undermine these efforts to protect the environment. To provide effective leverage, the U.S. legislation must be compliant with the Agreement Establishing the World Trade Organization (WTO). To that end, the International Brotherhood of Electrical Workers (IBEW) and American Electric Power (AEP) have proposed that the United States impose an allowance requirement on imports of carbon-intensive goods from countries that fail to take action on GHG emissions comparable to that of the United States.[4] Counsel for AEP has prepared the following legal analysis on the WTO-consistency of such a requirement.

I. Summary

Where governments take action to address environmental protection, WTO law favors doing so through consensual and multilateral procedures, rather than unilateral trade measures. However:

- if the United States made **good faith efforts** to negotiate with **all affected** nations on a non-discriminatory basis but was unable to reach agreement on procedures to reduce greenhouse gas emissions, then
- the United States could **require imports** of goods to be accompanied (electronically) by emissions **allowances**,
- in the context of a broader requirement that **domestic producers** have emission allowances.

Analyzing the WTO-consistency of an allowance requirement on imports is a two-step process: (1) is the requirement, as a measure, **consistent** with the relevant obligations of the WTO, and if not; (2) is it covered by a WTO **exception**?

[4] A summary of the IBEW-AEP proposal is attached.

One could argue that an allowance requirement on imports should be considered as part of the overall U.S. cap-and-trade program. As such, it would be consistent with the WTO national treatment obligation set forth in GATT Article III:4, because it would be administered to accord imported goods treatment no less favorable than the treatment accorded "like" domestic goods. If the allowance requirement on imports were not considered as part of domestic regulation, then it would be governed by the obligations set forth in GATT Article XI or II regarding border measures. Even if the measure were not consistent with applicable WTO obligations, however, the allowance requirement would be covered by the WTO exception set forth in GATT Article XX(g) for measures relating to the conservation of exhaustible natural resources or the exception set forth in GATT Article XX(b) for measures relating to the protection of human, animal or plant life or health. The allowance requirement, under which allowances submitted with imports would be retired from further use, just as allowances assigned to domestic production would be, is closely related to the conservation objective of the overall climate change program. It is also an important part of a comprehensive regulatory scheme that is apt to cause substantial benefits to health and life.

The relevant WTO provisions are included in an Appendix attached to this memorandum, and the following chart illustrates the results of the WTO analysis:

WTO ANALYSIS	**ALLOWANCE REQUIREMENT ON IMPORTS**
1. Is measure consistent with WTO obligations?	
(a) Issue	**Either** it is considered as part of internal regulation . . .
- Applicable provisions	GATT Article III
- Outcome	WTO consistent if judged in the context of overall domestic regulation, affords national treatment, *i.e.*, treatment to imported goods no less favorable than that accorded to "like" domestic goods.
(b) Issue	**. . . or** it is judged as a border measure.
- Applicable provision	GATT Articles II and XI
- Outcome	Not WTO-consistent if the measure imposes charges in excess of scheduled duties or border restrictions.
2. If the measures is not WTO consistent, then is it covered by a WTO exception . . .	
(a) Issue	**Either** measure relates to the conservation of exhaustible natural resources . . .
- Applicable provision	GATT Article XX(g)
- Outcome	Yes, it is closely related to the objective of conservation
(b) Issue	**. . . or** measure is necessary to the protection of human, animal or plant life or health . . .

- Applicable provision	GATT Article XX(b)
- Outcome	Yes, even though in the short term it may be difficult to isolate the contribution of a single measure to reducing climate change, it is part of a comprehensive regulatory scheme that is apt to induce sustainable change.
3. . . . and the "chapeau" to Article XX?	Is the measure applied in a manner that does not arbitrarily or unjustifiably discriminate between countries where the same conditions prevail, or is not a disguised restriction on trade?
- Applicable provision	Article XX chapeau
- Outcome	Yes, focusing on top emitting countries, and only those that had not addressed GHG emissions, would be justified because of clear link to GHG emission reduction goals; the measure is flexible and not "capricious" or "random" and the rationale for discrimination relates to the policy objective.
4. Result?	**YES, MEASURE IS PERMISSIBLE UNDER WTO RULES**

II. Description of Measure

The domestic context for GHG-related trade measures would be a **cap-and-trade program** under which the U.S. Government would determine a **quantitative cap** for GHG emissions, and establish quantitative **emission allowances,** the sum of which would equal the U.S. GHG emissions cap. This system would be modeled on the EPA's existing U.S. cap-and-trade program in its Acid Rain Program,[5] with some differences. The government would issue electronic allowance certificates (each with a unique serial number for tracking and safeguards against counterfeiting) to show the amount of GHG emissions allowed. The certificates could then be transferred or sold in an **allowances market**. A firm emitting more GHGs than its existing allowances would permit would need to procure additional allowances or would be penalized for exceeding its allowances. All firms generating GHGs would have to continually monitor and report their emissions.

A domestic cap-and-trade program, implemented without measures to address GHG emissions from outside the United States, would be ineffectual in addressing the full range of GHG emissions affecting the environment. An allowance requirement imposed on imports would help to secure the environmental benefits of the overall program.

Under the IBEW-AEP proposal, the U.S. Government would **negotiate** with GHG emitting countries to secure internationally agreed disciplines on GHG emissions. Before and after U.S. implementing regulations were promulgated, the U.S. Government would begin to measure on an annual basis the reduction of GHG emissions in sectors under the U.S. cap and use those data to determine whether and to what extent key sectors in other countries had taken comparable action. The determination would be based, therefore, on the impact on GHG emissions rather than

[5] Described at http://pubweb.epa.gov/air/clearskies/captrade.html, last visited January 25, 2008.

the precise form of the regulatory program used to achieve those effects. The U.S. Government would focus its determination on those countries that contribute most to global GHG emissions – least developed countries and countries with less than a *de minimis* volume of GHG emissions would be excluded.

If the U.S. Government determined that a country did not take comparable action, then an importer of certain goods from that country would be required to provide allowances to the U.S. Government corresponding to the GHGs emitted when the imported goods were produced in the country of origin. The U.S. Government would use an **adjustment factor** in setting the number of allowances required for imported goods. This adjustment factor would reflect the portion of allowances that domestic producers receive at no cost in relation to the allowances that domestic producers procure by auction. The adjustment factor would also reflect the conditions prevailing in different countries.

Which imported goods would be subject to the requirement? The scope of imported goods subject to the allowances requirement could be set to match as nearly as possible the scope of the domestic requirement. Thus, if the requirement were to apply only to the production of **carbon-intensive goods**, or only to "upstream" rather than "downstream" products, then the scope of imports covered by the requirement could be set accordingly. This contributes to ensuring non-discriminatory treatment of imports.

What would be the source of these certificates? Under one approach, importers would secure allowances from the normal supply of allowances made available for U.S. entities to satisfy their obligations under the U.S. cap-and-trade system. Thus, importers could obtain U.S. emissions allowances from the producer/exporter or brokers operating generally in the marketplace. Alternatively, the U.S. Government could establish a separate (unlimited) supply of allowances that would only be used by importers. Finally, the U.S. Government could **permit importers to satisfy their obligations using allowances (and credits) generated under the cap-and-trade systems of other countries**. The Bingaman-Specter and Lieberman-Warner bills combine the last two approaches.

III. Is the Measure Compliant with U.S. International Obligations?

In order to effectively persuade major newly industrializing economies to participate in GHG reduction, U.S. legislation must be permissible under WTO rules.[6] Two key principles of WTO law are germane to assessing the WTO legality of measures that could be used as part of a cap-and-trade program:

- each WTO Member government must obey its market access commitments on import tariffs, and cannot otherwise block imports (GATT Articles II, XI);
- it also may not use its domestic taxes, or **any** domestic regulations, so as to discriminate in favor of domestic goods compared to like imported products, or in

[6] We focus here only on WTO rules, as the WTO Agreement is the only agreement that binds both the United States and major countries of concern to Congress. Other U.S. treaties would also apply to climate change legislation, but the basic principles would not differ.

favor of imported goods from one foreign country rather than another (GATT Articles I, III).

In accordance with these principles, the legal status of a measure under the GATT may be different depending on whether it is a border measure or whether it is an internal measure enforced at the border. GATT Article II:1(b) prohibits new import charges, and Article XI:1 prohibits bans or quantitative restrictions on imports. A measure that comes under either GATT article would likely be WTO-inconsistent. However, under GATT Article III, a WTO Member is entitled to regulate all products that are sold in its market provided that internal regulation does not afford protection to domestic over imported goods.

Thus, notwithstanding the prohibitions embedded in Articles XI:1 and II:1(b), a restrictive internal regulation (such as a residue limitation or product ban) or a prohibitive internal excise tax can be enforced on imports at the border, and be judged under GATT Article III, rather than Articles XI or II. In other words, the border-enforced internal measure would be completely GATT-consistent as long as it is non-discriminatory. The Note to Article III shows how the GATT draws the line between border measures and border-enforced internal measures. The Note identifies two issues that must be considered: does the tax, charge or regulatory requirement apply **both** to an imported product and to the like domestic product, and is it collected or enforced "at the time or point of importation"? The stated policy purpose of a measure is not relevant, nor is its categorization by domestic law.[7]

The following analysis examines whether the allowance requirement on imports is consistent with the WTO market access commitments and non-discrimination obligations for trade in goods. GATT law considers the regulation of imported goods either as a border measure, or as part of an overall program of internal regulation, but not both. There are good arguments that the allowance requirement is best understood as part of internal regulation, but it is a very close question. We review both sets of arguments below.

A. Consistency with WTO Market Access Commitments

To simplify this analysis, we consider an allowance requirement as it applies to a hypothetical ton of steel produced and exported from Country X and a "like" ton of steel (*i.e.*, same physical characteristics and uses) produced in the United States. Of course, actual trading patterns may be more complex, involving multi-stage processing across borders, and some imported products are not produced in the United States.

As stated above, Articles II:1(b) and XI:1 are the GATT provisions that are relevant in assessing whether an allowance requirement on imports is a border measure, and as such, whether it is consistent with the WTO **market access** commitments of the United States. First, GATT Article II:1(b) prohibits the imposition of any new extra charges or surcharges on products that are subject to tariff concessions—and close to 100 percent of U.S. imports are now under such concessions. If the allowance requirement program mandated that only importers—as opposed to importers and domestic producers—buy allowance certificates or pay an

[7] *EC – Regulation on Imports of Parts and Components*, GATT BISD 35S/37 (1990), paras. 5.6-5.7.

extra charge, it would constitute a new border charge, and as such, it would violate GATT Article II:1(b). Second, GATT Article XI:1 prohibits any border measure restricting imports other than duties, taxes or other charges. By requiring that importers present allowance certificates as a condition for importation, the allowance requirement program could cause a decrease in the volume of imports. As a result, the program would constitute a border measure that imposes a quantitative limitation on imports in violation of GATT Article XI:1.

If the allowance requirement on imports is a border measure under either GATT Article II or Article XI, it will not be consistent with the WTO market access commitments of the United States. To have a chance of surviving WTO scrutiny at this first level of analysis, the allowance requirement must be justifiable as an internal measure that falls in line with the WTO non-discrimination obligations of the United States.

B. Consistency with WTO Non-Discrimination Obligations

GATT Article III is the most important provision, for the purposes of this analysis, embodying the non-discrimination principle of the WTO.

In contrast to the interpretation described above, the United States could argue that the allowances requirement should be considered an internal regulation subject to the national treatment obligation set forth in GATT Article III:4. To ensure compliance with Article III:4, the United States could adjust the scope of imported goods covered by the allowances requirement, and the number of allowances required to be submitted for particular imported goods. A WTO dispute settlement panel might point out, however, that the allowances program is a regulation on U.S. **producers**, whereas, the allowances requirement on imports is a regulation on imported **products**. On that basis, the Note to Article III might rule out classifying the allowances requirement on imports as an internal regulation subject to Article III.[8] But the United States could respond that the scope of Article III has been interpreted more flexibly than a hard-and-fast, line-drawing exercise would permit. For example, a measure, such as this one, regulating whether and how products, including domestic products, can be sold constitutes an internal regulation for purposes of Article III.

As an internal regulation, the allowance requirement on imports would be subject to GATT Article III:4, under which the United States must accord to imported products "treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use." A note to Article III provides that "[a]ny internal tax or other internal charge, or any law, regulation or requirement . . . which applies to an imported product and to the like domestic product and is collected or enforced in the case of the imported product at the time or point of importation, is nevertheless to be regarded as an internal tax or other internal charge, or a law,

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[8] The distinction between a regulation of U.S. *producers* and a regulation of imported *products* is based on the product-process doctrine. Under the doctrine, the line is not drawn between regulations of products on the one hand and regulations of producers and production processes on the other. Rather, it is drawn between regulations of products and regulations of producers and production processes that affect characteristics of the product on the one hand, and regulations of producers and production processes that do **not** affect characteristics of a product on the other. See Robert Hudec, *The Product-Process Doctrine in GATT/WTO Jurisprudence* in M. Bronckers and R. Quick, *eds.*, NEW DIRECTIONS IN INTERNATIONAL ECONOMIC LAW,187, 191-92.

regulation or requirement . . . and is accordingly subject to the provisions of Article III."[9] When an internal tax (such as VAT or an excise tax) is collected on imports at the border, that is called a *border tax adjustment*.

These provisions mean that if the U.S. imposes a regulation (such as the EPA's rules on gasoline composition under the Clean Air Act), the regulation must treat imported products no less favorably than like U.S. products. The internal U.S. measure can be enforced on imports at the border, but it must not discriminate against imports. In determining whether a measure discriminates against imports, WTO panels look to its effect on the conditions of competition between the domestic product and imported like products.[10]

Finally, there are two more non-discrimination requirements in the GATT that would be relevant. The most-favored nation (MFN) clause in GATT Article I:1 prohibits discrimination between foreign sources of supply. The MFN clause applies to border charges of any kind, to internal taxes or regulations, and to border enforcement of internal taxes or regulations. Under Article I:1, whenever a WTO Member grants an advantage, favor, privilege or immunity to a product from any country, it must accord that advantage, favor, privilege or immunity to the like product of any WTO Member. In addition, GATT Article XIII requires non-discriminatory application of any quantitative restrictions on imports.

If all imported steel from any foreign country were equally subject to the allowances program and received equal treatment, then the measure would be consistent with Article I:1. If an imported ton of steel from Country X were subject to the allowances measure but a "like" ton of steel from Country Y were not (for example because Country Y has a different set of arrangements with the U.S. to meet the objectives of GHG emission reduction), then it would raise questions under GATT Article I:1. However, the United States could argue that, under GATT Article I:1, it is entitled to impose conditions on the importation of products, provided that those conditions apply in the same way to imported products from all sources.[11] The United States could exclude from the allowance requirement of imports from WTO Members whose GHG emissions are below a *de minimis* threshold, which would capture most of the WTO Members that are considered by the United Nations to be least-developed countries.[12] With respect to the largest GHG emitting countries, the United States might point out that the climate change-related objective is the same, but the treatment of Country X and Country Y steel differs because the objective is being met in different ways. The Appellate Body might consider this argument under GATT Article I:1, just as

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[9] GATT, Note *Ad* Article III. The "*Ad* Notes" to the GATT have coequal status with the main GATT text.

[10] The focus on "conditions of competition" is a consistent theme in cases applying GATT Article III since 1957; as one example, *see Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef* ("*Korea – Beef*"), WT/DS161/AB/R, WT/DS169/AB/R, 11 December 2000, at para. 135, finding that treatment no less favorable under Article III "means...according *conditions of competition* no less favourable to the imported product than to the like domestic product."

[11] Panel Report, *Canada – Certain Measures Affecting the Automotive Industry*, WT/DS139/R, WT/DS142/R, adopted 19 June 2000, modified by Appellate Body Report, WT/DS139/AB/R, WT/DS142/AB/R, DSR 2000:VII, 3043, paras. 10.23-10.24.

[12] Described at http://www.unctad.org/Templates/Page.asp?intItemID=3618&lang=1, last visited January 25, 2008.

it has in cases applying GATT Article III:4.[13] However, this would be a novel argument in relation to Article I:1, and textual differences between Articles I and III would need to be taken into account in applying this argument to Article I.

IV. Applicability of WTO Exceptions

This portion of the analysis focuses on whether any of the general WTO exceptions for trade in goods would permit the United States to maintain the allowance requirement on imports.

Even if a government measure would ordinarily conflict with the market access and non-discrimination provisions of the GATT, the violation may be excused by one of the ten special policy-based exceptions provided in GATT Article XX. These exceptions apply when a measure is taken for particular purposes or under particular circumstances listed in Article XX. To prevent abuse, these exceptions are all subject to two safeguards provided in a general opening clause ("*chapeau*") to Article XX. The WTO Appellate Body has developed a standard "two-tiered" method for applying Article XX: first, examine whether a measure falls within one of these policy-based exceptions; second, determine whether it complies with the anti-abuse safeguards in the *chapeau*.[14] The following analysis concentrates on paragraph (g) of Article XX, which has been used in similar situations. Paragraph (b) of Article XX, covering measures "necessary to protect human, animal or plant life or health," could also apply to the measures described above. The "necessary" condition under paragraph (b) has been interpreted strictly in WTO jurisprudence although the Appellate Body has recently suggested that it should provide additional flexibilities when the measure is part of a comprehensive regulatory scheme or where there is a long-lead time between implementation and the expected result.[15]

A. Does an Exception in GATT Article XX Apply?

1. Article XX(g)

Article XX(g) provides an exception for "measures . . . relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption." The United States has already successfully argued in WTO dispute settlement that U.S. import restrictions on shrimp, which are tied to domestic restrictions on shrimp harvesting designed to protect sea turtles, are justified under Article XX(g). Article XX(g) would be the logical focus for justifying any trade measures on climate change that are otherwise

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[13] For instance, in one case, the WTO Appellate Body found that the detrimental effect of a measure on imports may be "explained" – and thereby justified under Article III – "by factors or circumstances unrelated to the foreign origin of the product." Appellate Body Report, *Dominican Republic – Measures Affecting the Importation and Internal Sale of Cigarettes*, WT/DS302/AB/R, adopted 19 May 2005, at para. 96. To recall, the Appellate Body here was expanding on a line of reasoning it started in *Chile - Alcohol* and *Korea – Beef* in which it found that "[a] formal difference in treatment between imported and like domestic products is…neither necessary, nor sufficient, to show a violation of Article III:4. [Rather, the question is] whether a measure modifies the conditions of competition…to the detriment of imported products," at para. 137.

[14] Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products ("U.S. – Shrimp (AB)")*, WT/DS58/AB/R, 12 October 1998, paras. 118-119 (citing *US—Gasoline* case).

[15] In Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres* ("*Brazil – Tyres*"), WT/DS332/AB/R, December 3, 2007 (not yet adopted), at paras. 150-1, 172.

inconsistent with GATT's market access or non-discrimination rules. Under the analysis used in the *US-Shrimp* case, the United States would need to demonstrate that:

- the resources to be protected, *e.g.*, clean air or dry land, are "**exhaustible**,"
- the measures at issue are measures "**relating to**" the conservation of the resource, and
- these measures are "made effective in conjunction with restrictions on domestic production or consumption."

First, in current circumstances, we believe that a WTO dispute settlement panel would agree that clean air and dry land are "exhaustible natural resources" in the sense of Article XX(g). The panel in *U.S. – Gasoline* explicitly found that clean air is a resource that is natural and capable of depletion, even if it is renewable.[16] Later, in *U.S. – Shrimp*, the Appellate Body stated "[w]e do not believe that 'exhaustible' natural resources and 'renewable' natural resources are mutually exclusive."[17] It also found that paragraph (g) must be "read ... in the light of contemporary concerns of the community of nations about the protection ...of the environment."[18] At present, no concern about the protection of the environment is more important and uniting than the need to reduce GHG emissions, and the fact that the Convention on Climate Change was ratified by all but four UN Members States bears witness to that.[19]

Next, to be a measure "relating to" conservation, the allowance requirement must be crafted to bear a relationship with its stated goals, and must be designed to achieve those goals. Indeed, the Appellate Body has interpreted the phrase "relating to" to mean "primarily aimed at",[20] or evidencing a means and ends relationship.[21] In *U.S. – Gasoline*, the Appellate Body found that the measure at issue permitted "scrutiny and monitoring" of compliance with its environmental objectives. It therefore concluded that the measure, although inconsistent with national treatment, was truly designed to achieve clean air conservation and thus fell within the exception.[22] Likewise, in *U.S. – Shrimp*, the Appellate Body focused on the "design and structure" of the measure at issue and was satisfied to find that the measure was narrow enough in scope that it did not constitute a "simple, blanket prohibition" against importation. Consequently, the measure bore a "close and real relationship" with its stated objectives.[23]

In contrast, in *US – Tuna I*,[24] the GATT 1947 Panel noted (in an unadopted report) that because the United States had "linked the maximum incidental dolphin-taking rate which Mexico had to meet during a particular period in order to be able to

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[16] Panel Report, *US – Gasoline*, at para. 6.37.
[17] *US – Shrimp (AB)*, at para. 128.
[18] *Id.*, para. 129.
[19] See Status of Ratification, available at http://unfccc.int/files/essential_background/convention/status_of_ratification/application/pdf/unfccc_ratification_22.11.06.pdf, last visited April 23, 2007.
[20] Appellate Body Report, *US- Gasoline*, WT/DS2/AB/R, 29 April 1996, p. 16, 18-19.
[21] *US – Shrimp (AB)*, at para. 141.
[22] *US – Gasoline (AB)*, p. 19.
[23] *US – Shrimp (AB)*, at para.141.
[24] Panel Report, *United States – Restrictions on Imports of Tuna (Tuna I)*, DS21/R, GATT BISD 39S/155 (circulated 3 September 1991; not adopted).

export tuna to the United States to the taking rate actually recorded for United States fisherman during the same period," the "Mexican authorities could not know whether, at a given point of time, their conservation policies conformed to the United States conservation standards."[25] The Panel concluded that "a limitation on trade based on such unpredictable conditions could not be regarded as being primarily aimed at the conservation of dolphins."[26]

Finally, to show that the allowance requirement program is "made effective in conjunction with restrictions on domestic production or consumption," the U.S. would have to show that if and where a requirement for allowances burdens imports, these allowances also burden domestic goods.[27] This test requires only "even-handedness,"[28] not "equality of treatment."[29] If a measure did not accord less favorable treatment to imports than it did domestic goods, it would not offend Article III, and therefore, would not need to be justified under an exception. On the other hand, a measure that solely burdens imports is not likely to be considered as even-handed, and would not find shelter under paragraph (g).[30] The import component of the allowances program is not intended to impose on foreign producers all or a disproportionate amount of the program's costs—it is intended to achieve appropriate burden-sharing in the shared fight against global warming, ideally through measures negotiated and adopted by governments. And even-handedness, because of the balance it strikes, sets a standard that the United States can meet in crafting climate change legislation.

An emissions allowances requirement falls within the policy-based exception for conservation in Article XX(g). As discussed above, the United States should encounter no difficulty arguing that clean air or dry land or other environmental resources put at risk by climate change are exhaustible natural resources threatened with depletion by GHG emissions. As for the second element under Article XX(g), "relating to," the Appellate Body has interpreted it in the *U.S. – Gasoline* and *U.S. – Shrimp* cases in a way that leads us to conclude that the United States could satisfy the standard it sets—since the allowances requirement is designed to effectively limit emissions by requiring presentation of allowance certificates.

Lastly, the United States could meet the requirement of even-handedness by applying the allowances requirement to domestic industry and enforcing the domestic program to compel producer reporting and compliance with the emissions caps. No WTO panel will accept a U.S. GHG reduction program that shifts all or a disproportionate part of the burden of GHG reduction to foreign producers, by restricting imports while giving a break to domestic producers. Even-handedness also rules out free rides—the United States must exempt from the allowances requirement all those countries that have adopted meaningful and satisfactory (i.e., comparable) emission

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[25] *Tuna I*, at para.5.28.
[26] *I.d*
[27] For example, in *U.S. – Shrimp*, the United States required shrimp trawlers to use turtle excluder devices (TED) to exclude turtles from their nets when fishing in waters that are likely to be turtle habitat. Exporting countries had to demonstrate their use of TEDs in order to be certified to export to the United States. Domestically, the United States required that shrimp trawlers use TEDs and imposed civil and criminal penalties (later changed to civil penalties and monetary sanctions) on offenders. See *U.S. – Shrimp (AB)*, at para. 144.
[28] *U.S. – Gasoline (AB)*, p. 20-21; *US-Shrimp (AB)*, at paras. 144-45.
[29] *U.S. – Gasoline (AB)*, p. 21.
[30] *U.S. – Gasoline (AB)*, p. 21.

reductions. On the other hand, the United States could exempt from coverage countries whose GHG emissions are below some *de minimis* level, as imposition of the allowance requirement to goods of such countries would not contribute to the non-trade policy objective of the program.

2. Article XX(b)

Article XX(b) offers an additional defense. It provides an exception for measures that are "necessary to protect human, animal or plant life or health." The United States would need to demonstrate:

- that the *policy* in respect of the measures for which the provision was invoked fell within the range of policies designed to protect human, animal or plant life or health; and
- that the inconsistent measures for which the exception was being invoked were *necessary* to fulfill the policy objective.[31]

First, we believe that a WTO dispute settlement panel would agree that a measure designed to curb climate vulnerability and its resulting effect on the spread and increased susceptibility of populations to disease and death would be a measure to protect human, animal and plant life or health within the meaning of Article XX(b). The World Health Organization has made a number of explicit findings linking climate change to significant public health problems that support this conclusion.[32] The Panel in *U.S. – Gasoline* found that Clean Air Act gasoline standards were designed to protect health and life.[33] Similarly, in *Brazil – Tyres* the Appellate Body found that Article XX(b) is satisfied by a measure to ban the importation of used tires because the accumulation of used tires contributed to the spread of disease and toxic tire fires.[34]

Second, in order to demonstrate that a trade-restrictive measure is "necessary" a country must show ""that the measure is apt to make a material contribution to the achievement of its objective."[35] To this end, the Appellate Body has recognized that "certain complex public health or environmental problems may be tackled only with a comprehensive policy comprising a multiplicity of interacting measures."[36] As an example of the type of objective that may require a longer time frame to demonstrate a contribution, the Appellate Body noted that "for instance, measures adopted in order to attenuate global warming and climate change, or certain preventive actions to reduce the incidence of diseases that may manifest themselves only after a certain period of time—can only be evaluated with the benefit of time."

Additionally, where the measure at issue is part of a comprehensive policy , the Appellate Body has noted that "[s]ubstituting one element of this comprehensive policy

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[31] Panel Report, *US – Gasoline*, at para. 6.20.
[32] *See, e.g.*, Bulletin of the World Health Organization, *Global Climate Change: Implications for International Public Health Policy* (March 2007), available at: http://www.who.int/bulletin/volumes/85/3/06-039503/en/index.html, last visited January 25, 2008.
[33] Panel Report, *US – Gasoline*, at para. 6.21.
[34] Appellate Body Report, *Brazil – Tyres*, at para. 136.
[35] Appellate Body Report, *Brazil – Tyres*, at para. 150.
[36] Appellate Body Report, *Brazil – Tyres*, at para. 151.

for another would weaken the policy by reducing the synergies between its components, as well as its total effect."[37]

An emissions allowance requirement for imports meets these criteria because it is part of a comprehensive policy that has synergies between its components and because it is apt to materially contribute to the reduction of carbon emissions, even if proof of that fact requires the benefit of time to demonstrate.

B. Does the Measure Satisfy the GATT's Safeguards Against Abuse?

As discussed above, all of the GATT's policy-based exceptions are subject to two safeguards provided in a general opening clause ("*chapeau*") to Article XX. This clause provides that measures that fall within the policy-based exceptions in Article XX may not be **applied in a manner** which would constitute **arbitrary or unjustifiable discrimination** between countries where the same conditions prevail, or a **disguised restriction on international trade**. The issue here is not the substance of a measure, but how it is applied. A WTO panel or the Appellate Body may agree entirely that a measure is a legitimate use of Article XX, but at the same time find that the way this legitimate measure is applied constitutes arbitrary or unjustified discrimination or disguised protectionism.

"Arbitrary or unjustifiable discrimination" in this context is discrimination not between products, but between countries where the same conditions prevail. The discrimination in question can be discrimination between the United States and one or more foreign countries, or it can be discrimination between different foreign countries. Different treatment of countries is permissible and even appropriate where these countries have objectively different conditions.[38] In practice, this proviso has been interpreted to bar an importing country from using an economic embargo to require its trading partners to adopt "essentially the same comprehensive regulatory program, to achieve a certain policy goal, as that in force within the Member's own territory, *without* taking into account different conditions which may occur in the territories of those other Members."[39]

The ban on arbitrary discrimination has also been interpreted to require that advantages offered to one trading partner must be equally available to other similarly situated trading partners. For instance, in the *US—Shrimp* case, the United States adopted a cooperative approach and negotiated an agreement on sea turtle protection with Caribbean nations, but did not pursue any negotiations with other WTO Members, including nations of the Western Pacific. The Appellate Body found that to avoid arbitrary or unjustifiable discrimination, the United States had to provide all exporting

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[37] Appellate Body Report, *Brazil – Tyres*, at para. 172.

[38] For example, in *Brazil – Tyres*, Brazil initially applied an import ban on tires from all origins, but then provided an exemption for tires from MERCOSUR countries. The panel found that the exemption constituted discrimination, but that the discrimination "[did] not seem to be motivated by capricious or unpredictable reasons." It found rather that the discrimination was due "to a ruling within the MERCOSUR framework [with] binding legal effects for Brazil." Panel Report, *Brazil – Tyres*, at para. 7.272. More importantly, the panel found that notwithstanding the ban, retreaded tires from non-MERCOSUR countries were still entering Brazil along with tires from MERCOSUR countries. The panel thus concluded that the discrimination resulting from the ban was arbitrary or unjustifiable under Article XX. Panel Report, *Brazil – Tyres*, at para. 7.306.

[39] *U.S. – Shrimp (AB)*, at para. 163-164; see also para. 177.

countries similar opportunities to negotiate an international agreement, by engaging in "serious, across-the board negotiations with the objective of concluding bilateral or multilateral agreements" on sea-turtle protection.[40] Nevertheless, although the United States had to make good faith efforts to reach agreements that are comparable from one forum of negotiation to another, its failure to reach comparable agreements did not constitute arbitrary or unjustifiable discrimination.[41]

Additionally, the discrimination must be evaluated based on its rationale rather than its effect.[42] That is, discrimination must have a rational connection to the objective of the measure, as described in one of the separate paragraphs of Article XX.[43]

The transparency and predictability of a measure are also relevant. In the *U.S. – Shrimp* case, the Appellate Body found the "informal" and "casual" nature of the certification process deprived it of basic fairness and due process, tarnished its transparency and predictability, and therefore, rendered it discriminatory in an arbitrary and unjustifiable manner.[44]

The requirement that the measure not constitute a "disguised restriction on international trade" has been defined as including restrictions that are actually discriminatory but are taken under guise of a legitimate Article XX exception: in effect, a form of stealth protectionism.[45]

As proposed by IBEW-AEP, U.S. climate change legislation would treat imports of products of countries that have *not* taken comparable action on GHG emissions less favorably than imports from a country that have done so. This difference in treatment would be justified under Article XX(g) of the GATT, for the reasons (and under the circumstances) described above. But in that case, the ban on arbitrary discrimination in the opening clause (*chapeau)* of Article XX would require that, if the United States were to negotiate with some countries before imposing the measure, it undertake "serious, across-the board negotiations with the objective of concluding bilateral or multilateral agreements" on GHG reduction, with *all* concerned parties. The United States would not have to reach agreements with these other countries, but it would have to make a non-discriminatory, good faith effort with each one. Second, the United States would have to take its trading partners' differences in circumstances into account in devising and implementing its measures. Finally, the U.S. measures would have to be implemented with due process and fairness. The IBEW-AEP proposal for U.S. climate change legislation meets these standards.

As we have discussed, the United States would appear to be in a strong position to defend a requirement that importers of goods from a country must present emission allowance certificates to cover the GHG emissions represented by the goods. First, such a measure is clearly linked to the purpose of GHG emissions reduction. Second,

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[40] *U.S. – Shrimp (AB)*, para. 166.
[41] *U.S. – Shrimp (AB)*, para. 166; Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products: Recourse to Article 21.5 of the DSU by Malaysia ("US – Shrimp (21.5 AB)*, WT/DS58/AB/RW, 22 October 2001, at paras. 122-134.
[42] Appellate Body Report, *Brazil – Tyres*, at para. 229.
[43] Appellate Body Report, *Brazil – Tyres*, at para. 227.
[44] *U.S. – Shrimp (AB)*, at paras. 180-81.
[45] *U.S. – Gasoline (AB)*, p. 25.

this would be a flexible measure adaptable to the circumstances of each exporting country, and therefore devoid of arbitrary or unjustifiable discrimination. Each exporting country would have a choice to implement any GHG emission reduction program as an alternative to forcing importers into presenting allowance certificates, and trading partners would be given a predictable standard in advance with which to achieve compliance. Third, the design, architecture, and structure of such an allowances requirement would demonstrate that the system has no purpose other than to cause the reduction of GHG emissions. Consequently, the *chapeau* of Article XX would pose no obstacle to deployment of a U.S. allowances program to combat climate change.

Attachment

APPENDIX OF RELEVANT WTO PROVISIONS

1. GATT Article I: General Most-Favored-Nation Treatment

1. With respect to customs duties and charges of any kind imposed on or in connection with importation or exportation...any advantage, favour, privilege or immunity granted by any [Member] to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other [Members].

2. GATT Article II: Schedules of Concessions

1. (a) Each [Member] shall accord to the commerce of the other [Member] treatment no less favorable than that provided for in the appropriate Part of the appropriate Schedule.

(b) The products described in Part I of the Schedule...shall, on their importation into the territory to which the Schedule relates...be exempt from ordinary customs duties in excess of those set forth and provided therein. Such products shall also be exempt from all other duties or charges of any kind imposed on or in connection with the importation in excess of those imposed thereafter by legislation in force in the importing territory on that date.

3. GATT Article III: National Treatment on Internal Taxation and Regulation

1. The [Members] recognize that internal taxes and other internal charges, and laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products, . . . should not be applied to imported or domestic products so as to afford protection to domestic production.

2. The products of the territory of any [Member] imported into the territory of any other [Member] shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products. . . .

4. The products of the territory of any [Member] imported into the territory of any other [Member] shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use. . . .

4. GATT Note Ad Article III

Any internal tax or other internal charge, or any law, regulation or requirement of the kind referred to in paragraph 1 which applies to an imported product and to the like domestic product and is collected or enforced in the case of the imported product at the time or point of importation, is nevertheless to be regarded as an internal tax of other internal charge, or a law, regulation or requirement of the kind referred to in paragraph 1, and is accordingly subject to the provisions of Article III.

5. GATT Article XI: General Elimination of Quantitative Restrictions

1. No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any [Member] on the importation of any product of the territory of any other [Member] or on the exportation or sale for export of any product destined for the territory of any other [Member].

6. GATT Article XIII: Non-Discriminatory Administration of Quantitative Restrictions

1. No prohibition or restriction shall be applied by any [Member] on the importation of any product of the territory of any other [Member] or on the exportation of any product destined for the territory of any other [Member], unless the importation of the like product of all third countries or the exportation of the like product to all third countries is similarly prohibited or restricted.

7. GATT Article XX: General Exceptions

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any [Member] of measures:

* * *

(b) necessary to protect human, animal or plant life or health;

* * *

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

The IBEW – AEP International Proposal –
How it Operates within Climate Change Legislation

1. What are the objectives?

   - The goal is to establish an environmental framework that protects the environment and fairly treats U.S. workers.
   - The framework seeks to –
     - find a global solution to the global climate change problem, and by solving this problem, also:
     - helps prevent the shifting of U.S. jobs to foreign countries that would have lower manufacturing costs merely because they refuse do their part to limit greenhouse gas (GHG) emissions.

2. Which countries are covered?

   - The allowance requirement only applies to foreign countries that are –
     - large-emitters of GHG emissions, and
     - not taking "comparable action" to address their emissions.
   - "Comparable action"
     - Must be measured and verified with demonstrated enforcement within that country
     - Determined solely by the President or independent U.S. agency
   - Foreign countries are excluded if they –
     - Have taken "comparable action" to limit their GHG emissions,
     - Are among the poorest developing countries, or
     - Have *de minimis* levels of GHG emissions.

3. How does the allowance requirement work?

   - U.S. importers must hold allowances (see below) to cover emissions from imported goods.
   - Failure to submit allowances bars entry of imported goods into the U.S.
   - The allowance requirement –
     - applies about the same time as the U.S. cap-and-trade program, and

- strives to mirror allowance requirement that the U.S. program imposes on producers of domestic goods.

4. How do importers comply?

   - Importers may comply with the allowance requirement by –

     - obtaining emission allowances issued pursuant to other foreign GHG regulatory programs

     - obtaining certified emissions credits issued pursuant to the U.S. program or other foreign GHG regulatory programs

     - purchasing "international reserve allowances" from a separate pool that is reserved only for this purpose (see below)

5. What are the key features of international reserve allowances work?

   - The allocation of international reserve allowances will not reduce the number of allowances allocated for domestic compliance.

   - The international reserve allowances –

     - cannot be used for domestic compliance, and

     - can only be used for meeting the allowance requirement applicable to imported covered goods.

   - The price of the international reserve allowances would be pegged at the U.S. market price for domestic allowances.

   - International reserve allowances may be traded and banked for future use.

6. When does allowance requirement apply?

   - To fully comply with WTO, the U.S. first must make good faith efforts to negotiate with foreign countries to limit their GHG emissions.

   - The allowance requirement is a measure of last resort that applies after the promulgation of regulations and near the start of the U.S. cap-and-trade program.

     - This ensures that the "comparability" of foreign action on GHG emissions can be measured against domestic action, thus complying with WTO and rebutting any allegation that the requirement is "protectionist."

   - Not protectionist – The requirement would not actually be applied against any country outside of the U.S. until 2015, with the precise date of implementation depending on date of enactment of climate legislation, how long it takes to promulgate regulations for the entire domestic program. (By contrast, a protectionist trade measure would take effect almost immediately.)

- Provides negotiating leverage -- The proposal provides U.S. climate negotiators with a "stick" -- with leverage -- to use in negotiations with other major emitting nations. The global political pressure for action on climate change will become even stronger during the next decade. That change in global opinion on this issue, and the need for all major emitting nations to reduce their own domestic emissions -- when coupled with the IBEW – AEP "stick" -- will likely mean that the IBEW – AEP proposal will never actually have to be implemented against any major emitters.

7. Which goods are covered?

   - The allowance requirement applies only to "greenhouse gas intensive" goods from countries that are found to have not taken comparable action as the U.S. Limiting the scope of the program again takes off the table concerns that the international allowance provision will interfere with international trade with respect to the vast amount of imported goods that do not generate significant GHG emissions during their manufacture.

   - Covered goods include –

     - primary goods (such as iron and steel, aluminum, cement, bulk glass, and paper) and

     - Other goods that are determined to have substantial amounts of GHG emissions.

   - Goods not covered include finished products and other goods that do not generate substantial amounts of GHG emissions (on emissions per dollar basis) during their manufacture.

8. How is the allowance requirement set?

   - The allowance requirement is –

     - set for each category of covered goods from each covered foreign country,

     - applied on a per unit basis to each good,

     - adjusted each year to reflect production changes in the foreign country,

     - adjusted to ensure consistency with WTO requirements.

9. What adjustments do WTO rules require?

   - To ensure WTO compliance, adjustments are made to each category of covered goods.

   - The WTO adjustments are intended to –

     - avoid discrimination between countries where the same conditions prevail.

- Example: Take into account the level of economic development of the foreign country.
    - maintain rough comparability in burden on imported and domestic goods.
- Example: Lower international allowance requirement to reflect "free" allowances given to domestic producers. (This ensures that imported goods are "not treated less favorably" than domestic goods.)

10. Can the allowance requirement be adjusted further?

- The President or an independent agency can increase the stringency of the international allowance requirement or take other appropriate action to address GHG impacts of imports.
- Either action is authorized if –
    - the President or an independent agency determines the current requirement is insufficient to address GHG impacts, and
    - the adjusted requirement complies with WTO laws.
- The President or an independent agency also may make adjustments to address concerns raised in WTO challenges lodged by foreign countries.

Mr. BOUCHER. Thank you very much, Mr. Morris. Mr. Slattery, we will be pleased to hear from you.

STATEMENT OF JIM SLATTERY, NUCOR STEEL CORPORATION

Mr. SLATTERY. Well, Mr. Chairman and members of the Committee, it is as you might imagine a pleasure for me to come back and see so many friends. Thank you for the opportunity to appear here today.

My name is Jim Slattery, and I am a partner at Wiley Rein LLP, and as counsel to Nucor Corporation, I am appearing on behalf of the American Iron and Steel Institute and the Steel Manufacturers Association. American steel companies make the girders and beams in our bridges, the steel in our pipelines, the rebar in our roads, the plate in our ships, the steel in our windmills, and the corrosion-resistant metal in our cars. The steel industry directly employs 150,000 people and hundreds of thousands more indirectly. Our national defense depends on a reliable source of steel. The loss of manufacturing industries like steel due to the climate change legislation without global reach would cost millions of Americans their jobs, damage our economy, and threaten our national security. Even worse, from a climate perspective, the loss of American steelmakers would result in increased global emissions of greenhouse gases, exactly the opposite the intended result.

My testimony focuses on how to prevent climate change legislation from putting our industry at a competitive disadvantage and how to encourage foreign firms serving U.S. markets to lower their carbon footprint. Mr. Chairman, if we cannot encourage developing nations like China, India, Russia, and Brazil to act, what we do in the United States will matter little. Carbon intensity standards would limit how much carbon dioxide and other greenhouse gases could be emitted from a given steel product sold in the United States. These standards would apply to both domestic and imported products. While we cannot force other countries to control their emissions, carbon intensity standards would encourage both domestic and foreign producers to do so by conditioning access to the U.S. market on compliance with the standards.

The American steel industry is part of the solution in the climate change debate, not the problem. Why do I say this? We beat Kyoto targets 11 years early and are among the most efficient in the world in terms of greenhouse gas emissions. For every ton of domestic steel that is replaced by imports, greenhouse gas emissions increase by a half-a-ton or more. For imports from China, the world's largest producer, the difference is double or triple U.S. emissions. According to the EPA, U.S. steel producers cut their process emissions from around 85 million metric tons to 45 million metric tons while actually increasing production from 1990 to 2005. Iron and steel accounts for only 1 percent of direct U.S. greenhouse gas emissions. It is vitally important for Congress to appreciate a few fundamentals of steel production. Steel is a manmade alloy of iron and carbon. Carbon dioxide is an unavoidable process emission of iron production at integrated steel mills. Once steel is produced, it can be recycled virtually without end by using electric arc furnaces that they rely heavily on electricity and natural gas but produce fewer process emissions. The domestic steel industry recy-

cles its product at a higher rate than aluminum, paper, glass, and plastic combined, including 100 percent of the steel in automobiles. Steel is a highly competitive, globally traded commodity, and energy is one of the largest input costs. Due to major achievements in efficiency and recycling, U.S. steel producers have survived massive onslaughts of imports and are finally recovering from years of losses. However, the competitiveness of U.S. steel is always under pressure, particularly from developing country producers who face far less environmental or labor regulations and often benefit from large government subsidies. Our customers make buying decisions based on a few dollars per ton, as hard as that is to believe. If cost makes either portion of the U.S. steel industry less competitive, then the balance that created our phenomenal environmental achievements will be lost. Under a poorly conceived U.S. greenhouse gas regime, global market pressures will work, and I regret to say that the inevitable result will be to off-shore production and increase global emissions at great cost to U.S. jobs and the world environment.

Carbon intensity standards would limit greenhouse gas emissions per ton of steel for steel consumed in the United States, whether domestic or imported. These standards would be analogous to car and truck fuel economy standards and appliance energy efficiency standards. Whether Congress creates a cap-and-trade system, carbon taxes, or carbon intensity standards, the only metric to achieve global reach is carbon intensity. Congress has no ability to impose carbon caps on the total emissions from economies like China, Russia, India, and Brazil. To determine carbon intensity, a steel producer would one, identify the quantity of each input; two, multiply the quantity by the greenhouse gas factor identified by the EPA; and three, add up the total emissions; and four, divide the total emissions by the total tons of steel produced. Congress would direct the EPA to set the standard so that a predetermined percentage of U.S. production would meet the standard. Any producer, foreign or domestic, that failed to comply within a fixed amount of time could not sell their products in the United States. The key is that these standards would apply to domestically produced and imported products equally.

Our firm has conducted an intensive analysis and concluded that such standards would be consistent with U.S. obligations under GATT.

I would be remiss if I did not tell you that the U.S. steel industry still has grave doubts about a cap-and-trade regime. We think the American Electric Power approach is inadequate as currently drafted in S. 2191. Our competitors producing steel in countries like China, India, and Brazil do not need handouts from the U.S. Government to reduce emissions when they have equal access to capital and technology in this global marketplace.

The American steel industry has led the world in reducing greenhouse gas emissions, but legislation that fails to achieve global reach will push production off-shore and produce greater greenhouse gas emissions. Carbon intensity standards for products such as steel offer a straightforward, GATT-consistent method of reducing domestic emissions while helping to preserve American com-

petitiveness. Other steps will also be needed as detailed in my written testimony.

And in conclusion, Mr. Chairman, I would just like to recognize a colleague of mine, Jim Bruce, a former staffer in the Senate Energy Committee that did a remarkable amount of work on this and is one of the fathers of this idea. So thank you very much, and I look forward to your questions.

[The prepared statement of Mr. Slattery follows:]

Summary of Testimony by Jim Slattery

The American steel industry, largely through recycling and investments in new technology, leads the world in lowering greenhouse gas emissions from steel production. The industry not only exceeded the Kyoto targets for emissions reductions 11 years ahead of schedule, but is already doing what Congress seeks to require for the entire economy. For every ton of domestically produced steel that is replaced by imports, greenhouse gas emissions increase, on average, by more than half a ton. When China instead of the United States sells a ton of steel to American consumers, greenhouse gas emissions associated with that ton will double or even triple.

The Committee's white paper, and this hearing focus on how to prevent climate change legislation from putting domestic industry at a competitive disadvantage, and how to lead foreign firms serving U.S. markets to lower their carbon footprint. If we cannot induce developing nations like China, India, Russia, and Brazil to address the carbon footprint of their economies, what we do here in the U.S. will matter little.

Carbon intensity standards for products such as steel offer a straightforward, GATT-consistent method of reducing domestic emissions while preserving American competitiveness. By adopting performance standards, America will also lead developing countries to deploy low-carbon emitting technologies for steel, substantially enlarging the reach of domestic climate change legislation.

Carbon intensity standards would set limits on how much carbon dioxide and other greenhouse gases could be emitted in the production of a given steel product sold in the United States. These standards would apply to both domestically produced and imported products and are analogous to the fleet fuel economy standards that the United States already imposes on automobiles, and the energy efficiency standards that apply to appliances.

Whatever approach Congress takes -- carbon taxes, international allowance obligations, or performance standards -- the only available metric to address foreign imports is the carbon intensity of foreign products. The first step is to require the submission of independently verifiable data from domestic and foreign producers selling in the U.S. market. This submission must be simultaneous for domestic and foreign manufacturers doing business in the U.S.

While the domestic steel industry has grave doubts about how well cap and trade can address climate change, carbon performance standards could fit within a cap and trade regime, at least in the case of steel. The legislation must prevent higher energy prices and the cost of meeting regulatory obligations from promoting the offshoring of U.S. industry and an increase in global emissions.

TESTIMONY OF JIM SLATTERY

CLIMATE CHANGE: COMPETITIVENESS CONCERNS AND PROSPECTS FOR ENGAGING DEVELOPING COUNTRIES

BEFORE THE ENERGY AND AIR QUALITY SUBCOMMITTEE,
ENERGY AND COMMERCE COMMITTEE,
U.S. HOUSE OF REPRESENTATIVES
MARCH 5, 2008

Mr. Chairman and members of the Committee, thank you for the opportunity to appear before you today. My name is Jim Slattery, and I am a partner with Wiley Rein LLP. As counsel to Nucor Corporation, I am appearing on behalf of the American Iron and Steel Institute and the Steel Manufacturers Association. These associations represent the companies that produce practically all of America's carbon steel. Their products include the girders and beams in our bridges, the steel in our pipelines, the rebar in our roads, the plate in our ships, the steel in our windmills, and the corrosion-resistant metal in our cars.

My testimony will focus on the international aspects of climate change legislation and its implications for American industry. This includes both how to prevent climate change legislation from putting domestic industry at a competitive disadvantage, and how to encourage foreign firms serving U.S. markets to lower their carbon footprint. Mr. Chairman, if we cannot induce developing nations like China, India, Russia, and Brazil to address the carbon footprint of their economies, what we do in the U.S. will matter little. Specifically, I will explain how the United States can use carbon intensity standards to decrease domestic and global greenhouse gas emissions without harming U.S. competitiveness. While my focus is on the American steel industry, much of this testimony is potentially applicable to other energy-intensive industries.

(Mr. Chairman, I compliment you and your staff for the excellent white paper that you issued defining how critically important competitiveness concerns are for American industry. The paper is thoughtful and insightful as it outlines the major options for addressing these concerns and for engaging developing nations in reducing their contribution to the increasing concentrations of greenhouse gases in the earth's atmosphere. I also commend you for holding this hearing.)

In the case of steel, carbon intensity standards would set limits on how much carbon dioxide and other greenhouse gases could be emitted in the production of a given steel product sold in the United States. These standards would apply to both domestically produced and imported products.[1] The American Iron and Steel Institute, the industry's largest trade association, has stated that:

> {Any}program must be a truly global approach involving all major GHG {greenhouse gas} emitting countries and must be verifiable and enforceable. To ensure a global approach and to protect the competitiveness of domestic products, legislation should include a requirement that all products sold in the U.S., whether domestic or imported, meet a carbon intensity performance standard...[2]

While the United States cannot force other countries to control their greenhouse gas emissions, carbon intensity standards would encourage both domestic and foreign producers to do so by conditioning access to the U.S. market on compliance with the standards.

Greenhouse Gas Emissions by the U.S. Steel Industry

As the American Iron and Steel Institute has testified, the American steel industry is part of the solution in the climate change debate, not the problem. We not only beat the Kyoto targets

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[1] The term "standard" is used here as a matter of convenience, as this is how measures of this type are normally described under the Agreement on Technical Barriers to Trade. These measures would technically be considered "regulations" as they would be imposed by a government and are mandatory.

[2] American Iron and Steel Institute, *2008 Public Policy Agenda* 8 (2008).

11 years early, we are already doing what Congress seeks to require for the entire economy. A paper the NAFTA steel industry submitted to the Organization for Economic Cooperation and Development in late 2007 establishes a key point. American steel producers are among the most efficient in the world in terms of greenhouse gas emissions.[3] American steelmakers emit on average only a little over 1.2 tons of greenhouse gases per ton of steel.[4]

On average, steel producers around the world emit more than 1.7 tons of greenhouse gases, directly and indirectly, for every ton of steel they produce.[5] For some major producers, including China, emissions are significantly higher. Unfortunately, we do not have reliable data on China, which is by far the largest steel producer in the world.[6] Although some international statistics indicate that China emits nearly 2.5 tons of greenhouse gases for every ton of steel produced,[7] the real number is almost certainly higher, perhaps 4 to 5 tons. The bottom line is that,

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[3] Organization for Economic Cooperation and Development, *The NAFTA Steel Industry and Greenhouse Gas Emissions* (2007). A copy of this paper is attached.

[4] American Iron and Steel Institute, *Recap of IISI & AISI Indicator Values* (2007). The American steel industry also emits fewer greenhouse gases directly (i.e., from the steelmaking process itself) than most other major producers. Direct greenhouse gas emissions per ton of steel produced by the American steel industry are one-half or less of those emitted by producers in Germany, Australia, and Japan. Levels of process emissions were taken from official filings with the U.N. Convention on Climate Change, available at http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/3929.php. Because Japan reports emissions from coke production and use as "energy related," but other countries report these emissions as process emissions, these emissions were treated as process emissions. The total emissions reported were divided by the country's steel production for 2005, as reported by IISI in *Steel Statistical Yearbook 2006* at 11.

[5] International Iron and Steel Institute, *Steel: The Foundation of a Sustainable Future* 23 (2006), available at http://www.worldsteel.org/index.php?action=storypages&id=131.

[6] In addition, the Chinese steel industry is growing at a frantic pace; China installed 60.9 million metric tons of new steel capacity in 2007, and a further 55 million tons is due to come on line in 2008. In comparison, the entire U.S. steel industry produced around 100 million metric tons in 2007.

[7] According to IISI, China accounted for around 50 percent of total greenhouse gas emissions by the world steel industry. International Iron and Steel Institute, *A global sector approach to CO2 emissions reduction for the steel industry* 3 (2007). Average emissions for the global steel industry in 2005 were 1.7 metric tons per ton of steel, while global steel production in 2006 was 1,244 million metric tons. This calculates to approximate total emissions in 2006 of 2,115 million metric tons of greenhouse gases. With 50 percent of the total, Chinese emissions in 2006 were around 1,057 million metric tons. Chinese steel production in 2006 was 422.7 million metric tons. International Iron and Steel Institute, *World Steel in Figures 2007* 3 (2007), available at www.worldsteel.org. This yields

for every ton of domestically produced steel that is replaced by imports, greenhouse gas emissions increase by half a ton or more. For imports from China – the second largest source of steel imports in the United States – the difference is at least double, perhaps triple, U.S. emissions.

The U.S. industry's achievements reflect a decades-long drive by the American steel industry to maximize recycling and improve efficiency.[8] According to the EPA, the steel industry's directly emitted process-related emissions were 86.2 million metric tons of CO_2 equivalent in 1990.[9] In 2005, those emissions were only 46.2 million metric tons, a reduction of nearly 50 percent, even though steel production in 2005 was more than seven percent higher than in 1990. The United States is not a signatory to the Kyoto Protocol, but if it were, the U.S. steel industry would have substantially beaten the U.S.'s Kyoto targeted reduction (a seven percent reduction in direct greenhouse gas emissions by 2012). Today, the production of steel accounts for less than two percent of total U.S. greenhouse gas emissions.

Carbon Intensity Standards for Steel

Certain recent proposals seem to accept the loss of energy-intensive industries in the United States as an inevitable consequence of climate change legislation. Some have referred cavalierly to this as "leakage." In fact, the loss of energy-intensive manufacturing industries like steel as a consequence of climate change legislation would cost millions of Americans their jobs,

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emissions of 2.5 tons of greenhouse gases for each ton of steel produced in China. Industry sources state that Chinese emissions are in fact much higher, at around four tons of greenhouse gases per ton of steel.

[8] *See* American Iron and Steel Institute *et al.*, *The NAFTA Steel Industry and Greenhouse Gas Emissions: Actions, Achievements and Obstacles* 13-23 (2007).

[9] Production figures for 1990 are from IISI, Steel Statistic Archive 1990, available at http://www.worldsteel.org/?action=stats&type=steel&period=year&year=1990. Production figures for 1995 are from IISI, Steel Statistic Archive 1995, available at http://www.worldsteel.org/?action=stats&type=steel&period=year&year=1995. Production figures for 1997 – 2005 are from IISI, *Steel Statistical Yearbook 2006* at 11. Emissions are derived from *Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005* at ES-4 "CO_2 equivalent" represents total emissions of all greenhouse gases, with quantities of non- CO_2 converted to reflect how much CO_2 would have the same climate effects.

damage our economy, and threaten our national security. Even worse from a climate perspective, because American manufacturers are generally among the most efficient in the world, such "leakage" would result in increased global emissions of greenhouse gases, exactly opposite the intended result.

One way to avoid this result is to promulgate and apply carbon intensity standards that set an upper limit on greenhouse gas emissions per ton of steel produced and that apply to all steel consumed in the United States, whether domestically produced or imported. These standards would be analogous to the fleet fuel economy standards that the United States already imposes on automobiles, and the energy efficiency standards that apply to appliances – regulatory regimes with which this committee is very familiar.

First, Mr. Chairman, let me emphasize that however Congress seeks global reach on foreign manufacturers who sell in U.S. markets, carbon intensity is the only suitable metric, not total carbon emissions. This is true whether Congress creates a cap-and-trade system, levies carbon taxes, or imposes carbon intensity standards on foreign and domestic products. Whatever approach Congress takes, the only available metric is the carbon intensity of foreign products. Congress has no authority to impose carbon caps on the total emissions from foreign economies, and carbon intensity is the only reasonable way to enlist countries like China, Russia, Ukraine, India and Brazil to participate in a meaningful global framework. The fact is, all you have to work with is the carbon intensity of the products sold in our country. Again, that is the only hook on foreign-made products.

Second, whatever approach Congress takes to achieve global reach, it must require the submission of verifiable data on carbon intensity from domestic and foreign manufacturers selling in the U.S. market. Submission of data should be simultaneous for domestic and foreign

manufacturers doing business in the U.S. Only then is a regulatory agency, such as EPA, in a position to set regulatory requirements.

Third, while calculating the carbon intensity of steel products and setting a carbon intensity standard sounds complicated, it is fairly straightforward. The first step in setting a standard would be to require domestic and foreign steel producers to report their emissions for different categories of steel products – steel slab, beams, sheet, etc. – on a per ton basis. The sources of greenhouse gas emissions from steelmaking are readily identifiable, and steel producers track their consumption of these inputs in the ordinary course of business. Domestic manufacturers already share this information in aggregate with EPA in a number of programs.

To calculate the emissions arising from the use of these inputs, it is necessary to know how much CO2 is released on average from the use of a given quantity of the input, such as a ton of coal. By multiplying this "greenhouse gas factor" by the amount of the input consumed, a steel producer can calculate its total greenhouse gas emissions from the use of that input. The International Iron and Steel Institute has already calculated these emissions factors for a range of inputs.

To determine its carbon intensity, the steel producer could in most cases simply (1) identify the quantity of each input it consumed during a given period; (2) multiply that quantity by the "greenhouse gas factor" for the input identified by the EPA; (3) add up the total emissions from all of its inputs; and (4) divide total emissions by the total tons of steel it produced. The calculations for different products would vary slightly, but the overall form would remain consistent.

There are several ways to set a carbon intensity performance standard. We offer the following approach because it is market-based. Once domestic and foreign producers have reported

their carbon intensity for various products, Congress would direct the EPA to set the standard so that a predetermined percentage of U.S. production (90 percent, for example) would meet the standard. Producers (both foreign and domestic) who did not satisfy the standard would have a fixed amount of time (several years), to bring themselves into compliance. If they did not do so, their products could not be sold in the United States. Finally, EPA would periodically review the standard to determine whether additional improvement in the standard is economically and technologically feasible.

Carbon intensity standards provide an efficient and effective way to decrease greenhouse gas emissions globally while limiting the harm to American competitiveness. The key is that these standards would apply to *both* domestically produced and imported products. My colleague Charles Verrill[10] has conducted an intensive analysis of the GATT consistency of such standards, and has concluded that they would be consistent with U.S. obligations under the GATT. Because the compliance of U.S. measures with our international obligations is such an important issue, we will make a copy of the latest analysis available to the Committee. [11]

Consideration of Steel Production Processes

As you contemplate any climate change policy, we think it is vitally important for this Committee, and other members of Congress, to understand a few basic facts about steel production. Importantly, steel is a man-made alloy of iron, a natural element, and carbon is an essential ingredient and byproduct of that transformation.

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[10] Charles Verrill is a partner in the International Trade Group of Wiley Rein LLP, and an adjunct professor at Duke University School of Law and Georgetown University Law Center. He has published numerous books and articles on various aspects of international trade.

[11] See Charles Verrill, "Maximum Carbon Intensity Limitations and the Agreement on Technical Barriers to Trade," "Climate Change in a Global Economy,," a special issue of Carbon & Climate Law Review, to be exhibited at Point Carbon's Carbon Market Insights 2008, Copenhagen, anticipated publication -- second week of March.

What is universally called the steel industry are actually two distinct but complementary production processes. The first involves smelting iron from various forms of mined iron ore, and then transforming the molten iron into steel by the introduction of various alloying elements. In the industry's vernacular, we refer to this as the "integrated" process, and it is characterized by coke ovens, blast furnaces, and basic oxygen furnaces, or "BOFs."

Iron production is essential to steel production, and an unavoidable byproduct of iron production is carbon dioxide, commonly referred to as "process emissions." However, once steel is produced from iron, and after serving useful purposes for decades, it can be recycled, re-melted and reshaped into new products in a cycle that virtually has no end. It is notable that the domestic steel industry recycles its product at a higher rate than aluminum, paper, glass and plastic combined, including the steel from 100% of the automobiles produced in the United States.

Typically, this form of steel production is accomplished by re-melting reclaimed scrap steel and other iron-bearing materials in an electric arc furnace, or "EAF," and is often referred to as a "mini-mill." Because re-melting scrap steel does not require the same chemical transformation needed to extract molten iron from iron ore, EAFs typically have much lower carbon emissions than the integrated process, even if indirect emissions from electricity purchased from upstream suppliers are factored in. The growth of recycling and the widespread deployment of EAF technology in the U.S. since the early 1980's are major reasons for the declining carbon footprint of the U. S. steel industry. Bonus allocations should be used to encourage the recycling of steel. Today, 60 percent of America's steel is produced using EAF technology.

It is important to understand the interaction and interdependence of these two distinct processes. As I've noted, the United States already recycles 100 percent of the automobiles produced in this country, and has high recycling rates for other steel products. We are reaching the

practical limits of EAF production, due to the constraints of the key ingredient – scrap steel. Metallurgically, certain steel grades have been obtained only through the integrated process.

Because of these differences in steelmaking processes, carbon intensity will vary greatly between different types of mills. Some products, such as rebar, are made in the United States exclusively in EAF mills. Other products, such as hot-rolled steel sheet, are made in both types of facilities. Still other products, such as ultra-low carbon grades for special applications, are made exclusively in BOF shops. While EAFs utilize some pig iron, and BOFs utilize some scrap, there remain significant technological barriers to complete interchangeability of processes. Therefore, for individual products, EPA would set two different standards, depending on whether the product was produced using a BOF or an EAF, with a clear understanding of the competitive and technological relationships referenced above.

Higher, uncompensated regulatory and related costs imposed on steel producers – regardless of which industrial process they employ -- will force manufacturers to move production from the United States to countries like China, India and Brazil, that do not have comprehensive and significant greenhouse gas reduction obligations. For example, while electric arc furnaces use some coal, perhaps enough to create allowance obligations, their greatest vulnerability is from increases in electricity prices as electric utilities pass through their allowance costs to their customers downstream.[12] Unless these electric arc furnace operators obtain some kind of relief, such as emission allowances to sell to offset these higher electricity prices, these operators, who emit the least greenhouse gases, will not be competitive with higher emitters globally. This is exactly what is happening in the European Union, which has the longest established and most comprehensive greenhouse gas cap-and-trade system in the world.

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[12] S. 2191, now pending in the Senate, would impose allowance obligations on EAF steelmakers.

Steelmakers in the EU have been hit with substantial increases in electricity costs, increases that have made them less competitive internationally.[13] The President of WV Stahl, the federation of German steel producers, estimates that the EU's climate change regime will increase the costs of the German steel industry alone by two billion euros per year,[14] or over 41 euros per ton of steel produced.[15] As a consequence, European steelmakers have become reluctant to make large new investments in the EU.

Poorly-designed climate change legislation could have similar impact in the United States. Duke Energy, one of the country's largest generators of electricity, predicts that a cap-and-trade system could cause electricity prices in the Duke service area to rise by 53 percent by 2012.[16] Electric arc furnaces use large amounts of electricity. Such an enormous increase in electricity prices would have a clear impact on their competitiveness. Indeed, sharp increases in electricity prices will diminish the competitiveness of every business in the United States that uses substantial amounts of electricity – which includes practically every manufacturing industry in the country. Sharp increases in electricity costs would be especially harmful to steel producers

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[13] *See, e.g.,* P. Price, Eurofer slams Commission's ETS Proposal, *American Metal Market* (January 24, 2008), available at http://amm.com/2008-01-24_06-50-43.html. According to Eurostat, prices for electricity sold to industrial consumers increased by 22 percent between 2005 and 2007. Eurostat, Electricity prices – industrial users, available at http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detail-ref&language=en&product=Yearlies_new_environment_energy&root=Yearlies_new_environment_energy/H/H2/H21/er02b1.

[14] P. Price, ETS revisions give no security for EU steel says Ameling, *American Metal Market* (January 24, 2008), available at http://amm.com/2008-01-24__07-00-52.html.

[15] According to IISI, Germany produced 48.5 million tons of steel in 2007.

[16] Duke Energy, Power Costs Would Increase Dramatically under Lieberman-Warner Legislation, available at http://www.duke-energy.com/news/releases/2007111501.asp (Feb. 11, 2008).

who use electric arc furnaces and who do not generate significant process emission greenhouse gases.

Finally, higher utility costs would also affect integrated and EAF producers in both downstream processing operations, such as rolling mills and coating lines. For example, increased electricity costs would dramatically harm producers making corrosion-resistant steels via the electro-galvanizing process, which, as the name implies, utilizes significant amounts of electricity, and which represents a major end-use market for appliances and automobiles. In this case, it should be remembered that substitution of these products from other sources will increase greenhouse gas emissions globally.

Suggestions Regarding Cap and Trade Legislation

I would be remiss if I did not tell you that the U.S. steel industry still has grave doubts about how well cap and trade can address climate change. Admittedly, the cap-and-trade approach worked reasonably well on the acid rain problem. Regulating greenhouse gases, however, is a much broader and more complex problem than regulating sulfur dioxide and nitrogen oxides emissions. The risks and costs of implementing the wrong policy are substantially higher. The climate change issue is quite different. With climate change we have major technological gaps, the presence of foreign competitors and thus the need for global reach, and no guaranteed ability for pass-through of regulatory costs. If Congress does proceed with cap and trade, however, then we have some suggestions.

First, with respect to steel and other energy-intensive industries, several principles must underlie any climate change legislation. The products of energy-intensive industries like steel, whether domestically produced or imported, must be subject to the same requirements, starting at the same time, with no exceptions and no discretion. These principles will encourage a "race to

the top" in producers around the world. Conversely, a system that applies weaker measures to imports than goods produced in the United States will result in the off-shoring of American industries, the loss of American jobs – and an increase in global emissions of greenhouse gases.

Second, the legislation must recognize the different vulnerabilities to a cap and trade regime of both the integrated steel mills and the electric arc furnaces and be designed to prevent the demise of either. While cap and trade legislation hits these firms in different ways, the costs are not borne at all by foreign competitors in mostly developing countries, thus creating a competitive disadvantage for domestic firms. In a recent speech, José Manuel Durão Barroso, the President of the European Commission, raised precisely such an alternative arrangement for steel and other energy-intensive industries in Europe.[17] Similarly, Canada is in the midst of a comprehensive regulatory review that aims to exempt certain industrial fixed process emissions (not entire industries) from its cap-and-trade system. This review is rooted in the understanding that the ability to reduce some emissions lies beyond reasonable or known control technologies. To that end, the Congress could consider exempting from regulation gasses from fixed process emissions such as the use of coal or coke in the chemical reduction of iron ore. In 1993 when the U.S. House of Representatives passed the ill-fated BTU tax proposal, there was general acceptance that certain industrial processes requiring energy as a feedstock (e.g., electricity for electrolytic processes, natural gas for chemicals, coal/coke for steelmaking, etc.) should be exempted at least in part from the proposed tax regime (and imported goods with substantial like inputs be commensurately taxed), precisely because of international competitiveness concerns. Similarly,

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[17] J. Durão, 20/20 by 2020: Europe's Climate Change Opportunity (2008), available at http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/34&format=HTML&aged=0&language=EN&guiLanguage=en.

the legislation could allocate allowances to the steel industry to offset higher energy costs and to reward those who recycle the most.

Third, any cap-and-trade system will face the problem of how to achieve "global reach" as a part of the international competitiveness problem. The Senate legislation S. 2191 uses the American Electric Power approach. I am here to discuss performance standards, but I will say that the steel industry has examined the AEP approach in great detail, both as a stand-alone provision and within the context of S. 2191. As contained in S. 2191, the AEP approach is, we think, unworkable. We believe that any competitiveness provision should 1) apply simultaneously to domestic and foreign firms selling in the U.S. market; 2) use the same baseline periods; 3) not invite subsidies by foreign governments; and 4) not enable the Administration to waive the requirements on foreign manufacturers.

Among options for addressing the international competitiveness problem within cap and trade, I am far less sanguine about proposals to offer "premiums" or other incentives to so-called developing countries to implement climate change legislation. In fact, countries like China, India, and Brazil have a huge incentive *not* to limit their greenhouse gas emissions. The absence of greenhouse gas regulations gives their products a powerful competitive edge in international commerce. It is doubtful that we could offer incentives sweet enough to convince these countries to surrender this advantage voluntarily. Several of these countries view existing incentive programs as a mechanism for transferring energy intensive industry onto their shores. While a negotiated, binding and enforceable global agreement could resolve many of these issues, I doubt that an effective agreement can be negotiated before 2012.

Other Concerns about Cap and Trade Legislation

The legislation pending in the Senate, S. 2191, rewards states with extra allowances if they impose more stringent cap and trade requirements than does the federal scheme. I shudder to think how American industry can cope with a federal cap and trade program and a multitude of conflicting, more stringent state programs. Recall that the states, under the U.S. Constitution and our trade laws, have no mechanism to achieve global reach, to avoid giving foreign manufacturers who sell in our markets a competitive advantage over domestic firms.

We are also very concerned that cap and trade legislation will encourage fuel switching from coal to natural gas, further escalating natural gas prices. This scenario is already occurring, just in anticipation of legislation. Electricity price hikes will unquestionably follow, not just for us, but for the entire economy. The technologies we need are not in place, and will not be for many years. Unfortunately, energy supply is woefully neglected in current law. Obviously, if U.S. energy costs continue upwards unabated, this will only increase the likelihood that foreign manufacturers, who have access to affordable energy, will capture U.S. jobs and domestic market share, and consequently increase greenhouse gas emissions.

A recurring question in the climate change debate is whether we should differentiate between developed and developing countries. From the perspective of the steel industry, this distinction is meaningless. The major steel producers in "developing" countries like China, India, and Brazil are among the largest – and in many cases the newest -- in the world.[18] They have the same access to capital, to markets, and to technology that the U.S. steel industry has. They

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[18] *See* International Iron and Steel Institute, *World Steel in Figures 2007* 3 (2007). According to IISI, of the world's 30 largest steel producers, ten are based in China, four in Russia, two in India, and one each in Brazil, Iran, and Ukraine.

should be subject to the same requirements regarding greenhouse gas emissions that we are, instead of being handed a windfall that will increase global greenhouse gas emissions.

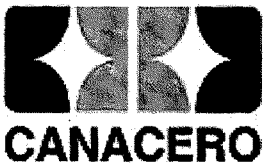
Conclusion

The American steel industry has led the world in reducing greenhouse gas emissions. Carbon intensity standards for products such as steel offer a straightforward, GATT-consistent method of reducing domestic emissions while preserving American competitiveness. By adopting performance standards, America will also lead developing countries to deploy low-carbon emitting technologies for steel, substantially enlarging the reach of domestic climate change legislation.

THE NAFTA STEEL INDUSTRY AND GREENHOUSE GAS EMISSIONS: ACTIONS, ACHIEVEMENTS AND OBSTACLES

A PRESENTATION TO THE STEEL COMMITTEE OF THE ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT

American Iron and Steel Institute



SPECIALTY STEEL INDUSTRY OF NORTH AMERICA

CSPA ACPA
Canadian Steel Producers Association
L'Association canadienne des producteurs d'acier

Presented by

The American Iron & Steel Institute

The Steel Manufacturers Association
The Specialty Steel Industry of North America
The Canadian Steel Producers Association
La Cámara Nacional de la Industria del Hierro y del Acero

DECEMBER 2007

THE NAFTA STEEL INDUSTRY AND GREENHOUSE GAS EMISSIONS

Introduction

Over the last decade, the steel industries in the three NAFTA countries have made enormous strides in reducing the amount of greenhouse gases they emit. Both total emissions and emissions per ton have declined significantly. One of the most significant factors behind this development has been the increasing use of steel scrap as a major feedstock by the U.S. steel industry in particular, but other technological and production measures also played vital roles. This improvement occurred in the absence of any formal government regulation of greenhouse gas emissions in any of the NAFTA countries.

NAFTA Steel Production

Because of its scale of production, the NAFTA steel industry's success in reducing greenhouse gas emissions represents a significant development within the global steel industry. Over the past decade, NAFTA steel production has remained relatively consistent. In 2006, the three NAFTA countries produced approximately 130.3 million metric tons of steel.[1] NAFTA accounted for 10.6 percent of total world steel production in 2006.[2] Through the first nine months of 2007, the NAFTA steel industry produced 96.9 million metric tons of steel, representing 9.9 percent of total world production.[3]

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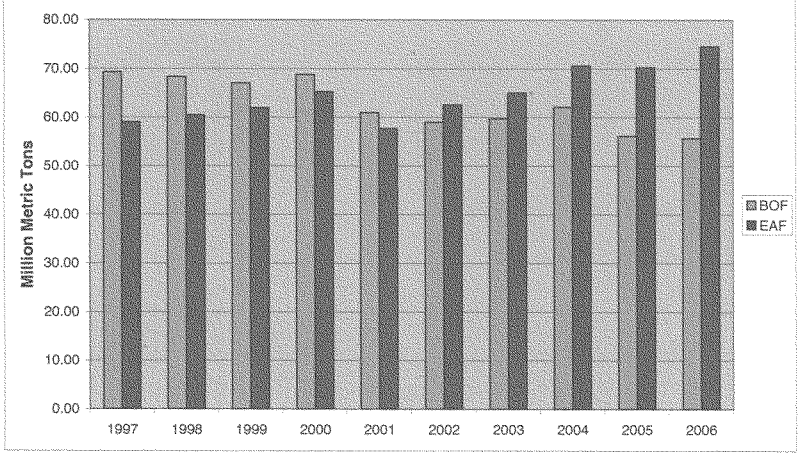
1 International Iron & Steel Institute ("IISI"), *World Steel in Figures 2007* 4 (2007). Unless otherwise noted, all tons are metric tons.

2 *Id.*

3 IISI, *Steel Statistics September 2007*, available at http://www.worldsteel.org/?action=stats&type=steel&period=latest&month=9&year=2007.

The NAFTA steel industry is somewhat unusual in its reliance on electric arc furnaces ("EAFs") compared to the rest of the world. As the following chart shows, the percentage of total production by EAFs rose from 46 percent in 1997 to 57.3 percent of NAFTA steel production in 2006.[4] Mexico in particular is heavily dependent on EAFs, which produced over 74 percent of Mexican steel in 2006.[5] The United States and Canada both make great use of EAFs as well, with the EAF process accounting for 56.9 percent and 41.4 percent of their respective steel production in 2006.[6]

Figure 1
NAFTA Production of Steel, BOF and EAF



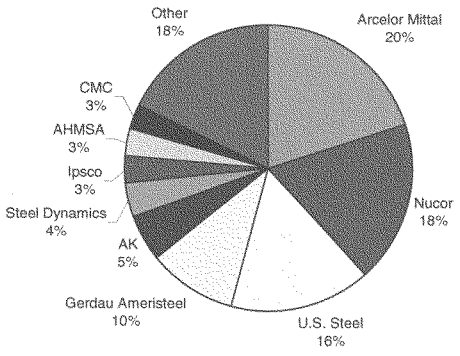
4 *World Steel in Figures 2007* at 5.

5 *Id.*

6 *Id.*

The ownership structure of the NAFTA steel industry is relatively fragmented The largest NAFTA producer, ArcelorMittal USA, is part of the ArcelorMittal group, which also recently acquired a Canadian producer, Dofasco. Two other NAFTA producers, U.S. Steel and Nucor, are among the ten largest producers in the world. Yet these three producers account for only about 51 percent of total NAFTA steel production.[7] The following chart shows the relative production shares of the major NAFTA steel producers. Because of the industry's relative fragmentation, comprehensive action on greenhouse gas emissions will require cooperation by a large number of companies, rather than measures by only one or two producers.

Figure 2
NAFTA Steel Production, 2006



7 *Id.* at 3.

The composition of the NAFTA steel industry has changed dramatically over the past decade. Major steel producers, including Bethlehem, LTV, Geneva, National, Stelco, Algoma, AHMSA, and Gulf States Steel, underwent bankruptcy in the 1999 – 2003 period. Ultimately, many of the assets of Bethlehem and LTV were taken over by ArcelorMittal USA. Further consolidation occurred as U.S. Steel acquired National Steel and Stelco; Nucor acquired Birmingham Steel, Trico, Corus Tuscaloosa Steel, and Marion Steel; Gerdau Ameristeel acquired Co-Steel, North Star Steel, and Chaparral Steel; Steel Dynamics, Inc. acquired Roanoke Electric Steel, Steel of West Virginia and Qualitech; SSAB acquired IPSCO; and Essar acquired Algoma. Stelco was acquired by US Steel in October 2007. Older integrated steel mills, like Geneva and Gulf States, could not be modernized economically, and closed permanently.

Trends in Greenhouse Gas Emissions by the NAFTA Steel Industry

All three NAFTA countries have comprehensive regulation of air pollutants. These regulations are, as a general matter, strictly enforced. However, only Canada has proposed specific restrictions on greenhouse gas emissions, for which the regulations are scheduled to be formalized by early 2008; some provincial governments in Canada have developed separate plans. Mexico plans to release its greenhouse gas emissions regulation strategy in mid-2008. Various forms of greenhouse gas legislation have been proposed in the United States. Even if legislation is passed in the near future, it is unlikely that any would actually go into effect before the next President takes office in January 2009.

Greenhouse Gas Emissions from Steel Production

The production of steel creates greenhouse gas emissions from three major sources. The chemistry of steelmaking itself creates CO_2; these are generally described as process emissions.[8] Both EAFs and integrated facilities burn natural gas and other fuels to provide heat at various stages in the production process; this combustion also releases greenhouse gases in the form of CO_2. Finally, integrated and especially EAF mills use large amounts of electricity, which is normally purchased from unrelated power companies. The majority of electricity produced in NAFTA is generated by burning fossil fuels, so that CO_2 emissions result from the generation of the electricity used in steel production. The vast majority of greenhouse gas emissions associated with steel production consist of CO_2, although a small amount of CH_4 is released as well.[9]

One of the major accomplishments of the NAFTA steel industry has been to identify the inputs into steelmaking that contain carbon and ultimately result in CO_2 emissions. A study commissioned by the Steel Manufacturers Association ("SMA") has identified the main sources of carbon (both direct and indirect sources) at the melting stage for EAFs in the United States as charged and injected carbon; natural gas; electrodes; carbon from the scrap itself; direct reduced iron; pig iron; oxygen; and electricity.[10] Rolling and finishing operations

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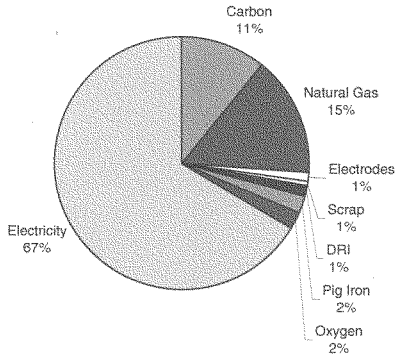
[8] *See, e.g.*, U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005* 4-6 – 4-7 (2007) for a discussion of the greenhouse gas emissions associated with the actual steelmaking process.

[9] *See, e.g., Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005* at 4-6 – 4-7

[10] J. Stubbles, *Carbon "Footprints" in U.S. Steelmaking* 3 (2007). This study is available at www.steelnet.org.

use more natural gas and electricity.[11] The following chart shows the magnitudes of the various carbon inputs, both direct and indirect, in the EAF process.[12]

Figure 3
Sources Of Carbon Per Ton Of Finished Steel Produced In an EAF Facility



Not surprisingly, the sources and quantity of carbon in steel produced using the integrated method are quite different. By far the largest source of carbon are the fuels, including coke, coal, oil, and natural gas, used in the blast furnace, as well as the natural gas used for rolling and finishing operations. Other sources of carbon include electricity, limestone, and oxygen.[13] The following chart shows the contributions of various inputs to the carbon "footprint" of a metric ton of finished steel produced in an integrated mill in the United States.

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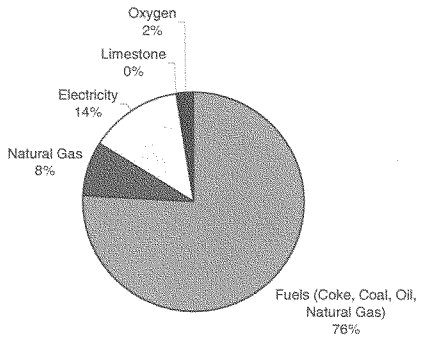
11 *Id.* at 4-5.

12 *Id.* at 3, 6.

13 *Id.* at 7.

Figure 4
Sources Of Carbon Per Ton Of Finished Steel Produced In an Integrated Facility



Greenhouse Gas Emissions Totals

The three NAFTA countries identify and quantify the greenhouse gas emissions associated with the steel (and other) industries somewhat differently. Canada calculates two emissions totals – one reflecting emissions from fossil fuel combustion by steel mills, the other direct process emissions.[14] The United States measures only process-related emissions.[15] Mexico quantifies process-related emissions only.[16] Neither the United States nor Mexico calculates emissions from fossil fuels burned as energy in the steelmaking process, such as

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14 *See* Environment Canada, *National Inventory Report 1990 – 2005* 45, 50 (2007).

15 *See Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005* at 4-6 – 4-9.

16 Instituto Nacional de Ecologia, *Inventario Nacional de Gases de Efecto Invenrnadero 2002 (Procesos Industriales)* 51 (2005).

natural gas burned in reheat furnaces, so the official emissions figures for the steel industry substantially understate the industry's direct (i.e., process plus energy) emissions. None of the NAFTA countries attempts to allocate emissions from electricity generation to individual industries, although, as discussed below, industry associations within NAFTA have calculated the portion of the electricity generation industry's emissions that are attributable to the generation of electricity used to make steel.

The steel industry is not a major source of greenhouse gas emissions in any of the NAFTA countries. In 2005, process-related emissions in the steel industry accounted for only 0.9 percent of total greenhouse gas emissions in Canada[17] and 0.7 percent in the United States.[18] In 2002, process-related emissions by the steel industry constituted 2.6 percent of Mexican greenhouse gas emissions.[19] Canada also calculates emissions from the burning of fossil fuels in the production of iron and steel; taken together, these "energy emissions" by the Canadian iron and steel industry, combined with process emissions, represented about 1.9 percent of all emissions of greenhouse gases in Canada.[20] None of these numbers includes emissions from the generation of electricity used to produce steel.

Process-related greenhouse gas emissions by the steel industry in the NAFTA countries have fallen since 1990. In 1990, according to official sources,

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17 *National Inventory Report 1990 – 2005* 533.

18 *Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005* at 2-24.

19 *Inventario Nacional de Gases de Efecto Invenrnadero 2002 (Procesos Industriales)* 51; Instituto Nacional de Ecologia, *Inventario Nacional de Gases de Efecto Invenrnadero 2002* 36 (2005).

20 *National Inventory Report 1990 – 2005* 533.

the three NAFTA countries produced 109.6 million metric tons of steel, and emitted 111.0 million metric tons of CO_2 equivalent.[21] However, both the amount of steel produced and the volume of greenhouse gases emitted in 1990 were reduced by two work stoppages that had a significant impact on Canadian steel production, and greenhouse gas emissions. Normalization of Canadian production and emissions figures for that year yields production of 14.5 million metric tons, and GHG emissions of 17.4 million metric tons.[22] Normalized NAFTA production in 1990 was 111.2 million metric tons, while normalized process emissions were 114.9 million metric tons.

By 2002, the NAFTA steel industries were producing 121.6 million metric tons of steel, but emitted only 84.3 million metric tons of CO_2 equivalent as part of the steelmaking process itself. In 2005, the United States and Canada together produced 110.2 million metric tons of steel, but had process emissions of only 59.7 million metric tons of CO_2 equivalent. The following chart shows U.S. and

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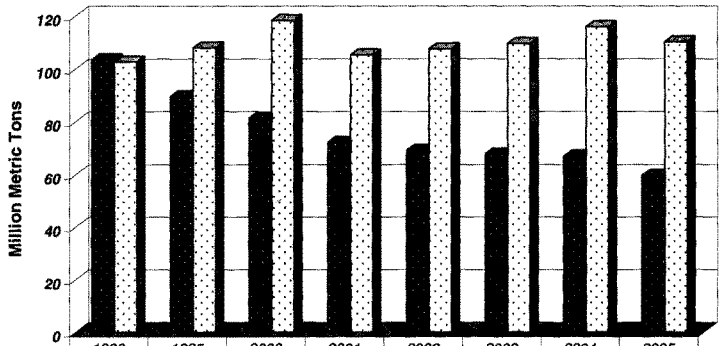
[21] Production figures for 1990 are from IISI, Steel Statistic Archive 1990, available at http://www.worldsteel.org/?action=stats&type=steel&period=year&year=1990. Production figures for 1995 are from IISI, Steel Statistic Archive 1995, available at http://www.worldsteel.org/?action=stats&type=steel&period=year&year=1995. Production figures for 1997 – 2005 are from IISI, *Steel Statistical Yearbook 2006* at 11. NAFTA emissions are derived from *Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005* at ES-4; *National Inventory Report 1990 – 2005* at 12; and *Inventario Nacional de Gases de Efecto Invenrnadero 2002 (Procesos Industriales)* at 51. "CO_2 equivalent" represents total emissions of all greenhouse gases, with quantities of non- CO_2 converted to reflect how much CO_2 would have the same climate effects. The Canadian emissions total reflects both "energy" and "industrial processes" emissions by the Canadian steel industry.

[22] *See* Canadian Industry Energy End-Use Data and Analysis Center (CIEEDAC), *A Review of Energy Consumption and Related Data:Canadian Iron and Steel and Ferro-Alloy Manufacturing Industries 1990 to 2004* 15-16 (2007) (*"CIEEDAC Study"*). To account for the labour stoppages, this CIEEDAC document calculated the normalized CO_2 emissions for 1990. The 1990 GHG emissions reported in this OECD paper are prorated based on the normalized CO2 data from CIEEDAC.

Canadian steel production and direct process-related emissions from 1995 to 2005.[23]

Figure 5
U.S. and Canada Process Emissions and Production, 1990 - 2005



	1990	1995	2000	2001	2002	2003	2004	2005
■ Emissions	103.6	89.52	81.39	72.17	69.2	67.81	66.94	59.73
□ Steel Production	102.758	108.016	118.398	105.38	107.589	109.606	115.986	110.224

While process-related emissions represent a substantial portion of the total emissions associated with steel production, this method does not capture the emissions associated with the electricity used in the production of steel, or with the emissions associated with the combustion of other fuels such as natural gas or fuel oil in the steel mill itself. For steel produced in EAFs in particular, emissions from electricity generation are a significant source of total steel-related emissions. Identification of all greenhouse gas emissions connected with the production of steel requires the allocation of emissions from external energy pro-

[23] Canadian process-related emissions for 1990 have not been normalized.

viders, especially electricity generators, and from the on-site combustion of fossil fuels, to steel producers.

The American Iron & Steel Institute (AISI) has calculated total steel-related emissions, including emissions from electricity generation, for the United States for the years 1990 and 2004 – 2006. In 1990, total steel-related emissions (process, energy, and externally-supplied electricity) were 1.83 metric tons of CO_2 equivalent per metric ton of steel produced. By 2006, this figure had fallen to 1.24 metric tons of CO_2 equivalent per metric ton of steel produced, an improvement of more than 32 percent.[24]

While it is useful to know the magnitude of greenhouse gas emissions associated with the generation of electricity used to make steel, the vast majority of these emissions are outside of the steel industry's control. Most NAFTA steel producers purchase their electricity from outside sources. It is the owners of the power plants, not their customers, who design, build, and operate the power plants.

Energy Intensity

Greenhouse gas emissions by the steel industry are largely a function of the amount of energy used. Therefore, a meaningful alternative measure of trends in greenhouse gas emissions is energy intensity. All three NAFTA steel industries have significantly reduced their energy intensity since 1990. The SMA study described above, however, shows that energy use per ton in the United

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[24] AISI, *Recap of IISI & AISI Indicator Values* (2007).

States is approaching an asymptotic level in steelmaking.[25] Further large-scale reductions in energy intensity are unlikely without the introduction of radical new technologies – and no such technologies are likely to become commercially available in the near future.

AISI has calculated the energy intensity of steel production in the United States in terms of BTUs per ton of steel for the period 1990 – 2006.[26] As the following chart shows, U.S. energy intensity has fallen by 15 percent since 2002. The decrease since 1990 has been 29 percent.[27] This marked drop in energy intensity has been a major factor in the overall decline in greenhouse gas emissions by the steel industry in the United States since 1990.

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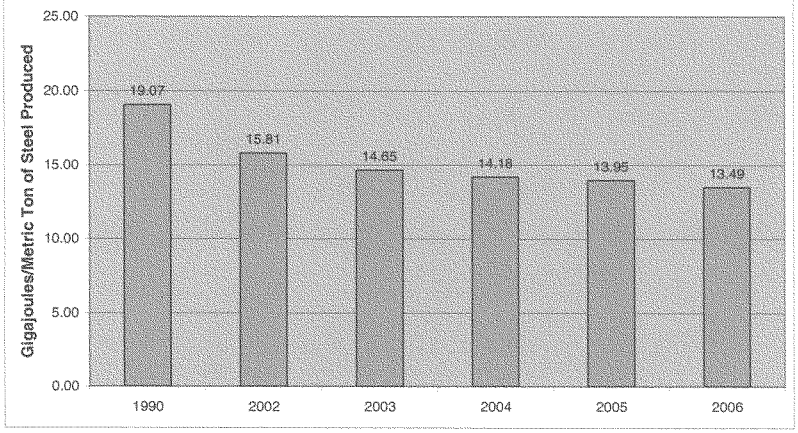
[25] *Carbon "Footprints" in U.S. Steelmaking* at 1, 4. The study indicates that, for EAFs, even a further reduction of 10 percent in energy intensity "will be difficult to achieve."

[26] American Iron & Steel Institute, *U.S. Steel Industry Energy Intensity 2006 Completed Survey Totals* (2007).

[27] *U.S. Steel Industry Energy Intensity 2006 Completed Survey Totals.*

Figure 6
Energy Intensity of U.S. Steel Production



The Canadian steel industry has achieved similar improvements. In 1990, energy intensity of steel production in Canada was 18.29 gigajoules per metric ton steel produced. By 2005, this figure had fallen to 15.53 gigajoules per metric ton of steel produced; a decline of 15.1%.[28]

The Mexican industry has also reduced energy intensity, largely in response to high natural gas and electricity costs. Canacero estimates that, between 1994 and 2004, the Mexican steel industry reduced its energy intensity by 23 percent per ton.

Industry Actions to Reduce Emissions

The NAFTA steel industry has been quite successful in reducing greenhouse gas emissions. The reduction has occurred through a combination of

[28] *See CIEEDAC Study* at 12.

structural changes in the industry, a shift to the use of scrap as a primary feedstock particularly in the U.S. steel industry, successful joint initiatives by the NAFTA governments and the NAFTA steel industries, and actions by individual companies.

Structural Changes in the NAFTA Steel Industry

The NAFTA steel industries have undergone far-reaching structural changes over the last decade. A number of both large and small steel producers, including such famous names as Bethlehem Steel, LTV, and Stelco, underwent bankruptcy. As described above, some were acquired by new parent organizations, while some others ceased operations permanently. Since 2000, the U.S. steel industry has closed approximately 10 million tons of steelmaking capacity. Both integrated and EAF mills were affected.

As discussed above, the NAFTA steel industry has moved increasingly to the use of EAF technology. The energy intensity of steel made in EAFs is slightly more than one quarter that of steel made in basic oxygen furnaces (BOFs).[29] However, as discussed below, the industry needs both types of processes. In particular, certain chemistries and qualities cannot be obtained economically through the processing of scrap. In the NAFTA, the distinction between integrated and EAF producers has begun to blend, as integrated producers such as Wheeling-Pittsburgh and Dofasco have added EAFs to process more scrap, and as EAFs use increasing amounts of pig iron and DRI.

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[29] *U.S. Steel Industry Energy Intensity 2006 Completed Survey Totals.*

The Role of Scrap

One of the most important factors behind the NAFTA steel industry's success in reducing greenhouse gas emissions has been the increasing use of scrap in steel production. In 2006, the U.S. steel industry consumed about 62.5 million tons of steel scrap.[30] In 1997, scrap represented slightly less than 55 percent of metal inputs into U.S. steelmaking; by 2005, the proportion had grown to more than 60 percent.

The increasing reliance of the NAFTA steel industry on scrap is mirrored in declining production of pig iron in NAFTA. Between 1997 and 2005, NAFTA production of pig iron fell by more than 22 percent, from 63.6 million metric tons in 1997 to 49.5 million metric tons in 2005.[31] Over the same period, NAFTA production of direct reduced iron (DRI) increased by 19 percent, as the Mexican steel industry relied on DRI for a growing share of its feedstock.[32]

The increasing role of scrap in North American steelmaking reflects in part the growing proportion of production accounted for by EAFs. The use of scrap is not restricted to EAFs, however. To the contrary, in 2006, integrated mills in the United States used around 13.5 million tons of steel scrap in their production of 46.8 million metric tons of crude steel, so that the integrated U.S. mills are, on average, using scrap for 25 – 30 percent of their metal input

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30 Steel Recycling Institute, *2006 The Inherent Recycled Content of Today's Steel* 1 (2007), available at http://www.recycle-steel.org/PDFs/Inherent2006.pdf.

31 IISI, *Steel Statistical Yearbook 2006* at 3.

32 *Id.* at 5.

needs.[33] With some narrow exceptions, practically every ton of steel made in the NAFTA countries contains at least some scrap.

The Recycling Culture

The prominence of scrap in steel production in the NAFTA countries is the product of a vigorous recycling culture. Recycling begins with the steel producers themselves. In 2006, the integrated and EAF sectors of the NAFTA steel industry recycled several million tons of scrap they had generated internally; this is commonly referred to as "home scrap."[34]

North America has a well-developed system for recycling steel, to the point where steel is the most recycled material in North America. In the United States alone, there are over 2000 scrap processors, who collectively handled over 75 million tons of steel scrap. Overall, 68.7 percent of the steel used in the United States is recycled. The following chart shows the recycling rate for major sources of scrap steel:

FIGURE 7
RECYCLING RATES FOR STEEL PRODUCTS[35]

Product	Recycling Rate %
Motor Vehicles	103.8
Containers (Cans, etc.)	63.4
Appliances	90.0
Construction Structural Steel	97.5
Construction Rebar	65
Overall	68.7

33 *2006 The Inherent Recycled Content of Today's Steel* 1.

34 *2006 The Inherent Recycled Content of Today's Steel* at 1.

35 Steel Recycling Institute, *Steel Recycling Rates at a Glance: 2006 Steel Recycling Rates* 1-2 (2007).

The Virtuous Cycle

The NAFTA steel industry is able to rely on scrap for the major part of its metal input needs, even though approximately 20 percent (12 – 14 million tons) of steel scrap are exported from the NAFTA countries, because the industry has a healthy BOF sector. While NAFTA recycling rates are high, they are not high enough to maintain scrap supplies at levels sufficient to satisfy all of NAFTA's demand for steel. The integrated sector, which makes steel primarily from iron ore and coal or DRI, generates much of the steel that is ultimately recycled for use in both EAFs and BOFs. In this way, the NAFTA industry has created a "virtuous cycle" where the relative proportions of BOF and EAF steel mills allow for a sufficient supply of "new" scrap, while keeping emissions to the lowest level possible while satisfying most (about 90 percent) of NAFTA's demand for steel.

Industry-Wide Initiatives

The NAFTA steel industry, primarily through its major trade associations, has undertaken a number of initiatives to reduce greenhouse gas emissions. One of the most prominent of these is the Climate VISION program in the United States, a partnership between the U.S. Department of Energy and various trade groups.[36] Under the program, associations representing a number of industries, including steel, automobiles, aluminum, chemicals, mining, and cement, have committed to improving energy efficiency and so reducing greenhouse gas emissions. AISI, for example, has set a target of a 10 percent improvement in energy

[36] Information on Climate VISION can be found on the program web site, http://www.climatevision.gov/.

intensity in the U.S. steel industry between 1998 and 2012. As discussed above, the industry has already exceeded this goal.

As part of its involvement in Climate VISION, the U.S. steel industry has made an effort to survey, identify, and promote best practices and technologies for energy reduction in NAFTA steel companies. Many of those companies are also participants in the American Iron and Steel Institute's CO2 Breakthrough Program, a suite of research projects that, if successful, could cut energy use and emissions in steel production dramatically.

One promising project under the CO2 Breakthrough Program has been research at the Massachusetts Institute of Technology, funded by AISI members, into whether it is possible to produce iron through molten oxide electrolysis. Such a process would generate no greenhouse gas emissions. The process has been successfully demonstrated at the laboratory level; the participants are now examining whether it is commercially feasible. Other steel research projects under the CO2 Breakthrough Program include ironmaking by hydrogen flash smelting; geological sequestration of carbon dioxide; and integrating steel production with mineral sequestration.

The Canadian steel sector has also been engaged in voluntary energy efficiency programs for over thirty years. Canadian iron and steel companies are founding members of the Canadian Industry Program for Energy Conservation (CIPEC). CIPEC promotes voluntary energy efficiency efforts within the manufacturing sector. Through this program, Canadian iron and steel firms have engaged in sector energy intensity benchmarking and capacity-building via the

"Dollars to $ense" initiative.[37] The iron and steel sector has also set a target to reduce energy intensity by 10 percent between the years 2000 and 2010.

Canada's iron and steel sector has also been active on the research and development front to improve energy efficiency. In the late 1980s and early 1990s, the steel industry, in partnership with federal and Ontario governments, modeled a world-class reheat furnace based on first principles for energy efficiency improvements. This reheat furnace was operated at Queen's University, and is now situated at the federal government's CANMET Energy Technology Centre.

Another initiative by the U.S. industry has been participation in the Asia-Pacific Partnership on Clean Development and Climate ("APP").[38] In October 2007, with the support of its steel industry, Canada also joined the APP. The APP, which also includes Australia, China, India, Japan, and the Republic of Korea, has the mission to assist its members in meeting "goals for energy security, national air pollution reduction, and climate change in ways that promote sustainable economic growth and poverty reduction." The APP includes both the member governments and trade associations. The partnership works through eight task forces, including one for steel.

The APP has set a number of objectives for the steel industry:

- Develop benchmark and performance indicators.
- Facilitate the deployment of best practices.
- Develop processes to reduce energy usage, air pollution and greenhouse gas emissions from steel production

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37 *See Benchmarking Energy Intensity in the Canadian Steel Industry 2007.*

38 http://www.asiapacificpartnership.org/default.htm.

- Increase recycling throughout the Partnership.[39]

As the members of the APP account for over half of world steel production, accomplishment of these objectives could play a major role in global efforts to reduce energy use and emissions from the steel industry.

The Mexican steel industry has also committed itself to working towards sustainable development and limiting climate change. In 2003, the Mexican industry signed a voluntary agreement with SEMARNAT, the Mexican Environmental Authority) to develop specific regulations for the iron and steel sector regarding greenhouse gas emissions. So far, five technical documents have been developed under this partnership.

Initiatives by Individual Companies

While industry-wide initiatives may yield exciting results, most of the improvements in energy efficiency and reductions in greenhouse gas emissions are the result of actions of individual NAFTA steel producers. In the integrated sector, several producers are reusing the process gases generated by coke- and ironmaking. This process both reduces emissions and increases energy efficiency. Several EAF producers are burning old tires in their furnaces, which provides extra energy and carbon content, recycles the steel contained in steel-belted radials, and disposes of tires that would otherwise have to be buried in landfills. Many EAF producers are using waste gases in shaft converters and conveyors to preheat scrap; this step alone reduces energy intensity by as much as 25 percent. Three steel producers are using waste gases generated by on-site landfills to fuel their reheat furnaces. Overall, the NAFTA approach to in-

[39] http://www.asiapacificpartnership.org/SteelTF.htm.

creasing energy efficiency and decreasing emissions has been one of modest but continuous annual improvement, as producers constantly try new methods to enhance efficiency and reduce energy use.

The efficacy of this approach is reflected in greater efficiency in using metal inputs. In 1997, the U.S. steel industry used around 1.3 metric tons of metal inputs (pig iron, DRI, and scrap) to produce one metric ton of crude steel. By 2005, the industry was accomplishing the same result with only 1.16 metric tons of metal inputs.[40]

In Mexico, some steel companies have gone beyond technical measures, and are trying to promote a culture of energy conservation among their workers and their families. This effort is directed initially to increase understanding of the climate change phenomenon, and to identify and encourage preventive actions individuals and families can take.

Achievements

The achievements of the NAFTA steel industry in reducing energy intensity and greenhouse gas emissions have been impressive. Between 1990 and 2002 (the last year for which full information is available), NAFTA-wide process-related greenhouse gas emissions by the steel industry fell by 25.6 percent.[41] Between 1990 and 2005, process-related emissions by the U.S. and Canadian industries dropped by 42.9 percent. The United States is not a signatory to the Kyoto Protocol but, if it were, the U.S. steel industry would have exceeded its

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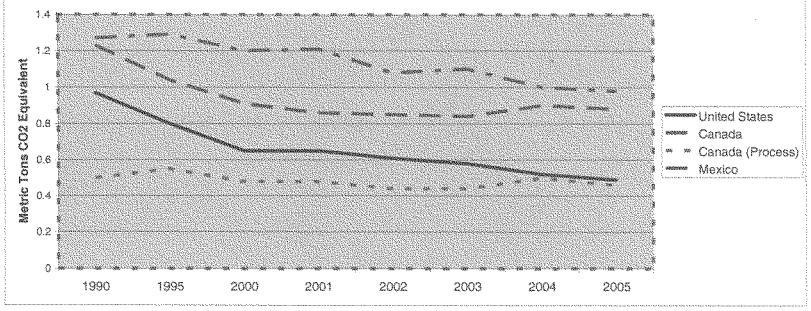
[40] *See Steel Statistical Yearbook 2006* at 3 (pig iron production); 5 (DRI production); 101 (imports of pig iron). Scrap consumption was taken from information provided by the Steel Recycling Institute.

[41] This calculation reflects process emissions only. The process-related emissions figure for Canada for 1990 has not been normalized.

Kyoto target (a seven percent reduction in greenhouse gas emissions) seven times over. In Canada, which did sign the Kyoto Protocol, the reduction in total greenhouse gas emissions by the steel sector was more than twice the Kyoto target.

The NAFTA steel industries showed even greater progress in reducing emissions on a per ton produced basis. The following chart shows greenhouse gas emissions in the form of metric tons of CO2 equivalent per metric ton of crude steel produced. Canadian emissions figures include both process emissions and emissions from the combustion of fossil fuels at the mill; U.S. and Mexican figures reflect process emissions only. For ease of comparison, the chart also shows Canadian process emissions per metric ton.

Figure 8
NAFTA Greenhouse Gas Emissions
Per Metric Ton of Crude Steel Produced



As the chart shows, all three of the NAFTA steel industries have substantially reduced their greenhouse gas emissions per ton of crude steel produced. Per metric ton process emissions by the U.S. iron and steel industry have declined by nearly 50 percent since 1990. Canadian total (energy plus process) per

ton emissions have dropped by 28.5 percent. Mexican emissions fell by 22.8 percent per ton between 1994 and 2005.[42]

Obstacles

Despite their enormous success in increasing energy efficiency and reducing greenhouse gas emissions, the NAFTA steel industries face two major obstacles to further progress. The first is the potential for misguided climate change policies and regulations. The second obstacle is the inherent limitations of current steelmaking methods.

The Risk of Misguided Policies

Probably the greatest single obstacle to further progress on reducing greenhouse gas emissions by the NAFTA steel industry lies in the realm, not of technology, but of politics. Greenhouse gas policy and regulation are in a state of extreme flux in all three NAFTA countries. Steel producers in all three countries are concerned that poorly-designed climate change legislation and regulation may impose unrealistic emissions limits upon them; increase their costs without bringing about further substantial reductions in greenhouse gas emissions; and ultimately place them at a competitive disadvantage vis-à-vis steel producers operating in countries without greenhouse gas regulations.

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[42] Production figures for 1990 are from IISI, Steel Statistic Archive 1990, available at http://www.worldsteel.org/?action=stats&type=steel&period=year&year=1990. Production figures for 1995 are from IISI, Steel Statistic Archive 1995, available at http://www.worldsteel.org/?action=stats&type=steel&period=year&year=1995. Production figures for 1997 – 2005 are from IISI, *Steel Statistical Yearbook 2006* at 11. NAFTA emissions are derived from *Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005*; *National Inventory Report 1990 – 2005*; and *Inventario Nacional de Gases de Efecto Invenrnadero 2002 (Procesos Industriales)* (2005). Figures for Mexico after 2002 were provided directly by Canacero. Total emissions for Canada for 1990 are based on normalized figures from *CIEEDAC Study* at 15-16. Canadian process-only emissions are taken from *National Inventory Report 1990 – 2005*, and do not reflect any adjustments for 1990.

Greenhouse Gas Regulation in the United States

As noted above, the United States presently has no formal regulation of greenhouse gas emissions. Official policy is to encourage industries to reduce greenhouse gases on a voluntary basis. As described above, the U.S. government is active in a number of areas of research and development, but there are no legally binding requirements that the steel industry control greenhouse gas emissions.

This is almost certain to change, but when and how remains very unclear. Federal courts have held that the Environmental Protection Agency has the power to regulate CO_2 emissions, but the agency has yet to exercise this power. Some suspect the EPA will issue regulations regarding emissions from mobile sources in 2008; action on stationary sources (including steel mills) if it occurs, will probably happen only in 2009 or later.

A number of bills to regulate greenhouse gas emissions are presently under consideration in the U.S. Congress. Most of these bills would impose some sort of cap on emissions by individual industries or emitters, and allow the trading of emissions allowances, although performance standards are also being examined. The challenge to all of these bills is to create a system that has global reach, so that U.S. steel producers are not placed at a competitive disadvantage.

The situation in the United States is complicated by the role of the states. Several states, most prominently California, have begun to take steps to regulate greenhouse gas emissions from sources within their borders. While these activities have not yet affected the U.S. steel industry, it is quite possible that major

steel producing states such as Indiana could undertake such efforts in the near future.

Greenhouse Gas Regulation in Mexico

Like the United States, Mexico has no formal regulation of greenhouse gas emissions. Mexico has signed the Kyoto Protocol as a Non – Annex 1 country, so it has no obligations under the protocol. Nevertheless, Mexico has been very active in addressing climate change. The Governmental Committee on Climate Change was created, and the steel sector participates actively in it. Mexico was the first developing country to present three National Communications to the United Nations Framework Convention on Climate Change. Mexico has also developed the Mexican Carbon Fund (FOMECAR). Finally, in May, the Government announced the National Plan on Climate Change. It is expected to release a national action program in mid-2008. With this timeline in mind, Canacero is working closely with the Mexican government to provide sectoral input for Mexico's climate change strategy.

Greenhouse Gas Regulation in Canada

The Canadian federal government has announced a new policy (April 2007) that would require large industrial emitters, including all steel facilities, to reduce greenhouse gas emissions per metric ton of production to levels 18 percent below their 2006 emissions intensity by 2010, and to 26 percent below 2006 levels by 2015. Actions that will count towards compliance include:

- Direct internal reductions of emissions intensity at the regulated facility;
- Contributing to a new greenhouse gas emissions reduction "Technology Fund" starting at a rate of $15 per metric ton of carbon dioxide equivalent. The price equivalence escalates in later years.

- Establishing or purchasing an offset credit, which must be attributable to third-party verified emission reductions located in Canada;
- Purchasing emissions credits through a domestic trading system which may be linked in the future to U.S. regional or state-level trading schemes;
- Purchasing "Certified Emission Reductions" from projects in developing countries under the Kyoto Protocol's Clean Development Mechanism (CDM).

Companies that voluntarily reduced emissions between 1992 and 2006 are eligible for a one-time, limited credit that will only partially capture emissions improvements during the 1992-2006 timeframe.

Final regulations implementing these requirements are still being developed, and should be issued by early 2008. In the meantime, the Canadian steel industry is engaged in discussions with the Canadian government regarding the specific application of the requirements to the industry. To complicate matters further, individual provinces are also formulating greenhouse gas programs. These efforts are not always consistent with the approach taken by the Canadian federal government. As with any such system, the details of actual implementation will be key.

The Necessity of Global Solutions

Global warming is, by definition, a global problem; greenhouse gases emitted by steel mills in countries outside of NAFTA have just as great an effect on NAFTA's climate as gases emitted in Canada, Mexico, or the United States. A global problem must have a global solution. Almost any system of domestic greenhouse gas regulation is likely to drive up the costs of production for NAFTA steelmakers. The demand elasticity for steel is generally fairly low; customers need steel, and are unlikely to cut consumption much even if prices are high.

The elasticity of substitution of suppliers for steel, on the other hand, is quite high; customers will readily switch from one supplier to another in search of lower prices, especially in open markets such as NAFTA.

If greenhouse gas regulation in the NAFTA countries drives up the NAFTA steel producers' costs, their customers might well turn to lower-priced steel imported from foreign countries with fewer or no limits on greenhouse gas emissions. Ultimately, greenhouse gas regulations that apply only to NAFTA steel producers, but not to their foreign competitors, may drive an even greater share of global production to countries with less rigorous, or no regulations, and hence lower compliance costs. In this way, legislation intended to reduce greenhouse emissions could instead cause them to increase globally for any given amount of world steel production.

In fact, greater production in developing countries increases greenhouse gas emissions in three ways. First, the mills themselves are on average less efficient than NAFTA steel mills, and will emit more greenhouse gases on a per ton basis. The electricity generators in these countries are subject to less stringent regulations than are electric power companies in NAFTA. This is especially true in China, where the majority of electricity is produced by burning coal. In this way, increased steel production is accompanied by increased greenhouse gas emissions from power plants. Finally, the steel must be moved, normally by ship, from the country of production to NAFTA. The combustion of bunker fuels by ships is a significant source of greenhouse gas emissions.[43] Indeed, in 2005,

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[43] *See, e.g., Inventory of U.S. Greenhouse Gas Emissions and Inventories 1990 – 2005* at 2-5.

U.S. emissions attributable to international bunker fuel combustion were twice as large as emissions by the steel industry.[44]

The Need for Breakthrough Technologies

Attempts to reduce greenhouse gas emissions by the NAFTA steel producers are facing another major obstacle – the inherent characteristics of modern steelmaking processes. Using current technologies, it is impossible to make steel without producing significant amounts of greenhouse gases, both directly from the steelmaking process and from the generation of electricity used in steelmaking. As discussed above, it is also unlikely that energy intensity using current production processes can be reduced much further. While some incremental gains remain to be made, it is unlikely that tweaking current processes will result in the sort of dramatic reductions in emissions accomplished by the NAFTA industries between 1990 and 2005 or that proposed regulatory regimes would seek to mandate.

The NAFTA steel industries are energetically investigating a number of technologies that could substantially decrease the energy intensity and greenhouse gas emissions of the steelmaking process. Two such projects -- ironmaking using molten oxide electrolysis and hydrogen flash smelting – were briefly described above. Another ironmaking technology, HIsmelt, is being developed in Australia with the participation of Nucor, a U.S. steel company. In the HIsmelt process, iron ore fines and non-coking coals are injected directly into a molten

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[44] *See id.* at 2-4 – 2-5.

iron bath to produce molten pig iron.[45] The objective is to develop a technology that could be used to replace blast furnaces in integrated steel mills and to provide pig iron for EAFs. If the technology proves commercially viable, it would reduce the energy inputs into and the greenhouse gas emissions from steelmaking.

A second process, currently used in the United States by Nucor, is Castrip. In this process, molten steel is injected directly between two rollers, which roll a very thin-cast sheet.[46] The process, which eliminates the need to pour slabs and then hot-roll them, reduces greenhouse gas emissions from the production of steel sheet by 70 percent.

In Canada, the steel sector is supporting breakthrough research and development efforts in biomass and four CO2 Breakthrough Projects spearheaded by AISI. Between 2004 and 2007, the Canadian steel industry has been focusing biomass efforts through the "Biomass in iron and steelmaking" project, in partnership with the Natural Resources Canada. Dofasco and Ipsco are supporting CO2 Breakthrough projects in the areas of electrolysis reduction, hydrogen reduction, carbon capture and storage using EAF slag, and using mineral silicates.

It is uncertain whether any of these technologies will develop into the sort of breakthrough necessary to reduce greenhouse gas emissions from steelmaking significantly below their current levels. Without such breakthroughs, it is certain that the NAFTA steel industry cannot achieve dramatic new reductions, al-

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[45] For a general description of the Hismelt process, *see* http://www.hismelt.com.au/EN/HT_PageView.aspx?pageID=6.

[46] For a detailed description of the Castrip process, *see* http://www.castrip.com/technical/pdf/01/The%20Castrip%20Process%20An%20Update%20on%20Process%20Development%20at%20Nucor%20Steel's%20First%20Commerical%20Strip%20Castring%20Facility%206-07.pdf.

though the slow process of improvement will undoubtedly continue. Even if breakthroughs are achieved, the amount of investment that will be needed to implement these technologies is massive, and their widespread adoption, even within NAFTA, would take at least 30 years.

Conclusion

The NAFTA steel industry has achieved impressive results in reducing greenhouse gas emissions, both in total and on a per ton basis. Significantly, the industry accomplished this reduction purely in response to market forces. An important driver in this process has been increased production from EAFs, and increased use of scrap as an input into BOFs. This heavy reliance on scrap in NAFTA is possible because the NAFTA countries have created a sophisticated system for recycling a very high proportion of steel.

Further improvements in energy efficiency and greenhouse gas emissions will require new, breakthrough technologies. The NAFTA steel industries are actively researching possibilities, both through their trade associations and by individual producers. The ability of the NAFTA industries to identify and commercialize these technologies is hampered to some degree by the uncertain future of climate change policy in the United States, Canada and Mexico. Poorly designed policies and systems of regulation that lack global reach could indeed drive production away from NAFTA to countries with fewer or no greenhouse gas limits. It would be a supreme irony if the NAFTA steel industry, which has achieved very impressive results in reducing greenhouse gas emissions, were to shrink because of policies that drive its costs up prohibitively, and that encourage

a shift in global steel production to countries with weaker regulation, resulting in a net increase in global greenhouse gas emissions.

Global warming potentials are not provided for CO, NO_x, NMVOCs, SO_2, and aerosols because there is no agreed-upon method to estimate the contribution of gases that are short-lived in the atmosphere, spatially variable, or have only indirect effects on radiative forcing (IPCC 1996).

Recent Trends in U.S. Greenhouse Gas Emissions and Sinks

In 2005, total U.S. greenhouse gas emissions were 7,260.4 Tg CO_2 Eq. Overall, total U.S. emissions have risen by 16.3 percent from 1990 to 2005, while the U.S. gross domestic product has increased by 55 percent over the same period (BEA 2006). Emissions rose from 2004 to 2005, increasing by 0.8 percent (56.7 Tg CO_2 Eq.). The following factors were primary contributors to this increase: (1) strong economic growth in 2005, leading to increased demand for electricity and (2) an increase in the demand for electricity due to warmer summer conditions. These factors were moderated by decreasing demand for fuels due to warmer winter conditions and higher fuel prices.

Figure ES-1 through Figure ES-3 illustrate the overall trends in total U.S. emissions by gas, annual changes, and absolute change since 1990. Table ES-2 provides a detailed summary of U.S. greenhouse gas emissions and sinks for 1990 through 2005.

Figure ES-1: U.S. Greenhouse Gas Emissions by Gas

Figure ES-2: Annual Percent Change in U.S. Greenhouse Gas Emissions

Figure ES-3: Cumulative Change in U.S. Greenhouse Gas Emissions Relative to 1990

Table ES-2: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks (Tg CO_2 Eq.)

Gas/Source	1990	1995	2000	2001	2002	2003	2004	2005
CO_2	**5,061.6**	**5,384.6**	**5,940.0**	**5,843.0**	**5,892.7**	**5,952.5**	**6,064.3**	**6,089.5**
Fossil Fuel Combustion	4,724.1	5,030.0	5,584.9	5,511.7	5,557.2	5,624.5	5,713.0	5,751.2
Non-Energy Use of Fuels	117.3	133.2	141.0	131.4	135.3	131.3	150.2	142.4
Cement Manufacture	33.3	36.8	41.2	41.4	42.9	43.1	45.6	45.9
Iron and Steel Production	84.9	73.3	65.1	57.9	54.6	53.4	51.3	45.2
Natural Gas Systems	33.7	33.8	29.4	28.8	29.6	28.4	28.2	28.2
Municipal Solid Waste Combustion	10.9	15.7	17.9	18.3	18.5	19.5	20.1	20.9
Ammonia Production and Urea Application	19.3	20.5	19.6	16.7	17.8	16.2	16.9	16.3
Lime Manufacture	11.3	12.8	13.3	12.9	12.3	13.0	13.7	13.7
Limestone and Dolomite Use	5.5	7.4	6.0	5.7	5.9	4.7	6.7	7.4
Soda Ash Manufacture and Consumption	4.1	4.3	4.2	4.1	4.1	4.1	4.2	4.2
Aluminum Production	6.8	5.7	6.1	4.4	4.5	4.5	4.2	4.2
Petrochemical Production	2.2	2.8	3.0	2.8	2.9	2.8	2.9	2.9
Titanium Dioxide Production	1.3	1.7	1.9	1.9	2.0	2.0	2.3	1.9
Ferroalloy Production	2.2	2.0	1.9	1.5	1.3	1.3	1.4	1.4
Phosphoric Acid Production	1.5	1.5	1.4	1.3	1.3	1.4	1.4	1.4
CO_2 Consumption	1.4	1.4	1.4	0.8	1.0	1.3	1.2	1.3
Zinc Production	0.9	1.0	1.1	1.0	0.9	0.5	0.5	0.5
Lead Production	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Silicon Carbide Production and Consumption	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Land-Use Change and Forestry (Sink)[a]	*(712.8)*	*(828.8)*	*(756.7)*	*(767.5)*	*(811.9)*	*(811.9)*	*(824.8)*	*(828.5)*
International Bunker Fuels[b]	*113.7*	*100.6*	*101.1*	*97.6*	*89.1*	*83.7*	*97.2*	*97.2*
Wood Biomass and Ethanol Consumption[b]	*219.3*	*236.8*	*228.3*	*203.2*	*204.4*	*209.6*	*224.8*	*206.5*
CH_4	**609.1**	**598.7**	**563.7**	**547.7**	**549.7**	**549.2**	**540.3**	**539.3**
Landfills	161.0	157.1	131.9	127.6	130.4	134.9	132.1	132.0
Enteric Fermentation	115.7	120.6	113.5	112.5	112.6	113.0	110.5	112.1
Natural Gas Systems	124.5	128.1	126.6	125.4	125.0	123.7	119.0	111.1
Coal Mining	81.9	66.5	55.9	55.5	52.0	52.1	54.5	52.4
Manure Management	30.9	35.1	38.7	40.1	41.1	40.5	39.7	41.3
Petroleum Systems	34.4	31.1	27.8	27.4	26.8	25.8	25.4	28.5
Wastewater Treatment	24.8	25.1	26.4	25.9	25.8	25.6	25.7	25.4
Forest Land Remaining Forest Land	7.1	4.0	14.0	6.0	10.4	8.1	6.9	11.6
Stationary Combustion	8.0	7.8	7.4	6.8	6.8	7.0	7.1	6.9
Rice Cultivation	7.1	7.6	7.5	7.6	6.8	6.9	7.6	6.9
Abandoned Coal Mines	6.0	8.2	7.3	6.7	6.1	5.9	5.8	5.5
Mobile Combustion	4.7	4.3	3.5	3.2	3.1	2.9	2.8	2.6
Petrochemical Production	0.9	1.1	1.2	1.1	1.1	1.1	1.2	1.1
Iron and Steel Production	1.3	1.3	1.2	1.1	1.0	1.0	1.0	1.0
Field Burning of Agricultural Residues	0.7	0.7	0.8	0.8	0.7	0.8	0.9	0.9
Ferroalloy Production	+	+	+	+	+	+	+	+
Silicon Carbide Production and Consumption	+	+	+	+	+	+	+	+
International Bunker Fuels[b]	*0.2*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
N_2O	**482.0**	**484.2**	**499.8**	**502.5**	**479.2**	**459.8**	**445.2**	**468.6**
Agricultural Soil Management	366.9	353.4	376.8	389.0	366.1	350.2	338.8	365.1
Mobile Combustion	43.7	53.7	53.2	49.7	47.1	43.8	41.2	38.0
Nitric Acid Production	17.8	19.9	19.6	15.9	17.2	16.7	16.0	15.7
Stationary Combustion	12.3	12.8	14.0	13.5	13.4	13.7	13.9	13.8
Manure Management	8.6	9.0	9.6	9.8	9.7	9.3	9.4	9.5
Wastewater Treatment	6.4	6.9	7.6	7.6	7.7	7.8	7.9	8.0
Adipic Acid Production	15.2	17.2	6.0	4.9	5.9	6.2	5.7	6.0
Settlements Remaining Settlements	5.1	5.5	5.6	5.5	5.6	5.8	6.0	5.8
N_2O Product Usage	4.3	4.5	4.8	4.8	4.3	4.3	4.3	4.3
Forest Land Remaining Forest Land	0.8	0.6	1.7	1.0	1.4	1.2	1.1	1.5
Field Burning of Agricultural Residues	0.4	0.4	0.5	0.5	0.4	0.4	0.5	0.5
Municipal Solid Waste Combustion	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
International Bunker Fuels[b]	*1.0*	*0.9*	*0.9*	*0.9*	*0.8*	*0.8*	*0.9*	*0.9*
HFCs, PFCs, and SF_6	**89.3**	**103.5**	**143.8**	**133.8**	**143.0**	**142.7**	**153.9**	**163.0**
Substitution of Ozone Depleting Substances	0.3	32.2	80.9	88.6	96.9	105.5	114.5	123.3
HCFC-22 Production	35.0	27.0	29.8	19.8	19.8	12.3	15.6	16.5
Electrical Transmission and Distribution	27.1	21.8	15.2	15.1	14.3	13.8	13.6	13.2
Semiconductor Manufacture	2.9	5.0	6.3	4.5	4.4	4.3	4.7	4.3
Aluminum Production	18.5	11.8	8.6	3.5	5.2	3.8	2.8	3.0

Magnesium Production and Processing	5.4	5.6	3.0	2.4	2.4	2.9	2.6	2.7
Total	**6,242.0**	**6,571.0**	**7,147.2**	**7,027.0**	**7,064.6**	**7,104.2**	**7,203.7**	**7,260.4**
Net Emissions (Sources and Sinks)	**5,529.2**	**5,742.2**	**6,390.5**	**6,259.5**	**6,252.7**	**6,292.3**	**6,378.9**	**6,431.9**

+ Does not exceed 0.05 Tg CO_2 Eq.

[a] Parentheses indicate negative values or sequestration. The net CO_2 flux total includes both emissions and sequestration, and constitutes a sink in the United States. Sinks are only included in net emissions total.

[b] Emissions from International Bunker Fuels and Biomass Combustion are not included in totals.

Note: Totals may not sum due to independent rounding.

Figure ES-4 illustrates the relative contribution of the direct greenhouse gases to total U.S. emissions in 2005. The primary greenhouse gas emitted by human activities in the United States was CO_2, representing approximately 83.9 percent of total greenhouse gas emissions. The largest source of CO_2, and of overall greenhouse gas emissions, was fossil fuel combustion. CH_4 emissions, which have steadily declined since 1990, resulted primarily from decomposition of wastes in landfills, natural gas systems, and enteric fermentation associated with domestic livestock. Agricultural soil management and mobile source fossil fuel combustion were the major sources of N_2O emissions. The emissions of substitutes for ozone depleting substances and emissions of HFC-23 during the production of HCFC-22 were the primary contributors to aggregate HFC emissions. Electrical transmission and distribution systems accounted for most SF_6 emissions, while PFC emissions resulted from semiconductor manufacturing and as a by-product of primary aluminum production.

Figure ES-4: 2005 Greenhouse Gas Emissions by Gas (percents based on Tg CO_2 Eq.)

Overall, from 1990 to 2005, total emissions of CO_2 increased by 1,027.9 Tg CO_2 Eq. (20.3 percent), while CH_4 and N_2O emissions decreased by 69.8 Tg CO_2 Eq. (11.5 percent) and 13.4 Tg CO_2 Eq. (2.8 percent), respectively. During the same period, aggregate weighted emissions of HFCs, PFCs, and SF_6 rose by 73.7 Tg CO_2 Eq. (82.5 percent). Despite being emitted in smaller quantities relative to the other principal greenhouse gases, emissions of HFCs, PFCs, and SF_6 are significant because many of them have extremely high global warming potentials and, in the cases of PFCs and SF_6, long atmospheric lifetimes. Conversely, U.S. greenhouse gas emissions were partly offset by carbon sequestration in forests, trees in urban areas, agricultural soils, and landfilled yard trimmings and food scraps, which, in aggregate, offset 11.4 percent of total emissions in 2005. The following sections describe each gas' contribution to total U.S. greenhouse gas emissions in more detail.

Carbon Dioxide Emissions

The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced. Since the Industrial Revolution (i.e., about 1750), global atmospheric concentrations of CO_2 have risen about 35 percent (IPCC 2001, Hofmann 2004), principally due to the combustion of fossil fuels. Within the United States, fuel combustion accounted for 94 percent of CO_2 emissions in 2005. Globally, approximately 27,044 Tg of CO_2 were added to the atmosphere through the combustion of fossil fuels in 2004, of which the United States accounted for about 22 percent.[9] Changes in land use and forestry practices can also emit CO_2 (e.g., through conversion of forest land to agricultural or urban use) or can act as a sink for CO_2 (e.g., through net additions to

[9] Global CO_2 emissions from fossil fuel combustion were taken from Energy Information Administration *International Energy Annual 2004* (EIA 2006a).

Recap of IISI & AISI Indicator Values

	IISI 2004	IISI 2005	AISI 2004	AISI 2005	AISI 2006
1- Energy Intensity GJ/ tonne	19.1	19.1	14.2	13.9	13.6
2- Greenhouse Gas Emissions Tonne of CO2 / Tonne of Steel	1.6	1.7	1.29	1.27	1.24
3- Material Efficiency %	96.8	95.5	96.1	95.4	95.0
4- Scrap Utilization % of Steel Produced	42.3	41.8	58.9	63.1	60.1
5- Environmental Management Systems % Employees in Registered Facilities	85.4	90.8	74.7	69.7	73.4

A global sector approach to CO_2 emissions reduction for the steel industry

A position paper issued by the International Iron and Steel Institute (IISI)

December 2007

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Steel is essential to economic growth

The modern world is built on steel. In developing and developed nations alike, steel has become an indispensable part of life.

Global steel production has been growing for the last 50 years. In the 1950s, world steel production was about 200 mmt. In the last five years, the pace of growth has accelerated and in 2006, the figure stood at 1,239.5 million metric tons (mmt).

The future growth in demand for steel will be driven mainly by the needs of the developing world. The steel industry must continue to grow by 3-5% worldwide and by 8-10% in China, India and Russia to satisfy these needs.

Steel as part of a climate change solution

According to the Intergovernmental Panel on Climate Change (IPCC), the steel industry accounts for between 3-4% of total world greenhouse gas emissions. On average, 1.7 tonnes of carbon dioxide are emitted for every tonne of steel produced. (For explanation please see 'Sustainability Report of the World Steel Industry 2005', on www.worldsteel.org).

Over 90% of steel industry emissions come from iron production in nine countries or regions: Brazil, China, EU-27, India, Japan, Korea, Russia, Ukraine and the USA.

Technological advancements over the past 25 years have enabled substantial reductions in CO_2 emissions from steel production. These advancements include:

- Enhanced energy efficiency in the steelmaking process
- Improved recycling of steel products, currently in excess of 60% in developed countries
- Improved use of by-products from steelmaking
- Better environmental protection techniques.

In the future the important role that steel will play in finding solutions to the challenges posed by climate change is demonstrated:

1. Through our products - Across many different fields, new and technologically-advanced applications of steel are part of the solution to climate change. Steel is already indispensable to renewable energy industries, for example in wind turbines and solar power structures. Steel is also a key part of the construction of carbon neutral housing for the future and in a new generation of lightweight yet fuel efficient vehicles.
2. Through technology transfer - The potential for greatest improvement in the medium term lies in some developing countries and CIS. The steel industry is involved in many programmes to help transfer efficient technologies to speed up the replacement of outdated steel plants. IISI is an important source of technology transfer information. Through our projects and working groups members regularly exchange information.
3. Through long-term Breakthrough Technology – Today's steelmaking processes have optimised the use of energy. Therefore to make a significant further reduction in CO_2 emissions, fundamentally new processes are required. IISI and its members are at the cutting edge of research and development into the next generation of steelmaking technology. The IISI CO_2 Breakthrough Programme is a long-term research project

investigating new processes for steel production that will substantially decrease CO_2 emissions. As modern steelmaking is already highly energy and CO_2 efficient, 'breakthrough' refers to 'new discoveries' that will lead to significant changes in the way steel is made.

The current situation

A number of different national approaches to emissions reduction now exist.

The Japanese steel industry is engaged in a Voluntary Action Programme comprising a range of efforts from international technical cooperation to research and development into further by-products uses. The Japanese steel industry has set a 10% reduction in energy consumption as its goal for the year 2010 compared to 1990 levels. The United States steel industry is signed up to the voluntary Climate Vision programme with a commitment to improving energy intensity by 10% as a sector using a 2002 baseline. Many other countries are making similar efforts in this area.

The United States, Japanese, Korean, Australian and Canadian steel industries are also engaged in the Asia-Pacific Partnership on Clean Development and Climate which also involves India and China.

The EU's emission trading scheme is the world's largest international trading scheme for greenhouse gas emissions. It is a mandatory scheme for all 27 EU member countries.

Global steel sector approach

In considering the best approach to take from 1 January 2013 in the post-Kyoto period it is important to review the EU Cap and Trade System. The steel industry considers that, in its current form, the scheme will not lead to the desired goal of reducing the effect upon climate change. The system:

1. Distorts competition in the EU – the allocation of emission caps and allowances by plant from member states is arbitrary and not related to individual plant performance. The end result is a loss of external competitiveness for the European steel industry and a distortion on competition within the EU.
2. Fails to effectively reduce emissions – the most direct result of a national/regional scheme is a transfer of production to parts of the world where no such limits exist, resulting in an increase rather than a decrease in global greenhouse gas emissions.
3. Fails to reward improvements – The system does not allow the most efficient steel companies to expand and the least efficient to decline.
4. Leads to huge and unjustified inflation of electricity costs – electricity companies have passed on the equivalent costs of freely allocated CO_2 allowances to their customers generating windfall profits.

As a consequence IISI's climate change policy takes a global perspective. It is aimed at reducing CO_2 emissions worldwide. This can be achieved through a global steel sector approach.

To kick start this process the world steel industry announced its new global steel sector approach at the annual IISI conference in Berlin in October 2007.

At the core of the new steel sector approach is the collection and reporting of carbon dioxide emissions data by steelplants in all the major steel producing countries. The information collection will lead to benchmarking improvements based on actual performance data and then reporting and setting of commitments on a national or regional basis for implementation during the post-Kyoto period. The key advantage of the IISI approach is that it is supported by its members in both the developed and developing countries including China which accounts for approximately 50% of total steelmaking CO_2 emissions.

IISI uses an intensity-based approach to measurement of carbon dioxide emissions, taking into account the CO_2 produced per tonne of steel rather than the total carbon dioxide emissions within a country or region. This globally consistent calculation methodology will allow production normalised CO_2 emission comparisons between regions that are not possible today.

IISI has put in place an expert group to oversee the collection of emissions data. This task force will develop a reporting methodology and specific approaches to reduce the steel industry's global CO_2 emissions.

At the same time, IISI is working on the transfer of the best available steelmaking technologies to developing countries. One opportunity for this is through wide distribution of the Asia Pacific Partnership State of the Art Technology Handbook.

The aim of the steel industry's new approach to climate change is a global improvement in carbon dioxide emissions for every unit of steel produced.

By including all the major steel producing countries, worldwide competition will no longer be harmed in an industry where over 40% of products are already traded internationally.

The future post-Kyoto 2013

The global problem of climate change requires a global solution. Policies to encourage improved energy efficiency and reduced CO_2 emissions are important in all regions. The steel industry is asking for a new emissions regulatory regime that takes a global steel sector approach, is intensity based, verifiable and finally is technology driven. The industry is asking that:

1. Governments should work closely with the steel industry on a global approach by adopting a sector specific framework which involves all major steel-producing countries.
2. Any emission regulatory regimes should support the expansion of efficient steel companies and the decline of the least efficient companies based on an equal basis.
3. Governments should work with IISI to adopt and support a new methodology that will measure and analyse emissions data from its member companies' plants in all major steel producing countries.
4. Governments should work with the steel industry to invest in the next generation of breakthrough technology CO_2 programmes, to bring about the next major advancement in steelmaking.

Mr. BOUCHER. Thank you, Mr. Slattery. Mr. Morgenstern.

STATEMENT OF RICHARD MORGENSTERN, SENIOR FELLOW, RESOURCES FOR THE FUTURE

Mr. MORGENSTERN. Thank you, Mr. Chairman. I appreciate the opportunity to appear here to consider how to achieve domestic emission reductions of CO_2 and other greenhouse gases without placing undue burdens on any one sector and without shifting production and the corresponding emissions to other countries.

Today I will briefly report on some recent research by myself and some colleagues, and I will discuss several options to alleviate the impacts.

As is widely understood, the impact of a carbon price is fundamentally tied to the carbon intensity of individual industries and to the ability of firms to pass on the higher costs to their customers. We estimate that energy costs in most manufacturing industries as broadly defined at what the Commerce Department calls the two-digit level, are less than 2 percent of total costs. However, they are more than 3 percent in energy-intensive industries such as refining, non-metal mineral products, primary metals, and paper and printing. Larger impacts, in fact, considerably larger impacts are seen when more narrowly defined industrial categories are considered. For example, for the aluminum and chlorine industries, costs are about 10 times higher.

We generally find adverse effects on domestic production of less than 1 percent for every $10 per ton of CO_2 charge. There are exceptions. Motor vehicle manufacturing and chemicals and plastics are about 1 percent and primary metals are about 1½ percent. Of course, if we looked at narrower industrial categories, we would inevitably see larger impacts.

Turning to the options for lessening these impacts, I would note at the outset the difficulty of achieving this without some cost either to the environment in the form of higher emissions or to the overall economy, largely because we would be substituting more expensive abatement options that would have to be undertaken by other industries or other individuals throughout the country. Trade-related actions are not costless, either. They might raise legality concerns as we have heard, and they risk provoking countervailing actions. Further, they can also drive up domestic product prices for key materials which will itself threaten other industries in our country.

I focus here on three options today, performance standards instead of a market-based or cap-and-trade approach, free allowance allocation under a cap-and-trade system, and the trade-related policies which have been alluded to.

The first option, performance standards, comes in many varieties, for example, tradable emission standards. The particular version discussed in the white paper and discussed by Mr. Slattery moments ago includes embodied emissions. This is a considerably more complex approach than is used for example in CAFE standards or other product standards that we have commonly used in this country. However, well-crafted performance standards of any type definitely have the potential to encourage efficiency improvements without putting as much upward pressure on production

costs. In doing so, they may reduce the shift of production to other countries. At the same time, because performance standards do not encourage end users to reduce their consumption of carbon-intensive goods, they will leave behind some low-cost abatement opportunities, thereby raising the overall cost to all the rest of us of achieving a particular emissions target.

The second option concerns the free allocation of allowances under a cap-and-trade system, and there are two important points to make here. The first concerns how many allowances will be given away free, and the second concerns the methodology, how the allowances will be given away. In most existing programs such as the acid rain program for example, virtually all the allowances have been given away for free based upon historical emissions, known as grandfathering. More recent proposals in the climate field, in addition to providing for a larger auction, have proposed to allocate free allowances in a way that recognizes firm level changes in output over time. Certain Senate proposals tie this directly to employment. This latter approach is known as updating. Compared with an allocation based on grandfathering, an updating allocation can have important differences by creating incentives to maintain or even expand domestic production and it can thereby reduce the potential for emission leakage. The principal advantage of using free allocation is that it can compensate firms for losses resulting from the new policy without excluding those firms' emissions from the cap. Traditional grandfathering can compensate owners for losses in value, but it does not necessarily discourage firms from shutting down production and moving abroad. In contrast, updating allows firms to gain larger allocation allowances if they expand their production or if they expand their employment, for example. Although incentives of this type are——

Mr. BOUCHER. Mr. Morgenstern, if I could ask you to wrap up. Your time has expired——

Mr. MORGENSTERN. Sure.

Mr. BOUCHER [continuing]. And we are now getting recorded votes on the floor. I would like to get at least one more statement in before we have to recess.

Mr. MORGENSTERN. OK. Let me cut to the chase here, Mr. Chairman. I will skip over my discussion of trade-related policies. I think the Committee is well-versed on that. Let me close by noting that one can mix and match these options. For example, one might consider starting out with a generous allocation for the most severely affected industries, perhaps one based on updating free allocations tied to current output or employment. This free allocation could then be phased out or phased down, either at a date certain or once trade-related measures were in place or major trading partners had adopted comparable measures.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Morgenstern follows:]

Written Testimony of Richard D. Morgenstern

Senior Fellow, Resources for the Future
Washington, DC

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

Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries

February 28, 2008

Summary of Testimony: Due to the diversity of greenhouse gas (GHG) sources, efforts to address climate change will, of necessity, impact nations, industries, and individuals. In general, pursuing a cost-effective approach that minimizes the overall cost to society of achieving a particular emissions-reduction target will minimize the burden imposed on businesses and consumers.

Broad, market-based strategies—such as an emissions tax or cap-and-trade program that effectively attach a price to GHG emissions—offer significant cost and efficiency advantages. In order to limit hardships on selected industries, however, additional flexibility mechanisms will be required: these could include recognizing offset credits from sectors or gases not included under the cap and/or from projects undertaken in other countries. Close attention to cost and efficiency considerations should be considered the first step to addressing competitiveness concerns.

But even with a cost-effective strategy for reducing U.S. GHG emissions, some domestic producers will incur increased production costs and face increased challenges to their ability to remain globally competitive, particularly in trade-sensitive, energy-intensive sectors. In most manufacturing industries, energy costs are less than 2 percent of total costs, a figure that rises to more than 3 percent in energy-intensive industries like refining, primary metals, and paper and printing, and jumps to over 20 percent in more narrowly defined categories, like aluminum and alkalies.

As policymakers consider options to lessen these competitiveness impacts, an important caution is in order. As compelling as the argument for protecting vulnerable firms or industries might be, few provisions or program modifications designed to accomplish this can be implemented without some cost to the environment as well as the overall economy. Nor are trade-related actions costless: they might raise legality concerns under World Trade Organization rules and/or risk provoking countervailing actions by other nations.

Efforts to address competitiveness concerns in the context of a mandatory domestic climate policy typically involve one or more of the following options:

- weaker overall program targets,
- partial or full exemptions from the carbon policy,
- standards instead of market-based policies for some sectors,
- free allowance allocation under a cap-and-trade system, and
- trade-related policies, such as a border adjustment for energy- or carbon-intensive goods.

These options can also be mixed and matched to some extent. One option would be to start out with a generous allowance allocation for the most severely affected industries, which could then be phased out at a future time, either a date certain or once trade-related measures were in place or other key nations adopted comparable climate mitigation policies. In general, the more targeted policies will be difficult to police and many industries will have strong incentives to seek special protection by taking advantage of these various mechanisms without necessarily being at significant competitive risk.

Written Testimony of Richard D. Morgenstern*

Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries

Mr. Chairman: I am pleased to appear before this committee to discuss the potential impacts of climate change legislation on American competitiveness and the prospects for engaging developing countries in policies to reduce their greenhouse gas (GHG) emissions.

I speak as an economist who has been involved with the issue of climate change for two decades. I have also had the privilege of serving in senior policy positions under prior Republican and Democratic administrations, including a brief stint as Acting Deputy Administrator at the EPA during the Clinton transition, and participating in the Intergovernmental Panel on Climate Change and several major climate negotiations. Previously a tenured college professor, currently I am a senior fellow at Resources for the Future (RFF), a 56-year-old research institution headquartered here in Washington, DC, that specializes in energy, environmental, and natural resource issues. RFF is both independent and nonpartisan and shares the results of its economic and policy analyses with members of both parties, as well as with environmental and business advocates, academics, members of the press, and interested citizens. The views I present today are mine alone and do not necessarily reflect those of RFF.

Because of the great diversity of GHG sources, efforts to address climate change will—of necessity— have impacts at many different levels and affect nations, industries, and individuals. In general, pursuing a cost-effective approach that minimizes the overall cost to society of achieving a particular emissions reduction target will minimize the burden imposed on businesses and consumers. Broad, market-based strategies that effectively attach a price to GHG emissions, such as an emissions tax or cap-and-trade program in

* Dr. Morgenstern's testimony is drawn from chapters 7 and 8 in *Assessing U.S. Climate Policy Options: A report summarizing work at RFF as part of the inter-industry U.S. Climate Policy Forum*, which he co-authored. (www.rff.org/cpfreport)

particular, offer significant cost and efficiency advantages. As a result, it is widely assumed that some sort of policy that increases the costs of carbon will be part of the core response to climate concerns in the United States. As part of a broad pricing policy, additional flexibility mechanisms to limit hardships on selected industries will be required. These could include recognizing offset credits from sectors or gases not included under the cap and/or from projects undertaken in other countries. Such flexibility can lower overall program costs while ameliorating the potential for adverse impacts on particular sectors or the economy as a whole. Close attention to cost and efficiency considerations as overall policies are designed should be the first step in addressing competitiveness concerns.

American producers incurring significantly increased production costs will also face challenges in the global marketplace, especially if they compete against foreign suppliers operating in countries where emissions do not carry similar costs. These concerns are likely to be most acute in trade-sensitive, energy-intensive sectors. The question will likely be asked: why should U.S. firms be disadvantaged relative to overseas competitors to address a *global* problem? The difficulty, moreover, is not just political: if, in response to a mandatory policy, U.S. production simply shifts abroad to unregulated foreign firms, the resulting emissions "leakage" could wipe out some of the environmental benefits sought by taking domestic action.

My comments today draw on recent research I have conducted with two RFF colleagues, Mun Ho and Jhih-Shyang Shih, on the impacts on domestic manufacturing industries of a unilateral policy that establishes a price on carbon dioxide (CO_2) emissions. I also consider a range of options for offsetting these impacts.

Results of our modeling analysis

Let me begin by summarizing the major results of our research:

- The impact of a CO_2 price on the competitiveness of different industries is fundamentally tied to (a) the energy (and more specifically, carbon) intensity of

those industries and (b) the degree to which firms can pass costs on to the consumers of their products. The second factor hinges on the extent to which consumers can substitute other, lower-carbon products and/or turn to imports.

- Most industry-level studies of competitiveness focus on the energy-price impacts of a specific CO_2 policy. They typically do not consider what level of carbon price would be required to meet a particular emissions reduction target or how overall program stringency is coupled with decisions about offsets and/or a safety valve. Studies of competitiveness impacts typically also ignore the broader economic effects of the policy, such as the possibility that shifting from coal to natural gas for power generation could drive up natural gas prices and have additional effects on the competitiveness of natural gas users.
- Energy costs in most manufacturing industries (broadly defined at the two-digit classification level) are less than 2 percent of total costs. However, energy costs are more than 3 percent of total costs in such energy-intensive manufacturing industries as refining, nonmetal mineral products, primary metals, and paper and printing. For these more energy-intensive industries, total production costs rise by roughly 1 to 2.5 percent for each $10 increment in the per-ton price associated with CO_2 emissions; less is known about the impacts of larger CO_2 prices.
- Considerably larger impacts are seen when more narrowly defined industry categories are considered. For example, although the information is less complete, energy costs for the alumina refining and primary aluminum, and alkalies and chlorine industries represent more than 20 percent of total costs, with electricity costs alone accounting for about three-fourths of that total. For such industries, the CO_2 charge will have a proportionally larger impact on production costs than for the broadly defined category "primary metals."
- Recent case studies in the European Union (EU) found more substantial impacts in some industries when narrower industry classifications were used. Specifically, a $10 per-ton CO_2 price led to a 6 percent increase in total costs for steel production using basic oxygen furnace (BOF) technology; for cement, when process emissions are included, production costs increased by 13 percent. With free allowance allocation and some ability to increase prices, however,

researchers have found that adverse impacts on industry can be reduced substantially. Using simple demand models, one study found that output in most industries declined less than 1 percent—and by at most 2 percent in the most strongly affected industries—for a $10 per-ton CO_2 price with 95 percent free allocation.

- More generally, cost increases can be translated into impacts on production, profitability, and employment using either an explicit model of domestic demand and international trade behavior or empirical evidence from past cost increases.
- Using an economic model of U.S. industrial production, demand, and international trade, my colleagues and I generally find adverse effects of less than 1 percent when estimating the reduction in industrial production due to a $10 per-ton CO_2 charge. The exceptions are motor vehicle manufacturing (1.0 percent), chemicals and plastics (1.0 percent), and primary metals (1.5 percent). These estimates represent near-term effects—that is, impacts over the first several years after a carbon price is introduced—before producers and users begin adjusting technology and operations to the new policy regime. Longer-term effects could be larger or smaller.
- Various proposals for a mandatory U.S. cap-and-trade program to limit GHG emissions would grant free allowances to different industries to help alleviate economic burdens from a CO_2 pricing policy. Calculations based on results from our research suggest that for most industries where energy is more than 1 percent of total costs, providing allowances equal to around 15 percent of a firm's emissions from fossil fuel and electricity use would be sufficient to address adverse impacts on shareholder value. This number varies widely, however, across industries. For example, in the chemicals and plastics industry we estimate the relevant number to be about 40 percent, while for the petroleum industry allowances equal to about 1 percent of a firm's emissions from fossil fuel and electricity use would be sufficient to cover the adverse impacts. As with earlier calculations, narrower industry classifications can produce much higher estimates of the free allocation necessary to address lost shareholder value.

- Impacts on domestic industries will generally be lower when it is assumed that major trading partners also implement comparable CO_2 prices or that border tax adjustments or other import regulations are used to address the CO_2 content of imported (and exported) goods.

Options for lessening the impacts

As policymakers consider options to lessen the competitiveness impacts, an important caution is in order. As compelling as the argument for protecting vulnerable firms or industries might be, few provisions or program modifications designed to accomplish this can be implemented without some cost to the environment (because emissions will be higher) and/or to the overall economy (because more expensive abatement options must be used to achieve the same emissions result). Nor are trade-related actions costless: they might raise legality concerns under World Trade Organization (WTO) rules and/or risk provoking countervailing actions by other nations.

Efforts to address competitiveness concerns in the context of a mandatory domestic climate policy typically involve one or more of the following options:

- weaker overall program targets;
- partial or full exemptions from the carbon policy;
- performance standards instead of market-based policies for some sectors;
- free allowance allocation under a cap-and-trade system; and
- trade-related policies, including some form of border adjustment for energy- or carbon-intensive goods.

Weaker overall program targets

This option involves adjusting the stringency of the policy as a whole to produce a lower economy-wide emissions price (we assume that this would be done without regard to the obligations of specific industries). Under a cap-and-trade system, a lower price can be achieved by allowing a greater quantity of emissions under the cap or by including a safety valve or other mechanism designed to limit emissions prices to a desired maximum level (the lower the safety-valve price, the weaker the policy, and vice versa). Other

options for making the policy more flexible (such as allowing a larger role for offset credits) can also reduce domestic emissions costs; whether they do so in a way that undermines environmental objectives depends on how they are designed and implemented. Under a tax system, lower prices can be achieved very simply—by reducing the amount of the levy. In both cases, the question of program stringency has a temporal dimension: a policy that is weaker in the short run can be made more aggressive at a later point in time.

Pros: The lower emissions price associated with a less stringent policy will produce smaller economy-wide costs and price impacts and should ameliorate the competitiveness concerns of trade-sensitive firms or industries. The principal advantage of this option is that it does not require the government to identify particularly vulnerable firms or industries, thereby avoiding the need to distinguish truly disadvantaged parties from those that simply seek preferential treatment or regulatory relief. Further, this option does not require additional mechanisms or special provisions, nor does it diminish the cost-effectiveness of the underlying policy.

Cons: The principal disadvantage of a weaker policy is that it also produces weaker results – not only in terms of emissions reductions and technology innovation, but also in terms of the perception that the United States is taking serious action. By its very nature, an overall weakening of the policy does not target cost reductions to the most vulnerable firms or industries. And unless emissions prices and reduction targets are dramatically lowered, competitive issues will remain.

Discussion: The appropriate overall level of stringency for U.S. policy remains a subject of active debate. The Committee is well aware of modeling results by independent analysts assessing the costs of achieving the emissions reduction targets in various legislative proposals. Interestingly, the inclusion of a "safety valve"—a mechanism that directly limits costs under a cap-and-trade program by making an unlimited number of additional allowances available for sale at a fixed, predetermined price—will affect the policy differently, depending on the price level adopted. Set at a high price, the safety

valve will function primarily as an insurance policy, one intended to limit economic impacts only in cases of unexpectedly high mitigation cost. By contrast, a safety valve price set at a relatively low level will tend to determine both environmental and economic outcomes and is generally equivalent to adopting a weaker emissions reduction target. Put another way, if the safety valve price is set sufficiently low, the emissions target becomes irrelevant because the marginal cost of abatement can be expected to exceed the safety valve's cost cap long before emissions targets are reached. At that point, program outcomes are more or less entirely driven by the safety valve price.

In contrast, if competitiveness concerns are primarily motivated by the potential for adverse consequences at the extremes of potential policy cost—extremes that could be induced by bursts of economic growth, unusual weather, or other conditions that lead to a spike in energy use and disruptions in the supply of lower-carbon fuels, or by the failure of new technologies to come online as anticipated—then even a relatively high safety valve price may be adequate to address these concerns without much effect on the emissions reductions expected from the policy.

In sum, weakening the overall policy may address the concerns of the most vulnerable industries, but if the objective is primarily to provide insurance against extreme policy impacts, other mechanisms—for example, a safety valve somewhat above expected prices—can be used to protect industry while largely maintaining the integrity of the environmental objective. Other options, considered below, attempt to deal more directly with vulnerable industries and would presumably be implemented as an alternative to weakening the overall policy.

Partial or full exemptions from the carbon policy

An obvious option for addressing competitiveness concerns is simply to exempt certain industries from the broader GHG-reduction policy. The challenge in implementing this approach—or indeed any of the targeted policies discussed in the remainder of my testimony—is determining which firms or sectors are particularly vulnerable to cost and competitiveness concerns and should, as a result, qualify for special treatment. Applying

a very high threshold for exemption risks excluding vulnerable producers; setting the threshold too low opens the door to unlimited lobbying for more favorable treatment.

The mechanics of actually providing exemptions, by contrast, are relatively easy. In a cap-and-trade system where downstream entities—primarily energy users—are regulated, exempt firms would face reduced requirements (or perhaps none at all) to submit allowances to cover their emissions. In a carbon tax system, eligible firms would face a reduced levy (or possibly none at all). Exemptions could also be provided to downstream firms or sectors in a system that regulated upstream entities (that is, energy suppliers). In that case, a procedure would be needed to credit exempt downstream entities based on their emissions or fuel use. The credit could be payable in allowances (in the case of a cap-and-trade system) or via a tax credit or rebate (in the case of an emissions tax).

Pros: The principal advantage of exemptions is that they can be used to protect vulnerable firms or industries in a convincing and targeted way, potentially making it politically possible to adopt a more stringent economy-wide GHG-reduction target.

Cons: The principal disadvantage of this approach is that it would likely increase the total economy-wide cost of achieving a given emissions target because exempting certain firms or sectors would almost certainly leave at least some inexpensive mitigation options untapped. As a result, the program would be both less efficient and more costly overall. This approach may also raise equity concerns: if the national target stays the same but some industries or firms are exempt from participating, the remaining nonexempt industries must bear a greater burden. Finally, the difficulty of identifying truly vulnerable firms or industries cannot be overemphasized. Politically and technically, it will be extremely challenging to adjudicate requests for exemptions on the basis of vulnerability to competitive harm.

Discussion: Interestingly, two proposals currently under consideration in the Senate already call for significant exemptions but do not limit these exemptions to sectors that would seem most obviously at risk of suffering a business disadvantage under a

mandatory domestic climate policy. For example, a bill introduced by Senators Feinstein and Carper (S.317, 110th) covers only the electricity sector—almost 40 percent of U.S. emissions—and therefore exempts primary (nonelectricity) energy use by households and the industrial sector along with all transportation-related emissions. A bill introduced by Senators Lieberman and Warner (S.2191, 110th), by contrast, covers large facilities downstream at the emitter, transportation fuels at the refinery or importer, plus F-gas producers and importers, for an estimated 75 percent of the total U.S. greenhouse gas emissions. Households, agriculture, and small nontransport emitters are generally exempt. In both these cases, however, the less than full coverage envisioned in the proposals appears to be motivated more by practical and political considerations—for example, that it might be easier to start by focusing on the electric power sector or on larger sources—than by competitiveness concerns per se.

For a cautionary lesson concerning the political hazards of exemption, one could look to the energy (Btu) tax proposed by the Clinton administration in 1993. At that time, many firms and industries made claims of business hardship. As a result, the final House legislation included a long list of exemptions added at the request of members or recommended by the administration. Ultimately, of course, the Btu tax was defeated in the Senate and the policy was never implemented—in part because its effectiveness was undercut by the exemptions.

Performance standards instead of market-based policies for some sectors

Performance standards come in many varieties and may include minimum, average, and tradable standards for emissions or energy use per unit of output. Unlike broad, market-based CO_2 policies, they do not directly increase energy costs and therefore do not create as much pressure for firms to raise product prices. For this reason, performance standards may seem less likely than market-based policies to raise competitiveness concerns for industries that face international competition and seem less likely to create incentives for shifting production abroad.

Pros: Well-crafted performance standards have the potential to encourage efficiency improvements without putting as much upward pressure on domestic production costs. In doing so, they may reduce the potential for domestic production to shift to countries without mandatory GHG-reduction policies (and thus avoid the emissions leakage that would result from such shifts). In general, efficiency and cost considerations argue for corporate average standards rather than facility-level standards. Tradable performance standards—such as those used to effect the phasedown of lead in gasoline in the 1980s and the current proposals for a national renewable energy portfolio standard (RPS)—provide even more flexibility and are even more cost-effective.

Cons: Performance standards are more costly than broad, market-based approaches because they do not encourage end users to reduce their consumption of GHG-intensive goods, and they do not balance the cost of emissions reductions across sectors. Relying on standards instead of market-based instruments to achieve emissions reductions will leave behind some low-cost abatement opportunities, thereby raising the overall cost incurred by society to achieve a particular emissions target. From an implementation standpoint, standard setting can be contentious and may require government to estimate technology costs in a particular sector more precisely than would be required to implement a broad-based cap-and-trade program or emissions tax.

Discussion: The academic literature provides abundant evidence that market-based mechanisms, especially broad-based ones, provide lower-cost emissions reductions than do standards. Some of the most important benefits of market-based instruments are often not realized immediately and become manifest only over a long period of time. Unlike performance standards, market-based instruments provide a continual incentive to reduce emissions. Thus they promote technology innovations that, by their nature, take time to develop and deploy. Market-based instruments also offer maximum flexibility in terms of the means used to achieve reductions, including, for example, the shift to new technologies that occurred in the U.S. sulfur dioxide program. In the case of GHGs, where emissions are not concentrated in a single sector, the flexibility afforded by a

broad, price-based system would be expected to provide even greater cost and efficiency benefits relative to more traditional regulatory mechanisms.

Notwithstanding those observations, it seems that firms and industries, particularly competitive ones, often prefer standards to market-based policies. They may fear that it will be more difficult to pass along increased energy costs under a market-based CO_2 policy; in addition, they may expect to be in a stronger position to negotiate the form and stringency of a regulatory program that is tailored to specific sectors rather than one designed for the economy as a whole.

Free allowance allocation under a cap-and-trade system

Allocation refers to the distribution of permits or allowances under an emissions trading program. Here, two decisions are important at the outset. The first concerns how many allowances (or what share of the overall allowance pool) will be given away, free. The second concerns the methodology—how the free allowances will be allocated to industrial sectors and, within sectors, to individual firms. In most existing emissions trading programs, the great majority of allowances have been given for free to directly regulated entities, primarily on the basis of historical emissions (an approach often called *grandfathering*). More recent climate policy proposals, in addition to providing for a larger auction, have proposed to allocate free allowances in a way that recognizes firm-level changes over time, typically based on an emissions, energy use, or output measure. The latter approach is known as *updating allocation.* Compared with an allocation based on grandfathering, an updating allocation can have important differences in terms of creating incentives to maintain (or even expand) domestic production—thereby reducing the potential for emissions leakage—and in terms of the effect on shareholder value.

Pros: The principal advantage of using a free allocation of allowances to address competitiveness concerns is that it can compensate firms for losses suffered as a result of the new policy without excluding those firms' emissions from the broad-based cap. Thus it avoids the efficiency losses and/or reduction in environmental benefit associated with other options (weakening the overall policy, exempting some industries, or relying on

traditional standards-based forms of regulation in some sectors) for responding to industry concerns.

In terms of the methodology used to distribute free allowances to individual firms, traditional grandfathering—which leaves the allocation fixed over time regardless of whether a business changes operations or even shuts down—can compensate firms' *owners* for losses in value but does not necessarily discourage firms from retiring or moving their emissions-producing operations overseas to avoid the future costs associated with the regulatory program.

The alternative, updating output-based allocations, continually adjusts allowance shares to reflect a firm's changing output. This effectively subsidizes production. That is, firms stand to gain a larger allocation of free allowances if they expand their operations and a smaller allocation if they move offshore, downsize, or shut down. Although incentives of this type are generally regarded as distorting and hence inefficient—because they induce firms to produce above the level that would otherwise make economic sense—they may be attractive in the context of concern about competitiveness impacts precisely because they tend to encourage domestic production and discourage firms from moving operations (and emissions) overseas. The subsidy benefit generated by an updating allowance methodology accrues to domestic consumers as well as to firms that face competition from foreign suppliers, either in markets at home or in export markets abroad (or both).

Cons: The principal case against free allocation is that it misses the opportunity to auction allowances and use the revenue to provide broad, offsetting benefits for the economy as a whole. From the standpoint of maximizing economic efficiency, it would make more sense to auction all allowances and use the proceeds to reduce taxes on income or investment. Compelling arguments can also be made for auctioning allowances and using the revenues to support other public policy objectives, such as funding energy R&D, offsetting the impact of higher energy prices on consumers (especially low-income households), and supporting efforts to adapt to the impacts of climate change.

Another concern is that if too generous, free allocation based on historical emissions (grandfathering) risks conferring windfall gains on some firms, especially if a firm can pass along most of the costs of regulation in the form of higher prices for its products. In that case, giving the firm free allowances would amount to a transfer of wealth from consumers—who pay higher prices for the firm's goods—to business owners or shareholders, who do not really bear a substantial share of the cost burden associated with the policy.

An updating free allocation that subsidizes domestic production gives rise to the same concerns noted in connection with other targeted responses that distort behavior relative to what would happen under a broad CO_2 pricing policy. Namely, allocation decisions in practice may fail to target truly trade-sensitive firms or industries and thus end up subsidizing emissions-intensive industries that are not really at risk of shifting their operations overseas, such as electric utilities. In that case, an updating allocation will create efficiency losses and increase the overall cost of the policy to society while providing only limited benefits in terms of maintaining domestic production, preserving U.S. jobs, and reducing the potential for emissions leakage.

Discussion: Compared with targeted exemptions and performance standards, using free allowances to compensate vulnerable industries as part of a broad cap-and-trade or emissions tax program generally maintains efficiency. Among these three options, an allocation-based approach remains the most cost-effective because it preserves the ability to trade off emissions reductions throughout the economy—without excluding some sectors—so that the environmental objective is achieved by exploiting the least expensive abatement opportunities. Tying free allocation to future production—or even to future employment, as proposed in legislation recently introduced by Senators Bingaman and Specter (S. 1766)—provides a way not only to compensate firms for unrecovered costs under the regulatory program but also to provide inducements for maintaining domestic production. The principal disadvantages are (1) that government will forgo revenues from auctioning allowances that could be used for other purposes, and (2) that it will be

difficult, as with all targeted measures for addressing competitiveness concerns, to identify truly vulnerable sectors. Moreover, free allocation involves difficult and politically contentious decisions about how many allowances should be given away for free and how those allowances should be divvied up, not only across industry sectors but also among individual firms within a sector.

Trade-related policies

The principal aim of trade-related policies is to level the competitive playing field between domestic and foreign suppliers. In this case, efforts to level the playing field would likely involve using a tariff or some other mechanism to impose costs on imports into the United States—presumably based on their embedded carbon or energy content—roughly equivalent to the costs that the climate policy imposes on domestic production. A similar mechanism, perhaps involving some type of export subsidy, could be used to level the playing field for U.S.-produced goods that compete in foreign markets against goods produced in countries without mandatory emissions policies, though this option is not discussed as often. A recent proposal by American Electric Power and the International Brotherhood of Electrical Workers (AEP/IBEW) would require importers from countries that do not have emissions reduction requirements comparable to those of the United States to submit emissions allowances to cover the carbon content of certain products. As incorporated into several Senate bills, this mechanism would engage only after eight years, during which time the United States would encourage its trading partners to undertake emissions reduction efforts; furthermore, it would apply only to bulk, energy-intensive goods, and it would account for free allocation to domestic industry by reducing the import obligation.

Pros: If they can be successfully defended under WTO rules, border adjustments would protect U.S. firms or industries against adverse competitiveness impacts related to the implementation of a mandatory domestic climate policy. The approach would provide the added benefit of creating real incentives for major trading partners to adopt similar policies or otherwise reduce their GHG emissions. Once authorized in U.S. legislation,

even the threat of such adjustments might trigger some favorable policy responses from other nations.

Cons: Even if they can be successfully defended under WTO rules, border adjustments have several disadvantages. To the extent they act as barriers to trade (beyond correctly accounting for the cost of emissions), such adjustments are inherently inefficient and costly to U.S. consumers and industries that depend on imported goods. Moreover, because of the difficulty of accurately measuring embedded energy or carbon content for specific items, implementing such a policy could be both expensive and controversial in practice. More importantly, the system could be abused by firms or industries—or even by other nations if they use it as grounds for instituting their own system of border adjustments—for purely protectionist reasons unrelated to climate policy. These actions, in turn, could work against long-sought free-trade objectives. They could also undermine the trust and good relations necessary to foster international cooperation and agreement on future global efforts to address climate change risks.

Discussion: Since any directly trade-related action risks a challenge by U.S. trading partners before the WTO dispute settlement body, the first issue to consider is what kind of policy would be legal under WTO rules (the consequences of illegality are mentioned below). Even though WTO law is vague on this issue, the United States might be able to address the problem of offshore emissions associated with imported products (so-called process emissions) by applying to imports a carbon tax or emissions permit requirement that is *equivalent* to the requirements imposed on U.S.-produced goods under domestic policy. Arguably, if this equivalent policy does not discriminate against imports versus domestic products or disadvantage some imports relative to others, it could be seen as an extension of U.S. policy. In that case, it would likely pass WTO scrutiny without reference to the environmental exceptions provided for under Article XX in the General Agreement on Tariffs and Trade.

Further complexities arise in developing administrative procedures for assigning process carbon emissions to specific imported products. On the one hand, the border adjustment

policy might be considered more acceptable if it were based on the processes and fuels used in the United States—the so-called U.S. predominant method of production. At the same time, however, it might be necessary to establish procedures that would allow foreign producers to make different claims concerning assumed process emissions based on the submission of technical data. Such determinations would be more defensible—and easier to calculate—if the focus were on basic products, such as steel, aluminum, and cement, rather than on automobiles, appliances, or other finished goods.

The amount of any border adjustment might be diminished to the extent that domestic producers are effectively subsidized by a free allowance allocation. Thus, for example, if 50 percent of available allowances under a domestic cap-and-trade program are allocated for free to affected industries, an importer might have to surrender allowances equal to only half of estimated process emissions associated with the imported product. If a carbon tax were imposed, without exemptions, importers would presumably face an equivalent adjustment at the border and there would be no need to account for offsetting benefits to U.S. producers. A variety of other issues might also complicate the use of border adjustments, including the question of how to treat imports from a country or region with some form of domestic carbon policy versus imports from countries that lack such a policy altogether.

In the best case, the credible threat of border adjustments would create incentives for other nations to adopt mitigation policies of their own. Of course, in the eight years before the border adjustments would kick in, U.S. industry could suffer significantly.

To improve the prospects for a successful WTO defense, any such policy would have to be designed with great sensitivity on a number of issues, including the need to put major trade partners on notice and provide sufficient time for them to develop viable domestic emissions reduction policies of their own. Once legislation was in place, U.S. customs would need a substantial infrastructure to assess the carbon footprint of imported products and apply border adjustments accordingly. Interestingly, even if a U.S. policy of carbon-based border adjustments was ultimately found to violate WTO law—by no

means a certainty—the only available remedy for the United States is to change the law or suffer retaliation. No damages for past harm are due.

In sum, I would close with the following observations:

- Cost-effective policies that allow access to inexpensive mitigation opportunities throughout the United States and potentially around the world will generally minimize the economic costs of achieving any given emissions target and could be viewed as a first response to competitiveness concerns.
- A weaker overall policy—less stringent emissions caps and/or lower emissions prices—represents the least focused approach available for addressing competitive impacts. This approach has the advantage that it does not require policymakers to identify vulnerable sectors or firms and thus avoids the potential for a "gold rush" of industries seeking relief. The disadvantage, obviously, is that less ambitious emissions reduction targets will produce smaller environmental benefits and weaker incentives for technology innovation.
- Simply exempting certain sectors or types of firms provides a direct response to competitiveness concerns and the most relief to potentially affected industries, but it is also the most costly option in terms of reducing the economic efficiency of the policy.
- More traditional (nonmarket-based) forms of regulation—such as emissions standards or intensity-based regulations—can be used to avoid direct energy price increases and deliver some emissions reductions. Regulated industries will still face compliance costs, however. Meanwhile, the overall cost to society of achieving a given environmental objective using these forms of regulation will tend to be higher than under a single pricing policy.
- Free allowances can be used to compensate adversely affected industries (even if those industries are not directly regulated under the policy) without necessarily losing the efficiency of a broad, market-based approach. Different forms of free allocation—for example, an allocation based on historical emissions or energy use ("grandfathering") versus an updating allocation tied to current output—will have

very different incentive properties and may respond more or less effectively to concerns about retaining production capacity and jobs in the United States. The consequences of different allocation methodologies and their relative advantages and disadvantages in relation to competitiveness concerns and other policy objectives must therefore be carefully considered.

- Trade-related policies (such as border adjustments for energy- or carbon-intensive goods) can both protect vulnerable domestic firms and industries and create incentives for nations without similar GHG policies to participate in emissions reduction efforts. However, such policies also risk providing political cover for unwarranted and costly protectionism and may provoke trade disputes with other nations.
- To some extent, one can mix and match these options. For example, one might consider starting out with a generous allowance allocation for the most severely affected industries—perhaps one based on updating free allocations tied to current output. The free allocations could then be phased out, either at a date certain or once trade-related measures were in place or major trading nations adopted comparable climate mitigation policies.
- In general, the more targeted policies—that is, all the above options except an overall weaker policy—will be difficult to police, and many industries will have strong incentives to seek special protection by taking advantage of these various mechanisms without necessarily being at significant competitive risk.

Thank you.

Mr. BOUCHER. Thank you, Mr. Morgenstern. We have three recorded votes pending on the floor, and it is our intention to recess the Subcommittee in about another 8 minutes, and what I am hoping is that potentially within 8 minutes, we can have two statements of approximately 4 minutes each.

So, Mr. Doniger, that is your challenge, 4 minutes if you can do it.

Mr. DONIGER. We could go at the same time.

Mr. BOUCHER. Let us try it one at a time and see how we do.

STATEMENT OF DAVID DONIGER, POLICY DIRECTOR, CLIMATE CENTER, NATURAL RESOURCES DEFENSE COUNCIL

Mr. DONIGER. Thank you, Mr. Chairman. I am happy to be here on behalf of Natural Resources Defense Council's 1.2 million members and activists.

What this Committee does has to be framed above all by the science. Global warming has started. The time for effective action is very short. We are looking at catastrophe if we let global average temperatures rise by more than another 2 degrees Fahrenheit. To avoid this we have to cut emissions in half by 2050 and that means that the leadership has to come from the industrial countries, to cut their emissions by as much as 80 percent over that time period. Delay makes everything harder. Wait 10 years, and the necessary rate of emission reductions doubles. In short, a slow start means a crash finish.

The task is very challenging. It cannot be done without cooperation of both north and south, but it can be done. The United States, if it has a claim to leadership in the 21st Century, has to be instrumental in forging that coalition between north and south. Above all, early enactment of a U.S. cap-and-trade program is the single-most important step that we can take to unlock the global negotiating gridlock. We will also need a totally different foreign policy from the next president that places global warming in the top tier.

At Bali, the big emerging economies showed unprecedented willingness to negotiate real actions. This is a big change from their prior stance against any new commitments. Some big developing countries are already taking significant domestic measures to reduce their own domestic energy use and pollution. For example, the Chinese are improving industrial and vehicle efficiency and more rapidly deploying renewables. China has even established special tariffs to discourage exports of cement, iron, and steel. The export tariff on steel equates to about $50 a ton.

To be sure, solving the climate problem means that they have to do more. We cannot get their agreement to do more unless we in the U.S. show our willingness to join other industrial countries in reducing emissions.

Some manufacturing industries and their unions are understandably concerned about potential competitiveness impacts in the first few years of a U.S. program. In our view, Congress can address those potential impacts with two tools. One of them, the IBEW-AEP trade proposal, is before you in the white paper. The other, a limited use of free allocations for the years before the trade proposal takes effect has not yet been considered by the white paper.

To me, the importance of the IBEW-AEP proposal is that it would give the executive branch additional diplomatic leverage in negotiations with other countries for agreement on comparable actions, and it would also provide an equalizer later on if for one or more of those countries the negotiations do not succeed.

Some want an earlier start date for the trade proposal. I would caution against that because there are dangers in putting the import proposal into effect too quickly. Brandishing the trade stick before 2020 would, in my judgment, inflame the climate treaty talks and pose more WTO risks.

Fortunately, there is another tool that I mentioned that you could use: to allocate for a limited time a small number of allowances—it would not take more than 10 percent of the allowance pool—to specific industries that demonstrate their competitive disadvantage from domestic carbon control requirements. Any such free allocations should be conditioned on the recipient firms' maintaining domestic employment, and they should be phased out by the time the trade provision starts in. Free allocations will not be needed beyond that point because competitiveness issues will be resolved either by success in the negotiations or by the triggering of the trade provision.

In short, we can solve the competitiveness concerns and go ahead with cap-and-trade with these two tools. Thank you, Mr. Chairman.

[The prepared statement of Mr. Doniger follows:]

Summary of Testimony of David D. Doniger, Climate Center Policy Director, Natural Resources Defense Council, February 28, 2008

- The science is clear: Global warming has started and the time for taking effective action is very short. To avoid a further increase in global average temperatures greater than 2°F, global emissions need to be cut in half by 2050.

- All major emitters must participate, but the world's richest countries – with the highest per capita and historical emissions and the most technological and financial resources – must lead by starting to reduce emissions now and by 80 percent by 2050. Delay makes everything harder. A slow start condemns us to a crash finish.

- The U.S. must lead again. Early enactment of a U.S. cap and trade program is the single most important step we can take to unlock the global negotiating gridlock of the past decade.

- Big emerging economies showed unprecedented willingness in Bali to negotiate "measurable, reportable, and verifiable actions." China, for example, is already taking significant steps to improve energy efficiency, deploy renewables, and dampen greenhouse gas emissions growth.

- Substantial sectoral commitments from these countries can be achieved in the post-Bali international negotiations. But success depends on U.S. willingness to join other industrial countries in reducing our own emissions, and in offering clean technology assistance, help to reduce deforestation, and help for adaptation in the most vulnerable countries.

- There are ample tools for addressing competitiveness concerns, which in proper combination can also contribute to engaging other countries. The IBEW/AEP proposal for import allowance purchases has two attractive attributes. It would give the Executive Branch additional diplomatic leverage during the initial period of multilateral and bilateral negotiations with other countries for agreement on comparable actions. It also would provide an equalizer later on, should those negotiations not succeed with one or more important trading partners.

- There are risks both to the success of the climate treaty talks and under the WTO, however, if this proposal is put into effect too early. Fortunately, Congress can address legitimate competitiveness concerns in the early years by allocating allowances or auction revenues to specific industries that demonstrate their disadvantage because of domestic carbon control requirements. This can be accomplished with less than 10 percent of all allowances, and should be conditioned on maintaining domestic employment, and phased out in 2020.

- Free allocations will not be needed beyond 2020 because by then competitive issues will have been resolved either by international negotiations or by triggering the import allowance purchase requirement.

- U.S. cap and trade legislation also needs to provide stable long-term support for clean technology deployment, reduction of deforestation, and adaptation in the most vulnerable countries. These are essential elements to the success of the post-Bali climate treaty negotiations.

Testimony of David D. Doniger
Policy Director, Climate Center
Natural Resources Defense Council

Hearing on Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries

Committee on Energy and Commerce
Subcommittee on Energy and Air Quality
United States House of Representatives

February 28, 2008

Thank you, Chairman Dingell and Chairman Boucher, for the opportunity to testify today on behalf of the Natural Resources Defense Council (NRDC). My name is David Doniger and I am a senior attorney at NRDC and the policy director of our Climate Center. NRDC is a national, nonprofit organization of scientists, lawyers and environmental specialists founded in 1970, dedicated to protecting public health and the environment, with more than 1.2 million members and online activists nationwide and offices in New York, Washington, Los Angeles and San Francisco, Chicago, and Beijing. During the 1990s, I served in the Environmental Protection Agency and as member of the U.S. delegation to the global warming treaty negotiations over the Kyoto Protocol and its implementing rules.

NRDC appreciates the committee's commitment to producing global warming legislation. The committee's first White Paper very constructively outlined the major features of cap-and-trade legislation and acknowledged the need to reduce CO_2 and other global warming pollution by as much as 80 percent by mid-century. The second White Paper, which is the subject of today's hearing, addresses the twin objectives of engaging developing countries and addressing competitiveness concerns. My testimony addresses the discussion questions posed in the White Paper.

In NRDC's view, these objectives of engaging developing countries and addressing competitiveness concerns can be met effectively with a combination of measures, both carrots and sticks, that include but go beyond the alternatives examined in the White Paper. In this testimony, I will explore the broader set of measures that NRDC believes are needed to engage developing countries and address competitiveness concerns, and how those should fit into domestic cap-and-trade legislation.

I. Slow Start Means Crash Finish

This committee has held productive hearings on the science of global warming and the need for action. Almost every day we learn more about the ways that global warming is already affecting our planet. The Nobel prize-winning Intergovernmental Panel on Climate Change (IPCC) concluded last year that the warming of the earth is "unequivocal" and that, with 90 percent certainty, human activities are causing most of the observed warming. The IPCC found that 11 of the last 12 years are among the dozen hottest years on record. Temperatures in the Arctic have already risen far more than the global average. Satellite pictures show that summertime Arctic ice has declined by 40 percent since 1979 (Figure 1). The Greenland and West Antarctic ice sheets are melting at accelerating rates. Rising sea surface temperatures correlate strongly with increases in the number of Category 4 and 5 hurricanes. Wildfires, floods and droughts are predicted to increase as global warming continues unabated. Our oceans are warming and becoming more acidic. Everywhere one looks, the impacts of a disrupted climate are confronting us.

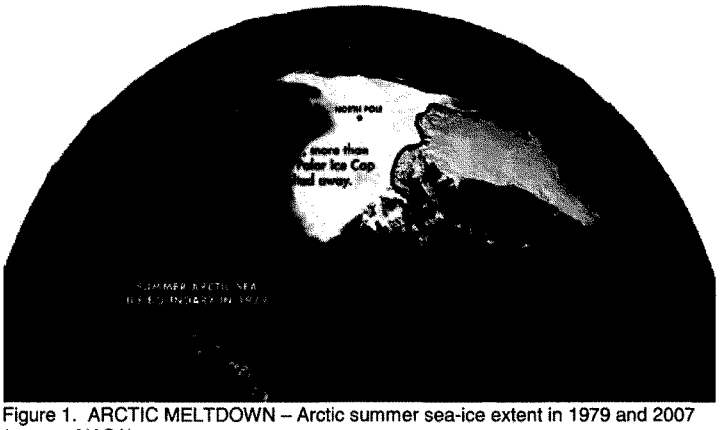

Figure 1. ARCTIC MELTDOWN – Arctic summer sea-ice extent in 1979 and 2007 (source: NASA)

Time is very short. Scientists warn that we will suffer devastating damages if we let global average temperatures rise by more than another 2 degrees Fahrenheit. A Union of Concerned Scientists (UCS) analysis has shown that to keep open a better-than-even chance of avoiding this greater-than-2°F temperature increase, global emissions need to be cut in half by 2050.[1] While all major emitters must participate, the world's richest countries – with per capita and historical emissions far higher than developing nations and with the most technological and financial resources – must lead and must do the most. The U.S. and other developed nations need to start reducing emissions now and reduce them on the order of 80 percent by 2050.

The cost of delay is very high. The UCS report shows that we can achieve an 80 percent reduction by 2050 by cutting emissions on average by about 4% per year. But if we delay and emissions continue growing at or near the business-as-usual trajectory for another 10 years, the job will become much harder. In that case, the necessary annual

[1] Union of Concerned Scientists, "How to Avoid Dangerous Climate Change: A Target for U.S. Emissions Reductions," http://www.ucsusa.org/assets/documents/global_warming/emissions-target-report.pdf.

emission reduction rate doubles to 8% per year (Figure 2). In short, a slow start means a crash finish, with steeper and more disruptive cuts in emissions required for each year of delay.

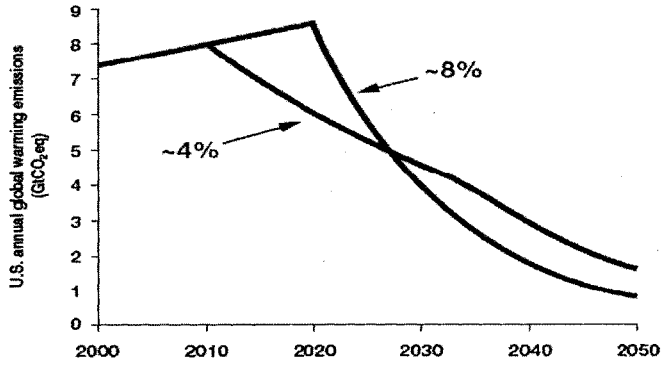

Figure 2: Slow Start Means Crash Finish (source: Union of Concerned Scientists)

Keeping additional warming below another 2°F is very challenging. It cannot be done without the cooperation of both the countries of the industrial North and the countries of the emerging South. But it can be done. And if the United States has a claim to leadership in the 21st century, we must be instrumental in forging the necessary coalition between North and South.

II. The U.S. Must Lead Again.

Toward that end, early enactment of U.S. legislation establishing a declining cap for our country's global warming pollution is the single most important step we can take to unlock the global negotiating gridlock of the past decade. In Bali, other countries, including the big emerging economies, showed unprecedented willingness to take measurable action, but success in the international negotiations culminating in

Copenhagen in late 2009 depends on demonstrating our willingness to join other industrial countries in reducing our own emissions.

For this reason, enacting domestic cap-and-trade legislation would contribute very powerfully to success of these international negotiations. Conversely, failure to enact domestic legislation would reduce our credibility and our leverage in those negotiations.

U.S. legislation should include specific steps to encourage developing countries to take action, including measures to help deploy clean technology and reduce deforestation in developing countries and to assist the most vulnerable countries cope with climate change impacts that we can no longer avoid. I'll return to these elements later in this testimony.

While Congress must do its part on new legislation, success in the post-Bali negotiations will require a totally different diplomatic strategy from the next U.S. president. Success will require elevating global warming to the top tier of American foreign policy objectives. It will be necessary to link other foreign policy priorities with our major trading partners, both developed and developing, to making real progress on global warming. The fundamental element of credibility, however, is that we must take responsibility for reducing our own global warming pollution.

III. Reasonable Goals for Developing Country Actions

In Bali last December, we saw evidence that China, India, Brazil, South Africa, and other large developing countries will negotiate actions to slow their own emissions growth if the U.S. joins other wealthy nations in cutting emission and offers tangible help in the three areas I just mentioned: clean technology deployment, forest protection, and adaptation. They agreed to negotiate "measurable, verifiable, reportable" actions.

This is a big change from the developing countries' prior stance, adopted in Berlin in 1995, against any new commitments for developing countries. But in Bali, the "Berlin Wall" came down.

There is a short list of developing countries that contribute significantly to global emissions. As the White Paper notes, some 15 developed and developing countries account for 80 percent of world emissions: The U.S., the European Union (counted as one), China, Japan, Russia, India, Brazil, Canada, South Korea, Mexico, Indonesia, Australia, Ukraine, Iran, and South Africa. But among the big emerging economies, there are very substantial differences. For example, the India's total and per capita emissions are much smaller than China's. Brazil's and Indonesia's primary contribution to emissions comes from deforestation rather than industrial emissions. These differences needed to be recognized.

It is also important to recognize that while their emissions are growing rapidly, some big developing countries are already taking significant domestic measures to change their emission trends. China, for instance, acknowledges the science and the need for action. The National Climate Change Programme released by China's State Council in June 2007 acknowledges that global warming will have significant negative impacts on China in the form of crop failures, flooding, droughts, sea level rise and the greater incidence of disease, forest fires and extreme weather events. The National Climate Change Programme states China's "strategic goal" of making "significant achievements in controlling greenhouse gas emissions" through (1) energy conservation and efficiency, (2) renewable energy and nuclear energy, (3) reduction of industrial nitrous oxide

emissions, (4) reduction of agricultural methane emissions, and (5) increasing forest and other carbon sinks.

China's most recent Five-Year plan (2006-2010) sets an ambitious target for a 20% reduction in energy consumption per unit GDP by 2010. The country has set renewable energy targets to produce 15 percent of the countries primary energy through renewable sources by 2020. China "Top 1,000 Energy-Consuming Enterprises Program" requires the country's largest enterprises to sign energy conservation agreements with local governments. China's vehicle fuel economy standards are already more stringent than our new CAFE standards for 2020.[2]

Perhaps most interesting for today's hearing: To reduce domestic energy use and pollution, China has even established special *export* tariffs to discourage exports of products such as cement, iron and steel. According to the World Resources Institute, the export tariff on steel equates to $50 per ton.

To be sure, these domestic policies are grounded as much or more in China's economic and energy policies. Chinese experts admit to difficulties in meeting their energy efficiency targets, given the pace of growth in some industries such as steel. Obviously, China and the other big rapidly developing countries need to do much more to slow and eventually reverse the growth of their global warming pollution. But it is important to recognize the steps already being taken.

In the future, we must move well beyond the only international measure currently applicable in developing countries: the Clean Development Mechanism (CDM) under the Kyoto Protocol. This is a mechanism for investors to earn emissions credits through

[2] For more on China's recent actions, *see* Center for Clean Air Policy, "Greenhouse Gas Emissions Overview for China: Clearing up Misconceptions and Misinformation," http://www.ccap.org/international/China%20Myth.pdf.

project-based emission reductions. The CDM is subject to several key criticisms. At best, it provides a one-ton reduction in a developing country's emissions for each one-ton credit (or "offset") that is created for use in an industrial country. But experience indicates that a significant percentage of the actions being awarded credit are business-as-usual activities that would have happened anyway and thus are not generating additional reductions equal to the emissions credit being awarded. In short, under the CDM we may actually be losing ground.

On the other hand, it is too much to expect that countries such as China, India, and others will adopt full-scale national caps in the next five or ten years. In some cases, they could not do so even if they wanted to, because they do not yet have the sophisticated and reliable information systems and regulatory systems to account for energy use and emissions that we take for granted here in the U.S. Paradoxically, China's central government does not have effective regulatory control over all economic activity occurring in the regions. Developing the necessary information and regulatory systems is a priority for Beijing, but it will take time.

In the meantime, however, substantial progress can be made at the sectoral level, or in certain regions, to reduce and eventually reverse emissions growth in key industries. Ideas such as sectoral targets are taking hold. The best approach, in our opinion, is to shift towards a sectoral approach, and discontinue the project-level approach. As discussed above, on a project-by-project basis it has proven impossible to screen out projects that would have taken place anyway and credit only those that take place only because of the availability of credits. On the other hand, China or other countries could negotiate agreed-upon "stretch targets" on a sectoral basis for their steel, electricity, or

other sectors. The initial "stretch" would be funded by a combination of internal resources and international assistance – something I return two at the end of this testimony. If the country out-performed its target – that is, if emissions were reduced below that target – then credits could be issued through emissions trading mechanisms. It might be appropriate to discount those credits, to give less than 1-for-1 credit, so as to assure that every transaction reduces overall global emissions.

The negotiations started in Bali will develop these ideas as important "measurable, reportable, and verifiable" actions by developing countries. But getting agreement on these measures will require the U.S. and other industrial countries to take the lead by controlling their own emissions, to offer technology deployment assistance, and to expand existing carbon markets.

IV. Effective Domestic Tools for Addressing Competitiveness and Promoting Engagement

With this preface, let me now turn to the mechanisms reviewed in the White Paper for addressing competitiveness concerns. The White Paper focuses on the risk that U.S. domestic legislation could expose some industries to competitive disadvantage if comparable actions are not taken by competing industries in other countries. NRDC believes there are ample tools for neutralizing this concern – tools which in proper combination can also contribute to engaging other countries.

Not all of these tools, however, were considered in the White Paper. Specifically, the White Paper acknowledges that it did not consider the role that allowance allocations can play in addressing competitiveness in the initial years of the program. If used with

care to avoid over-compensation and windfalls, this can be an important additional tool for this purpose. More on this in a moment.

The IBEW/AEP Proposal. Of the three alternatives reviewed in the White Paper, NRDC sees the most potential in the IBEW/AEP proposal to require importers of certain energy-intensive primary products such as steel, cement, pulp and paper, aluminum, or chemicals to purchase emissions allowances at the border. The import allowance purchase proposal – a version of which is contained in S. 2191 (Lieberman-Warner) and S. 1766 (Bingaman-Specter) – focuses on our largest trading partners, which are also the largest contributors to global warming pollution. The proposal requires the President to negotiate with those key countries over an initial period to reach agreement on comparable actions to reduce emissions that are appropriate taking into account those countries' economic circumstances. For countries where agreement on comparable actions cannot be reached through multilateral or bilateral negotiations, the proposal provides for the President to require importers of the covered products to purchase emissions allowances at rates that level the playing field.

The IBEW/AEP proposal thus has two attractive attributes. It would give the Executive Branch additional diplomatic leverage during the initial period of multilateral and bilateral negotiations with other countries for agreement on comparable actions. It also would provide an equalizer later on, should those negotiations not succeed with one or more important trading partners.

Some have expressed concern with the definition of "comparable action" in the IBEW/AEP proposal. While the definition could be refined, in NRDC's opinion it states an essential concept without excessive rigidity. For reasons I already described, it is not

practical to set a "one-size-fits-all" rule, for example, that each country must adopt a cap-and-trade program at this stage. Furthermore, WTO rules require some latitude to take into account national economic circumstances.

Some have expressed concern that that the import allowance purchase requirement would not "kick in" soon enough and have recommended that the start date of 2020, as proposed in S. 2191 and S. 1766, should be moved up by as much as five years. While NRDC is sympathetic to the motivation for this proposal, there are important countervailing considerations grounded in both the climate treaty negotiations and World Trade Organization (WTO) concerns. Resorting to the import allowance purchase requirement too quickly will only inflame passions in the post-Bali global warming talks, diverting the parties from their current positive attitudes and towards retrenchment and recrimination. Resorting to this tool too quickly will also raise the risk of a successful challenge under the WTO, which calls for a period of good faith negotiation before imposing such a measure.

Allowance Allocations. Fortunately, advancing the start date is not necessary because there is another tool available for "leveling the playing field" in the early years when the U.S. is negotiating comparable actions abroad. This can be done by allocating some allowances or auction revenue on a temporary basis to specific industries that demonstrate their vulnerability to competitive disadvantage.

NRDC does not suggest the use of free allowances or auction revenues lightly. We believe the emissions allowances created by a national cap and trade program are a public trust and should be put to public purposes, not private windfalls. A case can be made consistent with this principle, however, for a limited and temporary amount of free

allocation or auction revenue to prevent job losses in specific vulnerable industries while multilateral negotiations are underway to reach agreement with key trading parties on measurable, verifiable, and reportable actions, and during a reasonable start-up period for implementing those actions.

If subject to appropriate criteria, this approach would not require a large fraction of the total allowance pool even at the outset, and it can be phased out over the first decade. Direct emissions from primary manufacturing industries account for only about 15 percent of total U.S. emissions, and only a subset of those manufacturing industries can demonstrate vulnerability to competitive disadvantage as domestic emission limits take effect. A relatively small list of industries is commonly mentioned: iron and steel, cement, glass, pulp and paper, chemicals. Only certain subcategories of these industries are significantly challenged by foreign competition and significantly affected by the cost of meeting carbon limits. NRDC believes that with appropriate criteria and thresholds it would take well under 10 percent of the allowance pool to offset the fraction of costs that these vulnerable industrial subcategories cannot recoup in the marketplace. If appropriate criteria are followed, windfalls can be avoided.

Free allocations or auction revenue will not be needed for this purpose after 2020. During the intervening years the Executive Branch will be negotiating with key trading partners, both in the global climate treaty talks and bilaterally, for agreement on comparable actions to reduce their growing emissions. Where those efforts succeed, the basis for competitiveness concerns will be resolved. And where those efforts do not succeed, the President would level the playing field by invoking the emissions allowance purchase requirement for importers of the covered products.

Any free allowances or auction revenues allocated for these purposes must be structured to reward investments in energy and process efficiency and in maintaining production and employment here in the United States. It would be ineffective and wrong to grandfather those allowances without conditions. Doing so would allow firms to "take the money and run" by moving production overseas. Unconditional grandfathering could protect or even overcompensate shareholders, but would not protect workers or the environment, as shifting production to countries without emission limits would result in "leakage" of some of the environmental benefits of a domestic emission cap. This problem can be avoided by making allocations to energy-intensive firms contingent on maintaining domestic employment (as is done in S.2191) or by making allocations proportional to domestic production of energy-intensive goods (as has been proposed by some manufacturers). As mentioned, such allocations should also be tied to making investments to increase the energy efficiency or reduce the process emissions of domestic facilities.

Some have suggested that this approach might account for the competitive impacts from the costs of reducing direct process emissions but not from the increased costs of energy sources (such as electricity) whose carbon emissions are regulated. This question cannot be addressed without first working out the general allowance distribution system. It will be important to assure that no entities – manufacturers, electric power generators, or others – reaps windfall profits from the allowance allocation system at the expense of consumers.

WTO Considerations. While I do not claim to be a WTO legal expert, based on my review of legal arguments made for and against the IBEW/AEP proposal, I believe

the proposal is defensible under the WTO, provided sufficient time is allowed, and sufficient effort is made, to negotiate agreements on emissions mitigation actions. The proposal does not call for treating like products of domestic and foreign manufacture unequally. And if necessary, the proposal has a reasonable justification in the public health and environmental exceptions sanctioned by the WTO. Countries are permitted to take reasonable measures to prevent the depletion of exhaustible natural resources and to protect the lives and health of humans, animals, and plants. Plainly, the capacity of the atmosphere to absorb carbon dioxide without adverse impacts is an exhaustible natural resource. So are our coastlines, forests, water supplies, and other natural resources threatened by climate change. And a myriad of public health and ecosystem impacts are also threatened by climate change.

The likelihood of a successful WTO challenge would increase, however, if we impose an import allowance purchase requirement too quickly. As explained above, WTO concerns argue for good faith negotiations to try to reach agreements that would obviate the imposition of the requirement. If we unrealistically truncate the period for such an effort, we will increase our WTO exposure. And as I mentioned, if we resort to this approach too quickly, we risk inflaming the climate treaty talks themselves, making agreements on comparable action much harder to reach. If free allocations are used to address competitiveness in the early years, then it would be unnecessary, and potentially counterproductive, to start the import allowance purchase requirement earlier.

This is an area where we might take a useful lesson from the European Union. The EU has raised the possibility of imposing a border allowance adjustment, but more recently has put the question on hold at least until after 2012. The European Commission

has proposed using temporary free allocations to address competitiveness concerns in the interim. Their aim is to facilitate the post-Bali negotiations while keeping the possibility of border measures still visible in the background as a last resort. I believe including the IBEW/AEP proposal in domestic legislation can serve the same function with the same useful balance – but not if it is imposed prematurely.

The IBEW/AEP proposal, of course, is not perfect and is not written in stone. NRDC looks forward to working with the Committee and other stakeholders on the development of these trade-related provisions.

V. Other Proposals

Globally Uniform Performance Standards. The White Paper reviews a proposal, supported principally by some in the steel industry, for setting a globally uniform allowable emissions rate per unit of certain energy-intensive products. In NRDC's view, this proposal does not meet either environmental or economic objectives. First and foremost, the proposal would exempt domestic steel and other manufacturing industries from our national emissions cap. While the emissions of other U.S. industries would be capped and reduced, the total emissions from U.S. products covered by such standards could increase without limit. This fails the fundamental environmental test. We cannot stave off the worst effects of global warming unless the U.S. and other industrial nations with the highest per person emission rates and the largest historical emissions contribution take the lead by capping and reducing their emissions. We need to set the example that developing countries will later join. There is an important role for performance standards for key products and industries in such a program – as crucial complements to, not substitutes for, the overall emissions cap.

The proposal is also fundamentally unfair to other sectors of the economy. If emissions from steelmaking or other industries are allowed to keep growing, other industries will have to make even greater emission cuts.

It is also unlikely that nations will agree to uniform performance standards for specific products around the world. As a technical matter, it would be extremely difficult to determine how much carbon dioxide is associated with specific steel or chemical products from particular countries. And as the White Paper notes, it may be a WTO requirement to recognize legitimate variation in such performance standards based on the economic circumstances of developing countries. It is a reasonable and necessary objective to achieve significant changes over the next decade in the emissions trends of key sectors in rapidly developing countries. But differences between national circumstances make it unreasonable to insist on meeting uniform standards in all countries.

Carbon Market Access Conditions. The White Paper summarizes proposals from the Environmental Defense Fund (EDF) to encourage meaningful actions in other countries through the terms on which we allow other countries access to the U.S. carbon market. Measures outlined include offering better carbon trading terms to countries that establish emissions caps early, and discounting project-based emissions credits from countries without caps.

NRDC believes these are useful proposals to supplement other approaches. Given the urgency of global warming, we will need to use the full range of our diplomatic, economic, and trade tools to encourage sufficient engagement by developing countries. Conditions on access to our carbon markets can contribute to this objective. I have

already described proposals to shift towards a system of "stretch" targets for key sectors within a country, and away from the current project-level approach embodied in the CDM. U.S. legislation could encourage this approach in defining the conditions for access to our carbon markets.

VI. Carrots as Well as Sticks

The White Paper acknowledges the need for U.S. legislation to offer carrots as well as sticks. In addition to limiting our own emissions, domestic legislation should include several other components beyond those reviewed in the White Paper that NRDC believes are critical to engaging developing countries.

In the Bali Action Plan the U.S. recognized that reaching agreement on measurable, verifiable, and reportable developing country actions will require agreement on technical and financial assistance to help those countries deploy clean energy technology, cut tropical deforestation, and adapt to unavoidable climate impacts. There are ways to offer this assistance that are in our direct commercial, environmental, and humanitarian interest – that enlarge markets for U.S. firms' clean technology and that avoid costly ecological and humanitarian tragedies.

The U.S. currently contributes to these objectives through such means as the Agency for International Development (USAID), but these and other programs are funded very modestly and have to fight for appropriations from year to year. Recently, in conjunction with his Major Economies Meetings, President Bush proposed a fund for clean technology investments in key developing countries, but that proposal is too limited and as yet has no secure source of funding.

This is a problem on two levels. First, the scale of the need is much greater. The International Energy Agency estimates that $4 trillion dollars will be invested between now and 2030 on global energy infrastructure. We need to tip that investment towards cleaner technology: more energy efficient vehicles, buildings, and equipment, renewable energy sources, and coal with carbon capture and storage. The Stern Review, undertaken for the British government, estimates that an additional $20-30 billion per year are needed for low-carbon investments in developing countries.[3] The Stern Review also suggests that major progress to stem tropical deforestation (responsible for about 20 percent of global emissions) could be made for about $5 billion per year.[4] Another estimate, undertaken by the Secretariat of the UN Framework Convention on Climate Change, estimates the need for climate-friendly technology funding to be $200-$210 billion in 2030.[5]

In industrial countries, carbon markets created by cap and trade systems will tip the direction of energy investment. But carbon markets cannot do the whole job in developing countries during the next decade, when they will not yet have full-scale cap-and-trade programs. To be sure, key developing countries have increasing sources of their own investment capital. They must contribute to their own cleaner development, but it is not in our interest to insist that they entirely self-finance it. We have a stake in it too. American firms that have pioneered low-carbon technologies will benefit as developing country markets for their technologies grow. And since global warming is a

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[3] Stern Review on the Economics of Climate Change, executive summary at xxiv, http://www.hm-treasury.gov.uk/media/4/3/Executive_Summary.pdf

[4] *Id.* at xxvi.

[5] United Nations Framework Convention on Climate Change, "Investment and Financial Flows to Address Climate Change," Executive Summary at 6, http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/background_paper.pdf

global problem, we benefit directly from progress limiting carbon emissions in all countries.

A second reason for the U.S. and other industrial countries to provide more support for clean technology deployment and preventing deforestation is to make the global bargain work in the climate treaty negotiations. As I have mentioned, in the Bali Action Plan the U.S. and other industrial countries agreed to negotiate additional support for clean technology, forest protection, and adaptation. We won't be able to close the deal in Copenhagen without substantial commitments in these areas.

Some might say, why not rely on the carbon markets – emissions credit trading – to finance clean development in the developing world. NRDC believes global carbon markets will grow as developing countries transition to sectoral and ultimately national commitments. But we have to prime the pump to get them there. We also need to recall that relying entirely on emissions credits to drive developing country decarbonization would merely result in an equal amount of extra emissions in industrial countries, where the credits would be used. To make actual progress on global emissions, we need a system that lowers emissions trajectories in the South without shifting emissions to the North. This can be done through a combination of self-financing and international support. Carbon markets can then operate on top of that underlying change.

Fortunately, the design of domestic cap and trade legislation offers the opportunity to establish secure stable sources of funding to meet these legitimate needs in the design of domestic cap-and-trade legislation. Toward this end, NRDC recommends that this Committee dedicate a percentage of the emissions allowances created by the domestic legislation to fund international clean technology deployment, reduction of

deforestation, and international adaptation activities. As an example, I note that the Lieberman-Warner bill (S. 2191) would provide funding through the allowance allocation and auction for two of these purposes: reducing tropical deforestation and international adaptation. As S. 2191 goes to the floor, consideration will be given to adding support for international clean technology too.

Providing substantial, stable support for these three items would be high-payoff investments both for their direct results and for their role in encouraging developing countries to take meaningful emission reduction actions.

* * *

Thank you for the opportunity to testify. I am happy to answer any questions that you may have.

Mr. BOUCHER. Very good, Mr. Doniger. You were just a little over 4 minutes. Mr. Hufbauer, we will be glad to hear from you.

STATEMENT OF GARY HUFBAUER, PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS

Mr. HUFBAUER. Thanks very much, Chairman Boucher, and members of the Committee. I want to commend the well-drafted white paper. I need to mention that a representative of the National Foreign Trade Council was originally going to speak where I am speaking. I have appended his statement written independently of my own, but the conclusions are quite similar.

The Peterson Institute is working with the World Resources Institute on these issues, and a book titled Leveling the Carbon Playing Field will soon be published. I commend it to you.

Now quickly turning to the questions, the first point I would make is that any meaningful cap-and-trade or other carbon limitation system will impose very large costs on this economy and other economies. To dodge that fact, I think, is to dodge reality.

Second, the control systems adopted by different countries will differ. There is not going to be a uniform system, and the fact of differences and the possibility of various hybrid systems means that there will be enormous pressure in this country and elsewhere both for lobbying for free allowances and other preferences, and also for straight import protection. Sauce for the goose is sauce for the gander. Any import limitations we impose—citing carbon problems—can be imposed on us. This is going to be a two-way street. So if we go ahead and start imposing restrictions willy-nilly, we can expect return payment.

Next, I think that the legislation would be vastly improved if the Committee would call for WTO discussion on an appropriate code that would identify permissible emission measures. That is in addition to Kyoto II or the Bali roadmap. The Bali roadmap at most will set targets and time paths but it will not address the details of permissible emission measures.

I would caution this Committee against taking at face value assurances from brave lawyers that such-and-such a proposal is immune from WTO attack. I go into this subject in some detail in the testimony. There is hardly any trade restrictive measure that would not invite WTO attack, but we do not need to trash the world trading system, as Mr. Upton has noted, to get meaningful carbon emissions. What we need to do is have a WTO negotiation ahead of time—a good-faith negotiation led by the United States.

So let me just stop there and say that global cooperation started early by the United States will achieve a lot more than a heavy-stick, unilateral approach. Thank you very much.

[The prepared statement of Mr. Hufbauer follows:]

U.S. House of Representatives

Committee on Energy & Commerce
Subcommittee on Energy & Air Quality

Hearings on
Climate Change: Competitiveness Concerns
and Prospects for Engaging Developing Countries

March 5, 2008

Statement of
Gary Clyde Hufbauer
Reginald Jones Senior Fellow
Peterson Institute for International Economics
Washington, DC

Summary of Testimony of Gary Clyde Hufbauer, Reginald Jones Senior Fellow, Peterson Institute of International Economics, Washington DC.

- The United States is a leading source of GHG emissions – both in total tonnage and on a per capita basis. The major emitting sectors, in the United States and elsewhere, are energy generation and transportation. Manufacturing activity and industrial processes are less important GHG sources.

- **Regarding questions # 1 and #2 in the Committee's White Paper**, any meaningful form of GHG controls -- whether the limits take the form of a carbon tax, a cap-and-trade system, or performance standards -- will impose heavy costs to the US economy. The control systems adopted by various countries will differ in major respects – both as to the severity of limitations and the details of operation. The combination of enormous costs, huge values and systemic differences will generate tremendous lobbying pressure and protectionist forces.

- Sauce for the goose is sauce for the gander. Any restriction the United States imposes on imports, citing climate change as justification, can just as easily be imposed by other countries on U.S. exports. Any performance standards that the United States imposes on foreign firms, and any "comparability" tests the United States imposes on foreign GHG control systems, can be turned around and imposed on the United States.

- **With respect to questions #3 and #6 in the Committee's White Paper,** a US-led effort to agree on international rules would certainly help bring developing countries on board in reducing GHG emissions. Early US efforts will strengthen the US hand when it comes to designing the post-Kyoto Protocol regime.

- Application of basic WTO rules to foreseeable GHG emissions controls is far from cut and dried. Only a brave or foolish lawyer would give this Committee strong assurance that such-and-such a system of GHG controls is immune from challenge in the WTO. **In a response to question #5 in the Committee's White Paper,** almost all trade restrictive measures stand a fair chance of being challenged in the WTO.

- If the United States enacts its own unique brand of import bans, border taxes, and comparability mechanisms – hoping that measures which flaunt GATT Articles I, III and IX will be saved by the exceptions of GATT Article XX – the probable consequence will be a drawn-out period of trade skirmishes and even trade wars. During these battles, some countries will become more fixated on winning legal cases than fighting the common enemy, climate change. **Global cooperation in limiting emissions could be the first casualty of a unilateral approach that ignores the basic GATT articles.**

Mr. Chairman and members of the Committee, thank you for inviting me to testify. My name is Gary Hufbauer and I am a Senior Fellow at the Peterson Institute for International Economics. The Peterson Institute and the World Resources Institute are jointly conducting research on the intersection between controlling greenhouse gas (GHG) emissions, competitiveness and international trade. This testimony reflects some preliminary findings.

My old friend, William A. Reinsch, President of the National Foreign Trade Council, was originally scheduled to occupy this place, but cannot be with you today. However, the NFTC statement is attached as Annex A, and the Committee will find it quite helpful. I am pleased to associate myself with NFTC's views; likewise the NFTC supports what I have to say. When you have a chance to read Annex A, you will find that the NFTC digs deep into WTO jurisprudence, while my remarks provide a broad overview.

In this statement, I will comment on the relationship between the rules of the world trading system and domestic legislation that would penalize U.S. imports, or foreign countries, when foreign production does not measure up to U.S. standards for limiting GHG emissions. Several tables are appended to my testimony, based on our joint program with the World Resources Institute.[1] For reasons of time, I will only draw broad inferences from the data, but the tables may be useful to the Committee as reference material.

[1] The tables were prepared by Jisun Kim, Research Assistant at the Peterson Institute, who also made valuable contributions to this testimony.

Emission Sources (tables 1, 2 and 3). The United States is a leading source of GHG emissions – both in total tonnage and on a per capita basis. However, China probably surpassed the United States in total tonnage in 2007. The major emitting sectors, in the United States and elsewhere, are energy generation and transportation. Manufacturing activity and industrial processes are less important GHG sources. These facts imply that the United States is vulnerable to legislation abroad that might seek to call U.S. practices to account, not only with respect to manufactured exports and industrial processes, but also for its high levels of GHG emissions in total and on a per capita basis.

Implied Value of GHG Emissions Taxes or Caps (tables 1 and 2). Serious limits on GHG emissions – of the sort proposed by my colleague William Cline, the Yale economist, William Nordhaus, and the Stern Report – will entail heavy costs.[2] **Regarding questions # 1 and #2 in the Committee's White Paper**, any form of GHG controls -- whether the limits take the form of a carbon tax, a cap-and-trade system, performance standards, or some other method -- will impose heavy costs to the US economy. One major difference in approaches is whether permits are assigned to private companies, thereby conferring valuable "quota rents" on the recipients, or whether limits are imposed by way of auction or tax systems so that the government collects substantial revenues. Another major difference is the choice of activity where limits are designed to "bite": for example, on power generation and refineries, or also on transportation and

[2] For references to these economists and others, see the Stern Report, available at http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm, the study by Nordhaus at http://nordhaus.econ.yale.edu/ and the study by Cline at http://www.copenhagenconsensus.com/Default.aspx?ID=165.

manufacturing. Other parameters also differ between approaches: trading of permits, domestically and internationally, banking and borrowing of permits, special auctions to curtail price spikes, etc.

Until international negotiations are conducted, it is difficult to say that what approach will best encourage developing countries to adopt their own GHG emission controls while simultaneously protecting US industry.[3] From an administrative standpoint, the simplest approach would be a uniform carbon tax, imposed at the border on imports from countries that do not adopt and enforce the same uniform rate. The carbon tax approach also has well-known efficiency features – reducing the most GHG emissions for the least cost. But it would be extremely difficult to marshal legislative support for such a tax in the US Congress or abroad.

Instead, the more likely outcomes are messy "hybrid" systems that differ from country to country. Each country will favor a mixture of subsidies, border adjustments, and other GHG controls that foster its own producers, especially "national champions". The United States is well along this path with respect to biofuels, having enacted measures that generously support ethanol production and firms like Archer-Daniels-Midland. President Nicholas Sarkozy of France and other European leaders have pushed the same approach.

[3] The US largest foreign suppliers of carbon-intensive goods are countries like Canada, the European Union, and Russia that emit considerably less carbon than the United States. In 2005, China accounted for less than 7 percent of US carbon-intensive imports except cement: 7 percent of steel imports; 3 percent of aluminum imports; 4 percent of paper imports; and 14 percent of cement imports (source: UN Comtrade).

Three important implications should be emphasized. First, any meaningful system of GHG controls will entail enormous costs and create huge values. Second, the control systems adopted by various countries will almost certainly differ in major respects – both as to the severity of limitations and the details of operation. Third, the combination of enormous costs, huge values and systemic differences will generate tremendous lobbying pressure and protectionist forces.

Tables 1 and 2 illustrate the cost/value implication. A control system which, in terms of effect, equates to $100 per metric ton of emitted carbon-equivalent (a middling figure for 2020), would generate costs/values of around $190 billion annually for the United States alone, at current emission levels.[4] For the European Union or China, the costs/values would be around $130 billion annually. Even if countries agree that limits of this severity are justified, no two political systems will agree on the same methods for imposing their controls. Lobbying pressure will be intense to exclude "preferred" activities from any limits (e.g., residential electricity and heat, agriculture), and industrial firms will do their utmost to acquire free emission permits for their own activities. Out of the political maelstrom, it is certain that some countries will use domestic GHG controls as a rationale for curtailing imports.

Trading System Dangers (tables 4, 5 and 6). WTO rules and decided cases are summarized in my tables. Before surveying the rules, an overriding observation must be stressed. **Sauce for the goose is sauce for the gander. Any restriction the United States imposes on imports, citing climate change as justification, can just as easily be**

[4] Note that $100 per metric ton of carbon converts to $27 per metric ton of CO_2 equivalent.

imposed by other countries on U.S. exports. Any performance standards that the United States imposes on foreign firms, and any "comparability" tests the United States imposes on foreign GHG control systems, can be turned around and imposed on the United States. An example will illustrate. The United States might impose its own carbon tax or performance standards on imports of steel rebar products from India, citing an exceptionally high level of carbon emissions per ton of Indian rebar production. In turn, India might impose a duty on all imports from the United States, citing the exceptionally high figure of U.S. per capita CO_2 emissions, compared to the world average (table 3).

Does this observation mean that, out of fear of retaliation, the United States should do nothing while the planet heats up? Of course not. But it does mean that the United States -- as leader of the world trade and financial system -- should make an exceptional effort to negotiate agreed international rules before blocking imports or penalizing foreign GHG control measures. The open system of world trade and investment has delivered enormous benefits to the U.S. since the Second World War. Our calculations indicate that globalization delivers about $1 trillion of benefits annually to the U.S. economy, around $10,000 per American household.[5] It would be a tragedy to endanger even a small part of these benefits by charging ahead with GHG legislation that takes no account of views abroad.

[5] Scott C. Bradford, Paul L.E. Grieco and Gary Clyde Hufbauer, "The Payoff to America from Global Integration", chapter 2 in C. Fred Bergsten, *The United States and the World Economy*, Washington DC: Institute for International Economics, 2005.

With respect to questions #3 and #6 in the Committee's White Paper, a US-led effort to agree on international rules would certainly help bring developing countries on board in reducing the GHG emissions. An early US effort will strengthen the US hand when it comes to designing the post-Kyoto Protocol regime. Any legislation enacted by the US Congress in the next year should emphasize foremost the urgency of international negotiations and postpone the imposition of import penalties or comparability mechanisms for at least three years.

Let me now turn to existing WTO rules that bear on climate change legislation. They contain several disciplines, summarized in tables 4, 5 and 6. At the same time, they permit many trade restrictions and penalties, in the name of ensuring human health and safety, and protecting the environment. But the existing rules do not preclude the eruption of tit-for-tat retaliation, if a major player, such as the United States, the European Union, or China, imposes its own brand of GHG trade policy without the prior blessing of a multilateral agreement.

Any U.S. climate legislation which includes trade restrictive measures should reflect the core disciplines of the existing WTO system. If and when WTO members negotiate a new code on trade rules with respect to GHG emissions, these core disciplines are almost certain to be included.

- **GATT Article I (Most Favored Nation Treatment):** Non-discrimination is a core principle in the GATT/WTO system, and is reflected in GATT Articles I and

III. Article I requires members to ensure that -- in the absence of an exception -- when favorable treatment is accorded to the goods or services imported from one country, the same treatment must be accorded to the products of all WTO members.

- **GATT Article III (National Treatment):** This article requires that the products of WTO members be treated no less favorably than "like" products made by firms in the importing country. In decided cases, this requirement has been strictly applied.
- **GATT Article XI (General Elimination of Quantitative Restrictions):** This article prohibits the imposition of quotas, import or export licenses, or other measures on trading partners unless they fall into one of the exceptions listed in paragraph 2 of GATT Article XI.
- **GATT Article XX (General Exceptions):** Even though an import restriction on imports violates another GATT article, including the articles discussed above, it might be acceptable if the trade measure conforms to the chapeau of GATT Article XX and falls under one of subsections. Relevant to climate change, these subsections allow otherwise inconsistent trade restrictions if they are "necessary" to protect human, animal or plant life or health (Article XX (b)) or if they conserve exhaustible natural resources (Article XX (g)), a term which covers GHG emissions.

Application of these basic rules to foreseeable GHG emissions controls is far from cut and dried. The NFTC published an excellent paper in December 2007, titled

***WTO Compatibility of Four Categories of U.S. Climate Change Policy*, which explores many nuances. I commend this paper to your attention. Only a brave or foolish lawyer would give this Committee strong assurance that such-and-such a system of GHG controls is immune from challenge in the WTO. When the Committee hears such assurances, it should ask its own legal staff to prepare a "devil's advocacy" memo describing the WTO vulnerabilities of the proposed system.**

For now, the most reliable guidance for incorporating trade measures in the U.S. climate policy in a WTO-consistent manner can be found by examining the Appellate Body's decisions on previous dispute cases and its interpretation of the shelter available under GATT Article XX. It must be remembered, however, that Appellate Body decisions are made case-by-case; they depend on the particular facts and circumstances, and the rule of *stare decisis* does not strictly apply. The Appellate Body's rulings in previous cases (table 6) show considerable sympathy with environmental concerns and have increased the likelihood that trade restrictions in furtherance of GHG emissions controls would pass muster under WTO rules.

However, in the absence of a negotiated compact that defines WTO "red lines" and "green spaces" with respect to trade measures that foster GHG controls worldwide, tit-for-tat retaliation and prolonged WTO litigation are all but certain if each country goes its own way with climate legislation. **In a response to the question #5 in the Committee's White Paper,** almost all trade restrictive measures stand a fair chance of being challenged in the WTO. The best guidelines I can offer are these: engage in good faith

international negotiations before restricting trade; ensure that the measures adopted make a genuine contribution to the reduction of GHG emissions; and avoid discrimination, both among foreign partners and between US producers and foreign producers.

If the United States enacts its own unique brand of import bans, border taxes, and comparability mechanisms – hoping that measures which flaunt GATT Articles I, III and IX will be saved by the exceptions of GATT Article XX – the probable consequence will be a drawn-out period of trade skirmishes and even trade wars. During these battles, some countries will become more fixated on winning legal cases than fighting the common enemy, climate change. **Global cooperation in limiting emissions could be the first casualty of a unilateral approach that ignores the basic GATT articles.**

ANNEX A

Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries
Committee on Energy and Commerce, Subcommittee on Energy and Air Quality
Statement of William A. Reinsch, President, National Foreign Trade Council
March 5, 2008

I represent the National Foreign Trade Council, the country's oldest and largest trade association devoted specifically to international trade and tax policy. Our members are primarily global companies doing business in virtually every country on earth. The NFTC supports an open, rules-based trading system, international tax policies that contribute to economic growth and job creation, and opposes unilateral economic sanctions.

In my statement I want to cover three topics: WTO compliance issues surrounding climate change proposals, the likelihood of retaliation against unilateral action either inside or outside the WTO dispute resolution process, and our preference for addressing climate change through multilateral action. The first and third topics were addressed in detail in a paper we released last December titled, "WTO – Compatibility of Four Categories of U.S. Climate Change Policy," which I commend to the Committee's attention.

In making these comments, I want to make clear that the National Foreign Trade Council is not an environmental organization and has not taken a position on the merits of specific climate change proposals. We do, however, believe strongly that any action that is taken

should be compatible with our multilateral obligations, and we will continue to evaluate new proposals against that standard as they appear.

WTO COMPLIANCE ISSUES

In our paper we examined four climate change bills pending in the 110th Congress from the perspective of their compatibility with WTO rules regarding national treatment, subsidies, and whether the measures proposed are more trade restrictive than necessary. We do not – and cannot – conclude definitively that a measure is "WTO-illegal." First and foremost, WTO jurisprudence tends to be case-specific. Disputes are settled based on the facts of the case presented, and they are not always regarded as precedents for future cases where the facts might well be different. Thus, although one might speculate about whether a particular measure is likely to lead to dispute resolution and then draw inferences about how such a case might be decided, it would not be correct to make a definitive statement about the "legality" of a particular measure, since that can only be determined as the result of a WTO proceeding.

Following is a brief summary of our conclusions. For more detail I would refer you to our paper.

U.S. domestic policies to address climate change can, in principle, be compatible with World Trade Organization (WTO) rules and the multilateral trading system. However, some policy tools are likely to be more trade-distorting than others and conflict with

specific WTO provisions, raising the costs and jeopardizing the long-term success of comprehensive climate change abatement programs in the United States. For example:

- Energy efficiency requirements and standards, such as the renewable fuel standard found in H.R. 6, are likely to violate GATT Article III on national treatment. In fact, similar measures adopted in the United States in the 1990s were successfully challenged in a landmark WTO dispute. By contrast, CAFE standards in H.R. 1509 appear to be more WTO-compatible.

- Government-administered eco-labeling schemes in H.R. 6 may violate the WTO Agreement on Technical Barriers to Trade for constituting measures that are "more trade-restrictive than necessary" to protect the environment, even if this objective is "legitimate."

- Subsidies for renewable energy are very likely to violate the WTO Agreement on Subsidies and Countervailing Measures. For example, loan guarantees for renewable fuels facilities in H.R. 6 are financial contributions targeting specific industries and commodity products; they may act to increase the U.S. world market share in biofuels while decreasing foreign countries' U.S. market share in conventional fuels. Any subsidy that affects the export performance of a U.S.-produced climate-friendly good is likely to be prohibited under WTO rules.

- In theory, cap-and-trade programs may be one of the most WTO-compatible policy instruments available, but in practice, such programs are accompanied by standards and regulations, eco-labeling, subsidies, and other measures that raise WTO-compatibility concerns. In addition, a particularly alarming provision in S.

> 2191 creates a reserve of emissions permits for U.S. importers of foreign goods, which is separate and additional to the national reserve. It effectively imposes a tax on imports from WTO Members who do not utilize clean production processes and methods. This is likely to violate GATT Article III on national treatment and in the absence of a multilateral agreement will almost certainly be challenged by industry-intensive developing countries where environmental standards are not as stringent as in the United States.

The last conclusion, relating to cap and trade, is the only one in our paper that has proved controversial, and I want to spend another minute on it. Our analysis of cap and trade largely tracks that found in the Committee's white paper. While the provision in S. 2191 was clearly drafted to take into account previous WTO decisions, we believe it is likely that it will be challenged – as will virtually any action the U.S. takes – and we are not confident it will ultimately pass muster.

To go into the weeds a bit, we believe there is no dispute that an international reserve allotment program on its face violates GATT Article III. Indeed, the provision in S. 2191 implicitly acknowledges that by being specifically drafted to fit into one of the permitted exceptions – Article XX(g), which relates to conservation of exhaustible natural resources.

In the *Shrimp-Turtle* case, the Appellate Body suggested that to qualify for this exception, the measure would have to concerned with the conservation of an "exhaustible natural resource" within the meaning of Article XX(g), it would have to relate to the

conservation of natural resources, and it would have to be "made effective in conjunction with restrictions on domestic production or consumption."

There is general agreement the proposal meets the first criterion. With respect to the second, there are good arguments on both sides. If the Appellate Body were to conclude that the measure was primarily an economic one designed to level the playing field by increasing the price of imports from countries not adopting controls on their greenhouse gas emissions, it could decide that the measure only "incidentally" focused on conservation. The third criterion would depend on implementation. For example, if the U.S. provided plentiful free allowances to domestic producers, the Appellate Body might conclude the domestic and foreign restrictions were not comparable.

Even with those uncertainties, however, the most likely basis for complaint against this proposal would be under the Chapeau of GATT Article XX. To qualify, the United States would have to show that it engaged in "serious, across-the-board negotiations with the objective of concluding bilateral or multilateral agreements, and that the measure itself shows flexibility in taking into account local conditions in other countries and that its implementation does not suggest an intent to discriminate.

The Article XX Chapeau is essentially focused on how measures are implemented, which means that any final judgment on WTO compatibility cannot be reached until after the measure is in place and implementation begun. The manner in which the International Reserve Allowance program is applied may pass the Chapeau of Article XX, following

the reasoning of the *Shrimp-Turtle* case, e.g. because Title VI of S. 2191 explicitly recognizes and builds cooperatively on UNFCCC principles and international environmental efforts. However, in contrast, the provisions in question may fail to pass the Chapeau through reasoning similar to the *U.S.-Taxes on Automobiles* case. In that case, two separate accounting systems were established for importers and domestic producers of automobiles, in effect regulating imported products based on their origin of manufacture rather than on any qualities intrinsic to the automobiles. The International Reserve Allowance Program also envisions subjecting imports to regulation based on their origin of manufacture, and via a reserve of allowances "separate from, and established in addition to" the domestic reserve. As both circumstances have raised WTO compliance issues in the past, in at least one case, it is appropriate to raise the possibility that this program may be vulnerable to an unfavorable WTO decision in the future. WTO panels have been careful to observe the unique circumstances surrounding each case that has come before them. The subjective nature of judging the *manner* in which the International Reserve Allowance program will be implemented, for purposes of the Chapeau of Article XX, makes it worthy of an on-going, constructive debate, particularly for those who wish to see the program succeed in the long term.

OTHER RETALIATORY ACTIONS

While much of the focus of debate on the trade-related provisions of cap and trade proposals has been on WTO compliance, there is also a significant likelihood states will retaliate outside of the WTO dispute resolution process. There is no question that a program which limits imports and/or increases their price would be opposed by countries

exporting the affected products. While they might well litigate, we believe it is also likely they would take other, more direct action.

Unfortunately, there is a long history in this regard. China, for example, when confronted with a U.S. action or policy it opposes, has canceled mil-mil consultations, rejected requests for naval ship visits, blocked proposed investments, canceled or reduced the scope of buying missions, purchased major items from other countries, and taken other actions to indicate its displeasure. As you can see, these actions are not always strictly in the trade area – they often spill over into foreign policy. The classic case of this behavior was in 1983 when the United States imposed textile import quotas. The Chinese response was to stop buying wheat and other agricultural products.

While WTO rules impose some constraints on such behavior, there remain many opportunities for nontransparent retaliation – new inspection requirements, "problems" with the customs authorities, surprise audits, unexpected labor problems, and so on. This is not to argue that the United States should not act for fear of retaliation, but in a globally integrated economy, the potential pain associated with these actions could be significant, suggesting that we should certainly be aware of the possibility before we act, do our best to minimize its likelihood, and prepare an appropriate response in the event it occurs.

MULTILATERAL ACTION AND TIMING

Finally, I want to suggest that the approach most likely to obviate all these various problems is a multilateral one in which all relevant countries agree to take parallel steps. This would significantly reduce the possibility of either WTO litigation or direct retaliation. We would prefer that the United States devote its energy to participating in and concluding a multilateral process. If it chooses instead to lead by example through unilateral legislation, it runs the risk of the problems I have described occurring unless it were to make its legislation contingent on other nations following suit.

At the same time, the final conclusion of our paper was that international law in this area is relatively unformed, which means the advantage will go to the early actor – the first proposals implemented will more likely become the template for slower countries and will more likely become the foundation on which WTO rules will be based in the future. Thus, it is in the United States' interest to act sooner rather than later in order to increase the likelihood that our approach will ultimately be regarded as legitimate. Many observers also believe the science argues for early action, which may well be so, but there are also legal reasons for moving sooner rather than later.

Table 1 Hypothetical carbon tax equivalent amounts calculated based on GHG emissions by gas
(assuming that carbon taxes or carbon caps increase the value of emissions by $100 per metric ton of carbon equivalent) [a]

GHG emissions by gas, 2000 (million metric tons of CO_2e)

	US	EU	China	Russia	Japan	India	Brazil	World
CO_2	5,791	3,843	3,400	1,533	1,266	1,034	337	26,351
CH_4	546	444	788	307	21	499	366	6,020
N_2O	396	408	645	55	37	67	241	3,114
HFCs	101	39	42	4	34	5	4	259
PFCs	14	10	6	8	6	1	2	81
SF_6	19	3	2	2	2	1	1	40
GHG total	6,868	4,747	4,883	1,909	1,366	1,607	950	35,865

When implied emissions value is $100 per metric ton of carbon emitted (billions of US $)

	US	EU	China	Russia	Japan	India	Brazil	World
CO_2	158.1	104.9	92.8	41.9	34.6	28.2	9.2	719.4
CH_4	14.9	12.1	21.5	8.4	0.6	13.6	10.0	164.3
N_2O	10.8	11.1	17.6	1.5	1.0	1.8	6.6	85.0
HFCs	2.8	1.1	1.1	0.1	0.9	0.1	0.1	7.1
PFCs	0.4	0.3	0.2	0.2	0.2	0.0	0.1	2.2
SF_6	0.5	0.1	0.1	0.1	0.1	0.0	0.0	1.1
GHG total	187.5	129.6	133.3	52.1	37.3	43.9	25.9	979.1

a. The implied emission value of $100 per metric ton of carbon equivalent emitted equals to the amount of $27.3 per metric ton of CO_2e emitted. (based on the conversion method used by EPA and IPCC which derives a quantity of carbon multiplying a quantity of CO_2 by 12/44).

Source: Climate Analysis Indicators Tool (CAIT) Version 5.0. (Washington, DC: World Resources Institute, 2007).

Table 2 Hypothetical carbon tax equivalent amounts calculated based on GHG emissions by sector
(assuming that carbon taxes or carbon caps increase the value of emissions by $100 per metric ton of carbon equivalent) [a]

GHG emissions by sector, 2000 (million metric tons of CO_2e)

	US	EU	China	Russia	Japan	India	Brazil	World
Electricity & Heat	2,685	1,477	1,466	917	466	556	50	11,582
Transportation	1,714	879	219	176	257	92	126	5,098
Manufacturing & Construction	661	649	903	218	270	225	94	4,748
Industrial Process	208	226	377	32	87	57	31	1,369
Residential & Other Fuel Conbustion	720	780	463	210	202	139	45	3,964
Agriculture	444	493	1,041	110	34	375	549	5,729
Fugitive Emissions & Waste	416	225	290	243	10	150	47	2,958
GHG total	6,846	4,730	4,759	1,906	1,326	1,595	942	35,440

When implied emissions value is $100 per metric ton of carbon emitted (billions of US $)

	US	EU	China	Russia	Japan	India	Brazil	World
Electricity & Heat	73.3	40.3	40.0	25.0	12.7	15.2	1.4	316.2
Transportation	46.8	24.0	6.0	4.8	7.0	2.5	3.4	139.2
Manufacturing & Construction	18.0	17.7	24.7	6.0	7.4	6.1	2.6	129.6
Industrial Process	5.7	6.2	10.3	0.9	2.4	1.6	0.8	37.4
Residential & Other Fuel Conbustion	19.7	21.3	12.6	5.7	5.5	3.8	1.2	108.2
Agriculture	12.1	13.5	28.4	3.0	0.9	10.2	15.0	156.4
Fugitive Emissions & Waste	11.4	6.1	7.9	6.6	0.3	4.1	1.3	80.8
GHG total	186.9	129.1	129.9	52.0	36.2	43.5	25.7	967.5

a. The implied emission value of $100 per metric ton of carbon equivalent emitted equals to the amount of $27.3 per metric ton of CO_2e emitted. (based on the conversion method used by EPA and IPCC which derives a quantity of carbon multiplying a quantity of CO_2 by 12/44).

Source: Climate Analysis Indicators Tool (CAIT) Version 5.0. (Washington, DC: World Resources Institute, 2007).

Table 3 CO_2 emissions from fuel combustion, 2005 [a]

Million Tons of CO_2

	Total	% change 2005/1990	By type of fuel				By sector					CO_2 per unit of GDP (kg/2000 USD)	CO_2 per capita (t/capita)
			Coal	Oil	Gas	Other[b]	Electricity & Heat	Manufacturing Industries & Construction	Transport	Residential	Other		
United States	5,817	20	2,131	2,457	1,202	28	2,485	636	1,813	347	535	0.53	19.61
China	5,060	129	4,172	802	86	-	2,469	1,593	332	243	424	2.68	3.88
European Union (27)	3,976	-3	1,223	1,706	1,015	32	1,433	661	954	487	441	0.43	8.09
Russia Federation	1,544	-30	430	315	783	16	872	222	206	118	126	4.41	10.79
Japan	1,214	15	419	620	171	4	472	268	249	68	157	0.24	9.50
India	1,148	96	774	312	62	-	659	243	97	70	77	1.78	1.05
Brazil	329	71	50	241	38	-	34	99	137	16	43	0.49	1.77
Total	19,088		9,198	6,453	3,357	80	8,424	3,722	3,789	1,349	1,803		
Memorandum:													
World Total	27,136	29	10,980	10,717	5,347	93	11,009	5,184	6,337	1,889	2,718	0.75	4.22

a. OECD source noted that CO_2 emissions are calculated using the IEA energy balances, IPCC Sectoral Approached the default emissions factors from the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories. They may differ from National Communication submitted by the parties to the UNFCCC.

b. Other includes industrial waste and non-renewable municipal waste.

Source: International Energy Agency (IEA), CO_2 emissions from fuel combustion 1971-2005 (2007 edition), OECD

Table 4 GATT/GATS Articles applicable to environmental issues

Article	Text language
GATT Article I:1 General Most-Favoured-Nation Treatment	1. With respect to customs duties and charges of any kind imposed on or in connection with importation or exportation or imposed on the international transfer of payments for imports or exports, and with respect to the method of levying such duties and charges, and with respect to all rules and formalities in connection with importation and exportation, and with respect to all matters referred to in paragraphs 2 and 4 of Article III, any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties....
GATT Article II:1 (a) & (b) /2 (a) Schedules of Concessions	1. (a) Each contracting party shall accord to the commerce of the other contracting parties treatment no less favourable than that provided for in the appropriate Part of the appropriate Schedule annexed to this Agreement. (b) The products described in Part I of the Schedule relating to any contracting party, which are the products of territories of other contracting parties, shall, on their importation into the territory to which the Schedule relates, and subject to the terms, conditions or qualifications set forth in that Schedule, be exempt from ordinary customs duties in excess of those set forth and provided therein. Such products shall also be exempt from all other duties or charges of any kind imposed on or in connection with the importation in excess of those imposed on the date of this Agreement or those directly and mandatorily required to be imposed thereafter by legislation in force in the importing territory on that date. 2. Nothing in this Article shall prevent any contracting party from imposing at any time on the importation of any product: (a) a charge equivalent to an internal tax imposed consistently with the provisions of paragraph 2 of Article III in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part....
GATT Article III: 1, 2 & 4 National Treatment on Internal Taxation and Regulation	1. The contracting parties recognize that internal taxes and other internal charges, and laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products, and internal quantitative regulations requiring the mixture, processing or use of products in specified amounts or proportions, should not be applied to imported or domestic products so as to afford protection to domestic production. 2. The products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products. Moreover, no contracting party shall otherwise apply internal taxes or other internal charges to imported or domestic products in a manner contrary to the principles set forth in paragraph 1. 4. The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use. The provisions of this paragraph shall not prevent the application of differential internal transportation charges which are based exclusively on the economic operation of the means of transport and not on the nationality of the product

Table 4 GATT/GATS Articles applicable to environmental issues (continued)

GATT Article XI:1 & 2 (a) (b) (c) General Elimination of Quantitative Restrictions	1. No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party. 2. The provisions of paragraph 1 of this Article shall not extend to the following: (a) Export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party; (b) Import and export prohibitions or restrictions necessary to the application of standards or regulations for the classification, grading or marketing of commodities in international trade; (c) Import restrictions on any agricultural or fisheries product, imported in any form,* necessary to the enforcement of governmental measures which operate.....
GATT Article XX: (b) (g) General Exceptions	Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures: "... (b) necessary to protect human, animal or plant life or health; "... (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption; ..."
GATS Article XIV: General Exceptions	Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where like conditions prevail, or a disguised restriction on trade in services, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any Member of measures; "...(b) necessary to protect human, animal or plant life or health;..."

Source: WTO website (http://www.wto.org/english/docs_e/legal_e/legal_e.htm#finalact. Accessed on Nov. 7, 2007)

Table 5 US Climate Policy Options on Energy Intensive Imports [a]

Restriction on Imports		Justified under GATT Articles?				
		Article I *(MFN)*	**Article II** *(Tariff Schedules)*	**Article III** *(National Treatment)*	**Article XI** *(Quotas)*	**Article XX** *(Exceptions)*
Import restriction applied to penalize "foreign emitted carbon" (measure applied only against imports)	*Import ban (quantitative restriction)*				***No because:*** Violated	**Yes.** If any provision or restriction on imports can be justified under Article XX, it is permitted even though it violates other GATT rules.
	Additional or punitive tariff	***No because:*** Violated	Violated			
	Anti-dumping or countervailing duties	**No.** Under present GATT rules, even if the exporting country does not restrict its carbon emissions, the social cost of carbon cannot be labeled as dumping or a subsidy. The failure to impose a carbon tax, or otherwise internalize the full price of carbon, does not currently give other WTO members the right to impose penalty duties on imports.				Whether a trade restrictive measure is determined to be "necessary" under Article XX requires consideration of three factors:
Competitive provision applied as an extension of domestic US climate policy (measure applied both to domestic production and imports)	*Carbon tax*	***Yes if:*** Not violated		Not violated. Carbon taxes can be justified as an "internal tax" under GATT Article III:2 and thus can be adjusted at the border.		1) how trade-restrictive is the challenged measure; 2) the value of what the measure is designed to protect; 3) the contribution of the measure to the objective. However, even "necessary" trade restrictive measures should not discriminate between trading partners, or against imports by comparison with domestic goods.
	Cap-and-trade system	***Yes if:*** Not violated		Not violated. The cost of purchasing carbon credits can be justified as an "internal tax" or "other internal charge of any kind" under GATT Article III:2 and thus can be adjusted at the border.		
	Quantitative carbon regulation	***Yes if:*** Not violated		Not violated. Article III permits regulations as long as they are not discriminatory. However, there is a "product" vs. "process" issue. Even if a carbon regulation can not be adjusted at the border by imposing a tax under GATT rules, extension of the regulation to imports could be justified under the Agreement on Technical Barriers to Trade.		

a. Cells are in shadow when the referenced GATT Articles are unlikely to apply.

Source: Adapted and updated from Pauwelyn, Joost. 2007. *US Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law*. NI WP 07-22. Nicholas Institute for Environmental Policy Solutions. Duke University

Table 6 Selected environmental dispute settlement cases (GATT and WTO)

Case Detail [a]	Background	Key Panel and Appellate Body Findings
WTO DS332 (Dec. 2007) "Brazil-Retreaded Tyres" case *:Measures Affecting Imports of Retreaded Tyres* ***Complainants:*** European Communities ***Respondent***: Brazil	In June 2005, the European Communities requested consultations with Brazil on the imposition of measures that adversely affect exports of retreaded tyres from the EC to Brazil. Brazil banned the import of retreaded tyres and used tyres (two different categories). Brazil also imposed a fine of 400 BRL per tyre on the importation. However,Brazil has not imposed similar measures on retreaded tyres imported from its Mercosur partners. Brazil argued that waste tyres were breeding grounds for mosquitoes, and therefore the import ban was necessary to prevent the spread of mosquito-borne illnesses such as malaria and dengue fever.	* The Panel found Brazil's import prohibition on retreaded tyres violated GATT Article XI:1 and could not be justified under GATT Article XX(b). * The Appellate Body (AB) found that the import ban might be provisionally justified under GATT Article XX(b), which permits measures "necessary to protect human, animal, or plant life or health." * The AB has introduced a new "material" contribution test to determine when a measure will be considered as "necessary" under Article XX(b). The AB recognized that measures should make a "material" contribution (not marginal) to the objective. However, the AB has also stated that the "necessity" of measures can be assessed both qualitatively and quantitatively and the results from certain actions may only be evaluated with the benefit of time. * The AB found that the unequal application of the ban meant the measure was being applied in a discriminatory manner, contrary to the requirement of the "chapeau" of GATT Article XX.
WTO DS 58 (Nov. 1998) "US-Shrimp" case *:Import Prohibition of Certain Shrimp and Shrimp Products* ***Complainants:*** India, Malaysia, Pakistan and Thailand ***Respondent***: United States	The US Endangered Species Act of 1973 listed five species of sea turtles in US waters that are endangered. The act prohibited their "taking" in the US territorial sea or the high seas. ("Taking" means harassment, hunting, capture, or killing). Under the act, the US required that US shrimp trawlers use "turtle excluder devices" (TEDs) in their nets when fishing in areas where there is a significant likelihood of encountering sea turtles. Section 609 of US Public Law 101–102, enacted in 1989, dealt with imports. Among other provisions, shrimp harvested with technology that may adversely affect certain sea turtles may not be imported into the US — unless the harvesting nation had a regulatory program and an incidental take-rate comparable to that of US vessels, or the particular fishing area did not pose a threat to sea turtles.	* The Panel found that the US prohibition (Section 609 of US Public law 101-162) on imported shrimp and shrimp products violated GATT Article XI and can not be justified under GATT Article XX. * The AB held that although the US import ban was related to the conservation of exhaustible natural resources and covered by Article XX(g) exception, it could not be justified under Article XX because the ban constituted "arbitrary and unjustifiable" discrimination under the chapeau of Article XX.

Table 6 Selected environmental dispute settlement cases (GATT and WTO), continued

Case Detail [a]	Background	Key Panel and Appellate Body Findings
WTO DS 58-Article 21.5 (Nov. 2001) "US-Shrimp" case :Import Prohibition of Certain Shrimp and Shrimp Products ***Complainant:*** Malaysia ***Respondent:*** United States	In 2000, contesting that the United States had not implemented the recommendations of the Dispute Settlement Body (DSB), Malaysia requested that the matter be referred to the original panel pursuant to Article 21.5 of the Dispute Settlement Understanding (DSU). In particular, Malaysia considered that by not lifting the import prohibition and not taking the necessary measures to allow the importation of certain shrimp and shrimp products in an unrestrictive manner, the United States had failed to comply with the recommendations and rulings of the DSB.	* The Panel concluded that the measure adopted by the United States in order to comply with the recommendations and rulings of the DSB violated Article XI:1. * The AB found that the revised US guidelines were justified under Article XX (g), as (i) it related to the conservation of exhaustible natural resources and; (ii) it now met the conditions of the chapeau of Article XX when applied in a manner that no longer constituted a means of arbitrary discrimination as a result of (i) the serious, good faith efforts made by the United States to negotiate an international agreement and; (ii) the new measure allowing "sufficient flexibility" by requiring that other members' programs simply be "comparable in effectiveness" to the US program. In this regard, the AB rejected Malaysia's contention.
WTO DS 2 & 4 (May 1996) "US-Gasoline" case *:Standard for Reformulated and Conventional Gasoline* ***Complainants***: Brazil and Venezuela ***Respondent***: United States	Venezuela requested consultations in January 1995 and Brazil on April 1995. They asserted that US Gasoline rules under the US Clean Air Act discriminate against imported gasoline. The Act set out the rules for establishing baseline figures for gasoline sold on the US market (different methods for domestic and imported gasoline), with the purpose of regulating the composition and emission effects of gasoline to prevent air pollution. Venezuela and Brazil claimed that the stricter rules did not meet the "national treatment" standard of GATT Article III and clean air does not qualify as an "exhaustible natural resource" within the meaning of Article XX(g).	* The Panel found that the measure treated imported gasoline "less favorably" than domestic gasoline in violation of Article III:4. In particular, under the regulation, importers had to adapt to an average standard (i.e., the "statutory baseline"), that had no connection to the particular gasoline imported, while refiners of domestic gasoline had only to meet a standard linked to their own production in 1990. * In respect of the US defense under Article XX(g), the AB modified the Panel's reasoning and found that the measure was "related to" the "conservation of exhaustible natural resources," and thus fell within the scope of Article XX(g). However, the measure was still not justified by Article XX because its discriminatory application constituted "unjustifiable discrimination" and a "disguised restriction on international trade" under the chapeau of Article XX.

Table 6 Selected environmental dispute settlement cases (GATT and WTO), continued

Case Detail [a]	Background	Key Panel and Appellate Body Findings
GATT DS 31/R **"US-Automobiles" case** *:Taxes on automobiles* ***Complainant***: European Union ***Respondent***: United States	Three US measures on automobiles were under examination: the luxury tax on automobiles ("luxury tax"), the gas guzzler tax on automobiles ("gas guzzler"), and the Corporate Average Fuel Economy regulation ("CAFE"). The European Community complained that these measures were inconsistent with GATT Article III and could not be justified under GATT Article XX(g) or (d). The US argued that these measures were consistent with the GATT.	* The Panel found that both the luxury tax (which applied to cars sold for over $30,000) and the gas guzzler tax (which applied to the sale of automobiles attaining less than 22.5 miles per gallon) were consistent with Article III:2. However, the Panel found that the CAFE regulation was inconsistent with Article III:4 because the separate foreign fleet accounting system discriminated against foreign cars, and the fleet averaging differentiated between imported and domestic cars on the basis of factors relating to control or ownership of producers or importers, rather than on the basis of factors directly related to the products as such. Similarly, the Panel found that separate foreign fleet accounting was not justified under Article XX(g). * The Panel Report was circulated in 1994 (during the GATT-1947 era) but not adopted. The conclusion of the Uruguay Round and the establishment of the WTO in 1995 rendered prior GATT panel reports moot. The European Union did not renew the case under the auspices of the WTO Dispute Settlement Mechanism.
GATT DS 29/R **"US-Tuna" Case** also known as "Son of Tuna-Dolphin" case *: Restriction on imports of tuna* ***Complainants***: European Economic Community and the Netherlands ***Respondent***: United States	The EEC and the Netherlands complained that both the primary and the intermediary nation embargoes on imported tuna, enforced pursuant to the Marine Mammal Protection Act (see the "Tuna-Dolphin" case below), did not fall under GATT Article III, were inconsistent with GATT Article XI:1 and were not covered by any of the exceptions of GATT Article XX. The US argued that the intermediary nation embargo was consistent with GATT since it was covered by Article XX, paragraphs (g), (b) and (d), and that the primary nation embargo on offending tuna did not nullify or impair any benefits accruing to the EC or the Netherlands since it did not apply to these countries.	* The Panel found that neither the primary nor the intermediary nation embargo was covered under Article III, that both were contrary to Article XI:1 and not covered by the exceptions in Article XX (b), (g) or (d). * The Panel Report was circulated in 1994 (during the GATT-1947 era), but not adopted.

Table 6 Selected environmental dispute settlement cases (GATT and WTO), continued

Case Detail [a]	Background	Key Panel and Appellate Body Findings
GATT DS 21/R **"US-Tuna" Case** also known as "Tuna-Dolphin" case *:Restriction on Imports of tuna* ***Complainant***: Mexico ***Respondent***: United States	The US Marine Mammal Protection Act sets dolphin protection standards for the domestic American fishing fleet and for countries whose fishing boats catch yellowfin tuna in that part of the Pacific Ocean. If a country exporting tuna to the United States cannot prove to US authorities that it meets the dolphin protection standards set out in US law, the US government must embargo all imports of tuna from that country. Mexico was the exporting country concerned, and its exports of tuna to the US were banned. Mexico complained in 1991 under the GATT dispute settlement procedure. The embargo also applies to "intermediary" countries handling the tuna en route from Mexico to the United States. Often the tuna is processed and canned in one of these countries. In this dispute, the "intermediary" countries facing the embargo were Costa Rica, Italy, Japan, Spain, France, the Netherlands Antilles, and the United Kingdom. Others, including Canada, Colombia, the Republic of Korea, and members of the Association of Southeast Asian Nations, were also named as "intermediaries".	* The Panel found that the import prohibitions under the direct and intermediary embargoes did not constitute internal regulations within the meaning of Article III, were inconsistent with Article XI:1 and were not justified by Article XX paragraphs (b) and (g). Moreover, the intermediary embargo was not justified under either Article XX (b), (d) or (g). But the US could apply its regulations with respect to the quality of tuna imported. This has become known as the "product" versus "process" distinction. "Process" standards violate the GATT; "product" standards do not. * The Panel found that GATT rules did not allow one country to take trade action for the purpose of attempting to enforce its own domestic laws in another country — even to protect animal health or exhaustible natural resources. The term used here is "extra-territoriality". * The Panel Report was circulated in 1991 (during the GATT-1947 era), but not adopted.
GATT DS 10/R (Nov. 1990) **"Thailand-Cigarettes" Case** *:Restrictions on the Importation of and Internal Taxes on Cigarettes* ***Complainant***: United States ***Respondent***: Thailand	Under its 1966 Tobacco Act, Thailand prohibited the importation of cigarettes and other tobacco preparations, but authorized the sale of domestic cigarettes; moreover, cigarettes were subject to an excise tax, a business tax and a municipal tax. The US complained that the import restrictions were inconsistent with GATT Article XI:1, and argued that they were justified neither by Article XI:2(c), nor by Article XX(b). The US also argued that the internal taxes were inconsistent with GATT Article III:2.	* The Panel found that the import restrictions were inconsistent with Article XI:1 and not justified under Article X1:2(c). It further concluded that the import restrictions were not "necessary" within the meaning of Article XX(b). The internal taxes were found to be consistent with Article III:2.

Table 6 Selected environmental dispute settlement cases (GATT and WTO), continued

Case Detail [a]	Background	Key Panel and Appellate Body Findings
GATT BISD 35S/98 (Mar. 1988) "Canada-Salmon and Herring" Case *:Measures Affecting Exports of Unprocessed Herring and Salmon* ***Complainant***: United States ***Respondent***: Canada	Under the 1976 Canadian Fisheries Act, Canada maintained regulations prohibiting the exportation of certain unprocessed herring and salmon. The US complained that these measures were inconsistent with GATT Article XI. Canada argued that these export restrictions were part of a system of fishery resource management aimed at preserving fish stocks, and therefore were justified under Article XX(g).	* The Panel found that the measures maintained by Canada were contrary to Article XI:1 and were not justified by either Article XI:2(b) or by Article XX(g).
GATT BISD 29S/91 (Feb. 1982) "US-Canadian Tuna" Case *:Prohibition of Imports of Tuna and Tuna Products from Canada* ***Complainant***: Canada ***Respondent***: United States	The US implemented an import prohibition on Canadian tuna after Canada seized 19 fishing vessels and arrested US fishermen fishing for albacore tuna, without authorization from the Canadian government, in waters considered by Canada to be under its jurisdiction. The US did not recognize this jurisdiction and introduced the import prohibition to retaliate under the Fishery Conservation and Management Act.	* The Panel found that the US import prohibition was contrary to Article XI:1, and was not justified either under Article XI:2 or under Article XX(g).

a. The date cited in parenthesis is the month and year when either the panel report or the appellate report was adopted.

Source : WTO website (http://www.wto.org/english/tratop_e/envir_e/edis00_e.htm, accessed on January 10, 2008); GATT digital library -Stanford Univ. (http://gatt.stanford.edu/page/home, accessed on Nov. 7, 2007); WTO, "GATT/WTO dispute settlement practice relating to GATT Article XX, paragraphs (b),(d) and (g)", March 8, 2002.

Mr. BOUCHER. Thank you very much, Mr. Hufbauer. We are going to recess the Subcommittee at this point and return following the last of the three recorded votes. I appreciate the patience of our witnesses, and we will be back with you in approximately 25 minutes.

With that, the Subcommittee stands in recess.

[Recess.]

Mr. BOUCHER. We would ask our witnesses if they could resume their seats at the table.

When we recessed, we had completed the statements of witnesses through Mr. Hufbauer, and Mr. Wenk, we have yet to receive your statement. So at this time, we will be happy to hear from you.

STATEMENT OF CHRISTOPHER WENK, SENIOR DIRECTOR, INTERNATIONAL POLICY, U.S. CHAMBER OF COMMERCE

Mr. WENK. Thank you very much, Chairman Boucher, Ranking Member Upton, and members of the Subcommittee for inviting the Chamber of Commerce to testify today on this very important issue.

My name is Christopher Wenk, and I serve as the Senior Director of International Policy at the Chamber, the world's largest business federation. My background is in trade policy. Rather than the science of climate change and the state of research and development, I will confine my testimony to the international aspects of this issue.

Without question, there are serious trade implications to the current debate over the various climate change proposals on the table that should give everybody pause. Let us consider the following facts. America's international trade in goods and services accounts for roughly 27 percent of our country's GDP. Nationwide our exports directly support 12 million good-paying jobs and indirectly support millions of other jobs. More than 57 million Americans are employed by businesses that engage in international trade, and the benefits reach every state in our Nation. The combined effects of trade agreements over the past half-century have raised the annual income of an American household by $10,000. In 2007, the United States exported a record $1.6 trillion in goods and services and continues to be the world's largest exporter. These facts cannot be overlooked. Further, one should not also overlook the fact that the climate change discussion involves trading relationships that the United States has with countries around the world.

A key focus of today's hearing is engaging developing countries on climate change. The Chamber believes that neither least-developed nor developing countries can be forced to comply with the domestic greenhouse gas emission regulatory regime without possible significant risk to not only U.S. exporters and workers but also to the economies of developing countries.

For example, S. 2191, legislation to cap greenhouse gas emissions sponsored by Senators Lieberman and Warner, exempts countries that are de minimus emitters from having to buy import allowances. However, several developing countries besides China and India could possibly be considered significant emitters. These countries include Nigeria, Ecuador, Indonesia, Malaysia, and South Africa to name a few. These countries also export to the United

States raw and intermediate products like oil and minerals that require them to purchase import allowances. One could argue that the imposition of the import allowance requirement on these countries would have a negative impact on their economic development. There is also the question of whether climate change legislation would make the United States vulnerable to a challenge under the WTO or NAFTA, for that matter. As noted on page 13 of the white paper, there is a general expectation that a WTO challenge is likely regardless of what approach Congress takes. However, I think it is safe to assume that we could screw up trading relationships around the world before we even got to a possible WTO dispute settlement proceeding. In this time of economic uncertainty, the Chamber urges Congress to not risk provoking a trade war with countries like China or India where the United States exported almost $83 billion worth of goods combined in 2007. Most recently, Brazil scored a big victory at the WTO over America's cotton subsidies. Brazil has reserved the right to impose annual sanctions of up to $4 billion on the United States. If the United States fails to comply with this ruling, Brazil has said that it would target American goods as well as trademarks, patents, and commercial services for retaliation.

The bottom line is that there is no guarantee that our trading partners will not retaliate against us in the WTO or otherwise based on actions by Congress. Further, according to the U.S. Commerce Department, in 2007, the United States imported almost $113 billion in energy products like oil, gasoline, and natural gas from Canada and Mexico. Wouldn't border measures require our two largest trading partners to buy massive amounts of import allowances? Just imagine the impact that would have on the economies of these two important allies and possibly on our NAFTA obligations.

Finally, the Chamber believes that trade policy can contribute in a meaningful way in efforts to reduce climate change through trade liberalization and not trade restrictions. Last fall the United States and the European Union submitted a proposal as part of the ongoing Doha round of WTO negotiations to increase global trade in and the use of environmental goods and services. It would place priority action on technologies directly linked to addressing climate change and energy security. Significantly, WTO members currently charge duties as high as 70 percent on certain environmental goods, impeding access to and use of these important technologies.

Once again, the Chamber is grateful for the opportunity to provide testimony today. However, I believe that this hearing today will raise many more questions than it will answer. I would also urge the leadership of this Subcommittee and the full Energy and Commerce Committee to work with your colleagues on the Ways and Means Committee which has jurisdiction over international trade issues to explore the issues not only that were raised in the white paper but also addressed at this hearing.

Thank you very much.

[The prepared statement of Mr. Wenk follows:]

United States House of Representatives
Committee on Energy and Commerce
Subcommittee on Energy and Air Quality

Hearing on "Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries"

Wednesday, March 5, 2008
10:30 a.m.
2322 Rayburn House Office Building

Testimony by
Christopher Wenk
Senior Director, International Policy
U.S. Chamber of Commerce

Thank you Chairman Boucher, Ranking Member Upton and the rest of the members of the Subcommittee on Energy and Air Quality. I am Christopher Wenk, Senior Director of International Policy for the U.S. Chamber of Commerce, the world's largest business federation representing more than three million businesses and organizations of every size, sector and region. I appreciate this opportunity to share the Chamber's views on Competitiveness Concerns and Prospects for Engaging Developing Countries related to greenhouse gas emissions legislation.

It is important to note that international cooperation to develop and implement technologies that reduce greenhouse gas emissions is the most important factor to consider in efforts to slow the growth of and ultimately reduce greenhouse gas emissions.

As the Chamber described in both our March 19 letter to Chairmen Dingell and Boucher and our April 16 letter to Ranking Member Barton and then-Ranking Member Hastert, a combination of technology research and development to reduce greenhouse gas emissions and international cooperation to implement new technologies among developed and developing nations is the best — and only — policy approach to address greenhouse gas emissions.

My expertise is in trade policy. Rather than the science of climate change and the state of research and development, I will confine my testimony to the

international trade impacts of the strategies, tactics, and proposals presented for discussion in the "Climate Change Legislation Design White Paper Competitiveness Concerns/Engaging Developing Countries (White Paper)."

In short, the Chamber believes the White Paper demonstrates the limits on what Congress or the Bush administration can do to compel America's trading partners to comply with a U.S.-only plan to address greenhouse gas emissions.

Further, the Chamber strongly believes that international trade is vital to the economic interests of the United States and plays a driving role in the expansion of economic opportunities for American workers, farmers, and businesses. Moreover, the Chamber believes that domestic measures to force trading partners to share this domestic goal will not only have a negative impact on U.S. competitiveness, but also could have a large economic impact on several developing countries.

The White Paper touches on three alternatives to incent or compel developing nations to comply with a domestic greenhouse gas regulatory regime in an effort to, as the White Paper asks on page 14, "limit their GHG emissions and simultaneously protect... U.S. industry in global trade markets[.]"

The Chamber believes that trade policy tools cannot be used successfully to force international partners to meet domestic objectives. In fact, the ideas presented in the White Paper may be perceived by our trading partners as barriers to trade. International trade is an important component of the U.S. economy, and a domestic greenhouse gas emissions trading scheme that forces international trading partners to comply will have significant repercussions for U.S. firms. Simply put, the Chamber strongly supports free trade. Domestic environmental policy that forces America's trading partners to comply with U.S. requirements and protect our domestic industry will face a significant backlash for American manufacturers and businesses.

Trade, Growth, and Prosperity

Over the years, the Chamber has helped lead the business community's effort to make the case for initiatives to expand trade, including global trade negotiating rounds under the purview of the World Trade Organization (WTO) and its predecessor, the General Agreement on Tariffs and Trade, as well as bilateral and regional free trade agreements (FTAs). The Chamber does so because U.S. businesses have the expertise and resources to compete globally — if they are allowed to do so on equal terms with our competitors.

The facts show that while some are hurt — and should be helped — the overwhelming majority of Americans derive great benefits from international trade

and investment. America's international trade in goods and services accounts for roughly 27% of the country's GDP. As the Office of the U.S. Trade Representative (USTR) has pointed out, the combined effects of the North American Free Trade Agreement (NAFTA) and the Uruguay Round trade agreement that created the WTO have increased U.S. national income by $40 billion to $60 billion a year. In addition, the lower prices for imported goods generated by these two agreements mean that the average American family of four has gained between $1,000 and $1,300 annually in spending power — an impressive tax cut, indeed.

Nationwide, our exports directly support 12 million good-paying jobs and indirectly support millions of other jobs. Imports keep inflation low and expand consumer choice and quality. More than 57 million Americans are employed by businesses that engage in international trade, and the benefits reach every state in our nation. A fact commonly overlooked is that a staggering 97% of U.S. exporters are small or medium-sized companies, which create three out of four new jobs. These companies depend on open foreign markets for growth and are the backbone of the U.S. economy.

When Trade Promotion Authority (TPA) lapsed in 1994, the international trade agenda lost momentum. The Uruguay Round was implemented, but no new round of global trade negotiations was launched as the 1990s wore on. Moreover, the United States was compelled to sit on the sidelines while other countries and

trade blocs negotiated numerous preferential trade agreements that put American companies at a competitive disadvantage.

As the Chamber pointed out during its 2001-2002 advocacy campaign for approval of TPA, the United States was party to just three of the roughly 150 Free Trade Agreements (FTAs) in force between nations at that time. Since then, the United States has approved FTAs with an additional dozen countries, and they are bringing substantial economic benefits. Today, just under half (43%) of American exports go to markets where they enter duty free thanks to these FTAs. Only a third of U.S. exports enjoyed this advantage back in 1994, the year NAFTA came into force. With sales to our newest FTA partners growing twice as fast as U.S. export growth to the rest of the world; it's no surprise that U.S. exporters are enjoying robust growth.

The Chamber was very pleased that Congress passed the U.S.-Peru Trade Promotion Agreement with strong-bi-partisan support last fall. However, we would also like Congress to consider the pending trade agreements with Colombia, Panama and South Korea before the end of this year.

Climate Change Through Trade Liberalization, Not Trade Restrictions

Without question, there are serious trade implications to the current debate over the various climate change proposals on the table that should give everyone pause. As noted on page 13 of the White Paper, "there is a general expectation, that a WTO (World Trade Organization) challenge is likely regardless of what approach Congress takes."

In this time of economic uncertainty, the Chamber urges Congress to not risk provoking a trade war with countries like China and India, where the U.S. exported almost $83 billion worth of goods combined in 2007. Otherwise, the United States could face retaliation on our exports as was the case when the WTO ruled against the Foreign Sales Corporation (FSC)/Extraterritorial Income (ETI) legislation and the Byrd amendment where billions of dollars of U.S. exports, on a broad range of products, were subject to retaliation.

U.S. agriculture policy has been increasingly scrutinized by the WTO. Most recently, Brazil scored a huge victory at the WTO over America's cotton subsidies. Brazil has reserved the right to impose annual sanctions of up to $4 billion on the United States. If the U.S. fails to comply with the WTO ruling, Brazil has said it would target American goods, as well as trademarks, patents and commercial services,

for retaliation. One of the Chamber's key messages today is that there is no guarantee that our trading partners will not retaliate against us in the WTO, or otherwise, based on actions by Congress on issues such as agriculture policy, trade policy, tax policy or, more importantly for today's hearing, environmental policy.

Further, the Chamber also believes that trade policy can contribute in a meaningful way to efforts on climate change through trade liberalization and not trade restrictions. For example, last fall, the United States and the European Union submitted a forward leaning proposal as part of the on going Doha Round of WTO negotiations to increase global trade in and use of environmental goods and services. It would place priority action on technologies directly linked to addressing climate change and energy security.

According to USTR, the U.S.-EU initiative proposes to eliminate tariff and non-tariff barriers to environmental technologies and services through a two-tiered approach: 1) first-ever WTO agreement on worldwide elimination of tariffs on a specific list of climate friendly technologies recently identified by the World Bank; and 2) higher level of commitment on the part of developed and the most advanced developing countries to eliminate barriers to trade across a broader range of other environmental technologies and an array of environment-friendly services.

Significantly, WTO Members currently charge duties as high as 70% on certain environmental goods, impeding access to and use of these important

technologies. A recent World Bank study on climate and clean energy technologies suggests that by removing tariffs and non-tariff barriers to key technologies, trade could increase by an additional 7-14% annually. A corresponding increase in use of such technologies and services could contribute importantly to global efforts to address climate change and energy security.

The World Bank report also concludes that liberalizing trade in these technologies could facilitate more high-end technology investment. Not surprisingly, countries that trade more environmental goods either have less pollution or consume energy more efficiently, or both, according to separate data on environmental indicators available from the World Bank and World Resources Institute.

Climate Change and Developing Countries

Question 3 in the White Paper asks how closely the link in timing should be for a domestic cap-and-trade regime and "policies to induce developing countries to limit their GHG emissions[.]"

The timing question presupposes that Congress can, in fact, implement policies to induce developing countries to limit greenhouse gas emissions. Timing is not the critical question. Rather, the fundamental question is whether the Congress can— through trade policy— force developing nations to accept domestic U.S.

environmental policy goals. The Chamber believes that Congress cannot force foreign governments to act— indeed one of the major failures of the 1997 Kyoto Protocol was its failure to include binding emissions caps on developing nations— and that such efforts by Congress would have significant impacts on U.S. trade.

Question 4 in the White Paper asks whether there should be a distinction between "least developed" and "developing" countries.

From a trade perspective, least developed and developing nations are treated differently. From an energy and environment side, least developed and developing nations could be treated differently. However, neither least developed nor developing nations can be forced to comply with a domestic greenhouse gas emission regulatory regime without possible significant risks to not only U.S. exporters, but also to the economies of developing countries.

For example, S. 2191 – legislation to cap greenhouse gas emissions sponsored by Sen. Lieberman and Warner – exempts countries that are *de minimus* emitters from having to buy import allowances. However, several developing countries besides China and India could potentially be considered significant emitters. These countries include Nigeria, Ecuador, Indonesia, Malaysia, and South Africa to name a few. These countries also export to the United States raw and intermediate products like oil and minerals that would require them to purchase import allowances. What impact

would the imposition of the import allowance requirement have on the economies of these countries and their economic development prospects?

Conclusion

In conclusion, there are serious trade implications to the climate change proposals before you that should not be overlooked. During these times of economic uncertainty, U.S. exporters are depending on Congress to carefully weigh legislative proposals on climate change and not steam ahead with legislation that could negatively impact U.S. exports or competitiveness.

Question 6 in the White Paper looks at a post-Kyoto agreement under the United Nations Framework Conventions on Climate Change. The answer for what the next agreement should look like is the same as the answer for what Kyoto should have looked like; any international agreement on greenhouse gas emissions must incorporate developed and developing nations. Underscoring this point, China has overtaken the United States as the world's largest greenhouse gas emitter.

Once again, the Chamber is grateful to the Subcommittee for asking important questions about the international and competitiveness impacts of domestic climate change legislation. However, I believe that the hearing today will raise many more questions than it will resolve. I would also encourage the leadership of this

Subcommittee and the full Energy and Commerce Committee to work with your colleagues on Ways and Means – the committee of jurisdiction over international trade issues – to explore the issues raised in the White Paper and this hearing.

I would also reiterate that the Chamber encourages adherence to the following six core principles as a comprehensive structure to manage climate change in a way that recognizes that governmental action should protect our environment, quality of life, and national security:

(1) Preservation of American jobs and the competitiveness of U.S. industry;

(2) Promotion of the accelerated development and deployment of greenhouse gas reduction technology;

(3) Reduction of barriers to the development of climate-friendly energy sources;

(4) Maximum flexibility;

(5) International, economy-wide solution with minimal impact on industry and regional economies, which includes developing nations; and

(6) Promotion of energy conservation and efficiency.

Finally, the Chamber believes that trade expansion is an essential ingredient in any recipe for economic success in the 21st century. If U.S. companies, workers, and consumers are to thrive amidst rising competition, new trade agreements such as the Doha Round of WTO negotiations and the various FTAs cited above will be critical. In the end, U.S. business is quite capable of competing and winning against anyone in the world when markets are open and the playing field is level.

Once again, the Chamber greatly appreciates the opportunity to testify today. The Chamber stands ready to work with you on these and other challenges in the year ahead. Thank you very much.

Mr. BOUCHER. Thank you very much, Mr. Wenk. Let me recognize myself for a round of questions, and I will address my first question jointly to Mr. Morris and Mr. Slattery.

You are the authors or the co-authors of the two competing leading proposals that we have before us for protecting American industry and assuring the participation of developing countries when greenhouse gas controls are adopted in this country, and what I would like to ask you to do is to put on the table before you both of your proposals and critique those, one against the other, against these three questions and tell me which of your proposals in your opinion is superior on each of these three points. So I guess what I am asking you to do is advocate for your respective position on these three points, but to some extent, critique the other party's proposal as well. This is not an invitation for a negative campaign, but you can choose to be a little bit negative if you desire.

So the three questions are these. Looking at your two proposals together, which of them is the most likely to achieve the following: One, reducing greenhouse gas emissions in developing countries; two, protecting the American industry that is exposed to trade at a time when we have carbon dioxide constraints domestically in the United States; and number three, passing muster under WTO and potentially other trade agreements to which the United States is a party. And so that is the challenge, and we will look forward to your answers. Mr. Morris, would you like to go first?

Mr. MORRIS. Certainly. Thank you, Mr. Chairman. Let me try to frame as best I can what I think are some differences, and I must admit that I do not know that we are that widely apart on this issue. I think we are both trying as constructively as we can to come up with a program that would satisfy the issue at hand. It would seem to me, however, if you are looking at the overall reduction of greenhouse gases in a developing country that the IBEW-AEP proposal surely would be more attuned to that because it is predicated on your opening comments about a cap-and-trade program. If you use carbon intensity or form of production as your measure, you would be lowering carbon output by that ton of product, whatever it is; but at the same time, if it is not a hard cap that steps down over time, you would be at best lowering then maybe flattening out. I do not know that you would ever get on the other side of the curve.

Mr. BOUCHER. And you are suggesting that Mr. Slattery's proposal does not contain the hard cap but instead——

Mr. MORRIS. I believe that to be the case.

Mr. BOUCHER [continuing]. Is a carbon intensity measurement?

Mr. MORRIS. Exactly. At least that is as I heard the comments and have had an opportunity to look at the program.

As to your second undertaking, as I tried to say in my opening comment, the IBEW-AEP proposal is really directed at a very limited group of carbon-intensive manufacturing processes in a definable group of countries with which one would deal and have bilateral discussions and negotiations with the intent of having them join us in a constructive, opportunistic way or if not, then actually have them join in a protective way in that before their manufactured product could actually be imported into this country, they

would have to pay for the International Reserve Allowance, which would put us on what I think is an absolutely equal footing.

So wrapped in the second question in our answer, I think it probably more appropriately addresses itself to the multitude where clearly Congressman Slattery's approach is very limited as to the steel industry that he is here to represent. Rest assured, the last thing that IBEW or American Electric Power want to do is have a negative impact on the steel industries. They are big companies of ours, customers of ours, big employers in this country, a very important business for this country to have.

As to your last question, as again I mentioned in my opening comments, we took a great deal of time, energy, and effort to try to create what we thought would be a WTO-compliant approach to this issue. I surely agree with the professor when he said it would be folly to believe that it will not be challenged. We believe that it will be. To the extent that the WTO in Geneva in fact offers opinions to questions asked before you bring in front of them a challenge, that is a great idea. There is no unending pride of authorship of what we have done. If someone can come forward and say, we think IBEW-AEP is missing WTO-compliance at this particular point, I would hope the Committee would change it as they implement it. We are impressed and pleased that both Lieberman, Warner, and—had included that concept, and it will be developed over time; and clearly, we believe ours is a superior proposal and we would hope that you include it in the House materials as well.

Mr. BOUCHER. Thank you, Mr. Morris. I think you would make an excellent candidate, by the way. You couched your negative remarks in a positive context just the way a good candidate should.

Mr. Slattery?

Mr. SLATTERY. Mr. Chairman, first of all, your question contemplates that there is a conflict between the AEP concept and the performance-standard concept. And that is not necessarily the truth. I mean, that is not the fact. You could do the AEP concept, you could also do performance-standards we envision. So there is not necessarily an inherent conflict. With respect to which——

Mr. BOUCHER. Let me just interject. If you are suggesting that we can meld these two proposals and take the best aspects of both, you might elaborate on that potential and tell us the mechanics of how that would work and which particular pieces of the two proposals should be selected——

Mr. SLATTERY. Sure.

Mr. BOUCHER [continuing]. For that unified approach as you answer the question.

Mr. SLATTERY. OK. First of all, the only specific AEP proposal that I am aware of that has been out there is the language contained in Senate 2191, and there are specific provisions in that particular proposal that in our judgment are terribly inadequate and very specifically the whole notion of having a base year established in the 2012, 2014 time period in effect tells the Chinese, do everything you can to ramp up your emissions between now and 2014. Be as dirty as possible because after all, in 2014, that will be the base year from which future emission reductions will be computed. And then to suggest the Chinese have nothing to do, or others, not just the Chinese, but other global competitors do not have to do

anything until 2020 as the Senate language contemplates in our judgment is really unworkable and is inefficient and is terribly inadequate. So we have some very serious base year issues.

Now, beyond that, the other thing that troubles us, and I trust that you can understand our reticence on this point, and that is given the Administration's current reluctance to currently address the currency issues with countries like China, for example, we are in this situation where when we look at the AEP proposal, for it to be effective will require in the future an administration to aggressively assert to the Chinese or others that your climate change and climate legislation is inadequate. It is not comparable to ours. That is going to be a tough call for some future administration to make. And then after making that determination, we are into this question of what kind of allowances then are going to be required of the Chinese, for example, when they enter our market? Now, I would ask you, who is going to buy those allowances for a Chinese competitor of a U.S. steelmaker, for example? I can show you that, for example, a company like Shanghai Bow Steel, state-owned. It is a company as large as the largest U.S.-based companies. It is larger than Nucor. It is larger than U.S. Steel. And they are state-owned. There are several other Chinese companies that are state-owned. So they come to our marketplace with allowances, presumably provided by their government. Today's news as was just handed to me when I walked in here today, China has ruled out increases in state set gas, power, and oil prices. They have ruled out any market adjustment for their cost of energy. These are our competitors.

As you can see, you have state-owned energy sources, state-owned steel makers, competing directly with U.S. industry.

Mr. BOUCHER. OK.

Mr. SLATTERY. And how is that going to unfold? So let me also respond to the question about——

Mr. BOUCHER. Very briefly because our time has expired.

Mr. SLATTERY. OK. As far as the WTO issue is concerned, bottom line is, we are both I think in the same position on this that you will find trade lawyers on both sides saying that the proposals are permissible under GATT, and we strongly believe that. We have done a lot of legal analysis on it, and we believe that the proposal that we are talking about is permissible.

So the last point I want to make is that with the performance standard, this should not be viewed as some sort of border measure necessarily, and it should not be viewed as a protectionist type measure. We are not seeking protection. We are seeking equal treatment. We are saying to domestic producers, we are saying to foreign competitors, if you want to sell into this market, produce a product that meets a certain standard, a certain performance standard with respect to your carbon intensity. That is similar to what we say with appliance energy standards, it is similar to what we say with respect to toy manufacturers in China that want to ship products into the United States. We do not permit them to ship products here with lead paint. They do it, but it is against our regulations. So my point——

Mr. BOUCHER. I thank you, Mr. Slattery, and thank you, Mr. Morris. I will have some follow-up questions as I know other mem-

bers will on precisely this set of issues. And let me announce that we are going to have a second round of questions so that we can get to some of those matters, and yes, we are going to be here a little while.

Mr. Upton is recognized for 5 minutes.

Mr. UPTON. Well, thank you, Mr. Chairman. I just want to say that I appreciate everyone's testimony. This morning I received a letter, and I am going to ask unanimous consent to put it into the record.

Mr. BOUCHER. Without objection.

Mr. UPTON. I have actually not studied it yet. I just skimmed it briefly, but it is from Susan Schwab, our U.S. Trade Rep, Executive Office of the President, so it was cleared obviously by the Administration, and she says this just to lift a sentence or two from this 3-page letter, "We have serious concerns with some ideas that are currently circulating, particularly the enthusiasm for using import provisions. It might be perceived as unilateral trade restrictions directed against other countries to push them to move rapidly to reduce their emissions of greenhouse gases. We believe this approach could be a blunt and imprecise instrument of fear, rather than one of persuasion that will take us down a dangerous path and adversely affect U.S. manufacturers, farmers, and consumers. It is no accident that trade ministers in Bali unanimously agreed that trade restrictions run the risk of tit-for-tat retaliation and even an all-out trade war where no one wins and everyone loses. My trade counterpart in Europe, Commissioner Peter Mendelssohn, strongly cautioned against including trade restrictions in the European Commission's recent package of proposals setting out the second phase of emissions cap-and-trade system, resulting in the omission of these measures." To me, that seems a pretty blunt warning that in fact trying to use the WTO or trying to influence the WTO. I think all of us agree that we should not proceed unless China and India are on board, and there are just enormous questions as to how that happens. But the idea that maybe the WTO is our escape valve or our safety valve to make sure that they are on board, at least does not seem like it fits with what the Administration is saying based on this letter, again, dated yesterday but I just received it this morning or what happened with the—or Bali, and Noel will have the report from the meeting in Hawaii at some point that happened just a couple weeks ago.

What is your reaction to this? I have not seen it and you have not seen it, either. What are your thoughts as it relates to this passage?

Mr. SLATTERY. Well, if I could just respond briefly, the bottom line is——

Mr. UPTON. It is like it undercuts any argument here.

Mr. SLATTERY. Yes, well, it is extremely difficult for our industry to understand how in the world you can characterize a measure that we are proposing as being a trade barrier if we are saying to the domestic producers and international competitors that you must meet a certain standard. We do not see that as a trade barrier. We are not desiring it to be a trade barrier. We believe that to put that in place, it is going to hopefully encourage a race to the top, so to speak, a race to better performance for steel makers and

other energy-intensive manufacturers all over the world. So as long as we are committed to equal treatment, which we are, it is hard for us to see that as being a trade barrier.

Mr. UPTON. Well, you made the point in your testimony of the real positives that the U.S. industry has made.

Mr. SLATTERY. Yes.

Mr. UPTON. 1.2 tons of carbon emitted for every ton of steel produced.

Mr. SLATTERY. That is correct. On average.

Mr. UPTON. On average. And in China, it is about, you thought, about 2½ but it could be as much as 4½ tons of carbon produced for every ton of steel produced. So there is quite a difference in terms of efficiency.

So you could look at something like, well, both countries are going to reduce by 80 percent. Fifty percent, let us say. Just pull a number out of the air. That would mean that they would go to 2½ tons and we would go to .6 tons of carbon, still quite a wide discrepancy. But then what if the Chinese say, or the Indians, they decide that they would go at a per-capita basis based on the populations of the two countries. That is how they want to comply. So they have a whole different standard, and under that, I think we are about 22 times worse at 1 ton per carbon emitted for 1.2 tons versus even 2½ or 3 tons that they have now. So I mean, we are not in the same playbook.

Mr. SLATTERY. Well, if I could, let us look at what is going on out in the real marketplace right now, the Chinese and others, but let us look at China. They are bringing on line every 2 years a steel production capacity that exceeds the current U.S. capacity.

Mr. UPTON. Right.

Mr. SLATTERY. This whole notion of saying to those new entities out there coming into the marketplace, in a global economy, competing with us for global capital, competing with us for global technology. This is not a mom-and-pop, backwoods operation. We are talking state-of-the art steel production capabilities. And the question is, what can we do here to encourage them as they bring all this capacity on line to bring it on line with clean, good, new state-of-the art technology; and we contend the best way to do that is to say to them, if you want access to our market, we are going to require a carbon-intensity standard here, and the technology is available with your new operations to employ that in the marketplace right now. And if they do that, which we expect them to do by the way, then no problem.

Mr. UPTON. I know I have exceeded my time, so I am going to follow up on the second round, but I want to ask the same type question as it relates to coal. Two plants, again, they are expanding tremendously, the Chinese. My sense is they have nowhere near the type of emissions that we have in this country, so again, they are running away at breakneck speed compared to what we have already.

I yield back, and I look forward to the second round.

Mr. BOUCHER. Thank you very much, Mr. Upton. The gentleman from Louisiana, Mr. Melancon, is recognized for 5 minutes.

Mr. MELANCON. I would like to pass at this time, Mr. Chairman.

Mr. BOUCHER. Thank you, Mr. Melancon. The gentlelady from Wisconsin. Ms. Baldwin is recognized for 5 minutes.

Ms. BALDWIN. Thank you, Mr. Chairman. The proposals presented today generally focus on ways to ensure American companies do not go overseas or go out of business, both of which are extremely important. But there is the other prong to this discussion as we develop this legislation over the weeks and months to come and that is encouraging developing nations' emerging economies to decrease their greenhouse gas emissions.

So I am sort of wanting to tease out a little bit more of whether the proposals presented here today are going to have a real difference in China or India or other nations' emission levels, and I guess I want to start with Mr. Doniger for your response to that.

Mr. DONIGER. Well, thank you, Congresswoman. The agreement in Bali is really a breakthrough because as I said the developing countries moved off their position that they are not willing to take on any new actions or commitments. What they are saying is we need to see the industrial countries—which have had the longest run on putting carbon in the atmosphere and which have the highest per capita emissions and have a lot of technological and economic capabilities—take responsibility for our emissions. That is why I think the cap-and-trade legislation that you are working on, to show that we are ready to take our place in this, is so important. That is one of the key elements of getting an international agreement. We have to have a foreign policy which puts global warming at the top of the list, not at the bottom of the list, so that it becomes important in the overall picture of things the United States wants to get from China and India, Mexico, Africa, South Africa, Brazil. It has to be important. It has not been important. And we have to, in my opinion, be willing to meet their needs for technological assistance in certain areas. By all means, they have lots of resources. But they can't be expected to entirely self-finance the big jump to clean technologies that we want to be taking here and we want them to be taking. In the Bali agreement the Administration agreed to three topics to discuss in the way of financing. One is clean technology deployment. The second is help with countries whose emissions are primarily in deforestation, to cut that deforestation. And the third area is in countries such as in Africa and some of the small island states, which are being overwhelmed by impacts, to help them cope with the impacts. It will not take a lot of money. We can build into the cap-and-trade allocation system funding that would help on a sustainable, stable way to create those incentives for cooperation with other countries.

If you do those things, then the trade measure will become a last resort for the recalcitrant. But I think we do not have recalcitrants across the board. We have countries which recognize global warming as a severe problem for them as well as us, and they are indicating that if we act, they will act, too.

Ms. BALDWIN. In follow up, in your testimony both on page 7 in your written testimony and also as you were here speaking earlier, described some of the actions that China is taking. And you know, it is something clearly not enough in my mind; but I was particularly interested in your mention of the special export tariffs to discourage export of I think it was cement, iron, and steel. And I am

wondering if you could tell us a little bit more about your knowledge of these tariffs and the effect that they will have in your opinion on the global market and prices.

Mr. DONIGER. Well, China is concerned that they have become the dirty manufacturing place for products that go to other countries. Of course, they are building their steel industry and cement and so on for their own domestic consumption. But with respect to the exports, they are putting on these tariffs to discourage excessive exports. The motivation is that the overly high levels of production for export are stressing their energy supplies and are creating a lot of pollution. So this is an indication that China takes their energy and pollution problems with increasing seriousness. Now, they have got a lot to do, and we have a lot to do here. We need to put this higher on the to-do list with them than we have before.

Ms. BALDWIN. And I want Mr. Slattery——

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

Ms. BALDWIN. Oh, I am sorry.

Mr. BOUCHER. We are going to do——

Ms. BALDWIN. I was looking at the one up there.

Mr. BOUCHER. We are going to do a second round and so——

Ms. BALDWIN. OK.

Mr. BOUCHER [continuing]. We will come back. The gentleman from Illinois, Mr. Shimkus, is recognized for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. I appreciate the panelists and their answers to the questions because it just gives us more comments based on the experience dealing with this, Mr. Doniger, and I am going to just respond to your last comment. I just disagree. We had a senior trade rep from China that Chairman Boucher sat with. Twice he was asked, and never really answered the question, would the Chinese go into a mandatory international cap-and-trade program. Chairman Boucher asked it, another member from the other side of the aisle asked it. He basically said no. So the country that sends us tainted toys, we have problems with intellectual property, disagreement, I think we are kidding ourselves if we think they are going to all of a sudden say yes because their basic response is, hey, listen, you had 200 years to develop—this was his response. You had 200 years of using a carbon-based system to become the major power in the world today, and now it is our turn. I am going to have some questions for some other folks. There are some points I want to make.

The second to Mr. Slattery, and I appreciate that part of this was notes based upon your testimony. I mean, I just want to respond to the—but the question was, having heard that from the Chinese official, what is your response based upon your proposal that says, hey, you know, we can have these performance standards.

Mr. SLATTERY. Several things. First of all, you know, I am one of these trust-but-verify people, and you know, when I look at this whole situation, there has been talk here, for example, about clean technology. How can we incentivize the Chinese, the largest steel producers in the world, the second-largest importer of steel into the United States, to responsibly address this problem? I would suggest to you that with performance standards and telling them if you want access to this market, then you are going to produce a

product with a certain carbon footprint that is going to be applied uniformly to domestic and all foreign competitors. If we say that to the Chinese and tell them right now that this is coming in a few years, whatever you all ultimately decide to do, then what will the Chinese response be? I would suggest to you that we have incentivized them to install the best technology available and not the cheapest and the dirtiest that can, you know, maybe meet their urgent demand for supply, but rather to put in place the cleanest and the best so that the products produced there will have access to the U.S. market.

Mr. SHIMKUS. If I can, I think that is a good summation. I want to move to Mr. Wenk for a second because of his testimony because you also talked about other provisions especially with our obligations under NAFTA, of current political debate these days. And I would say that that even makes a more interesting question with the trade issues based upon this proposal and the other issues of whatever the carbon regime we put in. Can you talk about trade aspects?

Mr. WENK. Thank you, Congressman. You know, there obviously has been a lot of focus on the white paper and in this hearing today about the WTO aspects of any possible climate change legislation, but you know, there are trade implications across the board here, Congressman. I think very close to home here are two of our biggest trading partners, Canada and Mexico, our NAFTA trading partners. And you know, in 2007, they exported $113 billion of raw materials to the United States. And I think a real fundamental question of any cap-and-trade program is how this would impact possibly our NAFTA obligations, and I think that these are things that need to be looked into a little bit more. But I think we cannot overlook the fact that, sure, there are WTO obligations that we need to be certain cognizant of, but there are also NAFTA obligations. And if there were some sort of cap-and-trade program, there may be give a special pass to Canada because they signed onto Kyoto and they maybe met some of their commitments. But then the question becomes about Mexico perhaps. So I think there are some real questions even closer to home here with Mexico and Canada and our NAFTA obligations.

Mr. SHIMKUS. And let me just finish and go across to the whole board, and if you want to add, depending on the Chairman's discretion, we have got two proposals. We have got a cap-and-trade, we have got this performance standard. Chairman Dingell had mentioned earlier in this Congress last year about not fooling the public that there would be no cost to be paid, based upon whatever regime we go. Why not be just clear and above-board that we are going to enact a carbon tax?

Mr. MORRIS. Gosh, I have got so many great answers for all these other questions. To the last question that you asked before that and I will try to get to that issue, the IBEW-AEP proposal would work perfectly for the Chinese, even if they do not want to participate. We would find out that they do not have a comparable program, and a ton of steel would have a carbon allocation cost to it; and if that were $10 a ton, the importer would pay it. So if Ford Motors is buying steel from them, Ford would pay $10 and put them on exactly the same footing as Nucor selling steel to Ford.

But to your question, if we have a tax, China surely is not going to put a tax on their people; and that would just simply add cost to the U.S. market price. Chairman Dingell is exactly right, and you addressed the same question. There is a societal cost associated with CO_2 capture, storage, control, whether you go to natural gas as your fuel source, whether you go to solar or wind, however we address this issue, there is a cost. And we as an industry, we as a company, have been trying to be extremely honest about that. And the more we understand that, society will make a decision whether they believe that cost is acceptable versus the cost of the potential long-term impact on the environment. But we should never be blind to the notion that these are all free goods. They are not.

Mr. SHIMKUS. Mr. Chairman, I know my time has expired. It is a big panel. I will just yield back and we will follow up with the next round.

Mr. BOUCHER. Thank you very much, Mr. Shimkus. Let me apologize to the gentlelady from Wisconsin for shortening her time. There was in fact time remaining on the clock, although from the vantage point of the Chair, it appeared that the light was red. And there was considerable discussion behind this dais about whether the problem was a clock malfunction or a Chairman malfunction. However it was, there was a malfunction. And we will add to the gentlelady's time for the next round, the time by which her questioning was foreshortened.

The gentleman from Utah, Mr. Matheson, is recognized for a total of 8 minutes.

Mr. MATHESON. Well, thank you, Mr. Chairman. I appreciate the witnesses' testimony. I think this is a very complicated issue of which I think we are all still trying to get our arms around. I have a series of questions that I want to ask the panel.

Mr. Slattery, in your testimony, you state the products of energy-intensive industries like steel, whether domestically produced or imported, must be subject to the same requirements starting at the same time with no exceptions and no discretion. If Congress adopts a mandatory cap-and-trade program, do you support having that mandatory cap applied to all sectors of the economy? Does your proposal exempt steel from what would be an economy-wide cap or is the steel industry willing to live with the domestic cap-and-trade system in addition to the performance standard for goods manufactured overseas?

Mr. SLATTERY. Congressman, first of all, as I indicated in my oral testimony, the industry as you might imagine has some serious concerns about how a cap-and-trade system would be implemented; and the devil is in the details, to make a long story real short. Now, very specifically, as I tried to indicate earlier, the steel industry is sort of two-pronged, it is the EAF, electric arc furnace operation, and the BOF integrated operation. They are interdependent. The EAFs cannot exist without the BOFs, and they each have unique problems. So for example, on the BOF side, you have process gas problems that have to be addressed. It is an unavoidable emission. On the electric arc furnace operation, we have a horrible upstream indirect emission problem related to the cost of electricity. And you know, if you put this operation under a cap, you

have to make sure that there is adequate allowances for, and I will just speak specifically about the electric arc furnace side of it because if you do not have adequate allowances, then what happens is in some cases you may have electricity rates going up by maybe 50 percent if you are to believe what has been said by the president of Duke Energy. Then how does our industry respond to that when 10 to 20 percent of our inputs are electricity.

Mr. MATHESON. So you are saying——

Mr. SLATTERY. So give us adequate allowances——

Mr. MATHESON. So you are not categorically saying no to the cap, you want to know how it is structured?

Mr. SLATTERY. We want to know how it is structured and we want to be a participant in solving this problem is what I am here to say.

Mr. MATHESON. Under your proposal, would we need to have domestic performance standard as well to make it work? Because we have heard some interested parties believe that you would need to have a domestic standard and that such a process would be duplicative. Can you comment on that?

Mr. SLATTERY. The way we see this, the performance standard is the part of it that is designed to achieve what we call global reach. In other words, how do we incentivize our global competitors to get in the game and help us solve a global problem. How do we do that? And we contend that with performance standards that are enforceable by American industry that you will have in place the tools that you need to most strongly incentivize the kind of activity that you want.

Mr. MATHESON. It would be the same whether it was foreign or domestic?

Mr. SLATTERY. That is correct. That is correct.

Mr. MATHESON. Let me ask you——

Mr. SLATTERY. All of the players have to be treated the same.

Mr. MATHESON. Does your proposal apply to unfinished commodities such as cement and aluminum and steel? Is that a correct statement?

Mr. SLATTERY. I am not here representing those industries, but the concept of performance standards in our opinion——

Mr. MATHESON. Is for unfinished commodities?

Mr. SLATTERY [continuing]. Would be applicable to other energy-intensive business products.

Mr. MATHESON. So how do we do with having imports of finished products that could come in? Would that avoid carbon restrictions if I am bringing in a finished product as opposed to just raw steel or how would we deal with that?

Mr. SLATTERY. In the first instance we would be dealing with the raw material, but ultimately it would be applied to the finished products, too.

Mr. MATHESON. Let me shift to the boarder adjustment proposal, Mr. Morris. Your proposal would require countries that are large emitters of greenhouse gases to purchase enough international allowances to cover the emissions producer and manufacturing. In order to meet fairness concerns that may be raised by the WTO, should this proposal apply to all greenhouse gas emitters that fail to take comparable action to reduce greenhouse gases as the

United States has done as opposed to just being applied to large emitters?

Mr. MORRIS. There is a de minimus exclusion that is required under the WTO, so you would be going after the large manufacturing competing countries that have industries that have large carbon footprints associated with them. So that would be the target of what you would do.

Mr. MATHESON. I am sure you know that in some countries that are developing where we import products that are energy-intensive, their manufacturing sectors are receiving subsidies from the government. How does your proposal prevent or stop other nations from subsidizing the cost of these international carbon allowances?

Mr. MORRIS. The importing agent would pay the carbon allowance. So again, if the buyer of the product manufactured were Mike's Concrete Company, I would have paid the cement manufacturer to import that cement into the country before I turn the cement into concrete. So whether or not they then would lower the price, there is no way for us to control that.

Mr. MATHESON. And you are talking about these allowances, there is an unlimited capacity for allowances for employment——

Mr. MORRIS. They would be created by the office of the president or the independent agency which you would write into the law that would be responsible for determining the comparability of another country's program and the actual process that one would go through to do that.

Mr. MATHESON. Since the ultimate goal is to reduce global greenhouse gas emissions, what I am hearing is your proposal helps create a leveling of the economics of this if we place restrictions on this country, making higher cost to produce something to meet carbon restrictions. We are going to say, OK, if you are importing something, you have got to buy allowances. The importer does so on an equal playing field. I am trying to get my arms around how that is going to result in other countries actually lowering actual greenhouse gas emissions.

Mr. MORRIS. The hope would be that they would implement a comparable cap-and-trade program in the housed country so that they would not have to pay the import allowance as they came into this country. That is the notion of our carrot side of our program because to the point that was made by Mr. Doniger, if in fact from Bali we get the impression, and I am not certain I buy that yet, but we at least heard some very different statements by a number of countries, it would encourage them to do that. They have an opportunity to join in this addressing of a global issue. Should they choose not to do that, then they are going to have to pay an allowance, and it will have an impact on their cost production.

Mr. MATHESON. If I can restate that to make sure I understand, your proposal is assuming that there is going to be an effort to get a cap-and-trade type program in these other countries?

Mr. MORRIS. That would surely be our hope. I mean, if we are going to handle this in a global sense, we have to have global partners. We constantly hear those kinds of conversations, but yet we have not seen that kind of action.

Mr. MATHESON. I got less than a minute. Let me ask a broader question for this round. It seems like a lot of this is predicated on

the notion that the United States is the great consumer in the world and that we consume so much, we can help drive policies elsewhere because we are the market where everyone wants to sell their goods, and yet we are basing a global economic circumstance where greater consumption is taking place elsewhere. We were told the new steel production and cement production in China is really for internal consumption. So at the end of the day, is the access to U.S. markets the great carrot if you will that we hope it is that we hope to influence all these other countries to do this? I question if these other countries are going to feel motivated by that or if they are just going to go sell their products elsewhere.

Mr. MORRIS. They might well do that, but what we are trying to say is we are creating a law in the United States that will affect the United States manufacturing cost in the United States companies and jobs. We are only trying to create something that tries to put some equality and balance in it.

Mr. MATHESON. Mr. Doniger, do you have a——

Mr. DONIGER. Thanks, Congressman, good question. We cannot get there if the Chinese, the Indians, the South Africans, and so on do not want to get there. They are coming to want to get there because they are seeing impacts in their own countries, they are seeing how it all knits together, the same as we are. And I do not think we are going to get the economy-wide cap-and-trade programs in those countries in one fell swoop. But we could get to agreements for their electricity sectors, agreements for their steel sectors, agreements for cement. We have a 150-year head start on developing the information systems to know the emissions of Mr. Morris' company and Mr. Slattery's clients every day. The Chinese do not have that yet. They are building that. They can move forward in these key sectors, and that is where most of the emissions problems are and that is where most of the competitive problems are.

Mr. MATHESON. Thank you, Mr. Chairman.

Mr. BOUCHER. Thank you very much, Mr. Matheson. The gentleman from Pennsylvania, Mr. Doyle, is recognized for 5 minutes.

Mr. DOYLE. Thank you, Mr. Chairman. Mr. Morris, in your testimony you stated that there should be an appropriate allocation of allowances at no cost to the electric power sector in order to blunt the otherwise inevitable electricity price spikes. In your estimate, what do you believe the range will be in your territory and how long do you estimate you will need these no-cost allowances in order to prevent these spikes?

Mr. MORRIS. The contemplation on an allocation of allowances to the electric industry is really a mirrored image of what this Committee did in 1970, 1977, and 1990 and the socks and knocks undertaking. The contemplation is that those allowances would be monetized and that that capital would be used to add the equipment or build the new power production facility that our colleague from Illinois clearly pointed out needed to be done in the future. So just as we have done in the Clean Air Acts before, you would step those allowances down over time.

If you simply do not do that and you have an auction, and who really are the proponents of an auction, Goldman-Sachs, all the New York banks, if you buy them for $20, I submit they do not in-

tend to sell them for $5. So you know, that to me is just a profit motive, where ours is an implementation of technology to make certain that we in fact do respond to the cap-and-trade program that we feel strongly ought to be implemented.

To your specific question, American Electric and Power is the lowest cost energy provider in the 11 states where we do business with our 5.1 million customers. I would expect this could have an impact of 20 to 30 percent on that rate structure; but again, as I said to the Congressman from Illinois, this is a societal decision that needs to be made by the voters of this country, and you are in the process of doing that now. And if this country decides that these are acceptable costs, then that is exactly the way it will unfold. So I do not think we should run from this because we think it is costly, but I surely do not think we should live in a make-believe world that this is a free move.

Mr. DOYLE. Thank you, and I want to compliment you and your company for taking a stand in support of a cap-and-trade system. You know, one of the concerns we have heard about your proposal is that other nations can get around it due to the fact that these countries simply do not follow fair trade practices. An example, in China where the steel companies there produce steel at an artificial price because the government, you know, supports it. How can we add to your proposal in order to address some of the concerns that people have in that regard?

Mr. MORRIS. At the point of importation to the United States, the importer is going to pay that fee. And that will equalize to a producer of steel or a producer of cement or a producer of aluminum at least this one subset of what is going on. There is no way in the world a cap-and-trade law passed by this Congress and signed by this President will be able to affect the safety programs in China, the wages that are paid in India, the overall cleanliness of how they go about doing those issues; but as to this subissue, we think what we have put together here is a very appropriate way to do it. And again, as I said before, if someone has a great idea to add to that value, we would be the first to support it. We are only trying to address the issue. It is mobile and we want to be sure that in the implementation of a cap-and-trade program in this country, we do not inadvertently put a huge burden on our manufacturing customers when the companies that they compete with worldwide do not have that same point.

Mr. DOYLE. Thank you.

Mr. MORRIS. So as to that subissue, I think we have addressed it as to the larger issue. We cannot make them pay $80 an hour for labor. We just cannot.

Mr. DOYLE. Thank you. Mr. Doniger, one of the thoughts I have been sharing with the environmental community that most of us, and I believe the majority in Congress, agree with this goal of reducing emissions 60 to 80 percent by the year 2050. The argument now is how do we get there? And I do not think there is any silver bullet. I think we need to put everything on the table.

In your viewpoint, are the performance standards that you heard outlined today by Mr. Slattery, is this something we should consider as long as they are under the tent of an economy-wide cap-and-trade system or is this something that you are just dismissing

outright and what other aspects of the proposal could you and others in the environmental community support?

Mr. DONIGER. Mr. Doyle, we do support performance standards, as you said, under the tent of the cap. It is very important to have performance standards, especially where through them you can achieve cost-effective reductions even faster, or with a lower carbon price signal than you would have to have without the performance standard. So they complement each other, and they are very important.

I do think you have to allow for the fact in any of these proposals that developing countries are going to come along, but they are not going to do the same thing at the same time we do. And so it is a relationship that we need to develop.

I will give you the example of the phase-out of ozone-depleting chemicals, the most effective international agreement we ever had, the Montreal Protocol. The developed countries went first, the developed countries offered some assistance to developing countries, and the developing countries are phasing out on a 10 year delayed timeline. The whole thing is working. We have eliminated more than 85 percent, 90 percent of the ozone-depleting chemicals all around the world in developed and developing countries. And China and India are full parties to that, and they have binding limits on their fluorocarbon industries, just like we do here, it is just staged a bit in time. And that I think is a model that can work, and it is a model that they have played as full partners in for 20 years.

Mr. DOYLE. Mr. Chairman, if my color vision is correct, I think I am in the red, so I will yield back.

Mr. BOUCHER. Thank you very much, Mr. Doyle. Let me pursue some additional inquiries with our panel this afternoon. Mr. Morris, your proposal has received probably the most commentary since it was announced earlier, at an early point last year in fact; and one of the comments that has been made about it is that in order to obtain the maximum potential for WTO-compliance, there would be a lag time required of maybe as much as 8 years during which time there would be an effort made to enter into agreements among a number of nations, multilateral agreements, that could lead to a finding of WTO-compliance. And a critique of your proposal is that that is a pretty long time, and I think in fact some of the members on this panel raised that issue when they were making comments about that approach.

So my question to you is, is there some way that that long period of as much as 8 years could be lessened and still not weaken the potential that your proposal would pass WTO muster?

Mr. MORRIS. Clearly as this contemplation went through the process of trying to pick a timeline that you would have to be out in the world negotiating to be WTO-compliant, it was the contemplation that a law, if passed in 2009, would not be through the regulatory process until maybe 2013, and then you would have 3 or 4 years to work this out which would take you out to 2017 or 2018. Inadvertently, someone said, well, let us then pick 2020. So the timeline could easily be collapsed. And to my friend, I think Mr. Slattery said that is the one thing that is unacceptable about the AEP program is the timeline, and China would do whatever

they would do during the period. That simply is fixable, and you could begin the bilateral negotiations while the EPA or DOE or whomever would have the responsibility of crafting the program. Remember, there is no way to pass legislation tomorrow and have implementation 2 days later. It will take some time to get that done. It would be during that period that you would do it. And again, I think there was a proposal down the table that you might see WTO clearance, and I do not know whether or not the WTO court in Geneva offers opinions of a design as to being compliant or not. It may well be, but they only react to complaints and that is something obviously we can submit to you in a written answer. But you could easily collapse the timeline. And if that is the only deficiency in our concept, we could fix that without much difficulty.

Mr. BOUCHER. You are saying the WTO might not render declaratory judgments.

Mr. MORRIS. That is true.

Mr. BOUCHER. Mr. Hufbauer, your hand is raised. Do you have a comment?

Mr. HUFBAUER. Mr. Chairman, yes, the WTO does not render declaratory judgments but what I had in mind was that the United States should start now, not in 3 years, not in 5 years, but now, under this Administration, to begin to negotiate a WTO code which clarifies the green space for GHG measures—including cap-and-trade, performance standards, and so forth—that can be imposed. I do not think those clarifications will come out of Kyoto II, which will not take effect until 2012. So we should start in the WTO right now. Maybe no one is willing to negotiate with us, but we should go forward and make the effort.

If you have a chance, or your staff has a chance, to read the testimony I submitted—which just scratches the surface—you will find a lot of ambiguity in the current WTO articles and decisions. If we decide as a nation, and if other nations do the same, that what we are going to do is just litigate differences over the next years, that means 10 years at least of litigation. Great for the lawyers, but not so great for the carbon control system. So we should go forward sooner with a new WTO code that designs some space for the kinds of systems which are being advocated and discussed today and including other systems because other countries will have different approaches.

Now, if I could just borrow on your forgiveness for about 30 seconds more, one problem that I have—which has not been discussed today—with both the performance and the cap-and-trade systems is that the promoters of these have not specifically said that a firm based in India or based in China which meets our standards should not be penalized. In other words, we should not attribute that firm with country averages which are very poorly calculated and might be inappropriate for individual firms in those countries.

Mr. BOUCHER. Well, that is an excellent point. My sense was that that concept was inherent essentially in both proposals. Mr. Slattery, would you care to comment——

Mr. SLATTERY. Very specifically. We clearly contemplate facility type performance standards, and that is possible.

Mr. BOUCHER. Mr. Slattery, let me ask you. I was pleased to hear you say that your proposal could be modified to convert what

is a carbon intensity standard into a firm cap, and you said you would like to obviously be a part of the discussion in which that modification is made, but you held open the possibility that could happen. I think that is an important statement and an important step. In the initial question that I asked you some time ago, I suggested that you might want to consider some way to meld the AEP IBEW proposal to your manufacturing standard proposal and had asked if you had some suggestions on how that might be done. Would you like to elaborate on that at this point or is that something you would like to give extended consideration to and supply a written document to us?

Mr. SLATTERY. I would be happy to accommodate the Chairman and the Committee in any way possible, and let me just say that I can comment briefly right now on that point. Mr. Morris and I have already discussed the idea of us getting together and visiting extensively about this and understanding precisely how we might be able to come to the Committee with a proposal that would achieve what you have just asked.

As I said earlier, I do not see anything inconsistent with performance standards and the vision that Mr. Morris has outlined with respect to what we call the AEP IBEW proposal. It is not inconsistent. And we believe that the performance standards are sort of in addition to, if you will. And again, I have already elaborated on why we believe these performance standards are important. In our judgment, you can clearly do both. Again, our major concern about the IBEW-AEP proposal is that it does not go far enough. We are very concerned about a future administration vigorously enforcing it, making the judgments that have to be made to trigger it, and we are also, as a very practical matter, very troubled by the fact that our competitors, for example in China, are state-owned, they have access to state-owned energy that is subsidized; and when you talk about them being required to pony up allowances to access our market, the immediate question is, who is going to buy those allowances——

Mr. BOUCHER. Well, with all due respect, you are going to have that problem with your standard approach also. I mean, that is a condition that we face, and it is going to have to be a part of every consideration we make concerning participation by China and other developing countries.

Well, my time has expired. Let me simply encourage the two of you perhaps to have the conversation that you mentioned and to the extent that you can make a proposal to us, that marries the better aspects of both your proposals. That would be very welcome.

Mr. Upton for 5 minutes.

Mr. UPTON. Thank you, Mr. Chairman. I want to follow up with Mr. Morris as I did with Jim on the last round. We know that China's use of coal, and the world has grown from 20 percent to about 30 percent now and it is expected to get to use 40 percent of the world's coal in the next 15 years or so, we know that China's emissions have grown by 80 percent since 1990 and they are expected to grow another 65 percent by the year 2020. You were quoted in last week's National Journal as saying China is going to keep building coal plants, India is going to keep building coal plants, the United States is going to keep building coal plants, this is an elec-

trified world and I do not see it de-electrify. I have been to U.S. coal plants. I have not been to any of China's. My sense is that our emissions work and certainly the money that the utilities have spent on it is far greater than what we see in China. You will know that answer better than me, but I hope to some time see that answer myself, along with Chairman Boucher. But my question to you is as we look to last year, 2007, utility companies have abandoned plans to build at least 30 new coal plants. I read this weekend that I guess the Sierra Club has announced that they are going to fight every single coal plant anywhere in the United States to stop it from happening. So would you say that the cutback in coal generation which is happening now as it relates to this last year will result in higher costs for consumers here, possible electric shortages in the near future. I think I saw in that same article in National Journal you thought we would have real severe energy shortages as early as 2012, 2015, and does that put us at a real competitive disadvantage for the U.S. industry, and then how does that all relate to what may happen under a cap-and-trade, knowing full well that again, like we have seen with the steel industry where they emit so much more carbon per ton of steel produced, my sense is that they are way ahead in terms of carbon emissions as it relates to their coal production, too.

Mr. MORRIS. That is a far- and wide-ranging question——

Mr. UPTON. I know.

Mr. MORRIS [continuing]. And I will do my best to answer it in the time allotted to you and me. The fact of the matter is it is very difficult to gather information on what China is or is not doing. I am led to believe by some of the suppliers that last year they added 70,000 megawatts of coal-fired generation to their fleet of production, and they are using what we call super-critical technology which is one notch below what American Electric and Power is proposing in our newest stations which would be ultra-super-critical, something that the Germans and the Japanese are also working on. And again, the concept there, Congressman, there is higher pressure, higher steam, less coal consumed for more megawatts out-reduces the carbon footprint. So they are moving in the right direction and in fact retiring some of their oldest and dirtiest plants in that process. So I think some of that is good news. But the fact of the matter is what I said before, particularly as to your question about the Sierra Club, is that we as a nation, to the comments made by Mr. Shimkus of Illinois, need to build some new power plants that operate 24 hours a day, 7 days a week. And those really do need to be fueled by either clean coal technology, and I do not agree with Mr. Reid of the Senate that there is no such phraseology. There is improved coal technology, and we will bring that forward as a company and as an industry, or new nuclear which I think is another perfect answer to that question. And so the point of coal plants falling off-line today may well lead us to a South African challenge, and I think we are all aware that South Africa has run out of base load capacity. They shut down various industries 2 or 3 days a week. Their 2008 financial forecast has gone from a 6 percent GDP to about a 1½ GDP. That is the future I am afraid we are looking at.

Now, you have asked a very important question on top of that. If we were to do a cap-and-trade program and we implement it over a series of years, I have said this now about seven times, it will only be if society realizes that those costs are equal to the challenge of leaving behind a planet for our children and grandchildren that we as a nation and we as generations can be proud of. I think that this country is moving in that direction. And in this industry, my company in particular, there is not among the investor in utilities anyone who is saying just say no. What we are all saying is let us be honest about the timeline, let us be honest about the costs, let us be honest about the technology that will need to be developed. It is there in the lab and it is being upgraded to field conditions, but let us be realistic about what we are facing here.

Mr. UPTON. My time has expired so I will yield back to the Madam Chair.

Ms. BALDWIN [presiding]. Thank you. I think in our second round it comes to me now, so I will recognize myself for some follow up.

As I was last questioning Mr. Doniger, I did want to give Mr. Slattery a brief chance to respond. You did already address some of the issues with the discussion of performance standards, but in your testimony, you indicate that China, India, Brazil have huge incentives not to limit their greenhouse gas emissions because it gives their products a powerful competitive edge in international commerce. And it is kind of interesting that China has indeed imposed the export tariff. I wonder if you want to comment on that in light of your testimony on page 13 but also what is the expected effect in the international steel industry of this tariff and hopefully briefly because I do have some questions for Mr. Morgenstern who I think has been eager to talk. Mr. Slattery first.

Mr. SLATTERY. The long and short of it is that the Chinese are currently the largest exporter in the world. The tariff that they have put in place really does not have any effect on this question that we are talking about here today. And my comments were really more focused on the domestic reality. In other words, if we impose additional cost on the domestic industry, either direct cost or indirect cost, with the increase in the cost of electricity that Mr. Morris has referred to, that profoundly affects the competitive position of the U.S. industry globally. And I just want the Committee to be aware of that. We cannot ignore that. If the Chinese and others, but particularly the Chinese, are in a position where as I have already indicated to you they have state-owned energy sources available to them at below market prices, subsidized energy available to them, they have state ownership, and you can imagine if you are in the United States trying to compete with this when you realize that they also have access to global capital, the same global capital that we struggle for and they have access to state-of-the-art new technology that we are all struggling for, and I would say in that context, if we say to the Chinese, put in place state-of-the-art technology that is going to get the carbon intensity, the carbon content of the products that you wish to ship to the United States at the lowest possible level, then we will encourage them to employ that state-of-the-art technology.

Ms. BALDWIN. According to your testimony, Mr. Morgenstern, obviously cap-and-trade systems are broad, market based strategies

that offer significant cost and efficiency advantages, but you seem to say that those advantages are eroded with every carve out exemption or special treatment Congress might offer to a particular industry or constituency. And your testimony describes that protecting these vulnerable firms could result in weaker program targets or partial or full exemptions from carbon policy among others. I know that you have mentioned some of the industries that we might expect to hear from in terms of asserting that they are vulnerable and asking for particular consideration as we put this legislation together. So I would just ask you what other industries are going to be coming to Congress claiming that we must ease the burden because they are vulnerable, and if we do, what is the total result going to be of industry after industry coming to us in terms of an effective program for greenhouse gas emissions? Your testimony sort of talks about all the things that might be done starting on page 5, but I would like to hear a little bit more about what the consequence will be.

Mr. MORGENSTERN. Thank you, Madam Chairman, for the question. I had the opportunity to serve in the Clinton Administration as a lead official at the EPA at the time on the BTU tax, and frankly, it was a horrible experience because every industry that you can imagine came knocking on our door and every industry made claims. Many of them were clearly valid claims but for others it was not so clear, and frankly, at that time, the government had very little capacity to distinguish the valid from the not-so-valid claims. This is potentially a huge problem. Once you start walking down this road, the potential for a lot of special provisions and a lot of special hardships to come to you or to an agency that you would delegate to make these decisions is enormous. So I think you have to be very careful about it. Part of the answer to your question is that you would need to establish a fairly rigorous process which, I presume, would be delegated to an executive branch agency. EPA or DOE have been mentioned as obvious candidates. You would also need to establish some criteria for the agency to follow, ideally criteria that could be tied to transparent, readily measurable factors. With such a process, there is a high potential for the system to fail.

Another point I was going to make is that the process of setting the standards that are being discussed by Mr. Morris and Mr. Slattery is probably going to be pretty difficult for the government to do because they have to obtain credible information not just from the domestic industries, but also from foreign companies operating abroad. And I think that would be quite difficult. To expect that to happen very quickly is unrealistic. That is why I brought up the idea of a transition period wherein you allow some accommodation for the affected industries which would phase out once other countries acted to reduce their emissions or trade sanctions were in fact imposed.

Ms. BALDWIN. Next I would recognize Mr. Matheson.

Mr. MATHESON. Well, thank you, Madam Chair. I think an issue that is going to have to be addressed regardless of any of these options that is pursued is going to be how we can ensure that, whether it is in either Mr. Slattery's or Mr. Morris' proposal, how do we ensure that performance standards are being met or how do we ac-

count for this and have an accountable system where one is really playing by the rules?

Mr. SLATTERY. That is a very, very important question, and we contend that the best way to do that is to permit individual companies in this country to have an actionable cause of action and do it several ways. I mean, you could do it from RICO, you could do it through trade law provisions, but the important thing is to empower U.S. industry, U.S. injured parties to enforce the standards and do what you do now with a countervailing duty case or antidumping case. I mean, that is a model, that is a way, maybe not the only way but it is certainly a way.

Mr. MORRIS. And again, I think that is why the IBEW-AEP proposal is a little more robust because the contemplation would be the creation of either the president having the responsibility and obviously with some delegation or the EPA or someone else would make an evaluation government-to-government of whether or not they have a comparable program; and if in fact they did, then they would not—and this is not to be confused with the border techs. I know we keep calling that but it really is an international reserve allowance that is paid by the importer of the product that did not have a comparable program. And that really I think is the better way to go about doing it because then you get it above an industry. I would be the first one to complain that country X is making a megawatt hour of electricity in a different form than I am, and that is wrong. But that would take me forever. And I need to be back home making the most cost-effective electricity I can for my customers. However, if the government were deciding whether or not Brazil's program was up to the standards that were required, I think that would be a very important way to do it.

Mr. SLATTERY. This is a very, very important issue that you are targeting on here because, you know, It is a little bit like in the trade world, if you bring what we call a safeguard action, a Section 201 case, and if you pursue that through the International Trade Commission, the International Trade Commission might conclude, yes, you have sustained serious injury as a result of these imports. And then you go to the White House, and the White House ultimately makes the determination as to what remedy is going to be employed to correct the serious injury. The President only has broad authority, can do zero, nothing. And I can tell you that for those individuals that have pursued a remedy and got to the White House and incurred the horrible cost involved in litigating something like this and then to have no remedy available, it is enormously frustrating. And that is why there needs to be real, tough measures available to injured individuals in this country who are complying with the standards you put in place and doing it at great cost and then to permit others to not comply with the standard is totally unacceptable. You have to have real enforcement mechanisms.

Mr. MATHESON. And I would suggest that applies to any effort we are going to do, any international agreement or whatnot. I mean, the ultimate goal is to reduce greenhouse gas emissions. Again, there is this accountability component we all have to——

Mr. SLATTERY. Absolutely. Huge.

Mr. MATHESON [continuing]. Get our arms around. OK.

Mr. SLATTERY. Thank you for raising it.

Mr. MATHESON. Thanks, Madam Chair. I yield back.

Ms. BALDWIN. Mr. Doyle is recognized for the second round.

Mr. DOYLE. Thank you very much. I wasn't going to stay for a second round but my friend, Ed Markey, came in the room and made a statement that he was here to add balance to the hearing which I wonder what that comment was about the rest of us sitting up here. And now he is sitting next to Mr. Inslee, so I think I better stay anyway before I yield to those two.

I just have a quick question. It is more of a curiosity for Mr. Wenk from the Chamber. Does the U.S. Chamber of Commerce have an official stated position on global warming? Do you guys believe it exists or what is your position on that?

Mr. WENK. Thank you very much, Congressman. You know, as I said in my testimony, I am providing a trade perspective on this issue so I am not the energy and environment guy that we have at the Chamber, but you know, the Chamber has provided all sorts of correspondence to the hill last year, March 19th, to Mr. Dingell and Mr. Boucher, last April to Mr. Barton and Mr. Hastert, outlining our concerns and priorities with the legislation that was about to——

Mr. DOYLE. I know that. I am just curious. Does the Chamber have a position on whether or not global warming is a problem? I mean, do you think it is a problem you think we should be doing something about? Yes or no.

Mr. WENK. We absolutely do, Congressman——

Mr. DOYLE. Oh, good.

Mr. WENK [continuing]. And as Mr. Upton actually said in his opening statement, we have set some guidelines that we think should be looked at in terms of putting together any legislation on this issue, preserving American jobs and the economy; be international in scope; incentivize and accelerate technology research, development, and employment; reduce barriers to the introduction of that technology to all nations; and promote energy efficiency.

Mr. DOYLE. OK. My curiosity has been satisfied. With that I will yield to my good friends, Mr. Markey and Mr. Inslee, for their thought-provoking questions.

Ms. BALDWIN. The Chair recognizes Mr. Markey for 5 minutes.

Mr. MARKEY. I thank the Chair, and I thank the gentleman from Pennsylvania. There is a natural, psychological adjustment all of us are going to have to make after last night as Pennsylvania now becomes the center of the political universe for the next several weeks. And I appreciate the slight adjustment that we all have to make now to Secretary Doyle. So I do not know which agency it will be, so we are all going to have to be much more deferential at least for 7 weeks. I thank you for yielding.

Mr. Morgenstern, there is much talk about cost containment. Will regulating some sectors through performance standards rather than including them in a cap-and-trade system as Nucor is proposing increase or decrease the total cost to society of reaching a concrete emissions target?

Mr. MORGENSTERN. Increase.

Mr. MARKEY. Increase. Thank you. Does anyone disagree with that? Thank you. Mr. Morgenstern, I agree with many of the——

Mr. SLATTERY. Would you mind reasking that question?

Mr. MARKEY. It is great to have you back. It is like hall of fame weekend having you. Second, I agree with many of the witnesses today that the United States must create incentives for global warming and encourage other countries to follow our footsteps. In the meantime, we can and should also develop provisions to prevent the leakage of jobs or emissions before international action is assured.

Many industries, Mr. Morgenstern, are going to come to us and say that they are going to be severely impacted through this climate legislation. Can you help us sort out who will be industries most and least impacted?

Mr. MORGENSTERN. Mr. Chairman, I have been working on that problem, and in my submission I listed a number of them. I also have some papers that I would be happy to——

Mr. MARKEY. Can you give us like a top five in each category?

Mr. MORGENSTERN. Sure, top five. Let me read from my testimony, Mr. Chairman, so I do not misstate it. The top five that are likely to be impacted in terms of the cost impact are going to be refining, non-metal mineral products, primary metals, and paper and printing. Of course some of these industries are going to be able to pass forward the added costs onto their customers, and so you really have to think about two components, the added energy costs along with their ability to pass it along.

Mr. MARKEY. And which industries will not be impacted, although they are protesting they will be impacted?

Mr. MORGENSTERN. Well, there is a long list that will not be. Something like 80 percent will not be impacted in any significant way. But these tend to be very small industries and not really the ones that are in discussion on this hearing. But energy-intensive industries are at risk, particularly the ones that face tough import markets.

Mr. MARKEY. And I have to save a question for you, Jim, so we have a balanced questioning period here. You mentioned that you believe an intensity standard should be implemented company by company, rather than based upon a country's average emissions rate. Would we not risk then that a country would sell its units, for instance to us, and sell its dirtiest steel to other countries without performance standards, thus resulting in no real change in their performance?

Mr. SLATTERY. Very good question and clearly we anticipate that if you put in place tough performance standards establishing very tough carbon intensity standards that it will do several things. First, it will incentivize the Chinese and others to employ as quickly as possible state-of-the-art technology producing the cleanest steel as possible that will hopefully meet the standard in the United States. Now, you are correct they will, in all probability, internally use the product that is needed there that may not meet the standard that we set for export to our country. But what are we doing? We are encouraging and incentivizing the utilization of the best technology and we are saying to world, and hopefully the world, and there are some indications that Europeans for example are very interested in this idea also. So maybe we can be a global

leader in establishing this kind of a concept in saying to the world this is the standard.

Mr. MARKEY. Mr. Morgenstern, can you comment on that what the likely effect is?

Mr. MORGENSTERN. I am sorry, can you repeat the question again?

Mr. MARKEY. I have to in balance not repeat the question because I did not do so earlier. So I thank the Chair, and I yield back the balance of my time.

Ms. BALDWIN. The gentleman from Washington, Mr. Inslee is recognized for 5 minutes.

Mr. INSLEE. Thank you. Jim, I think you wanted to ask the question. Mr. Markey asked the question about if anybody disagreed with the proposition that a performance standard would effectively cost the rest of society, and Mr. Morgenstern said it would. Do you have a different perspective on that?

Mr. SLATTERY. Well, to the extent that you increase the cost of the product because you are requiring it to meet a certain standard, there may be some short-term increase in the cost of the product. But over the long term, it would be probably de minimus. But you know, in terms of any sort of great societal cost, you know, hopefully it won't be that great. It certainly is not going to be near the kind of cost that one would incur in our industry, at least in a portion of our industry that relies so heavily on electricity. Jack the electricity cost up 50 percent and you have dealt a competitive devastating blow to that sector of the industry.

Mr. DONIGER. Congressman, the question in my view is a little broad because there are performance standards that are able to capture cost-effective, cost-saving measures that are not being done through normal market signals because of barriers. And those are the kinds of performance standards we want. We might not want performance standards that just plain raise costs. So you have got to sort them out. I would like to submit for the record a McKinsey & Company report that was done for a number of companies and for environmental groups that shows that between now and 2030, if we capture all the cost-saving measures that are out there with effective policies, the cost savings will cover the cost of the things that cost money. In other words, the net cost of making reductions that we need to make between now and 2030 could be near zero.

Mr. INSLEE. Yeah, I think they concluded that of all the things we need to do, 40 percent of all those things would actually be net gains economically. Pretty impressive. Mr. Morgenstern?

Mr. MORGENSTERN. Mr. Inslee, the issue is that if we let some companies or industries reduce fewer emissions, we ignore certain opportunities for cost-effective mitigation, then someone else is going to have to mitigate more, at higher overall cost. The reason I answered Mr. Markey's question the way I did was that by adopting a two-step approach, we are foregoing some of these low-cost emission reduction options and they are going to be made up by someone else at higher cost. Hence, the overall cost will be higher.

Mr. INSLEE. I may misunderstand this. I thought I understood it but maybe I do not, but if you go to a performance standard, that would not necessarily excuse an industry, it may increase a burden of compliance with that industry but it would simply say competi-

tors off-shore would have to meet that same level of performance. So that would not be excusing them, would it? Am I missing something?

Mr. MORGENSTERN. I am sorry if I used the term excused, but I think a more precise way to say it would be that if we allowed a standard that was not as stringent as would have been imposed by the cap-and-trade which would presumably be the direction that the standard would take, then the outcome that I indicated I think would be the one.

Mr. INSLEE. OK.

Mr. SLATTERY. If I could just insert that the U.S. steel industry, between 1990 and 2005, has already mitigated dramatically emissions. So in 1990, the U.S. steel industry was responsible for 85 million metric tons of greenhouse gas emissions. That number was dropped to 45 million metric tons in 2005. Dramatic progress, dramatic reduction in greenhouse gas emissions on the part of this industry that today accounts for approximately 1 percent of direct CO_2 emissions in the United States. So we contend that the steel industry today is part of the solution and a big driver in this, even as production was going up, I would point out, a big driver has been the need to reduce energy consumption.

Mr. INSLEE. I just got to see Mr. Morgenstern's proposal about, I would consider, mitigation costs where if you have an auction and then a rebate to an industry that might face mobility issues for higher costs, and I just had the scantiest review of it, but Jim, is there any qualitative reason why that would not work relative as opposed to a performance standard, or anyone who has a response to that?

Mr. MORRIS. Yucca Mountain.

Mr. INSLEE. Pardon?

Mr. MORRIS. Yucca Mountain, a federal fund that would then be reallocated out to the industry to implement technology. It was a grand idea. We tried it once. It hasn't worked and I do not think it would work here, either.

Mr. INSLEE. Because you just don't think it would get allocated?

Mr. MORRIS. Well, I think it would get into the general fund. It would be looked at against the large balance of trade or the large deficit in the government, and it just simply would not come back in an appropriate way. If it did, if you could assure that was going to happen, that might be a good way to do it. But that is why companies like ours and many others stand for the concept of allocating to those of us who are going to make capital improvements, rather than waiting for the government to get the money and then reallocate it. And I would offer FutureGen as another perfect example of that.

Ms. BALDWIN. The gentleman's time for questions has expired. All time for questions have expired. I want to once again thank our panel of witnesses for their opinions, their expertise, and their generous allocation of valuable time. And with that, this hearing is adjourned.

[Whereupon, at 2:00 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

EXECUTIVE OFFICE OF THE PRESIDENT
THE UNITED STATES TRADE REPRESENTATIVE
WASHINGTON, D.C. 20508

MAR 0 4 2008

Ranking Member Fred Upton
Committee on Energy and Commerce
Subcommittee on Energy and Air Quality
2125 Rayburn House Office Building
Washington, DC 20515

Dear Ranking Member Upton:

There can be little doubt that climate change is one of the most serious challenges we face as a nation. USTR officials are not the experts on substantive climate change negotiations or policy. But we assure you that we are interested in working with you to advance the goal, as stated in the cover letter to the Dingell/Boucher white paper, "to encourage developing countries to curb their greenhouse gas emissions."

We strongly believe that trade policy can play a positive role in advancing our environmental goals, including in addressing climate change. USTR has sought out and pressed hard for "win-wins" that will leverage trade liberalization to promote good environmental outcomes. Most recently, and most directly relevant to the climate challenge, the United States and the European Union jointly made a groundbreaking proposal in the World Trade Organization (WTO) to remove barriers to trade in a number of environmental technologies that are critically important for mitigating climate change. The proposal calls for early action to remove tariffs and non-tariff barriers on "climate-friendly" technologies that could increase related trade by as much as 14 percent, according to the World Bank, and lays the foundation for a new broader environmental goods and services agreement (EGSA).

In this, and in other areas, we have done much to promote mutually supportive trade and environment policies. Against that background, let me turn to some of the trade-related issues that are now being discussed in connection with proposed climate change legislation.

We have heard a lot about the important role developing countries will need to play in any new international climate change regime, and we agree that their role is important and critical in order to truly address the global nature of climate change. Our overriding goal should be to bring developing countries into a global system in which they do their part to limit greenhouse gas emissions. How best to do that is a complex issue.

For instance, we have serious concerns with some ideas that are currently circulating – particularly the enthusiasm for using import provisions that might be perceived as unilateral trade restrictions directed against other countries to push them to move rapidly to reduce their emissions of greenhouse gases. We believe that this approach could be a blunt and imprecise instrument of fear – rather than one of persuasion – that will take us down a dangerous path and adversely affect U.S. manufacturers, farmers and consumers. It is no accident that trade ministers in Bali unanimously agreed that trade restrictions run the risk of tit-for-tat retaliation and even an all-out trade war where no one wins and everyone loses. My trade counterpart in Europe, Commissioner Peter Mandelson, strongly cautioned against including trade restrictions in the European Commission's recent package of proposals setting out the second phase of its emissions cap-and-trade system – resulting in the omission of these measures.

There are a number of important questions that need to be raised about the implications of utilizing import measures to address competitiveness concerns or perceived failures on the part of other countries to address climate change. I trust that Congress will ensure careful consideration of the implications associated with drafting provisions that would apply with respect to other countries. Unfortunately, I am concerned that the trade issues have been framed far too narrowly – that is, simply in terms of whether particular legislative provisions could be consistent with the rules of the WTO. Of course, WTO consistency is a critical question. The greater risk, however, is that import measures emanating from U.S. legislation could prompt mirror action (or simple trade retaliation) by other countries – with U.S. exports being among the targets. This scenario could unfold long before any potential disputes were concluded in the WTO.

The consequences for global trade could be enormous. Trade sanctions, potentially applied by multiple countries and at cross-purposes, could affect large volumes of economic activity in carbon-intensive industries – sensitive sectors such as steel, cement, aluminum and paper – and affect imports from key players. Imposing import measures on such a large scale could inflict significant economy-wide harms on both the target countries and the countries imposing such measures, and threaten the foundations of the world trading system. This risk is not an illusory one, as several European leaders have already made highly visible comments that a European carbon tax should be applied, for example, to imports from countries that have not adopted mandatory carbon reduction programs, including the United States.

Moreover, the central premise of this type of approach is doubtful – that the threat of import measures will bring key developing countries to the table. In fact, the threat could easily backfire. Developing countries could resent what they perceive to be U.S. strong arm tactics and arguably be less, not more, amenable to work on the hard issues in international climate negotiations. The stick, not the carrot, would set the tone. And other countries could well turn to the stick themselves and develop their own import restrictions, based on their own unilateral definitions of what constitutes adequate action by other countries.

Finally, such trade threats can themselves dramatically unsettle markets. The specter of a shutdown of large sectors of global production would hang like the proverbial "Sword of Damocles" over climate negotiations. Whether the sword drops or not, uncertainty and fear will rule global investments and risk-taking, instead of growth and innovation. We are more likely to achieve global improvements in the environment generally – and in battling the challenge of climate change specifically – if we have a growing world-wide economy. In light of these concerns, USTR is carefully studying the three options laid out in the recent White Paper written by Chairmen Dingell and Boucher.

The first option – requiring importers to buy allowances for certain imports from countries with climate regimes that the United States determines are not "comparable" to the U.S. system – seems to raise many of the policy concerns I laid out. This option also underscores the importance of negotiating and establishing a global framework of commitments to reduce greenhouse gas emissions, one in which all major emitters contribute to solutions.

We intend on continuing to study the other two approaches that are considered in the white paper. The second option concerns the development of "carbon-intensity" performance standards or regulations that would apply to both domestic and imported "energy intensive" products. While the use of mandatory standards ("technical regulations," in WTO parlance) to achieve environmental objectives

is not new, one of the unique aspects of the second option is that it appears to focus on how a good is produced apart from the physical characteristics or end-uses of the final product. Relevant questions regarding trade implications are likely to include the opportunities that foreign and domestic producers and other interested stakeholders have to participate in the development of specific standards and whether compliance with such standards will be mandatory or voluntary under U.S. law. Other questions include whether carbon intensity standards could be based on internationally-developed standards, and what types of procedures are being contemplated for assessing conformity with such standards.

In this regard, I would note that the U.S. standards system, in general, has always been driven largely by the private sector. The U.S. government does not utilize standards as a tool for industrial policy. Rather, we allow markets to determine – based on criteria such as technical merit, consensus, and market relevance – what standard or standards will be utilized in manufacturing supply chains. This position is built on a recognition that a government-run standards development process could never keep up with the pace of technological change in the marketplace, and that a top-down approach could create serious market distortions. The U.S. system creates the conditions for maximizing economic growth, and promotes market dynamism and the harmonization of standards across borders. This long-standing policy was ingrained in U.S. law in 1996 via the National Technology Transfer and Advancement Act (NTTAA). In particular, the NTTAA provides that, when regulating, U.S. regulators need to use technical standards that have been developed or adopted by voluntary consensus standards bodies – rather than developing their own standards – unless the use of such standards would be inconsistent with applicable law or otherwise impractical.

Finally, the third option appears to be the least developed, at least in terms of the description provided in the white paper. Without more information on what is meant by "carbon markets" and "conditions on access," it is difficult to assess whether there may be any trade implications to this approach.

It is important to keep our eye on the ball – the negotiation of a comprehensive international climate agreement – and press others to do the same. It is important to consider the potentially serious and negative impact that climate change-related trade restrictions, particularly those that affect certain imports, could have in damaging the multilateral trading system and the competitiveness of the U.S. economy. I look forward to working with the Congress to develop approaches that can avoid such implications.

Sincerely,

Susan C. Schwab

cc: The Honorable John Dingell
The Honorable Joe Barton
The Honorable Rick Boucher

ONE HUNDRED TENTH CONGRESS

U.S. House of Representatives
Committee on Energy and Commerce
Washington, DC 20515–6115

JOHN D. DINGELL, MICHIGAN
CHAIRMAN

March 6, 2007

His Excellency Vaclav Klaus
President of the Czech Republic
11908 Prague 1, The Czech Republic

Dear President Klaus:

The Committee on Energy and Commerce of the U.S. House of Representatives has begun to examine the issue of mankind's contribution to global warming and climate change. The Committee, given its jurisdiction over energy policy and environmental issues, will be the principal advisor to the U.S. House of Representatives on matters concerning legislation to enhance the United States' current efforts to address energy policy and future climate change. Both Republican and Democratic members of the Committee seek to have as full an understanding of the facts as possible before the Committee acts within this complex policy area.

Over the past several decades, as an economist and political leader, you have developed an important perspective on the forces that effect individual freedom and economic progress and abundance, especially as you have helped to lead the Czech Republic out of the deadly stagnation of the former Soviet regime to become one of the fastest growing, vibrant economies in Europe. You have also taken public positions regarding the climate change debate. We believe your perspective on the political, economic, and moral aspects of the climate change debate can be useful as we seek to assess the potential impacts of proposed U.S. climate-related regulations on the economic well-being of its citizens and their ability to contribute to future economic vitality and innovation here and abroad.

We write today to invite your informed personal response on the climate change concerns currently confronting policymakers in Europe and the United States. You should know our Democratic counterparts have invited former Vice President Al Gore – another leading opinion maker – to testify on such matters before our energy subcommittee on March 21, 2007. We would welcome hearing from you in time for this hearing. Additionally, we would welcome hearing from you directly in either a private meeting or a more formal venue if your level of interest and schedule permit.

Although we appreciate whatever perspective you believe can contribute to our deliberations, we would also welcome your responses to the following questions:

1. Concerning mankind's contribution to climate change and in keeping with obligations towards the welfare of our citizens: what, in your view, should policymakers consider when addressing climate change?

2. How should policies address the rate and consequences of climate change and to what extent should regulation of emissions of greenhouse gases be a focus of any such policies?

3. What will be the effect on national economies, consumer well-being, job creation, and future innovation under various climate change policy scenarios that have come to your attention?

4. What impact and effectiveness will so-called cap-and-trade policies have upon the reduction of climate change threats and our ability to address these threats in the future?

5. What is the moral obligation of developed countries to the developing countries of the world? Should developed countries embark on large emissions reduction schemes while developing countries are allowed to continue to increase emissions unabated?

We write in an effort to contribute to the bi-partisan consideration of these matters and very much respect your perspective on these matters. If you have any questions, please contact us or have your staff contact David McCarthy, Chief Counsel for Energy and Air Quality, at (202) 225-3641.

Sincerely,

Joe Barton
Ranking Member
Committee on Energy and Commerce

J. Dennis Hastert
Ranking Member
Subcommittee on Energy
and Air Quality

cc: His Excellency Petr Kolar, Ambassador to the United States
The Honorable John Dingell, Chairman
Committee on Energy and Commerce
The Honorable Rick Boucher, Chairman,
Subcommittee on Energy and Air Quality

Answers to questions from the House of Representatives of the U.S. Congress, Committee on Energy and Commerce, on the issue of mankind's contribution to global warming and climate change

Václav Klaus, President of the Czech Republic

1. Concerning mankind's contribution to climate change and in keeping with obligations towards the welfare of our citizens: what, in your view, should policymakers consider when addressing climate change?

The – so called – climate change and especially man-made climate change has become one of the most dangerous arguments aimed at distorting human efforts and public policies in the whole world.

My ambition is not to bring additional arguments to the scientific climatological debate about this phenomenon. I am convinced, however, that up to now this scientific debate has not been deep and serious enough and has not provided sufficient basis for the policymakers' reaction. What I am really concerned about is the way the environmental topics have been misused by certain political pressure groups to attack fundamental principles underlying free society. It becomes evident that while discussing climate we are not witnessing a clash of views about the environment but a clash of views about human freedom.

As someone who lived under communism for most of my life I feel obliged to say that the biggest threat to freedom, democracy, the market economy and prosperity at the beginning of the 21st century is not communism

or its various softer variants. Communism was replaced by the threat of ambitious environmentalism. This ideology preaches earth and nature and under the slogans of their protection – similarly to the old Marxists – wants to replace the free and spontaneous evolution of mankind by a sort of central (now global) planning of the whole world.

The environmentalists consider their ideas and arguments to be an undisputable truth and use sophisticated methods of media manipulation and PR campaigns to exert pressure on policymakers to achieve their goals. Their argumentation is based on the spreading of fear and panic by declaring the future of the world to be under serious threat. In such an atmosphere they continue pushing policymakers to adopt illiberal measures, impose arbitrary limits, regulations, prohibitions, and restrictions on everyday human activities and make people subject to omnipotent bureaucratic decision-making. To use the words of Friedrich Hayek, they try to stop free, spontaneous human action and replace it by their own, very doubtful human design.

The environmentalist paradigm of thinking is absolutely static. They neglect the fact that both nature and human society are in a process of permanent change, that there is and has been no ideal state of the world as regards natural conditions, climate, distribution of species on earth, etc. They neglect the fact that the climate has been changing fundamentally throughout the existence of our planet and that there are proofs of substantial climate fluctuations even in known and documented history. Their reasoning is based on historically short and incomplete observations and data series which cannot justify the catastrophic conclusions they draw. They neglect the complexity of factors that determine the evolution of the climate and blame contemporary mankind and the whole industrial civilization for being the decisive factors responsible for climate change and other environmental risks.

By concentrating on the human contribution to the climate change the environmentalists ask for immediate political action based on limiting economic growth, consumption, or human behavior they consider hazardous. They do not believe in the future economic expansion of the society, they ignore the technological progress the future generations will enjoy, and they ignore the proven fact that the higher the wealth of society is, the higher is the quality of the environment.

The policymakers are pushed to follow this media-driven hysteria based on speculative and hard evidence lacking theories, and to adopt enormously costly programs which would waste scarce resources in order to stop the probably unstoppable climate changes, caused not by human behavior but by various exogenous and endogenous natural processes (such as fluctuating solar activity).

My answer to your first question, i.e. what should policymakers consider when addressing climate change, is that policymakers should under all circumstances stick to the principles free society is based on, that they should not transfer the right to choose and decide from the people to any advocacy group claiming that it knows better than the rest of the people what is good for them. Policymakers should protect taxpayers' money and avoid wasting it on doubtful projects which cannot bring positive results.

2. How should policies address the rate and consequences of climate change and to what extent should regulation of emissions of greenhouse gases be a focus of any such policies?

4

Policies should realistically evaluate the potential our civilization has, as compared with the power of natural forces influencing climate. It is an evident waste of society's resources to try to combat an increase of solar activity or the movement of ocean currents. No government action can stop the world and nature from changing. Therefore, I disagree with plans such as the Kyoto Protocol or similar initiatives, which set arbitrary targets requiring enormous costs without realistic prospects for the success of these measures.

If we accept global warming as a real phenomenon, I believe we should address it in an absolutely different way. Instead of hopeless attempts to fight it, we should prepare ourselves for its consequences. If the atmosphere warms up, the effects do not have to be predominantly negative. While some deserts may get larger and some ocean shores flooded, enormous parts of the earth – up until now empty because of their severe, cold climate – may become fertile areas able to accommodate millions of people. It is also important to realize that no planetary change comes overnight.

Therefore, I warn against adopting regulations based on the so- called precautionary principle which the environmentalists use to justify their recommendations, the clear benefit of which they are not able to prove. Responsible politics should take into account the opportunity costs of such proposals and be aware of the fact that the wasteful environmentalist policies are adopted to the detriment of other policies, thus neglecting many other important needs of millions of people all over the world. Each policy measure must be based on a cost- benefit analysis.

Mankind has already accumulated tragic experience with one very proud intellectual stream that claimed that it knew how to manage society better that spontaneous market forces. It was communism and it failed, leaving behind

millions of victims. Now, a new -ism has emerged that claims to be able to manage even nature and, through it, people. This excessive human pride – just as the previous attempts – cannot but fail. The world is a complex and complicated system that cannot be organized according to an environmentalist human design, without repeating the tragic experience of wasting resources, suppressing people's freedom, and destroying the prosperity of the whole human society.

My recommendation, therefore, is to pay attention to the thousands of small things that negatively influence the quality of the environment. And to protect and foster fundamental systemic factors without which the economy and society cannot operate efficiently – i.e. to guarantee human freedom and basic economic principles such as the free market, a functioning price system and clearly defined ownership rights. They motivate economic agents to behave rationally. Without them, no policies can protect either the citizens or the environment.

Policymakers should resist environmentalist calls for new policies because there are too many uncertainties in scientific debates on climate change. It is impossible to control natural factors causing climate change. The negative impact of the proposed regulation on economic growth is to the detriment of all other possible risks, including the environmental ones.

3. What will be the effect on national economies, consumer well-being, job creation, and future innovation under various climate change policy scenarios that have come to your attention?

If the policymakers accept the maximalistic environmental demands, the effects on national economies will be devastating. It would stimulate some, very

small parts of the economy while leaving a bigger part of it choked by artificial limits, regulations, and restrictions. The rate of growth would decline and the competitiveness of the firms on international markets would be seriously affected. It would have a negative impact on employment and job creation. Only rational policies, making spontaneous adjustments possible, can justify government intervention.

4. What impact and effectiveness will so-called cap-and-trade policies have upon the reduction of climate change threats and our ability to address these threats in the future?

Cap-and-trade policies are a technical tool to achieve pollution reduction goals by more market compatible means. They can help if the general idea behind the scheme is rational. I do not believe the whole idea to combat climate change by emission limits is rational and I, therefore, consider the technicalities of its eventual implementation to be of secondary importance.

5. What is the moral obligation of developed countries to the developing countries of the world? Should developed countries embark on large emissions reduction schemes while developing countries are allowed to continue to increase emissions unabated?

The moral obligation of developed countries to the developing countries is to create such an environment which guarantees free exchange of goods, services, and capital flows, enables utilization of comparative advantages of individual countries and thus stimulates economic development of the less developed countries. Artificial administrative barriers, limits and regulations imposed by developed countries discriminate the developing world, affect its economic growth, and prolong poverty and underdevelopment. The

environmentalist proposals are an exact example of such illiberal policies that are so harmful for the developing countries. They will not be able to cope with the limits and standards imposed on the world by irrational environmental policies, they will not be able to absorb new technological standards required by the anti-greenhouse religion, their products will have difficult access to the developed markets, and as a result the gap between them and the developed world will widen.

It is an illusion to believe that severe anti-climate change policies could be limited to developed countries only. If the policies of the environmentalists are adopted by developed countries, sooner or later their ambitions to control and manage the whole planet will spread the emissions reduction requirements worldwide. The developing countries will be forced to accept irrational targets and limitations because "earth is first" and their needs are secondary. The environmentalist argumentation gives ammunition to protectionists of all colors who try to eliminate competition coming from newly industrialized countries. Therefore, the moral obligation of the developed countries is not to introduce large emissions reduction schemes.

March 19th, 2007

MICHAEL G. MORRIS, ANSWERS TO SUBMITTED QUESTIONS

QUESTION SUBMITTED BY HON. JOHN D. DINGELL

Question 1. Your testimony of March 5, 2008, points out that several elements of the IBEW-AEP proposal, such as which developing nations are covered by an international allowance requirement and how to define ″comparability″ of other nations' climate regimes, could be assigned either to an independent agency or to the President.

There are significant differences between those two options. With an agency determination, Congress can specify that decisions fulfilling statutory intent be made on the record by rule. The rules for judicial review in that context are clear. If the President, however, were given responsibility for making such findings, the nature of any public participation is less obvious.

Which option do you favor, why, and how do you assess the tradeoffs?

Response: AEP assesses the tradeoffs between the two approaches precisely as you have laid them out in your question. However, on balance, AEP has come to believe the preferable option of the two is to place the decision-making authority in an independent agency or commission that is specifically charged with the responsibility of making the ″comparable action″ determinations under the international program.

The establishment of an independent agency represents a change of view. Since APE's appearance during the March 5 hearing of the Subcommittee on Energy and Air Quality, AEP has continued to consult with various stakeholders, many of whom expressed a strong preference to have the decision-making authority for the international allowance program vested in an independent entity whose decisions would be subject to transparency and public participation, as well as judicial review.

Accordingly, AEP has been persuaded that it would be preferable to vest the decision-making authority in an independent U.S. agency, to capture all the benefits of transparency, public participation and judicial review, without sacrificing efficiency and a comprehensive perspective on global climate change. To achieve these ends, the Congress would need to create a new independent agency that would have the requisite expertise to handle the tasks identified in the international allowance program.

In sum, AEP has been convinced that an independent U.S. agency would best serve the interests of U.S. climate change legislation in the operation of the international allowance program. We would be pleased to work with the Committee to develop these ideas further.

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April 16, 2008

Charles Owen Verrill, Jr.
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Hon. John D. Dingell
Chairman, Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515-6115

Re: Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries

Dear Chairman Dingell:

Jim Slattery, who has resigned from our firm to run for the U.S. Senate from Kansas, has asked me to respond to your questions regarding the testimony he delivered on March 5, 2008, in the hearing held by the Subcommittee on Energy and Air Quality. I am doing so on behalf of the American Iron and Steel Institute and the Steel Manufacturers Association. The Committee has requested that we address two questions. I appreciate the opportunity to do so.

1. *In the event Congress incorporated the IBEW-AEP proposal on climate change legislation, and some time later that WTO ruled the provision did not comply with its rules, how would the steel industry be affected?*

The impact of the IBEW-AEP proposal on the American steel industry, and the consequences of a ruling that the provision was inconsistent with the international obligations of the United States, depends to a major extent on the final form of the legislation. In its current version, the IBEW-AEP proposal would be likely to provide few benefits to the American steel industry. The provision would not require greenhouse gas emissions allowances for imports of steel and other primary products until 2020, and then only to the extent that the emissions associated with those imports exceeded 2012-2014 baseline levels, while U.S. producers would have to start providing allowances in 2012. Moreover, the proposal gives the President discretion in determining whether a foreign country has implemented climate change regimes "comparable" to that of the United States; if it has, the allowance requirement would not apply to imports from that country. It is questionable whether, under the current version of the proposal, any steel imports would ultimately require allowances at all. For this reason, it seems clear that, even if enacted into law, the IBEW-AEP proposal will provide little if any benefit to the American steel industry.

Improvements to the current proposal, such as moving the effective date up to 2012 and eliminating the baseline and Presidential discretion, as many have recommended, could make the proposal more effective. Even then, however, the industry is concerned that foreign countries would subsidize the purchase of allowances by

their exporters, which would maintain the competitive disadvantage climate change legislation will impose on the domestic steel industry in international commerce.

Paradoxically, given the meager benefits the IBEW-AEP proposal provides the steel industry, a decision by the WTO that the proposal violates various rules of international trade could cause substantial damage to the industry. If the United States response to a negative ruling was a suspension of the allowance requirement for imports, the domestic industry would have the worst of all worlds: a requirement that it present allowances, but no protection from imports from countries that do not impose allowance requirements. On the other hand, U.S. refusal to comply with the WTO ruling could lead to retaliatory duties on exports of primary products or goods made from them, such as agricultural and construction machinery. Even if the U.S. response was to suspend all allowance requirements (including those for domestic producers of primary products), the steel industry would in the interim have borne the additional costs that a cap-and-trade system of emissions allowances will (and indeed must) impose.

2. *Turning the tables, in the event Congress incorporated your "performance standard" proposal for energy intensive industries, and the WTO later struck down that approach, how would the steel industry be affected?*

While the Committee should properly consider the potential consequences of carbon intensity standards being held to be inconsistent with the WTO obligations of the United States, that outcome is unlikely. Unlike the allowance measures under the IBEW-AEP proposal, the WTO legality of which would depend on convincing the WTO to approve an exception to the normal GATT requirements, carbon intensity regulations would, in our view, be entirely consistent with the Agreement on Technical Barriers to Trade. Nevertheless, if the WTO found U.S. carbon intensity standards as enacted to be contrary to our international obligations, the United States would have the opportunity to conform those standards to the WTO requirements. The outcomes of compliance efforts in past WTO disputes suggest that aggressive international efforts to achieve consensus on international carbon intensity standards would permit the United States to demonstrate substantial compliance.

Thank you again for the opportunity to present my views. I welcome any further questions or requests for information the Committee might have.

Respectfully submitted,

Charles Owen Verrill, Jr.

RICHARD D. MORGENSTERN, ANSWERS TO SUBMITTED QUESTIONS

QUESTIONS SUBMITTED BY HON. JAY INSLEE

1. If the U.S. enacts a climate policy that adds GHG pollution to the costs of energy-intensive industries, international competition would drive some to relocate to a different country with a weaker climate policy. To prevent those jobs and emissions from ″leaking″ out of our economy, what criteria would you use to specifically identify the set of firms that should receive compensation as part of the policy?

Response: The likelihood that significant segments of energy intensive manufacturing industries would relocate abroad in response to a price based domestic climate policy depends on a number of factors including the carbon price itself, the carbon intensity of the industry, the cost/feasibility of changing production processes, and the ability to pass along the added costs in the form of higher product prices. Of course, the time dimension is also relevant: in the short term there may be more limited opportunities to modify production processes, while more options may be available over the longer term.

Unfortunately, it is not practical for the government to estimate precisely the vulnerability of individual industries to these different factors, especially for narrowly defined industrial categories. At best, we can use rough proxies such as the industries' energy intensity and the extent of competition it faces in international markets. In research I have done with several of my colleagues at Resources for the Future, we have used U.S. Commerce Department data (at the two digit NAICS level) to identify the most energy-intensive, trade-sensitive sectors.[1] It is also possible to develop some more detailed information at the more precise 6-digit level. A careful evaluation of such information, presumably by a federal agency with relevant technical expertise, could be used to develop a more refined analysis of the most vulnerable sectors.

In carrying out such an analysis, two factors are most critical: 1) energy costs as a percent of the industry's total costs, and 2) the extent of international competition faced by the industry. Since the measurement of international competition is not always straightforward, a suitable, transparent indicator would need to be developed. One candidate indicator would be the value of imports from unregulated countries (i.e., those without comparable climate policies) as a percent of domestic production. A more comprehensive measure would also include exports, which compete with products from unregulated countries.

2. Can you estimate the total emissions from these sub-sectors?

Response: Once the most vulnerable industry segments are identified, direct CO2 emissions can be readily calculated based on their combustion of fossil fuels. Indirect CO2 emissions from electricity use can be approximated by various methods, depending on the fuel use by regional utilities. (These need not be calculated for compliance, of course, as long as the electricity sector is covered, but they can provide a useful metric of the energy cost burden to the sector of the climate policy, to the extent that the electricity sector is able to fully pass its own costs.) If desired, CO2 emissions associated with the use of non fossil fuel inputs, or the emissions of nonCO2 gases, can also be estimated at the facility or industry level.

3. How would you decide how much to compensate each firm?

Response: Ideally, compensation to adversely affected firms would be sufficient to discourage the firms from moving to nations that do not have comparable climate policies. In practice, it is more difficult to determine the ″optimal″ amount of compensation at a sector level, much less a firm level. One approach, focusing only on firms in the most energy-intensive, import-sensitive industries, would be to cover most or all of the added costs associated with the new policy, at least at the outset. These added costs should be evaluated based on sector-specific averages or reasonable technology benchmarks, as opposed to a firm-specific basis, to ensure a level playing field among competitors at home. Over time, the compensation amount could decline to reflect the opportunities the firms would have to make new investments to lower their net costs and/or to reflect the increased burdens on their foreign competitors as other nations embrace comparable climate policies.

4. Would that compensation be based on their updated current output or their past emissions?

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[1] Morgenstern, Richard D., Joseph E. Aldy, Evan M. Herrnstadt, Mun Ho, and William A. Pizer. 2007. ″Competitiveness Impacts of Carbon Dioxide Pricing Policies on Manufacturing, in Assessing U.S. Climate Policy Options, (Raymond J. Kopp and William A. Pizer, editors), Resources for the Future, Washington, D.C.

Response: In order to minimize windfalls and provide incentives for firms to maintain or expand their output, a system based on updated current output would be vastly preferred. While such a scheme would create incentives to expand production of carbon intensive outputs, in this case that may be an acceptable trade-off, since foreign production may well be more carbon intensive than the domestic production it replaces. Basing compensation on past emissions does not provide an incentive to maintain or expand domestic output and it may generate windfalls to firms that reduce production but still receive free allowances.

5. How would that compensation be delivered?

Response: In the context of a cap and trade system, the compensation could be delivered in the form of free allocation of allowances during a transition period. As provided in S. 2191, for example, allocations of allowances for individual firms are updated annually on the basis of a three year moving average of a firm's proportion of production employees within a given industrial sector. Other metrics would also be possible, for example, the dollar value of output or value added in the sector. Alternatively, using similar metrics but in a system without free allocation, one could offer rebates for maintaining or expanding employment or output in lieu of additional free allowances. The economic effect is basically the same.

6. Would your proposal require a border tax adjustment in addition to direct compensation?

Response: With the updating allocation mechanism in place in S. 2191 energy intensive firms are receiving valuable allowances to offset the higher costs associated with the climate policy. Starting in 2017 there is a gradual reduction in the allowances received, declining to zero in 2030. One could envision a comparable phasing out of rebates in a system without free allocation. Since in all likelihood a WTO-legal border-tax adjustment would have to recognize the extent of the free allocation or rebates, the size of any border tax adjustment would likely be zero or minimal in the early years. More generally, the larger the amount of free allocation or rebates, the lower the allowable border-tax adjustment.

At the same time, the updated allocation or rebate performs the function of mitigating the competitiveness impacts of a climate policy. Thus, border adjustment is less necessary from a carbon leakage standpoint to the extent that the updating or rebate mechanism is in place. The trade-off between updated allocation or rebates on the one hand and border adjustment on the other involves several factors. One is compatibility with WTO obligations. To what extent can WTO-compatible border-adjustment taxes on imports fully account for the embodied emissions? Can relief for exports be incorporated in a WTO-compatible way, without undoing incentives to reduce the carbon intensity of production processes? If border adjustment policies must assume a weaker metric to be WTO-compatible, implying weaker protection against carbon leakage, updated allocation or rebates may be a more effective alternative. The second has to do with revenue implications: more government revenues are foregone with updated allocations or rebates than with border adjustment. All these policies, when associated with triggers that provide for their reduction or removal as major trading partners take on comparable climate policies, can help incentivize international action. Arguably, border-tax adjustment may be seen as a red flag to free trade advocates, but it can also more directly target those trade partners lagging in terms of climate policy action.

NATURAL RESOURCES DEFENSE COUNCIL

April 16, 2008

Hon. John D. Dingell, Chairman
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515-6115

Dear Mr. Chairman:

Thank you for the additional questions you posed in your letter of April 3, following the recent hearing on "Climate Change: Competitive Concerns and Prospects for Engaging Developing Countries." My responses are set forth below.

1. *With respect to the thorny issue of World Trade Organization (WTO) compliance, it is evident that expert legal opinion is divided as to whether U.S. legislation imposing a "border adjustment" such as the IBEW-AEP proposal would survive a challenge.*

   a. *Do you recommend inclusion of such a proposal in U.S. domestic legislation?*

   b. *Given the uncertainty regarding a WTO ruling, do you think such a provision would carry enough weight to affect the negotiating stance of major developing countries such as China?*

In my testimony, I noted that there is a real opportunity now, under the action plan agreed last December in Bali, for the developed and developing countries to overcome past obstacles and move forward in partnership in the period after 2012. In Bali, the major developing countries showed unprecedented willingness to negotiate actions they will take to reduce their growing emissions. For their part, developed countries, including the U.S., agreed to negotiate emission reduction commitments, and to assist developing countries in several areas: access to clean energy technology, reduction of deforestation, and adaptation to unavoidable climate impacts. These are the makings of a global bargain to avoid the worst effects of global warming.

While all countries are guided by their own interests, they pay careful attention to what others are doing. In my opinion, one reason that the major developing countries shifted their stance is that they see the movement in this country towards adoption of a domestic cap and trade program. It has been too easy for some other countries to hide behind U.S. inaction. Now that they see the prospect of change here, they know they have to reassess their own positions.

That is why early enactment of U.S. cap and trade legislation is the single most important step we can take to unlocking the global negotiating gridlock of the past decade.

At the same time that other countries look at trends in this country, U.S. policy makers need to take note of actions already being taken in key developing countries to reduce their emissions growth. My testimony summarized China's targets for reducing the energy intensity of its economy, and thereby to reduce its emissions growth, through increased energy efficiency and renewable energy deployment. I also noted that China has adopted fuel economy standards stronger than ours, and that China has instituted tariffs on high-polluting exports such as steel – according to the World Resources Institute the steel tariff works out to $50 per ton of carbon dioxide emissions. Submissions that the Committee has received from the World Resources Institute, the Center for Clean Air Policy, and others further document actions being taken in key developing countries.

Success in Copenhagen, however, will take a great deal of work. In addition to enacting a domestic program to reduce our own emissions, we need to bring to bear a variety of carrots and sticks.

One necessary step on the stick side of the ledger is for the next President (unlike the current one) to bring global warming to the top tier of our relationship with China and other key developing countries, linking progress on global warming with other top-tier issues.

In addition, if handled appropriately, the prospect of an import allowance purchase requirement can increase the Executive Branch's bargaining leverage in the current negotiations. The situation is delicate, however. If the threat of import requirement is not accompanied by appropriate carrots, or if it is brandished too early or aggressively, the negotiations will likely be set back. And as my testimony explained, using this stick too early or aggressively also increases the risk that it will be found defective under the WTO.

It is critical to accompany these sticks with carrots in the form of support for clean technology deployment, reduction of deforestation, and adaptation in the most vulnerable countries. As agreed in Bali, these are essential elements to the success of the post-Bali climate treaty negotiations. To be sure, developing countries with rapidly emerging economies must contribute to funding their own clean development. But it is in our interest to help, (1) because we cannot protect our own citizens from the effects of global warming without the cooperation of both the other developed countries and the largest developing countries, and (2) because there is a crucial opportunity to expand markets for American clean energy technologies and solutions. I suggested in my testimony a way to use a portion of the emissions allowances under our domestic program to provide stable support for our country's contribution to those activities.

2. *Your testimony of March 5, 2008, is critical in some respect of proposals to establish "performance standards" setting uniform emissions limits for certain energy intensive products, such as steel.*

The testimony, however, also states "There is an important role for performance standards for key products and industries" as "complements to, not substitutes for" an overall emissions cap.

How would you suggest Congress combine these two approaches? Can you provide the Committee with legislative language embodying this concept?

In NRDC's March 19, 2007, response to Chairman Dingell's initial solicitation of stakeholder views, we said:

> It is essential to have a hybrid program that combines the "cap-and-trade" system with performance-based standards and incentives. Performance-based standards, in combination with complementary incentive policies, can reduce costs and accelerate the deployment of needed technologies. These additional policies – performance standards and incentives – should be targeted at key low-emitting and energy-efficient technologies. Without such policies, the cap-and-trade system alone runs the risk of producing unnecessarily high allowance prices and inadequate technological progress in key sectors, especially in the near- and mid-term.

As the Committee recognized in the White Paper concerning state and federal relationships, there are areas where efficiency standards, building codes, policies to reduce vehicle miles travelled, and other performance standards can lower the overall cost of achieving a given cap by seizing low-cost emission reduction opportunities that – due to market barriers, short-term investment horizons, or other factors – will not be achieved through an emissions cap operating alone.

As members of the Committee are aware, NRDC believes stronger vehicle performance standards (beyond the 35 mpg standard established as a minimum requirement by EISA last year) are justified on the same basis because they are likely to reduce the overall national cost of making greenhouse gas reductions to meet a national cap. There is a strong case to be made that these vehicle standards will function like building codes and other examples mentioned in the paper, by capturing an opportunity for cost-saving emission reductions that is unlikely to be achieved by the federal cap alone. For example, California calculates that at the current cost of gasoline, the vehicle owner's net monthly cost of purchasing and operating a vehicle that meets that state's GHG emission standards will go down, despite a higher initial vehicle purchase price, because the lower-emitting vehicles will also use less fuel. The economic savings – and energy security benefits – also will extend to owners of existing vehicles because gasoline prices for all consumers will be moderated by reduced gasoline demand. Allowance prices will be moderated for the same reasons. Neither a cap on global warming pollution on its own, nor the CAFE standards adopted last year, can be counted

on to seize the full opportunity for cost-saving reductions that would result from the California standard.

Meeting such standards need not result in a negative impact on vehicle manufacturers or auto-making jobs. NRDC supports using a portion of the allowance value to assist automakers and their employees to make the transition to compliance with higher standards, through such means as retooling incentives and consumer purchase incentives.

Another example where complementary performance standards are needed is to help the electric sector make the transition from current coal-burning technologies towards plants equipped with carbon capture and disposal (CCD). A CO_2 cap and trade program by itself may not result in deployment of CCD systems as rapidly as we need. Many new coal plant design decisions are being made literally today. Depending on the pace of reductions required under a global warming bill, a firm may decide to build a conventional coal plant and purchase allowances rather than applying CCD systems to the plant. While this may appear to be economically rational in the short term, it is likely to lead to higher CO_2 allowance for everyone in the mid- and longer-term if construction of a substantial number of new conventional coal plants pushes up emissions and thus demand for allowances.

Everyone agrees that early deployment of CCD will produce learning and experience that will drive down costs. The more quickly CCD costs are driven down, the more widespread its use will be throughout the world, including in rapidly growing economies like China and India. If the allowance price is the only signal used to motivate CCD deployment, this learning, experience, and cost reduction will be delayed. The longer we wait to ramp up this experience, the longer we will wait to see CCD deployed here and in countries like China.

Accordingly, we recommend a hybrid program that combines the breadth and flexibility of a cap and trade program with well-designed performance measures focused on key technologies like CCD. One such performance measure is a CO_2 emissions standard that applies to new power investments. California enacted such a measure in SB 1368 last year. It requires new investments for sale of power in California to meet a performance standard that is achievable by coal with a moderate amount of CO_2 capture.

Another approach is a low-carbon generation obligation for coal-based power. The low-carbon generation obligation requires an initially small fraction of sales from coal-based power to meet a CO_2 performance standard that is achievable with CCD. The required fraction of sales would increase gradually over time and the obligation would be tradable. Thus, a coal-based generating firm could meet the requirement by building a plant equipped with CCD, by purchasing power generated by another source that meets the standard, or by purchasing credits from those who build and operate such plants.

This approach has the advantage of speeding the deployment of CCD while avoiding the "first mover penalty." Instead of causing the first builder of a commercial

coal plant with CCD to bear all of the incremental costs, the tradable low-carbon generation obligation would spread those costs over the entire coal-based generation system. The builder of the first unit would achieve far more hours of low-carbon generation than required and would sell the credits to other firms that needed credits to comply. These credit sales would finance the incremental costs of these early units. This approach provides the coal-based power industry with the experience with a technology that it knows is needed to reconcile coal use and climate protection and does it without sticker shock.

A bill introduced last year, S. 309, contains such a provision. It begins with a requirement that one-half of one per cent of coal-based power sales must meet the low-carbon performance standard starting in 2015 and the required percentage increases over time according to a statutory minimum schedule that can be increased in specified amounts by additional regulatory action. Additional legislative language for the Committee's consideration is attached to this letter.

3. *Your testimony states that "NRDC believes there are ample tools" for addressing competitiveness concerns, which "in proper combination can also contribute to engaging other countries." You propose several options not addressed fully in our White Paper, such as providing "a limited and temporary amount of free allocation or auction revenue" for specific industries while international negotiations proceed.*

   Could you provide the Subcommittee with proposed legislative language incorporating these ideas?

In my testimony, I expressed caution about proposals to rely solely on the import allowance purchase requirement to address competitiveness concerns, or to start that requirement too early. Resorting to the import allowance purchase requirement too quickly is likely to interfere with the post-Bali global warming talks by diverting the parties from their current positive attitudes and towards retrenchment and recrimination. Resorting to this tool too quickly will also raise the risk of a successful challenge under the WTO, which calls for a period of good faith negotiation before imposing such a measure. I suggested that Congress could address legitimate competitiveness concerns in the early years by allocating allowances or auction revenues to the specific industries that demonstrate their disadvantage vis a vis foreign competitors operating in jurisdictions without carbon control policies. This could be accomplished with less than 10 percent of all allowances, and should be conditioned on maintaining domestic employment, and phased out by 2020 (assuming that is the trigger date for the import allowance purchase requirement).

As a starting point for legislative language, NRDC suggests that the Committee consider Section 3904 of S.2191. Several modifications would be in order. First, a flaw in S.2191 is that it exempts from the cap certain process emissions, such as the CO_2 emissions from cement calcining. There is no good reason to exempt these emissions.

Assuming that this flaw is corrected, a modification would be needed to the language adapted from Section 3904 to account for process emissions as well as energy emissions.

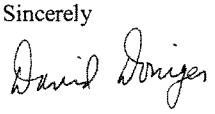
Second, we are willing to work with the Committee to fine-tune the language linking the assistance provided to investments in making facilities more energy-efficient and productive, and to the maintenance of domestic employment.

Third, the Committee should consider using auction revenue, rather than a direct allocation of allowances, to achieve the goals of this provision. That could allow better targeting of resources to entities and purposes that address competitive disadvantage with the least risk of distortion and creating windfalls.

* * *

Thank you for the opportunity to respond to these questions. NRDC is ready to help the Subcommittee in developing global warming legislation in any way we can.

Sincerely



David D. Doniger
Climate Center Policy Director
Natural Resources Defense Council

SEC. STANDARDS FOR ELECTRICITY GENERATION FROM ADVANCED COAL TECHNOLOGIES

1. Emission standards for coal-fired electric generating units.

`(a) Initial Standard-

`(1) IN GENERAL- Not later than 2 years after the date of enactment of this title, the Administrator shall, by regulation, require each coal-fired electric generating unit (including a cogeneration facility) that has an annual fuel input at least 50 percent of which is provided by coal, petroleum coke, lignite, or any combination of those fuels, that is designed and intended to provide electricity at a unit capacity factor of at least 60 percent, and that begins operation after December 31, 2011, to meet the standard described in paragraph (2).

`(2) STANDARD- Beginning on December 31, 2014, a unit described in paragraph (1) shall meet a global warming pollution emission standard with an annual average that minimizes emissions based on the use of best available technology, but is not less stringent than 250 pounds of carbon dioxide per megawatt-hour for supply to the grid.

` (3) MORE STRINGENT REQUIREMENTS- For the period beginning on January 1 of the calendar year following the effective date of the regulation described in paragraph (1) the Administrator shall, at least every 5 years, review and, if appropriate, revise the stringency of the global warming pollution emission standard described in paragraph (2) with respect to a coal-fired electric generating unit as described in that paragraph.

` (b) Final Standard- Not later than December 31, 2035, the Administrator shall require each coal-fired electric generating unit, regardless of when the unit began to operate, to meet the applicable emission standard under subsection (a).

`(c) Adjustment of Requirements- If the Administrator determines, pursuant to section____, that a requirement of this section is or will be technologically infeasible at the time at which the requirement becomes effective, the Administrator, may, by regulation, adjust or delay the effective date of the requirement for up to 24 months to take into consideration the determination of the Academy.

2. LOW-CARBON GENERATION REQUIREMENT.

`(a) Definitions- In this section:

`(1) BASE QUANTITY OF ELECTRICITY- The term `base quantity of electricity' means the total quantity of electricity produced for

sale by a covered generator during the calendar year immediately preceding a compliance year from coal, petroleum coke, lignite, or any combination of those fuels.

`(2) COVERED GENERATOR- The term `covered generator' means an electric generating unit that--

`(A) has a rated capacity of 25 megawatts or more; and

`(B) has an annual fuel input at least 50 percent of which is provided by coal, petroleum coke, lignite, or any combination of those fuels.

`(3) LOW-CARBON GENERATION- The term `low-carbon generation' means electric energy generated from an electric generating unit at least 50 percent of the annual fuel input of which, in any year--

`(A) is provided by coal, petroleum coke, lignite, or any combination of those fuels; and

`(B) results in an emission rate into the atmosphere of not more than 250 pounds of carbon dioxide per megawatt-hour (after adjustment for carbon dioxide from the electric generating unit that is geologically sequestered in a geological repository approved by the Administrator pursuant to subsection (e)).

`(4) PROGRAM- The term `program' means the low-carbon generation credit trading program established under subsection (d)(1).

`(b) Requirement-

CALENDAR YEARS 2015 THROUGH 2030- Of the base quantity of electricity produced for sale by a covered generator for a calendar year, the covered generator shall provide a minimum percentage of that base quantity of electricity for the calendar year from low-carbon generation, as specified in the following table:

`Calendar year:	Minimum annual percentage:
2015	1.0
2016	2.0
2017	3.0
2018	4.0
2019	5.0
2020	7.0
2021	9.0
2022	11.0
2023	13.0
2024	15.0
2025	18.0
2026	21.0
2027	24.0
2028	27.0
2029	30.0
2030	33.0

`(c) Means of Compliance- An owner or operator of a covered generator shall comply with subsection (b) by--

`(1) generating electric energy using low-carbon generation;

`(2) purchasing electric energy generated by low-carbon generation;

`(3) purchasing low-carbon generation credits issued under the program; or

`(4) undertaking a combination of the actions described in paragraphs (1) through (3).

`(d) Low-Carbon Generation Credit Trading Program-

`(1) IN GENERAL- Not later than one year after enactment, the Administrator shall establish, by regulation after notice and opportunity for comment, a low-carbon generation trading program to permit an owner or operator of a covered generator that does not generate or purchase enough electric energy from low-carbon generation to comply with subsection (b) to achieve that compliance by purchasing sufficient low-carbon generation credits.

`(2) REQUIREMENTS- As part of the program, the Administrator shall--

`(A) issue to producers of low-carbon generation, on a quarterly basis, a single low-carbon generation credit for each kilowatt hour of low-carbon generation sold during the preceding quarter; and

`(B) ensure that a kilowatt hour, including the associated low-carbon generation credit, shall be used only once for purposes of compliance with subsection (b).

`(e) Enforcement- An owner or operator of a covered generator that fails to comply with subsection (b) shall be subject to a civil penalty in an amount equal to the product obtained by multiplying--

`(1) the number of kilowatt-hours of electric energy sold to electric consumers in violation of subsection (b); and

`(2) the greater of--

`(A) 2.5 cents (as adjusted under subsection (g)); or

`(B) 200 percent of the average market value of those low-carbon generation credits during the year in which the violation occurred.

`(f) Exemption- This section shall not apply for any calendar year to an owner or operator of a covered generator that sold less than 40,000 megawatt-hours of electric energy produced from covered generators during the preceding calendar year.

`(g) Inflation Adjustment- Not later than December 31, 2010, and annually thereafter, the Administrator shall adjust the amount of the civil penalty for each kilowatt-hour calculated under subsection (e)(2) to reflect changes for the 12-month period ending on the preceding November 30 in the Consumer Price Index for All Urban Consumers published by the Bureau of Labor Statistics of the Department of Labor.

`(h) Technological Infeasibility- If the Administrator determines, pursuant to section _____, that the schedule for compliance described in subsection (b) is or will be technologically infeasible for covered generators to meet, the Administrator may, by regulation, adjust the schedule for up to 24 additional months to take into account the consideration of the determination of the Academy.

`(i) Termination of Authority- This section and the authority provided by this section terminate on December 31, 2030.

CHAMBER OF COMMERCE
OF THE
UNITED STATES OF AMERICA

CHRISTOPHER WENK
SENIOR DIRECTOR
INTERNATIONAL POLICY

1615 H STREET, N.W.
WASHINGTON, D.C. 20062-2000
202/463-5660

April 15, 2008

The Honorable John Dingell
Chairman
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515

The Honorable Joe Barton
Ranking Member
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515

Dear Chairman Dingell and Ranking Member Barton:

Thank you for the opportunity to testify before the Subcommittee on Energy and Air Quality on March 5, 2008 at the hearing titled "Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries." In response to your letter dated April 3, 2008, the Chamber is providing written responses to the following questions from Ranking Member Barton to be made part of the record.

1). You mentioned in your testimony that the United States and the European Union submitted a ground-breaking proposal as part of the Doha Round of World Trade Organization (WTO) negotiations to increase global trade in and use of environmental goods and services. Can you tell us a little more about that initiative and where it stands?

The Chamber believes that trade policy can contribute in a meaningful way to efforts on climate change through trade liberalization and not trade restrictions. The United States and the European Union (EU) have indeed submitted a forward leaning proposal as part of the on-going Doha Round of WTO negotiations to increase global trade in and use of environmental goods and services. It would place priority action on technologies directly linked to addressing climate change and energy security.

According to the Office of the U.S. Trade Representative (USTR), the U.S.-EU initiative proposes to eliminate tariff and non-tariff barriers to environmental technologies and services through a two-tiered approach: 1) the first-ever WTO agreement on worldwide elimination of tariffs on a specific list of climate friendly technologies recently identified by the World Bank; and 2) higher level of commitment on the part of developed and the most advanced developing countries to eliminate barriers to trade across a broader range of other environmental technologies and an array of environment-friendly services.

Significantly, WTO members currently charge duties as high as 70% on certain environmental goods, impeding access to and use of these important technologies. A recent World Bank study on climate and clean energy technologies suggests that by removing tariffs

and non-tariff barriers to key technologies, trade could increase by an additional 7-14% annually. A corresponding increase in use of such technologies and services could contribute importantly to global efforts to address climate change and energy security.

The World Bank report also concludes that liberalizing trade in these technologies could facilitate more high-end technology investment. Not surprisingly, countries that trade more environmental goods either have less pollution or consume energy more efficiently, or both, according to separate data on environmental indicators available from the World Bank and World Resources Institute. The Chamber is hopeful that this initiative will continue to gain support from other WTO members as part of the Doha Round.

2). Even if whatever scheme is imposed is fully successful in mitigating the competitiveness concerns about U.S. manufacturing versus imports, it does not do anything for U.S. exports. U.S. manufacturers would face higher production costs which would make U.S. exports less competitive overseas. This is particularly troubling, given the importance of sustaining the current rate of export growth to support economic growth in the United States. Would you agree?

During times of economic uncertainty, it is easy for people to overlook how well U.S. exports are currently performing. These facts should not be overlooked. In 2007, a steep rise in exports generated more than a quarter of U.S. GDP growth. The U.S. exported a record $1.6 trillion in goods and services, an increase of 12% over the previous year. Due to increased growth in both goods and service exports, the U.S. trade deficit declined for the first time since 2001. As a percentage of U.S. GDP, the goods and services deficit declined from 5.7% in 2006 to 5.1% in 2007. The United States was once again the world's largest exporter 2007 and will continue to be in 2008.

There are serious trade implications to the climate change proposals before you that should not be overlooked. U.S. exporters are depending on Congress to carefully weigh legislative proposals on climate change and not steam ahead with legislation that could negatively impact U.S. exports or competitiveness. The Chamber strongly believes that international trade is vital to the economic interests of the United States and plays a driving role in the expansion of economic opportunities for American workers, farmers, and businesses.

Finally, the Chamber encourages adherence to the following six core principles as a comprehensive structure to manage climate change in a way that recognizes that governmental action should protect our environment, quality of life, and national security:

(1) Preservation of American jobs and the competitiveness of U.S. industry;

(2) Promotion of the accelerated development and deployment of greenhouse gas reduction technology;

(3) Reduction of barriers to the development of climate-friendly energy sources;

(4) Maximum flexibility;

(5) International, economy-wide solution with minimal impact on industry and regional economies, which includes developing nations; and

(6) Promotion of energy conservation and efficiency.

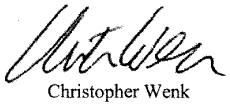
3). Long before a potential WTO case runs its course, isn't it likely that affected countries – say China or India or Brazil – will develop their own trade sanctions based on their unilateral definitions of sufficient action by other countries? For example, might they define action on the basis of per capita emissions in an economy?

As stated in the Chamber's written testimony, people should not overlook the fact that the climate change discussion involves trading relationships that the United States has with countries around the world. Further, the Chamber thinks it is safe to assume that Congress could negatively impact these trading relationships, whether China, India or Brazil, before the U.S. even got to a possible WTO Dispute Settlement proceeding. Without question, U.S. trading partners could develop their own trade sanctions or regulatory barriers in response to what they would likely see as stiff arm tactics by the United States.

The Chamber believes that trade policy tools cannot be used successfully to force international partners to meet domestic objectives. In fact, the ideas presented in the Committee on Energy and Commerce's White Paper may be perceived by U.S. trading partners as barriers to trade. International trade is an important component of the U.S. economy, and a domestic greenhouse gas emissions trading scheme that forces international trading partners to comply will have significant repercussions for U.S. firms.

Instead of exchanging climate-related trade sanctions with other nations, the U.S. should continue its efforts to engage all major emitting nations in developing a post-Kyoto framework whereby all of the world's major emitters make long-term commitments to achieve real reductions in greenhouse gas emissions, with the flexibility to allow each nation the discretion to choose the method by which to meet its commitment.

Sincerely,



Christopher Wenk

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