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THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

March 4, 1999

REMARKS BY THE PRESIDENT
AT THE DEPARTMENT OF INTERIOR
150TH ANNIVERSARY EVENT

Department of Interior
Washington, D.C.

2:50 P.M. EST

THE PRESIDENT: Thank you very much. Ladies and gentlemen, it's wonderful to be here today. I want to thank the Great American Indian Dancers. I got to watch on the screen, off the stage, and I thought they were wonderful. And I want to thank Dagmar and Mark for their presentations and for the employees they represent.

Mark, that was a pretty shameless pander to Bruce Babbitt, though. (Laughter.) If that doesn't get you a raise, nothing will. (Laughter.)

And I would like to say Secretary Babbitt has spent a lot of his time putting out fires, both figuratively and literally, some of which I lit. (Laughter.) And I thank him for that and for his remarkable loyalty to this department. I got kind of tickled when he said that talking to one of you reminded him of drinking water from a fire hydrant. Sometimes I feel like a fire hydrant looking at a pack of dogs. (Laughter and applause.)

For six years I have declined to tell these kinds of jokes because I have been told repeatedly it is not presidential. (Laughter.) But I feel kind of outdoorsy today, you know. (Laughter.)

I would like to also say to all of you, I really appreciated the Secretary both featuring these two fine employees and talking about the other appointees. I know we have some previous administration appointees who have left to go on to other things here in the audience. I thank all of you who have served by my appointment, and all of you who served by choice in this department.

I have some remarks to make, but I hope that you will forgive me if I mention a few words about a great American citizen

who deeply loved the natural beauty of his native Minnesota. Justice Harry Blackmun died this morning, at the age of 90. In 24 years on the Supreme Court, he served with compassion, distinction and honor. Every decision and every dissent was firmly grounded in the Constitution he revered, and his uncanny feel for the human element that lies just beneath the surface of all serious legal argument.

You can see his mind and heart at work in the landmark decision he wrote protecting women's rights to reproductive freedom, and in his decisions to make the promise of civil rights actually come alive in the daily existence of the American people.

Hillary and I were deeply privileged to know Justice Blackmun and his wonderful wife of 58 years, Dottie, for quite a

long while. I saw up close Harry Blackmun's intense passion -- his passion for the welfare of the American people, for defending our liberties and our institutions, for moving us forward together. We send our respect and our prayers to Dottie and to his three daughters.

To the millions of Americans whose voices he heard and whose rights he defended, to the countless numbers of us who knew and loved him, Harry Blackmun's life embodied the admonition of the prophet, Michael: He did justice, and he loved mercy. And now, he walks humbly with his God. Thank you very much. (Applause.)

Now, let me say that I've been wanting to come over here to thank you for a long time. I don't know that there has ever been a President who has benefitted more, in personal ways at important times of his life, from the Department of the Interior. I was raised in Hot Springs National Park, Arkansas, the first city in America to contain a national park. I spent my first 18 years in a state that is more than half-covered with pine and hardwood forests, which is why Mike Gauldin had a little trouble appreciating Arizona. (Laughter.)

When I finished law school, I went home to the hills of northwest Arkansas, and spent some of the happiest days of my life on the Buffalo River, the very first river set aside under the National Wild and Scenic Rivers Act.

Today, my family and I have the great honor of living in the most beautiful home under the care of the National Parks System. Sometimes it feels more like a zoo than a park, but I love it. Now, my lease is up in one year, 10 months, and 16 days -- (laughter) -- but who's counting? (Laughter.)

Perhaps more than any other department of the federal government, the Interior Department really does embody the history of our country: The story of manifest destiny and the great Western

expansion; the story of fertile fields rising from arid desert; of people rising from the depths of the Great Depression; of a nation marshaling the resources to win two world wars. A story of scientific discovery and relentless explorations; a story of our country's struggle to recognize the dignity and independence and sovereignty, and expand the opportunity of our first citizens, our Native Americans.

A story of the efforts of this country to expand the horizons and make real the promise of America for all Americans, as Secretary Harold Ickes did when he invited the incomparable Marian Anderson to sing from the steps of the Lincoln Memorial 60 years ago, in 1939. Most of all, as Secretary Babbitt has proved every day, it is the story of our intensifying determination as a people to conserve and restore our precious natural resources.

In 1849, when this Department was launched, with a headquarter staff of 10, and a budget of \$14,200, it lacked a unifying purpose -- hard to imagine you could do much more than one thing with that kind of money. (Laughter.) Today, with a much larger staff and a considerably larger budget, the contrast is remarkable.

Under Bruce Babbitt's leadership, everything this department does is guided by the unifying purpose of stewardship. As wise and dedicated stewards, you act in the recognition that all of us are but brief visitors on this small planet. You understand that everything we want for our children depends on protecting the forests, the streams, the deserts that were here so very long before we came along. Today, the "Department of Everything Else," as it was once called, is and forever will be the "Department of Stewardship." And for that, I thank you all.

Using a skillful touch, but not a heavy hand, you have achieved remarkable things. Many have been mentioned today, but because they're so important to me, I want to thank you personally for them. Three years ago, we set out on a mission to preserve California's Headwaters Forest, the world's largest unprotected stand of old-growth redwoods. Three days ago, you did it. We did it. And aren't we glad. (Applause.)

Thanks to the tireless efforts of so many people here and at your sister agency, NOAA, not one of the magnificent trees of Headwaters Forest will ever be logged. Anyone who has ever strolled through a grove of redwoods -- and I have -- who have seen the tangle of ferns at your feet and a living canopy reaching high overhead, knows that these ancient forests are as much a part of our legacy, as I said, as the world's great cathedrals. Thank you for making them safe for all time.

We should also be proud that over the last six years we've set aside vast unspoiled areas of the Mojave Desert,

designating three new national parks. We put a stop to a massive mining operation that threatened Yellowstone, the world's first national park. To protect Utah's stunning Red Rock Canyons, we created the Grand Staircase Escalante National Monument, and completed the largest land exchange in the continental United States.

And I have to tell you, I just returned from Utah, where the rest of my family went skiing, and I thought about it. (Laughter.) And I was so pleased that any number of people, after all the flak we took -- any number of people came up to me, just on the street, and said, Mr. President, you might have been right about that; I think this is going to work out fine, and I'm glad we saved that land. (Applause.)

And in a project that has been particularly close to my heart because I have also been there, we are restoring the Florida Everglades -- the largest restoration project ever undertaken in our nation's history.

That is quite a legacy. But we have much, much more to do. This year, the last of this century, we must dedicate ourselves not to resting on these accomplishments, but to building on them.

First, we must preserve more precious lands. I will soon send the Congress a plan to bestow the highest level of wilderness protection on more than 5 million acres of backcountry lands within Yellowstone, Glacier and other national parks. (Applause.) In these vast regions, the roar of bulldozers and chainsaws never again will drown out the call of the wild.

I'm also proposing an unprecedented \$1 billion Lands Legacy Initiative, which Secretary Babbitt mentioned, on which many of you worked. It will allow us to continue your efforts to protect natural and historic lands across our nation, such as Civil War battlefields, remote stretches of the historic Lewis and Clark trail, and an additional 450,000 acres in and around Mojave and Joshua Tree National Parks.

It will also allow us to meet the stewardship challenges of a new century. It is no longer enough for our nation to preserve its grandest natural wonders. As communities grow and expand, it has become every bit as important to preserve the small, but sacred, green and open space closer to home. So my Lands Legacy Initiative will also help communities protect meadows and seashores, where children play; streams where sportsmen and women can fish; farmlands that produce the fresh harvest we often take for granted.

We believe this Lands Legacy Initiative must be a permanent legacy. So today -- (applause) -- today, I promise to work with Congress to create for the very first time a guaranteed fund for protecting and restoring priceless land all across America.

There are many good legislative ideas for achieving this goal. We think any solution must provide at least \$1 billion annually, with at least half dedicated to helping communities protect local greenspaces. It also must recognize the unique environmental challenges of coastal states, without creating any new incentives for offshore oil drilling.

Working together, we can ensure that not only our generation, but each generation to come, will have the resources to leave an even better land for those who follow. Second, as we help preserve more open spaces, we have a great opportunity to help create more liveable communities; healthy communities where people don't have to waste a gallon of gasoline driving to get a gallon of milk; where employers have no trouble recruiting workers interested in a high quality of life.

The Vice President and I have proposed record funding for public transit and Better America bonds to help communities grow in ways that ensure a clean environment and strong, sustainable economic development.

Third, we must clean up the 40 percent of our waterways that still are too polluted for fishing and swimming. Most Americans don't know that and many are surprised to hear it. I call on Congress to fully fund my clean water action plan and to reauthorize and strengthen the Clean Water Act.

Fourth, we must do more to meet our most profound, common global environmental challenge, the challenge of global warming. I have proposed a clean air partnership fund to help communities reduce both greenhouse pollution and smog, as well as tax and research incentives to spur clean energy technologies. I want to work with members of Congress in both parties to reward companies that take early, voluntary action to reduce greenhouse gases.

Let me say just one thing here that's not in the script. A lot of you clapped and a lot of you were smiling when I said I'd been to Utah, and people came up to me and said, this Grand Staircase idea wasn't such a bad idea, after all. And you nodded your head because you knew it all along. One of the biggest impediments to human progress in any free society is the persistence buried deep in the brains of the people at large or people in decision-making positions, of old ideas that aren't right any longer. The biggest impediment we have to dealing with the challenge of climate change is not cheap oil. It is the old idea that we simply cannot have economic growth without Industrial Age patterns of energy use.

And I see it all over the world. I see it here in the United States. I see it in the United States Congress, where one subcommittee forced us to spend hundreds of thousands of dollars last year trying to defend our climate change plan, which had no new taxes, no big new regulations, was solely devoted to tax incentives, and new research and development for new technologies.

Now, the fact is that things we do today to reduce greenhouse gas pollution -- with available technologies, not to mention those that are just ahead and almost within our reach -- will lower greenhouse gas emissions, will reduce the threat of global warming, and will create more jobs at higher incomes. The old idea is wrong. I ask the employees of the Interior Department to help the American people get rid of an old, wrong idea, so that we can do this. (Applause.)

These are the things that we have to do: setting aside more lands; making more livable communities; cleaning up our waterways; dealing with the challenge of climate change. We can do it. I say to the members of Congress in both parties, please join this crusade. I say to the majority party, the preservation of our natural resources, the stewardship of this great land, should not be a partisan issue. (Applause.)

This country never had a better conservation President than Theodore Roosevelt. For 12 years, I was a governor. The first Governors' Conference in history was called by Theodore Roosevelt in 1908 to talk about the conservation of our resources.

When I was out in Utah, I was looking through Roosevelt's four-volume history of the American West, and thinking to myself, why don't we have two parties equally committed to fulfilling his vision? So I implore the Congress: Let us not waste precious time battling over these bad anti-environmental riders, which I am going to veto anyway; instead, let's go on with the work of America. (Applause.)

Let me say in closing one very personal thing. As I have already explained, I am as deeply indebted to the work of the Department of the Interior as any President could possibly be -- to the visionaries like John Wesley Powell and Harold Ickes and Rachel Carson, to the park rangers that I've seen in Yellowstone and Grand Teton and other parks, to the people that were kind to me as a boy when I roamed the trails and the mountains of the national park which was my home.

In one way or the other, almost all of us have come to see nature as a precious, but fragile, gift, and an important part of the fabric of our lives. Probably every one of us could cite one particular example where that came home to us as never before. I remember once in 1971, when I was driving to California to visit Hillary -- we had just started seeing each other -- and I stopped at the Grand Canyon. And I crawled out on a ledge, about an hour-and-a-half or two before sunset, and I just sat there for two hours, and I watched the sun set on Grand Canyon -- if you've never done it, you ought to do it.

And because of the way the rocks are layered over millions of years, it's like a kaleidoscope. And the colors change over and over and over again, layer by layer by layer as the sun goes down. It is a stunning, stunning thing to see the interplay of light

and stone, and realize how it happened over the ages. I never got over it. I think about it all the time, now, nearly 30 years later.

That kind of moment can't be captured in the words I have shared with you, or even photographed, because the important thing is the interaction of human nature with nature. But we've all felt it. And we all know that part of our essential humanity is paying respect to what God gave us, and what will be here a long time after we're gone.

That is what the Interior Department means to me. And after 150 years, it's what it means to all of America's past, and to America's great future.

Thank you, and God bless you. (Applause.)

END

3:10 P.M. EST

**TESTIMONY OF DR. JANET YELLEN
CHAIR, COUNCIL OF ECONOMIC ADVISERS
BEFORE THE
U.S. SENATE
COMMITTEE ON ENERGY AND NATURAL RESOURCES**

MARCH 25, 1999

Thank you, Mr. Chairman. I appreciate having this opportunity to discuss with you the economics of climate change and the Administration's efforts to address this significant environmental challenge. As you know, the Administration released a report last July, entitled "The Kyoto Protocol and the President's Policies to Address Climate Change: Administration Economic Analysis." The report states that, in the Administration's view, the costs of achieving our Kyoto target would be modest if we can succeed in implementing international trading, joint implementation, and the Clean Development Mechanism in an efficient manner and we achieve meaningful developing country participation. In addition, since the Kyoto Conference, a variety of research on the economics of Kyoto, and especially on the economics of Kyoto's flexibility mechanisms, has been undertaken. Today, I will provide a brief summary of the Administration's Economic Analysis and review several of the key findings in the recent economic literature on climate change.

The Potential Impact of Climate Change

The Intergovernmental Panel on Climate Change (IPCC) concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of greenhouse gases have reached levels well above those of preindustrial times. If growth in global emissions continues unabated, the atmospheric concentration of carbon dioxide (CO₂) will likely double relative to its preindustrial level by midway through the next century and continue to rise thereafter. As a result of the increased concentration of CO₂, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years, with a best guess of about 3.5 degrees Fahrenheit. Potential consequences associated with this shift in climate include a rise in sea levels, greater frequency of severe weather events, shifts in agricultural growing conditions from changing weather patterns, threats to human health from increased range and incidence of diseases, changes in availability of freshwater supplies, and damage to ecosystems and biodiversity. Further discussion of the costs of climate change is contained in the Administration Economic Analysis.¹

The Kyoto Protocol and the Buenos Aires Conference of the Parties

The Kyoto Protocol provides several mechanisms that would allow countries to achieve the emissions targets established in this agreement in a cost-effective fashion. These mechanisms, which permit what we have termed "when", "what", and "where" flexibility in meeting the Kyoto emissions targets, are described in detail in the Administration Economic Analysis. Since securing international emissions trading, the Clean Development Mechanism, and joint implementation in Kyoto, the Administration has worked in bilateral and multilateral arenas to promote understanding of these mechanisms and to develop rules that will promote their efficient operation. In Buenos Aires, a workplan to resolve key implementation issues regarding these mechanisms by the end of 2000 was agreed to by all the participating countries. I want to reiterate that efficient implementation of these flexibility mechanisms is critical to reducing the costs of achieving the targets established in the Kyoto Protocol.

Costs of Action

In assessing the economic effects of the Kyoto Protocol, the Administration has drawn on the insights of a wide range of models and analysis. Examples include models of the energy sector and economy over the next 25 years, such as the Stanford Energy Modeling Forum, the Intergovernmental Panel on Climate Change's review of the economic and social dimensions of climate change, the work of the Organisation for Economic Co-operation and Development (OECD) on the economic dimensions and policy responses to global warming, and the Administration's staff-level interagency analysis. In addition, the Administration used other tools, such as a meta-analysis, basic economic reasoning, overviews of the domestic and international energy sectors, statistics regarding energy efficiency and greenhouse gas emissions, and economic indicators from World Bank, International Energy Agency, and Energy Information Administration databases.

Assuming that effective mechanisms for international trading, joint implementation, and the Clean Development Mechanism are established, and assuming also that the United States achieves meaningful participation of key developing countries, the Administration's overall assessment is that the economic cost of attaining the targets and timetables specified in the Kyoto Protocol will be modest for the United States in aggregate and for typical households. This conclusion is not entirely dependent upon, but is fully consistent with, formal model results. The Administration believes that there are limitations to relying on any single model to assess the economic impact of the Kyoto Protocol. However, model results can further inform and improve the understanding of the effects of climate change policy. To complement the economic analysis of the Administration's policy to address climate change, we have conducted an illustrative assessment with a modified version of the Second Generation Model

(SGM). The results from the SGM substantiate the conclusion that the economic effects of an efficient, effective, and global policy to address the risks of climate change will be modest.

An assessment using the SGM model that accounts for effective trading and developing country participation yields permit price estimates ranging between \$14/ton and \$23/ton, and direct resource costs to the U.S. between \$7 billion and \$12 billion/year (1997 dollars). The range reflects uncertainty about the extent of Annex I participation in international trading.

Under the assumptions of the Administration's analysis, permit prices in the range of \$14/ton to \$23/ton translate into energy price increases at the household level between 3 and 5%. Under these permit prices, fuel oil prices would increase about 5 to 9 percent, natural gas prices about 3 to 5 percent, gasoline prices about 3 to 4 percent (or around 4 to 6 cents per gallon), and electricity prices about 3 to 4 percent. This increase in energy prices at the household level would raise the average household's energy bill in ten years by between \$70 and \$110 per year, although such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity restructuring. By 2008-2012, the anticipated 10 percent decline in electricity prices from restructuring is projected to lead to expenditure reductions of about \$90 per year for the average household.

The illustrative modeling analysis does not account for several key components of the Kyoto Protocol and the Administration's policies to reduce greenhouse gas emissions. These include the benefits of reducing net emissions through carbon sinks, the Administration's electricity restructuring proposal, the Administration's Climate Change Technology Initiative (R&D funding and tax incentives in the FY 1999 and the Administration's FY 2000 Budgets), the Administration's sectoral consultations to encourage and support voluntary efforts by U.S. industry to undertake emissions reductions, including the provision of credit for early action, and the Administration's efforts to reduce federal energy use. There are also ancillary benefits of reducing greenhouse gas emissions -- in particular, the corresponding reductions in conventional air pollutants like sulfur dioxide and fine particulate matter. These benefits alone could produce savings equal to about a quarter of the costs of meeting our Kyoto target.

The Administration released last year its proposed electricity restructuring legislation and the analysis supporting that proposal. The Administration's proposed Comprehensive Electricity Competition Act (CECA) is estimated to reduce greenhouse gas emissions by about 25 to 40 million metric tons of carbon equivalent per year by 2010. Further, the electricity restructuring proposal provides potential cost-savings in four areas: dispatch efficiency, improved capital utilization, savings in capital additions and cost reductions in fuel procurement, non-fuel

operation and maintenance expenses, and administrative and general expenses. These four categories of savings, when translated to consumers, are likely to reach or exceed \$20 billion annually. The Department of Energy's CECA supporting analysis documents² contain further discussion of the Administration's electricity restructuring proposal.

Recent Research on the Economics of Climate Change

Since December 1997, many economists have conducted and made available their analyses of the Kyoto Protocol. I have noted in previous appearances before Congressional Committees that there are limitations to relying on one or a small set of models and that we were eager to see assessments of the Kyoto Protocol by other models. Two large efforts have been undertaken to coordinate and compile modeling results on the Kyoto Protocol. First, the Stanford University Energy Modeling Forum (EMF), a long-running model comparison exercise involving many of the leading climate and energy models, has coordinated full scale analyses of the Kyoto Protocol. Second, the Organisation for Economic Co-operation and Development (OECD) held an economic modeling workshop this past fall, and has since published the proceedings of this workshop which includes 16 papers. In addition, several research teams have undertaken work in evaluating the potential for intergas trading and the cost-savings of a six-gas target relative to a carbon dioxide-only target. I would like to take this opportunity to provide an overview of this recent research.

Kyoto Modeling Analyses

The Energy Modeling Forum comparison exercise of the Kyoto Protocol has included ten modeling teams from the United States, Europe, and Asia. In evaluating the Kyoto Protocol, all of the participating teams used economic models that incorporate the potential for international trading in greenhouse gas permits. The OECD workshop included presentations by X modeling teams, Y of which had global models as well.³ By explicitly incorporating international trading, these models can evaluate the opportunities for cost-savings through trading among Annex I nations and among Annex I and developing countries were they to adopt emissions targets. Since the Kyoto Protocol enables all countries with emissions targets to trade emissions allowances among other countries with targets, these models are well-suited to assess the economic implications of the international trading component of the agreement.

While the models used in the EMF exercise and the OECD workshop can assess international trading, there are several other flexibility mechanisms of the Kyoto Protocol that they cannot, at present, readily assess. For example, these models did not incorporate the effects of sinks. While several modelers did assess the economic costs of achieving the Kyoto targets with "off-line" assumptions

about sink activity, none incorporated an integrated energy-land use model. Further, most of the modelers did not evaluate opportunities to reduce costs by trading across greenhouse gases. These models are primarily energy models and are focused on the economics of reducing carbon emissions from fossil fuel combustion. Again, some modelers analyzed the Protocol by making some "off-line" assumptions about the potential reductions in non-carbon dioxide greenhouse gases, but none employed a model with cost curves for these gases. Finally, it should be noted that these models did not include opportunities for emissions reduction through Administration proposals, such as electricity restructuring or the Climate Change Technology Initiative, that could lower greenhouse gas permit prices.

The results from both the EMF and OECD efforts provide very useful context for the Administration's economic analysis. First, the illustrative model used by the Administration, the Second Generation Model of the Pacific Northwest National Laboratory, tends to fall in the middle of the range of this set of models in terms of U.S. permit prices.⁴ For example, under Annex I trading SGM generates a permit price which is at the median of this set of models. Under full global trading, the SGM permit price is just below the median permit price. Second, the EMF exercise found that the reduction in permit prices as trading expands from no trading to Annex I trading to full global trading is robust. On average, the EMF models found that Annex I trading would cut the U.S. permit price by 53% relative to a no trading scenario. Of these models, one estimated a 72% reduction in the permit price under Annex I trading. In full global trading, the permit price would be, on average, 80% lower than the no trading price. Several models estimated permit price reductions of about 90%.

The reported results from the OECD workshop found similar reductions in permit prices by going from no trading to Annex I trading. On average, the OECD workshop models found that Annex I trading would cut the U.S. permit price by 57% relative to a no trading scenario. Moreover, they found that the European Union and Japan would benefit more from unconstrained Annex I trading. For both the E.U. and Japan, the average reduction in permit prices across these models would be nearly 75%.

Analyses of Trading Constraints

In addition to the modeling of various efficient international trading scenarios, several EMF modeling teams have considered the impact of constraints on the opportunity to buy or sell emissions allowances in an international market. While the United States is unambiguously opposed to trading restrictions, several parties to the agreement have indicated support for some form of a trading constraint, for example, by setting a limit on the amount a party can purchase through the trading system. Trading restrictions would generate no benefit for the global climate while

they could significantly increase the costs of achieving the Kyoto targets.

Before describing the economic costs of trading constraints, I would like to explain why such constraints yield no climate benefits. Regardless of where an emission reduction occurs, it has the same effect on total emissions and the same effect on the climate. A ton reduced in New York generates the same climate benefit as a ton reduced in Berlin. In proposing trading constraints, some have focused on countries such as Russia, that will have emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies. If trading constraints are established that restrict the ability of Russia to sell permits (or restrict the opportunity for other Annex I countries to buy Russian permits), then emissions during the first commitment period would be lower than in the absence of such constraints. However, Russia would simply bank its allowances and use these allowances in a subsequent commitment period when its emissions exceed its target. While a trading constraint might lower emissions during the first commitment period, the cumulative emissions over several commitment periods from Annex I countries would be the same with and without the trading constraint. Given the long residence times of greenhouse gases (on the order of a 100 or more years), the cumulative effect is what is most relevant in terms of changes in the global climate.

To provide a sense of the economic implications of trading constraints, I would like to share with you two examples from work done by EMF modeling teams. First, consider a trading constraint that mandates that at least two-thirds of the emissions reductions necessary for a country to achieve its Kyoto target must occur through domestic actions. Evaluating this trading constraint with the EPPA model based at the Massachusetts Institute of Technology, the permit price for the United States is almost four times higher with the constraint than under an unconstrained global trading system. It is important to note that the effects of this constraint are even more pronounced for the European Union and for Japan. The permit price for the EU would be more than five times higher than the unconstrained global trading permit price, and the Japanese permit price would be thirteen times higher. As these results indicate, the trading constraint would result in each country experiencing a different marginal cost of abatement, and there would be no common permit price for a ton of carbon equivalent. Since the constraint restricts opportunities for countries like the United States, Japan, and members of the EU to buy emissions allowances, the competitive price for emission allowances from countries like Russia would fall below the unconstrained level.

Second, consider a trading constraint that mandates that acquisitions of permits through international trading could not exceed 10% of a country's emissions allocation. For example, the U.S. target is approximately 1.5 billion tons of carbon equivalent on an annualized basis. Under this trading constraint, the

United States, or private firms in the United States, could not purchase more than 150 million tons on an annual basis from other countries. Assessing this trading constraint with the Second Generation Model, the permit price for the United States would more than triple relative to the unconstrained global trading permit price. For the E.U., the permit price would nearly double, and for Japan, the permit price would be eleven times as high as the unconstrained global price.

While trading constraints increase greenhouse gas permit prices (and subsequently, energy prices) in the United States, the European Union, and Japan, they also reduce the gains from trade by the countries likely to be sellers of emissions allowances. For example, Russia and large developing countries that adopt emissions growth targets and participate in international trading, e.g., China and India, would sell fewer emissions allowances at lower international permit prices under such trading constraints than in an unconstrained global trading environment. Such restrictions lessen the benefits of participation by developing countries in international trading.

Estimated reduction in costs from trading across gases

As we note in the Administration Economic Analysis, the Kyoto Protocol provides additional flexibility in achieving emissions targets by specifying these targets as a basket of 6 types of greenhouse gases. Countries can effectively trade across gases, based on their global warming potential, so that the aggregate weighted emissions reductions occur at least cost. Most models used to evaluate the Kyoto Protocol have not incorporated this kind of flexibility, although several modeling teams are actively working to modify their models to include emissions of non-CO₂ greenhouse gases. In the Administration's analysis, cost curves for these other gases for the United States were used in conjunction with the SGM model. These simulations suggest that trading across greenhouse gases can lower costs up to 15% relative to a situation where no trading across gases occurs.

Complementing this finding, recent work by a group of researchers at the Massachusetts Institute of Technology has found that including the opportunity to abate non-CO₂ greenhouse gas emissions and promote carbon sinks reduces the costs to the United States by about 25% relative to a carbon-only approach (assuming no international trading). On average, they find that Annex I countries' costs would fall by more than 20%. In addition, work by University of Illinois researchers and others has evaluated the changes in costs of abating methane and carbon dioxide to achieve the U.S. Kyoto target instead of abating carbon dioxide alone. They found that meeting an emissions target through cost-effective trading between carbon dioxide and methane reductions could reduce costs by nearly 20% relative to a case with no intergas trading. Finally, research by several Dutch analysts presented at the OECD workshop found significant opportunities for the European Union to substitute abatement of non-CO₂ greenhouse gas emissions for

carbon dioxide reductions. They found that 27% of the total reduction effort necessary for E.U. countries to achieve their emissions targets could occur through the abatement of these non-carbon gases.

Developing Country Participation

During the Buenos Aires Conference, two non-Annex I countries, Argentina and Kazakhstan stated that they will announce emissions targets by the fifth climate change conference scheduled for this coming October. We believe that these two countries' efforts may encourage other non-Annex I countries to follow their lead. Economic and environmental benefits would accrue if some developing countries adopt binding emissions targets and participate in international trading. Setting a target below the business as usual emissions level for the commitment period would generate climate benefits by reducing global emissions below what they would otherwise have been. In addition, if the target is set not too far below the business as usual emissions level, the participation of the country in a global trading system would produce economic benefits or "gains from trade" for both the developing country and its trading partners. Emissions trading by developing countries would occur only if they chose to undertake emissions reductions above and beyond their commitments -- reductions that would generate trading extra income for them as long as their marginal abatement cost is below the world trading price for greenhouse gas permits. Many of the EMF models reveal that, for large developing countries, like China, such excess reductions would indeed be profitable, so that these countries would export allowances and gain from trade. Developing countries would also reap ancillary benefits of reducing conventional air pollutants, which may be substantial. Benefits from trading would also accrue to Annex I countries. Annex I countries (and private firms in these countries), who would purchase these emissions allowances in the world market, would achieve their targets at lower cost than without the participation of the developing countries. However, it should be noted that the more stringent the target for the developing country, the lower the gains from trade both for that country and for Annex I countries such as the United States. Indeed, an extremely stringent target could conceivably make the developing country a net importer of emissions allowances, and raise the international trading price for a greenhouse gas permit. Still, these models illustrate the potential to create targets that simultaneously make the environment, the developing country, and Annex I countries all better off.

Conclusion

The Administration's overall conclusion is that the economic impact of the Protocol will be modest under the conditions we have identified in our economic analysis. The purpose of this testimony has been to summarize the analysis we have presented in the Administration Economic Analysis on climate change and to provide a brief update of recent research efforts outside of the government.

I look forward to continuing to work with members of this Committee, as well as with other interested parties, in further analyzing the Kyoto Protocol and evaluating the net effects of reducing greenhouse gas emissions. It is my hope that economic analysis will continue to play a key role in designing policies in this area.

I welcome your questions.

WHITE HOUSE STAFFING MEMORANDUM

Date: 7/16/98 ACTION / CONCURRENCE / COMMENT DUE BY: ASAPSubject: RADIO ADDRESS (CLIMATE CHANGE)

	ACTION	FYI		ACTION	
VICE PRESIDENT	☒	☐	McCUE	cc: MARGULIA KOUNTOPES BALLENTINE ERILSON FOLEY THORNTON BRAIN	☒
BOWLES	☒	☐	McGIN'		☐
PODESTA	☒	☐	REED		☐
ECHAVESTE	☒	☐	RUFF		☐
LEW	☐	☐	SMITH		☐
BEGALA	☒	☐	SOSNIK		☒
BERGER	☐	☐	SPERLING		☒
BLUMENTHAL	☐	☐	STEIN	→	☒
EMANUEL	☒	☐	STREETT		☐
IBARRA	☐	☐	VERVEER		☐
JONES	☒	☐	WALDMAN		☒
KLAIN	☐	☐	YELLEN		☐
LEWIS	☒	☐	<u>STERN</u>		☒
LINDSEY	☐	☐	_____		☐
MARSHALL	☐	☐	_____		☐
MOORE	☐	☐	_____		☐

REMARKS:

COMMENTS TO JORDAN TAMAGNI

RESPONSE:

Draft 7/16/98 4:00pm
Elliot Diringer/Jordan Tamagni

'98 JUL 16 PM 4:52

**PRESIDENT WILLIAM J. CLINTON
RADIO ADDRESS ON CLIMATE CHANGE
JULY 18, 1998**

Good morning. This year, we have seen a disturbing string of weather-related emergencies around the country. Just this week, [23] people died in Texas, where record heat and drought are causing much misery and grief. My heart goes out to all the victims of this terrible heat wave.

Thirty-seven times already this year, I have had to declare a federal disaster to speed aid to communities stricken by severe weather. From the deadly flash floods this week in Tennessee, to the wildfires that have ravaged parts of Florida, to the ice storms that crippled New England last winter, Americans have been besieged by the weather. Many are beginning to wonder why.

Certainly, the latest El Nino is partly to blame. But there is growing evidence that the extreme and erratic weather we are seeing in America -- and around the world -- is being intensified and worsened by global warming.

Consider: 1997 was the warmest year on record. According to the latest data, the first six months of this year were the warmest in well over a century. Scientists predict that July may well be the hottest month in 600 years. The world's leading climate experts predict even more extreme weather -- more flooding, more drought, more powerful storms -- unless we reverse this dangerous warming trend.

We must act now to protect future generations from the grave risks of global warming. Vice President Gore and I have launched a comprehensive, cost-effective strategy to meet this challenge while creating new opportunities for economic growth. We are forging partnerships with the auto industry, the building industry and others, to develop new technologies that improve our energy efficiency, generate clean power, and reduce the pollution that contributes to global warming. To spur these efforts, I have proposed \$6.3 billion in research and tax incentives over the next five years, including tax breaks for consumers who buy super-efficient cars, homes and appliances.

We must all do our part to protect the environment -- in our homes, in our businesses, and in our government. As the nation's largest energy consumer, we in the federal government must do more. Today, I am pleased to announce three additional steps we are taking to put our own house in order. First, we will use innovative designs for new federal buildings to reduce their energy use up by to 50 percent. Second, we will replace hundreds of thousands of conventional light bulbs with energy-saving compact fluorescents. Third, I am directing federal agencies to work more closely with private investors to achieve maximum energy savings wherever possible. Together, these measures will save tax payers \$[TK] a year in energy costs, save energy, and

protect our environment by significantly reducing greenhouse gas emissions.

We are squarely facing the problem of global warming -- but there are some in Congress who would rather pretend it doesn't exist. Despite the mounting evidence, they would deny the science and ignore the warning signs. Rather than invest in a common-sense strategy to reduce greenhouse gas emissions, they want to cut programs for energy efficiency and renewable energy -- programs that long have enjoyed bipartisan support. Worst of all, some are even trying to keep the public from learning the facts about global warming, by barring federal agencies from conducting educational outreach or informational seminars.

This "know-nothing-do-nothing-say-nothing" approach is not only foolish -- it offends our basic democratic principles of free and open debate. Global warming is real -- the risks it poses are real -- and the American people have a right to know it. The sooner Congress understands that, the sooner we can protect our nation, and our planet, from increased flood, fire, drought, and deadly heat waves.

As sweltering as this summer has been, if we do not act now, our children may look back on the summer of 1998 as one that was mild and cool. There is absolutely no excuse for delay. We have the tools and ingenuity to head off this threat. We have the opportunity to live up to our deepest obligation to our children -- to bestow upon them a healthy, thriving planet -- God's greatest gift to us.

Thanks for listening.

Remarks by Frank E. Loy
Under Secretary of State for Global Affairs
to the International Conference on
"Implementing the Kyoto Protocol,"
Chatham House, London, June 14, 1999

*Myths Hindering Progress in
Climate Change Negotiations*

Thank you, and good morning ladies and gentlemen.

Almost thirty-seven years ago to the day, President John F. Kennedy warned the graduates of Yale University, "the great enemy of the truth is very often not the lie - deliberate, contrived and dishonest - but the myth - persistent, persuasive and unrealistic." By obscuring the truth, myth can inhibit progress. I would like to use my time today to highlight [several] [seven] harmful myths blocking progress in the multilateral climate change negotiations.

Myth #1: The United States lacks a serious domestic program to reduce greenhouse gas emissions.

The United States pursues strong domestic actions to reduce greenhouse gas emissions, and does not consider the Kyoto mechanisms a substitute for such actions. Since 1993, President Clinton has launched dozens of initiatives designed both to save energy and to reduce emissions. Last year, the President won a 25% increase in funding for new programs to develop the next generation of high-technology automobiles, electric power technologies, and clean industries. In this year's

budget alone, the President has proposed a \$4 billion climate change package, including a 34% increase for R&D in energy efficient technology and renewable energy, and a five year package of tax incentives for consumers who purchase energy efficient products and for producers of renewable energy.

Taken together, these actions will reduce significantly the trajectory of U.S. emissions. Overall our emissions continue to rise. More actions will be required to meet our Kyoto commitment, which requires us to reduce emissions by over 30% from business-as-usual forecasts, in contrast to 12% reductions from business-as-usual for all of Annex B. Our job is made more difficult by our long running economic expansion. Nevertheless, the United States remains committed to its Kyoto target and further domestic action.

Myth #2: In terms of environmental benefit, what made the Kyoto Protocol historic are its quantitative emissions reduction targets.

The Kyoto Protocol was an historic step toward the protection of the earth's climate system. Developed countries agreed to ambitious greenhouse gas reduction targets. Meeting these commitments will require persistence, creativity and dedication. The Kyoto targets are significant milestones on the path toward more sustainable global economic growth.

Yet, standing alone, the Kyoto targets would represent little more than a momentary pause along a steep path of rising global emissions. The importance of the Kyoto Protocol, therefore, lies not in the emission reduction numbers, but in the structural elements of its climate control regime.

I refer to the decision to include a basket of gases rather than just carbon, a multi-year commitment period, various forms of carbon sinks and, most importantly, the Kyoto mechanisms, which were designed to harness market forces to determine how and where to reduce greenhouse gas emissions.

While the Kyoto emissions reduction numbers are important, the real achievement at Kyoto was the creation of an architectural blueprint for sustained, broad-based, and cost effective international action on climate change.

The Kyoto Protocol, in particular the Kyoto mechanisms, allows countries the flexibility to achieve real emission reductions cost-effectively. The Kyoto mechanisms also create incentives for the transfer of advanced technologies and capital to developing countries when they take steps to reduce their own greenhouse gas emissions. Other incentives in the Kyoto agreement will stimulate private sector interest in technological innovation and environmentally sound, low cost solutions.

One corollary myth that deserves brief mention is the contention that so called 'hot air' represents the greatest threat to significant international action on climate change. 'Hot air,' to the extent that means false emissions reductions, could undermine the credibility and environmental effectiveness of the system. The international community should guard against false reductions.

The obsession with 'hot air,' however, misses the forest for the trees. Climate change is a one hundred-year problem that may require a one hundred-year solution. We must create an environmentally and politically viable global system that produces rapid, sustained and

significant global emissions reductions. We need to bring as many countries as possible into the system as soon as possible. In racing to extinguish the fires of climate change, we must not make the search for small leaks in our bucket our primary obsession.

Myth #3: Capping reliance on the Kyoto mechanisms is good for the environment and will stimulate 'domestic action' in the United States and elsewhere.

Restricting use of the Kyoto mechanisms would increase dramatically the cost of fighting global warming, thus wasting scarce capital that could be used to better protect the environment. A large body of economic analysis, including by the OECD, shows that the Kyoto mechanisms will deliver significant environmental gains at the lowest possible cost. Capping reliance on the mechanisms would gut these market approaches of their power and effectiveness. When U.S. firms pay to install energy efficient technology in another country through the purchase of emission credits that action reduces emissions just as much as more expensive investments made at home.

It is politically naïve, furthermore, to believe that raising the cost of implementing the Kyoto Protocol would lead the United States to act more swiftly to limit its emissions. Quite the contrary, an unnecessarily costly treaty stands little chance of U.S. ratification and, unless the United States ratifies the Kyoto Protocol and it enters into effect, I doubt very much the United States will meet its stiff Kyoto emissions reduction targets. If the planet does not distinguish between emission reductions in one place or another, why should we?

While we, in the United States, know from experience that market-based approaches to environmental protection work, we recognize concerns about the difficulties of monitoring and measuring reductions. The United States is working to address these concerns by ensuring, for example, that the Kyoto regime has strong reporting and compliance provisions.

Those who advocate a 'concrete ceiling' on Kyoto mechanisms seek to renegotiate the Protocol. EU member states and other developed countries accepted ambitious, legally binding, greenhouse gas reduction targets in exchange for the flexibility to achieve them via the Kyoto mechanisms, such as the "EU bubble" and international emissions trading. The issue of whether market mechanisms, especially emissions trading, should be capped was explicitly debated and rejected at Kyoto. Supporters of the caps attempt, in effect, to pocket the aspects of the Kyoto agreement they like and renegotiate the rest.

Myth #4: It would be unfair and unwise to ask developing countries to assume new international commitments.

Climate change is a global problem that requires a global solution. Developing country populations, unfortunately, have the least capacity to adapt to climate change. The longer we wait, the harder it will be to stabilize greenhouse gas concentrations at acceptable levels. To protect our common interests, we must reduce global emissions as quickly and cost effectively as possible.

To be sure, industrialization in OECD countries contributed enormously to increased greenhouse gas concentrations. These countries, including the United States, should take significant steps. Developing countries also are contributing to the problem, however. Several large developing countries will soon become the world's leading emitters. Developing countries already emit _____% of the global emissions. Deforestation and land use practices in the developing world have raised carbon concentrations. Per capita energy intensity ratios in some, but not all, developing countries continue to rise briskly, despite the existence of clean technology.

Acting alone, developed countries cannot stabilize global greenhouse gas concentrations, much less return them to pre-industrial levels. Scientifically, meaningful participation by developing countries is a necessity. Bickering about past responsibility, or about which countries should act first, detracts from our common cause of halting global warming. Each nation should take national and international steps commensurate with its capacity to contribute to the global solution. We should strive for common, but differentiated, action.

Developed countries should continue to work toward their Kyoto targets. All countries should work with developing countries to find avenues for their participation in the international system. In the immediate future, 80% of new electric power generation projects will occur in developing countries. All of us should want those projects to use the latest cutting edge technologies.

Myth #5: Requiring developing countries to adopt emissions reduction targets, as the United

States suggests, would jeopardize their economic development.

As President Clinton has said, the United States believes that key developing countries should participate meaningfully in efforts to reduce greenhouse gas emissions. Primarily, this means that each developed country should assume obligations or undertake actions appropriate to its national circumstances. For some countries, including OECD members, quantitative emissions commitments are appropriate. For many developing countries, quantitative targets could be both appropriate and in their self-interest, but we remain open other equally effective forms of participation in the international system. We recognize that the least developed countries may lack the capacity to assume and implement legally binding emissions targets, and that for these countries, other types of action would be appropriate.

Emissions in many developing countries should grow to meet their development needs, even under a binding emissions target. Developing countries with concerns about whether they could accurately predict their economic growth may wish to propose 'indexed growth targets' that would take economic uncertainty into account, such as by indexing emission targets to GDP growth rates or carbon intensity ratios. The negotiating histories of both the Framework Convention and Kyoto Protocol demonstrate general agreement on the need to mitigate climate change while allowing for continued economic growth. The United States believes this formula remains the key to securing developing country action.

Myth #6: Developing countries are too poor to participate in the Kyoto process, and stand little to gain from the Kyoto mechanisms.

Economic development, not climate change, remains the primary concern of many developing countries. On one hand, this is understandable. Of what concern is climate change tomorrow to those who struggle for food, medicine and shelter today? (The distinguished Minister from India, Sir Suresh Prabhu, has helped us understand this point today.) On the other hand, developing countries, particularly the poorest among them, are most vulnerable to the consequences of climate change. They have a strong interest in assuring, through their direct participation, the existence, viability and success of an international climate control regime.

Developing countries are finding in the Kyoto Protocol avenues to pursue their development and environmental goals simultaneously. In the last year alone, business and government leaders have met in Africa, Latin America, Asia and North America to discuss the potential of the Clean Development Mechanism to channel advanced technology and capital to the developing world. Those of you present in Bonn or Buenos Aires witnessed the enthusiasm of developing countries for the CDM. I met recently with a dozen CEOs from major Indian power and industrial companies who had traveled to Washington to discuss how the CDM could benefit their companies and India.

In the months ahead, I expect developing country interest in all the Kyoto mechanisms to grow significantly. Though CDM projects will provide needed stimulus in certain sectors, the potential of the CDM to produce economic benefit

would be dwarfed by a well functioning trading market in certified emission reductions. Though some developing countries may not be ready to join Argentina and Kazakhstan in accepting binding emissions reductions, I believe they will conclude that emissions trading may prove in their interest at some point. These countries will wish to preserve their options and ensure that the Kyoto mechanisms are elaborated in ways that maximize their potential to both induce development and reduce emissions.

Myth #7: The Kyoto Protocol is on its deathbed.

Some in the U.S. Congress and elsewhere have already heralded news of the demise of the Kyoto Protocol. Though rumors of its demise are greatly exaggerated, to paraphrase Mark Twain, we are nearing a critical period. The absence of significant momentum over the next few years could preclude completion of the Protocol's rules in time for nations to meet their emissions reduction commitments.

Despite the persistence and pervasiveness of the myths I have sought to debunk today, I remain optimistic about the fate of the Kyoto process. As Michael Zammit Cutajar has already said, we are making good progress on many important operational elements of the Buenos Aires plan of action, including rules for the mechanisms, monitoring and compliance.

With regard to resolution of the more political issues I have raised, I believe the Kyoto Protocol points the way. It can serve as a blueprint for sustained, serious and self-interested action by all countries, if we value its innovative

architecture and allow its mechanisms to function effectively.

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PRESIDENT WILLIAM J. CLINTON RADIO ADDRESS ON CLIMATE CHANGE JULY 25, 1998

Good morning. This year, we have seen a disturbing string of weather-related emergencies around the country -- from flash floods in Tennessee, to wildfires in Florida, to ice storms last winter in New England. This summer, record heat and drought are taking a terrible human toll -- destroying crops, causing power outages, and worst of all, taking lives. Since June, more than 130 people have died because of the heat.

Certainly, the latest El Nino is partly to blame for the severe weather conditions that have besieged so many communities. But growing evidence suggests that the extreme and erratic weather we are seeing in America and around the world, including El Nino, is being intensified by global warming.

Consider: 1997 was the warmest year on record -- and 1998 may well break that record. Scientists predict that July may be the hottest month since mankind began recording temperatures. The world's leading climate experts predict even more extreme weather unless we reverse this dangerous warming trend.

We are doing everything we can in the short term to help communities cope with this devastating heat wave. This week, I released \$100 million in emergency funds to the 11 hottest states. On Monday, Agriculture Secretary Glickman and FEMA Director James Lee Witt will travel to Texas and Oklahoma to see what more we can do to help. Today, I am pleased to announce that the Department of Energy will begin providing new crisis assistance to low-income families, repairing and replacing air-conditioners and fans, installing insulation, and giving advice on the best way to keep homes cool in this extreme heat.

But to meet the long-term challenge of global warming, we must do more. Vice President Gore and I have launched a comprehensive, cost-effective strategy to protect our environment, while creating new opportunities for economic growth. I have proposed \$6.3 billion in research and tax incentives over the next five years to encourage the private sector to work with us to improve our energy efficiency, generate clean power, and reduce the pollution that contributes to global warming.

We must all do our part to protect the environment, and as the nation's largest energy consumer, the federal government must lead. At my direction, we are undertaking a multi-part initiative to put our own house in order. Today, I am pleased to announce the first four parts of this plan, aimed at increasing the efficiency of federal buildings.

First, I am directing federal agencies to work more closely with private contractors to

retrofit federal buildings and other facilities with the best energy saving technology at no cost to taxpayers. Second, we will replace hundreds of thousands of conventional light bulbs and fixtures with brighter, more efficient fluorescents, which will pay back in energy-savings nearly five times what they cost to install. Third, I am directing all agencies to work toward bringing their existing buildings up to EPA's "Energy Star" standard of efficiency. Fourth, the Defense Department and six other federal agencies will adopt "sustainable design" guidelines for new federal buildings to reduce their energy use.

Together these measures will save tax payers as much as \$1 billion every year in energy costs, help jump-start markets for new technologies, and protect our environment by reducing greenhouse gas emissions.

We are squarely facing the problem of global warming -- but there are some in Congress who would rather pretend it doesn't exist. Despite the mounting evidence, they would deny the science and ignore the warning signs. Rather than invest in a common-sense strategy to reduce greenhouse gas emissions, they want to cut programs for energy efficiency and renewable energy -- programs that long have enjoyed bipartisan support.

Worst of all, some have even tried to keep the public from learning the facts about global warming, by barring federal agencies from even talking about the issue -- though I am pleased that this gag order was defeated in the House of Representatives this week. Global warming is real -- the risks it poses are real -- and the American people have a right to know it. The sooner Congress understands that, the sooner we can protect our nation, and our planet, from increased flood, fire, drought, and deadly heat waves. To protect our environment, we must put progress ahead of partisanship.

As sweltering as this summer has been, if we do not act now, our children may look back on the summer of 1998 as one that was relatively mild and cool. There is no excuse for delay. We have the tools and ingenuity to head off this threat. We have the opportunity and the deep obligation to leave our children and our grandchildren a healthy, thriving planet -- God's greatest gift to us all.

Thanks for listening.

Oral Statement of Dan Reicher
Assistant Secretary for Energy Efficiency and Renewable Energy
Department of Energy
Before the

Committee on Government Reform and Oversight
Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs

May 28, 1998

Mr. Chairman and members of the Subcommittee. I appreciate the opportunity to appear before you to testify on climate change and the Department of Energy's energy research and development programs.

Let me begin by pointing out that while one focus of the Climate Change Technology Initiative is reducing greenhouse gas emissions, all components of the Initiative are designed to also meet the critical energy and environmental challenges that face our nation today and in the 21st century.

The technology investments in CCTI are sound public policy -- that is, they would be appropriate even if we thought global climate change was not a potential threat. The bottom line is that the return on investment to the nation from the CCTI even without considering climate benefits will greatly exceed the investment costs. These programs provide huge benefits in terms of cost savings, air quality, and economic competitiveness, while enabling the nation to be better prepared to reduce greenhouse gas emissions if and when we are required to do so.

DOE's technology programs, many of which are conducted in partnership with industry, serve a broad range of the nation's energy, national security, and environmental interests, and enhance industrial competitiveness, help provide abundant clean energy, improve environmental quality, reduce greenhouse gases. Just this month, the Department released its "Comprehensive National Energy Strategy" which recognizes multiple goals to direct our programs. First, we are working to make more productive use of energy resources and enhance overall economic performance. Second, we are working to ensure against energy disruptions and protect our economy from external threats of interrupted supplies. Third, our programs encourage energy production and use in ways that improve our health and environmental quality. Fourth, we are working to expand

future energy choices in order to provide future generations with a robust portfolio of clean and inexpensive energy sources. Our efforts to develop a diverse energy technology portfolio will enable the United States of America to meet the multiple energy and environmental challenges of the 21st century and enable us to maintain the economy and standard of living that is the envy of the world.

Although our programs focus on this wide range of goals, the connection between energy and climate change is clear: fossil fuels supply 84 percent of the primary energy consumed in the United States and are responsible for 98 percent of U. S. emissions of carbon dioxide. And, fossil fuels will continue to be the world's dominant energy source for a considerable time. Mr. Chairman, there is often a tendency to view energy efficiency and clean energy technologies as somehow different from our traditional energy investments --as some "green" alternative to the real business of energy. In fact, these technologies can help us use conventional energy more efficiently and enhance our nation's productivity. There is no one "silver bullet" that will solve our future energy needs. A broad and balanced R&D portfolio is essential. We must use energy efficiency technologies to make better use of conventional energy sources while we make investments in new energy supply technologies. The development and widespread use of a diverse energy portfolio will provide many benefits -including reduced energy costs, increased energy security, improved urban air quality, greater U.S. competitiveness, and reduced greenhouse gas emissions.

Last year, a study conducted by five national laboratories and peer-reviewed by industry and academic experts recognized that the United States can hold down the costs of meeting climate

change goals through technological solutions such as advanced natural gas turbines, biomass and biofuels, and energy saving appliances. The study concluded that progress in reducing greenhouse gas emissions can be achieved without increasing the nation's energy bill. Many consumers and businesses could actually save money through reduced energy use and lower overall energy bills. Furthermore, there are multiple other benefits associated with advancing these technologies.

Let me conclude by highlighting some of the tremendous gains we have already achieved in the area of energy efficiency. Over 50 of our vehicle technologies, which enhance auto and truck fuel efficiency and alternative fuel use, are now commercially available. In industry, more than 100 energy saving technologies supported by DOE are now in the marketplace -saving \$1.8 billion since 1985. In buildings, consumer savings from just five technologies -advanced windows, electronic light ballasts, an efficient refrigeration compressor, an advanced burner for oil furnaces, and building energy software -have totaled more than \$30 billion since 1978. And, in the federal sector, reduced federal building energy costs save taxpayers more than \$800 million each year as a result of efficiency and renewable energy projects. The investments we make in energy efficiency do not simply save energy and cut emissions -- they represent one of the best public investments we can make to ensure the productivity and competitiveness of our economy, and one of the cheapest, least intrusive ways of accomplishing our environmental objectives.

I certainly hope that you will consider how energy technologies can prepare us to meet climate change challenges while serving a wide range of other critical national interests. Thank you again for this opportunity to appear before you.

Oral Statement of Dan Reicher
Assistant Secretary for Energy Efficiency and Renewable Energy
Department of Energy
Before the
Committee on Government Reform and Oversight
Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs

April 23, 1998

Thank you, Mr. Chairman and members of the committee, for giving me this opportunity to testify on the Kyoto Protocol. The United States agreed to the Protocol in December because the scientific evidence strongly supports our belief that a changing climate would pose very serious risks to public health and the environment. The framework for action that was negotiated in Kyoto would address those risks in a flexible, common-sense, and cost-effective way.

It is difficult to predict with certainty what will happen in the future, but the risks are enormous. If emissions of greenhouse pollutants are not reduced worldwide, atmospheric concentrations are expected to double by the year 2060. That would cause global temperatures to rise by roughly two to six degrees by the year 2100, and global sea levels to rise 6 - 38 inches.

Climatic changes on that scale would pose very serious threats to public health and the environment. For example, a doubling of current atmospheric concentrations of greenhouse pollutants could contribute to more frequent and intense episodes of urban smog, thus increasing rates of human illness and death. The projected increase in the duration and frequency of heat waves could increase mortality rates due to heat stress.

Climate change also could lead to increases in several infectious diseases, including malaria, dengue, and yellow fever, as the range of organisms that carry these diseases expands. It has been estimated, for example, that as global surface temperatures rise, by the end of the 21st century the global population will suffer an additional 50 - 80 million cases of malaria.

By the year 2100, rising sea levels could submerge 15 - 60 percent of America's coastal wetlands. These wetlands are nature's kidneys; they cleanse and purify the waters that pass through them. Their loss would be a blow to the health of humans and wildlife alike.

Groundwater aquifers and surface waters could be rendered unfit for drinking by the

saltwater intrusion that could be common as sea levels rise. Five thousand square miles of dry land in states like Louisiana and Florida could be inundated, with devastating effects on the quality of drinking water. Because droughts and floods are likely to become more frequent and severe as average temperatures rise, the overall hydrologic cycle could be impaired, which in turn could lower the quantity and quality of water available in many areas.

In short, the potential consequences of climate change go far beyond a few degree rise in average global temperatures over the next century. Rising temperatures and related climate phenomena pose a distinct and serious threat to human health, the environment, and the quality of life on earth. The Intergovernmental Panel on Climate Change stated the problem succinctly: "Climate change is likely to have wide-ranging and mostly adverse impacts on human health, with significant loss of life."

In the face of this evidence, and because the effects of climate change would be so serious and so costly, the United States negotiated an agreement that will allow participating nations to reduce greenhouse pollution in common sense, cost-effective, and flexible ways.

First, the Protocol sets realistic targets and timetables for reducing emissions of greenhouse pollutants. Different targets have been set for different countries. The flexibility entailed in differentiated targets and a five-year target period will help minimize any adverse effects on businesses and workers.

Second, the Protocol ensures that countries can meet their obligations through the use of flexible market mechanisms, not mandatory policies or taxes. This flexibility will allow companies and countries to find the cheapest possible ways of hitting their emissions reduction targets. In fact, because emissions permits can be traded, there is a built-in incentive to develop

advanced -- and cheaper -- methods of reducing emissions.

In this country we have several years of experience using the power of the free market to reduce pollution at the lowest cost. We've incorporated market trading mechanisms into programs to control acid rain, water effluents, lead, criteria air pollutants, and chlorofluorocarbons. The results have been impressive. The lead trading program, for example, reduced control costs by about 20 percent. Acid rain control costs were 50 percent lower than expected. CFC phaseout costs were cut dramatically. We believe the flexible market mechanisms built into the Kyoto Protocol will be equally effective in reducing greenhouse pollutants at the lowest possible cost.

The United States entered the Kyoto negotiations with a third objective: securing the meaningful participation of developing countries. I admit that the Kyoto Protocol does not meet all our objectives in this area. But it makes a solid start by encouraging investments in developing countries that can be credited toward the Protocol's emissions reductions targets.

The President's proposed Climate Change Technology Initiative also is part of our common-sense, cost-effective strategy. These voluntary programs would bring economic benefits beyond those associated with the control of global warming. They would provide incentives for American businesses and communities to cut greenhouse pollution now in ways that make economic sense now. They would speed the adoption of today's cost-effective, energy-efficient, low-carbon technologies throughout the economy, and hasten the development of even more advanced technologies in the future.

Let me give you just one example of how rewarding these kinds of actions can be for both the environment and the economy. In East Indiana, the Inland Steel Company is installing

technology that will recapture coke gas emissions and use it to generate both electricity and steam heat. Any excess electricity not used at the steel mill will be sold to the local utility. Thus this new, state-of-the-art, .cogeneration facility will save Inland money while it reduces the emissions of greenhouse gas and other pollutants from both the steel mill and the local utility.

Ideas like that help enhance the productivity of the American economy. They help American businesses compete more effectively in the global economy. And by reducing greenhouse pollution they help us reduce the threat of global warming.

One last point: every dollar we invest to improve energy efficiency and limit climate change will control pollutants besides greenhouse gases. Fossil fuel combustion is also a major source of conventional air pollutants like particulates, nitrogen oxides, volatile organic compounds, and carbon monoxide. These pollutants have been linked to heightened risks of mortality, chronic bronchitis, congestive heart failure, heart disease, and other serious illnesses. Children and the elderly are most vulnerable to these pollution-related illnesses.

In summary, the Kyoto Protocol lays the groundwork for a cost-effective, common-sense approach to controlling climate change. It is a work in progress, and the progress so far has been heartening. For example, we have to do more to engage the developing countries, but the framework for future action is strong.

Most important, the need for future action is clear. Let me close by quoting from an article by Stephen Wolf, the CEO of US Airways: "But in the long term, if we do not address this issue forcefully today, we and our children and our children's children will be penalized in ways we do not even want to contemplate." Thank you.

Draft for DOL

Thank you, Mr. Chairman and Members of the Committee. I am pleased to have this opportunity to appear before the Committee to elaborate on the Administration's views on global climate change policy.

The international agreement that was reached in Kyoto this past December is a crucial step forward in addressing global climate change. Global warming may be the most pressing environmental concern of the next century. The Intergovernmental Panel on Climate Change (IPCC), representing the world's climate change scientists, concluded that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of carbon dioxide, methane, nitrous oxide, and the other so-called greenhouse gases have reached levels well above those of preindustrial times.

As a result of the increased concentration of CO₂, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years. The IPCC reports that a doubling of carbon dioxide levels would lead to approximately 10,000 estimated additional deaths per year for the current U.S. population from higher summer temperatures, even after netting out the effects of warmer winters and assuming acclimatization. Other researchers have predicted sea level increases, greater spread of tropical diseases, and more violent storms due to increased concentrations of greenhouse gases.

While these effects may not be felt for several decades, it is important to begin to take action now in order to avoid leaving an even more expensive legacy for future generations. Some researchers have estimated that we already face a 1.0 degree Fahrenheit temperature increase from emissions that have already occurred. Delayed action will only increase the level of greenhouse gases accumulating in the atmosphere and magnify the future costs of addressing this issue. As CEA Chair Yellen recently testified, the monetary damages expected from a 4.5 degree Fahrenheit average worldwide temperature increase would amount to about \$89 billion per year or about 1 percent of GDP. Responsible action today would seem a prudent form of insurance to protect the world for our children and grandchildren.

The President's plan represents a flexible and market-oriented approach to global climate change and is designed to insure that we reach our goals with the least cost and in the most efficient manner. It exploits the creativity and ingenuity of American companies and their workers rather than relying upon command and control policies like taxing the use of fossil fuels. The plan emphasizes partnering with business by investing in the further development of win-win technologies which lower energy consumption (and costs) while reducing emissions. The \$6.3 billion program of increase R&D spending and tax credits that the President proposed is

designed to harness the power of the market to seek reductions in greenhouse gases at the least cost possible.

Let me emphasize that at the core of the President's policy is the recognition that we must begin to address this real problem but that we must do it in such a way so as to minimize any affect on the competitiveness of U.S. industry and workers. That is why the Administration has insisted upon international emissions trading, meaningful developing country participation, inclusion of land-use activities that absorb carbon ("sinks") and six categories of gases, as well as our domestic initiatives which can help ensure that reductions in global greenhouse gas emissions are consistent with continued strong economic growth. Our experience with the SO₂ program showed that when market flexibility is harnessed emission reductions can be achieved at costs 60 to 80 percent below what was originally thought possible. While success such as this is not guaranteed, it does illustrate the efficacy of using flexible market-based strategies to address the problem.

In trying to access the potential costs of global climate change policy there are several points to keep in mind. First, the parameters of the international effort to reduce greenhouse gas emissions is still in some respects a work-in-progress so, despite the claims of some studies, it is not yet possible to provide a full authoritative analysis. Second, one only has to pick up the paper on a daily basis and read the range of forecasts for the economy over the next quarter to appreciate the high degree of uncertainty attached to economic forecasts over the short term, let alone over a decade. How many forecasters a year ago, let alone ten years ago, predicted that we would again be seeing gas prices around \$1.00 per gallon?

Despite the uncertainty surrounding economic forecasts a decade into the future, there is good reason to believe that the costs of this policy will be modest. First, lower energy costs are but one of many factors affecting competitiveness. In fact, energy prices account for only 2.2 percent of total costs to U.S. industry and already vary substantially across countries. Gas prices range from 8 cents per gallon in Venezuela to \$1.28 in the U.S. to \$4.41 in France. Despite high energy prices in Europe and Japan, neither they nor U.S. industry is moving en masse to Venezuela. Further, the Administration's proposed plan for electric utility restructuring may actually offset any energy price increase caused by efforts to limit greenhouse gases.

Second, as Chair Yellen noted in her recent testimony, features of the Kyoto Protocol that the President insisted upon such as International Emissions Trading, Joint Implementation, and the Clean Development Mechanism have all been found to significantly reduce the costs of abatement. In fact, model estimates suggest that the costs could range between \$7 and \$12 billion per year in 2008-2012 or one tenth of one percent of GDP. These already low estimates may overstate actual costs as they ignore the benefits of climate change abatement as well as the effects of electric utility restructuring and the Administration Climate Change Initiative.

While we expect that the costs of global climate change policy to be modest, it is possible that some industries and workers may be adversely affected by a rise in energy prices. The President has stated that we have a moral obligation to help those who may be affected, no less than we do today, by any change in our economy which affects people through no fault of their

own. The President and the Department of ~~Energy~~ have demonstrated the strength of this commitment to helping today's workers manage change by doubling funding for programs that provide access to training and assistance to those workers when they need it.

Any layoff is a painful event for the workers and communities involved. By insisting upon flexible market-based solutions, the President's global climate change policies are designed to minimize any adverse effect on energy prices and the economy. Just as we do today, the Department of ~~Energy~~ is committed to helping any worker or community that may be affected. . Our rapid response teams have a proven track record of helping workers who are affected by any economic dislocation to look ahead and plan for their future. These teams set up worker assistance workshops that cover everything from resume writing to interviewing skills. They set up job fairs, training (including community college courses), direct placement, and related skills and remedial assistance. The Secretary has repeatedly stated her commitment to further improving these programs by increasing job placement and wage replacement for workers who permanently lose their jobs in a plant closing or mass layoff.

Thank you Mr. Chairman for this opportunity to discuss global climate change policy and I welcome any questions you might have.

Preliminary and incomplete: Draft 4, 3/2/98

**ORAL TESTIMONY OF DR. JANET YELLEN
CHAIR, COUNCIL OF ECONOMIC ADVISERS
BEFORE THE HOUSE COMMERCE COMMITTEE
ON THE ECONOMICS OF THE KYOTO PROTOCOL
MARCH 4, 1998**

Thank you, Mr. Chairman. The President has said that we can work to avert the grave dangers of climate change, while at the same time maintaining the strength of our economy. I agree and am pleased to have this opportunity to appear before the Committee to elaborate on the Administration's views on these issues.

The international agreement that was reached in Kyoto this past December is a crucial step forward in addressing global climate change. But it is only one step in a long journey. Since the international effort to reduce greenhouse gas emissions is still in some respects a work-in-progress, it is not yet possible to provide a full authoritative analysis of it. In my testimony today, I will attempt to identify key elements of the agreement and the Administration's policy, such as international emissions permit trading, meaningful developing country participation, the use of sinks to offset emissions requirements, and the inclusion of six gases, as well as domestic initiatives, that can ensure that reductions in global greenhouse gas emissions are consistent with continued strong economic growth.

Effects of Climate Change

The Intergovernmental Panel on Climate Change (IPCC) jointly established by the World Meteorological Organization and the United Nations Environment Programme, concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of carbon dioxide, methane, nitrous oxide, and the other

Preliminary and incomplete: Draft 4, 3/2/98

so-called greenhouse gases have reached levels well above those of preindustrial times. As a result of the increased concentration of greenhouse gases, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years, with a best guess of about 3.5 degrees Fahrenheit. The IPCC reports that a doubling of carbon dioxide levels would lead to about 6,000 to 10,000 additional deaths per year from higher summer temperatures, even after netting out the effects of warmer winters and acclimatization. The IPCC also predicts sea level increases of about 20 inches by 2100, with substantially greater increases subsequently. Despite the difficulties of deriving quantitative assessments of the damages from climate change, researchers have nonetheless developed monetary estimates of damages that prompt substantial concern, and range in tens of billions of dollars per year for temperature changes projected to occur in the next century. If left uncontrolled, disruption of the Earth's climate may thus pose substantial costs in terms of harm to commerce and the environment alike. These costs--and they are significant--provide the primary motivation for actions to reduce greenhouse gas emissions.

These estimates do not, and cannot, accurately reflect the value of reducing the small and unknown possibility of large-scale and potentially irreversible events with potentially catastrophic consequences, such as warming of the Northern tundra sufficient to release very large amounts of methane from the permafrost. There is thus a strong argument for the Kyoto Protocol as a form of insurance against a serious environmental threat.

Kyoto Protocol

To address climate change, the United States and approximately 160 other nations agreed

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in negotiations held in Kyoto, Japan, last December, to reduce emissions of greenhouse gases. The Kyoto Protocol, which requires the advice and consent of the Senate, would place binding limits on each industrial country's combined emissions of the six principal categories of greenhouse gases. These limits apply to the 38 so-called Annex I countries, which are the industrialized countries, defined to include Russia, Ukraine, and most Eastern European countries.

In taking action to reduce emissions, economic analysis suggests that two elements are absolutely essential: the effort must be flexible and market-based, to ensure that we reduce emissions in the most efficient way; and the effort must be global, for without global emissions reductions the effort would be ineffective. The nature of the climate change problem--that greenhouse gas emissions have the same effect on the climate regardless of how, where, and, within limits, when they occur--suggests three basic methods to lower the cost of achieving given levels of environmental protection. We term these "what", "where", and "when" flexibility.

As a result of U.S. diplomatic efforts, all three forms of flexibility are broadly reflected in the Kyoto Protocol. The inclusion of all six greenhouse gases and certain sink activities that promote removal of carbon from the atmosphere provide substantial "what flexibility"--enabling trading across emissions reductions sources to lower the cost of meeting our target. The choice of a multi-year budget period, ending later than many countries proposed, with allowance for "banking" of emissions reductions, constitute key elements of "when flexibility." These provisions mitigate costs by permitting reductions at times when they are less rather than more costly. The inclusion of international emissions trading among countries that take on binding

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targets, coupled with an agreement allowing industrial countries to receive emissions reduction credit for certified investments in “clean development” projects in the developing world, are the critical forms of “where” flexibility incorporated in the Kyoto Protocol. Although details of these provisions need to be finalized in negotiations in Buenos Aires later this year, we believe that these mechanisms can produce substantial reductions in the costs of attaining our environmental objectives.

The problem of climate change is global and so requires a global solution. Around 2030, under a continuation of business as usual, a majority of world emissions are projected to come from developing countries. Without developing country participation we cannot achieve adequate climate protection. In addition, developing country participation would permit relatively low-cost emissions reductions to be internationally recognized as a substitute for more expensive reductions in many industrial countries. The President has made clear that he will not submit the Kyoto Protocol to the Senate without meaningful participation from key developing countries (who are not included in Annex I).

Economic Effects

An economic analysis of climate change faces three broad categories of difficulties. First are the uncertainties that still remain over the terms of the ultimate treaty. Second are the inherent limitations of available models to analyze even short-term costs and benefits. And finally is the impossibility of putting a single monetary number on the long-term benefits of climate change mitigation.

Mindful of the limitations of any single model as a tool for evaluating the economic

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impact of the Kyoto Protocol, we have employed a broad array of techniques to assess the various possible costs and non-climate benefits of the Administration's emissions reduction policy. Ignoring the benefits of mitigating climate change itself, our conclusion is that the net costs of our policies to reduce emissions are likely to be small if those reductions are undertaken in an efficient manner and we are successful in securing meaningful developing country participation as well as effective international trading and clean-development mechanisms in future negotiations. As I explain in my written testimony, this conclusion is not entirely dependent on, but is fully consistent with, formal model results. For example, given the factors, such as trading, delineated above, but excluding the benefits of acting and the impact of electricity restructuring, estimates derived using the SGM model suggest that the resource costs of attaining the Kyoto targets for emission reductions might amount to just \$7 to \$12 billion per year in 2008 to 2012 -- or just 0.1 percent of projected GDP. That small net premium, in effect, purchases a partial insurance policy against a serious environmental threat.

A comprehensive economic evaluation of the Administration's climate change policies must also take into account the potential payoffs from the full package of proposed Administration climate change initiatives. As you know, the President's FY 1999 budget includes a \$6.3 billion package of tax cuts and R&D over the next 5 years; this package makes good sense in terms of energy policy and will jumpstart our efforts. A second responsible step entails industry-by-industry consultations to prepare emission reduction plans in key industrial sectors. A final component of the President's climate change policy is his support for electricity restructuring in a manner that will offer approximately \$20 billion in cost savings to electricity

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consumers, while achieving modest reductions in greenhouse gas emissions.

I look forward to continuing to work with members of this Committee, as well as other interested parties, in further analyzing the Kyoto Protocol and evaluating the effects of reducing greenhouse gas emissions.

I welcome your questions.

4/22/98

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**TESTIMONY OF DR. EDWARD MONTGOMERY
CHIEF ECONOMIST, U.S. DEPARTMENT OF LABOR
BEFORE THE HOUSE SUBCOMMITTEE ON NATIONAL ECONOMIC
GROWTH, NATURAL RESOURCES, AND REGULATORY AFFAIRS
ON THE ECONOMIC EFFECTS OF THE KYOTO PROTOCOL.
APRIL 23, 1998**

Thank you, Mr. Chairman and Members of the Committee. I am pleased to have this opportunity to appear before the Committee to elaborate on the Administration's views on global climate change policy.

The international agreement that was reached in Kyoto this past December is a crucial step forward in addressing global climate change. Global warming may be the most pressing environmental concern of the next century. The Intergovernmental Panel on Climate Change (IPCC), representing the world's climate change scientists, concluded that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of carbon dioxide, methane, nitrous oxide, and the other so-called greenhouse gases have reached levels well above those of preindustrial times.

As a result of the increased concentration of CO₂, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years. The IPCC reports that a doubling of carbon dioxide levels would lead to approximately 10,000 estimated additional deaths per year for the current U.S. population from higher summer temperatures, even after netting out the effects of warmer winters and assuming acclimatization. Other researchers have predicted sea level increases, greater spread of tropical diseases, and more violent storms due to increased concentrations of greenhouse gases.

While these effects may not be felt for several decades, it is important to begin to take action now in order to avoid leaving an even greater burden for future generations. Some researchers have estimated that we already face a 1.0 degree Fahrenheit temperature increase from emissions that have occurred. Delayed action will only increase the level of greenhouse gases accumulating in the atmosphere and magnify the future costs of addressing this issue. As CEA Chair Yellen recently testified, the monetary damages expected from a 4.5 degree Fahrenheit average worldwide temperature increase would amount to about \$89 billion per year or about 1 percent of GDP. Responsible action today would seem a prudent form of insurance to protect the world for our children and grandchildren.

The President's plan represents a flexible and market-oriented approach to global climate change and is designed to insure that we reach our goals with the least cost and in the most efficient manner. It exploits the creativity and ingenuity of American companies and their workers rather than relying upon policies like taxing the use of fossil fuels. The plan emphasizes partnering with business by investing in the further development of win-win technologies which

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lower energy consumption (and costs) while reducing emissions. The \$6.3 billion program of increased R&D spending and tax credits that the President proposed is designed to harness the power of the market to seek reductions in greenhouse gases at the least cost possible.

Let me emphasize that at the core of the President's policy is the recognition that we must begin to address this real problem but that we must do it in such a way so as to minimize any effect on the competitiveness of U.S. industry and workers. That is why the Administration has insisted upon international emissions trading, meaningful developing country participation, inclusion of land-use activities that absorb carbon ("sinks") and six categories of gases, as well as our domestic initiatives which can help ensure that reductions in global greenhouse gas emissions are consistent with continued strong economic growth. Our experience with the SO₂ program showed that when market flexibility is harnessed emission reductions can be achieved at costs 60 to 80 percent below what was originally thought possible. While success such as this is not guaranteed, it does illustrate the efficacy of using flexible market-based strategies to address the problem.

In trying to assess the potential costs of global climate change policy there are several points to keep in mind. First, the parameters of the international effort to reduce greenhouse gas emissions is still in some respects a work-in-progress so, despite the claims of some studies, it is not yet possible to provide a full authoritative analysis. Second, one only has to pick up the paper on a daily basis and read the range of forecasts for the economy over the next quarter to appreciate the high degree of uncertainty attached to economic forecasts over the short term, let alone over a decade. How many forecasters a year ago, let alone ten years ago, predicted that we would again be seeing gas prices around \$1.00 per gallon?

Despite the uncertainty surrounding economic forecasts a decade into the future, there is good reason to believe that the costs of this policy will be modest. First, lower energy costs are but one of many factors affecting competitiveness. In fact, energy prices account for only 2.2 percent of total costs to U.S. industry and already vary substantially across countries. Gas prices range from 8 cents per gallon in Venezuela to \$1.28 in the U.S. to \$4.41 in France. Despite high energy prices in Europe and Japan, neither they nor U.S. industry is moving en masse to Venezuela. Further, the Administration's proposed plan for electric utility restructuring may actually offset any energy price increase caused by efforts to limit greenhouse gases.

Second, as Chair Yellen noted in her recent testimony, features of the Kyoto Protocol that the President insisted upon such as International Emissions Trading, Joint Implementation, and the Clean Development Mechanism have all been found to significantly reduce the costs of abatement. In fact, model estimates suggest that the costs could range between \$7 and \$12 billion per year in 2008-2012 or one tenth of one percent of GDP. These already low estimates may overstate actual costs as they ignore the benefits of climate change abatement as well as the effects of electric utility restructuring and the Administration Climate Change Initiative.

While we expect that the costs of global climate change policy to be modest, it is possible

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that some industries and workers may be adversely affected by a rise in energy prices. The President has stated that we have a moral obligation to help those who may be affected, no less than we do today, by any change in our economy which affects people through no fault of their own. The President and the Department of Labor have demonstrated the strength of this commitment to helping today's workers manage change by doubling funding for programs that provide access to training and assistance to those workers when they need it.

Any layoff is a painful event for the workers and communities involved. By insisting upon flexible market-based solutions, the President's global climate change policies are designed to minimize any adverse effect on energy prices and the economy. Just as we do today, the Department of Labor is committed to helping any worker or community that may be affected. Rapid response teams have a proven track record of helping workers who are affected by any economic dislocation to look ahead and plan for their future. Working with locally-managed job training organizations, these teams set up worker assistance workshops that cover everything from resume writing to interviewing skills. Dislocated workers may also participate in job fairs, training (including community college courses), direct placement, and related skills and remedial assistance from federally-funded programs. The Secretary has repeatedly stated her commitment to further improving these programs by increasing job placement and wage replacement for workers who permanently lose their jobs in a plant closing or mass layoff.

Thank you Mr. Chairman for this opportunity to discuss global climate change policy and I welcome any questions you might have.

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4/22/98

EPA

**TESTIMONY OF DAVID GARDINER
ASSISTANT ADMINISTRATOR
OFFICE OF POLICY, PLANNING, AND EVALUATION
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON NATIONAL ECONOMIC GROWTH,
NATURAL RESOURCES, AND REGULATORY AFFAIRS
COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT
U.S. HOUSE OF REPRESENTATIVES
APRIL 23, 1998**

Thank you, Mr. Chairman and members of the committee, for giving me this opportunity to testify on the Kyoto Protocol. The United States agreed to the Protocol in December because the scientific evidence strongly supports our belief that a changing climate would pose very serious risks to public health and the environment. The framework for action that was negotiated in Kyoto would address those risks in a flexible, common-sense, and cost-effective way. The Kyoto Protocol would buy America an insurance policy to protect against a possible disaster in the future. Moreover, while protecting the future, it brings us substantial human health, environmental, and economic benefits in the near term.

It is difficult to predict with certainty what will happen in the future, but the risks are enormous. If emissions of greenhouse pollutants are not reduced worldwide, atmospheric concentrations are expected to double by the year 2060. That would cause global temperatures to rise by roughly two to six degrees by the year 2100, and global sea levels to rise 6 - 38 inches.

Climatic changes on that scale would pose very serious threats to public health and the environment. For example, a doubling of current atmospheric concentrations of greenhouse pollutants could contribute to more frequent and intense episodes of urban smog, thus increasing

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rates of human illness and death. The projected increase in the duration and frequency of heat waves could increase mortality rates due to heat stress.

Climate change also could lead to increases in several infectious diseases, including malaria, dengue, and yellow fever, as the range of organisms that carry these diseases expands. It has been estimated, for example, that as global surface temperatures rise, by the end of the 21st century the global population will suffer an additional 50 - 80 million cases of malaria.

By the year 2100, rising sea levels could submerge 15 - 60 percent of America's coastal wetlands. These wetlands are nature's kidneys; they cleanse and purify the waters that pass through them. Their loss would be a blow to the health of humans and wildlife alike.

Groundwater aquifers and surface waters could be rendered unfit for drinking by the saltwater intrusion that could be common as sea levels rise. Five thousand square miles of dry land in states like Louisiana and Florida could be inundated, with devastating effects on the quality of drinking water. Both droughts and floods are likely to become more frequent and severe as average temperatures rise, thus increasing personal and property damage.

In short, the potential consequences of climate change go far beyond a few degree rise in average global temperatures over the next century. Rising temperatures and related climate phenomena pose a distinct and serious threat to human health, the environment, and the quality of life on earth. The Intergovernmental Panel on Climate Change stated the problem succinctly: "Climate change is likely to have wide-ranging and mostly adverse impacts on human health, with significant loss of life."

In the face of this evidence, and because the effects of climate change would be so serious and so costly, the United States negotiated an agreement that will allow participating nations to

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reduce greenhouse pollution in common sense, cost-effective, and flexible ways.

First, the Protocol sets realistic targets and timetables for reducing emissions of greenhouse pollutants. The United States would reduce its emissions 7 percent below 1990 levels, Japan 6 percent, and the European Union 8 percent.

Second, the Protocol ensures that countries can meet their obligations through the use of flexible market mechanisms, not mandatory policies or taxes. This flexibility will allow companies and countries to find the cheapest possible ways of hitting their emissions reduction targets. In fact, because emissions permits can be traded, there is a built-in incentive to develop advanced -- and cheaper -- methods of reducing emissions.

In this country we have several years of experience using the power of the free market to reduce pollution at the lowest cost. We've incorporated market trading mechanisms into programs to control acid rain, water pollution, lead in gasoline, criteria air pollutants, and the chemicals which deplete the ozone layer (chlorofluorocarbons). The results have been impressive. The lead trading program, for example, reduced control costs by about 20 percent. Acid rain control costs were 50 percent lower than expected. CFC phaseout costs were cut dramatically. We believe the flexible market mechanisms built into the Kyoto Protocol will be equally effective in reducing greenhouse pollutants at the lowest possible cost.

The United States entered the Kyoto negotiations with a third objective: securing the meaningful participation of developing countries. The Kyoto Protocol does not meet all our objectives in this area. But it makes a solid start by encouraging investments in developing countries that can be credited toward the Protocol's emissions reductions targets through the Clean Development Mechanism.

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The President's proposed Climate Change Technology Initiative also is part of our common-sense, cost-effective strategy. This initiative expands existing voluntary programs designed to reduce greenhouse pollutants. These voluntary programs bring economic benefits beyond those associated with the control of global warming. They provide incentives for American businesses and communities to cut greenhouse pollution now in ways that make economic sense now. They speed the adoption of today's cost-effective, energy-efficient, low-carbon technologies throughout the economy, and hasten the development of even more advanced technologies in the future.

And they work. By 1999 they will reduce greenhouse pollutants by over 40 million tons a year, and eliminate 90,000 tons of nitrogen oxides, a prime component of urban smog. In addition, they will reduce U.S. energy consumption by over 45 billion kilowatt hours in 1999, providing \$3 billion in energy savings to consumers and businesses. For every dollar spent by EPA, the nation's energy bill is reduced by more than \$70.

Let me give you just one example of how rewarding these kinds of actions can be for both the environment and the economy. In East Indiana, the Inland Steel Company is installing technology that will recapture coke gas emissions and use it to generate both electricity and steam heat. Any excess electricity not used at the steel mill will be sold to the local utility. Thus this new, state-of-the-art, cogeneration facility will save Inland money while it reduces the emissions of greenhouse gas and other pollutants from both the steel mill and the local utility.

Ideas like that help enhance the productivity of the American economy. They help American businesses compete more effectively in the global economy. And by reducing greenhouse pollution they help us reduce the threat of global warming.

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One last point: every dollar we invest to improve energy efficiency and limit climate change will control pollutants besides greenhouse gases. Fossil fuel combustion is also a major source of conventional air pollutants like particulates, nitrogen oxides, volatile organic compounds, and carbon monoxide. These pollutants have been linked to heightened risks of mortality, chronic bronchitis, congestive heart failure, heart disease, and other serious illnesses. Children and the elderly are most vulnerable to these pollution-related illnesses.

In summary, the Kyoto Protocol lays the groundwork for a cost-effective, common-sense approach to controlling climate change. It is a work in progress, and the progress so far has been heartening. We have to do more to engage the developing countries, but the framework for future action is strong.

Most important, the need for action is clear. Let me close by quoting from an article by Stephen Wolf, the CEO of US Airways: "But in the long term, if we do not address this issue forcefully today, we and our children and our children's children will be penalized in ways we do not even want to contemplate." Thank you.

LRM ID: EHF460

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
Washington, D.C. 20503-0001

Wednesday, April 22, 1998

LEGISLATIVE REFERRAL MEMORANDUM

TO: Legislative Liaison Officer - See Distribution below
FROM: Ronald K. Peterson (for) Assistant Director for Legislative Reference
OMB CONTACT: Robert J. Tuccillo
PHONE: (202)395-5609 FAX: (202)395-5836
SUBJECT: ENERGY Testimony on Global Climate Change
DEADLINE: 5:45 PM Wednesday, April 22, 1998

In accordance with OMB Circular A-19, OMB requests the views of your agency on the above subject before advising on its relationship to the program of the President. Please advise us if this item will affect direct spending or receipts for purposes of the "Pay-As-You-Go" provisions of Title XIII of the Omnibus Budget Reconciliation Act of 1990.

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Statement of Dan Reicher
Assistant Secretary for Energy Efficiency and Renewable Energy
Department of Energy
Before the
Committee on Government Reform and Oversight
Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs
April 23, 1998

Mr. Chairman and members of the Subcommittee, I appreciate the opportunity to appear before you to discuss how the Department of Energy's enhanced energy research and development initiative can help the nation reduce our dependence on oil imported from unstable sources, increase our nation's competitiveness, cut air pollution, help maintain our leadership in energy technology, and at the same time, address climate change.

As the 21st century approaches, our nation faces many energy, economic, and environmental challenges. Over the next few years, we will restructure of U.S. electricity markets; implement new federal and state clean air requirements; encounter an increasingly global energy market; face increased economic competition in the global market for clean energy technologies; and, confront the challenge of global climate change. Each of these challenges poses substantial risks to our nation. However, there is a technology path that can help meet these challenges and turn them into opportunities.

Research, development and accelerated use of energy efficiency and clean energy technologies, built upon a solid foundation of advanced science and basic research, is a major part of the solution. In fact, this technology path is so important in meeting these challenges, that even without the threat of climate change, these investments would still be wise national policy. This exact point was made last Fall by the President's Committee of Advisors on Science and Technology.

There is no "silver bullet" that will address all our future energy needs. A broad and balanced R&D portfolio -- one that builds on clean fossil, renewable and nuclear supplies and increased

efficiency of energy use -- is essential. We must make better use of conventional energy sources with energy efficiency technologies while also investing in new energy supply technologies to provide us with a robust portfolio of clean and affordable future energy options. The development and widespread use of a diverse energy portfolio will provide many benefits, including reduced energy costs, increased energy security, improved air quality, greater U.S. competitiveness, and reduced greenhouse gas emissions.

That is why we are asking for funding for the following:

- Hydropower R&D to develop a fish friendly turbine that will help us preserve our large installed hydropower base that currently provides approximately 10 percent of the total U.S. electricity.
- Technologies that improve the efficiency and extend the operating life of current nuclear power plants.
- Super clean diesel engines that will be one-third more efficient than comparable gasoline engines and meet equivalent emission standards.
- Advanced gas turbines that can provide industrial and commercial buildings not only with their electricity, but with their heat, at efficiencies of 70 percent and higher.
- R&D partnerships with the most energy-intensive U.S. industries -- like steel, chemicals, and forest products -- to develop technologies to save energy and increase industrial

productivity. Just last month, the Department entered into a new R&D partnership with the agriculture industry to use crops like corn and soybeans -- instead of oil -- to make everyday consumer items -- ranging from paints and plastics to carpets and car parts.

Sequestration technologies to keep the carbon dioxide from combusting coal and other fossil fuels out of the atmosphere.

These investment proposals are built on a solid track record of DOE success in advancing energy technology.

In January, Chrysler, Ford, and GM stunned the world with their announcement of concept vehicles that promise two to three times greater fuel efficiency. This followed a DOE, Chrysler and A.D. Little announcement of a major breakthrough in powering a fuel cell electric car with gasoline. All these announcements were a result of our partnership with auto companies and their suppliers in the Partnership for a New Generation of Vehicles.

Last week in Nevada we dedicated an advanced clean coal power plant that produces 20 percent fewer greenhouse gas emissions and 90 percent less sulfur and nitrogen oxide emission. The advances in this plant result from our Fossil Energy R&D efforts.

Yesterday, Mayor Giuliani and Secretary Peña celebrated the first speculative office tower in Manhattan since 1988 -- a building already fully rented, powered in part by fuel cells and photovoltaic panels, and expected to be 40 percent more energy efficient than the average

building its size, with a similar reduction in associated greenhouse gas emissions. The technologies used in this building were developed by DOE, in partnership, with industry and the national laboratories.

Next week, in Indiana, Bethlehem Steel and DOE will showcase an array of technologies that will drastically cut pollution and energy use in the largest integrated steel mill in the nation -- a mill that spends about \$300,000 per day on energy -- or more than \$100 million per year.

And this year, DOE has been instituting a simple method for investing billions of dollars of private sector funds in energy retrofits for the nation's Federal buildings. As you may know, the Federal government occupies 500,000 structures and is the single largest energy user in America. In one recent example, Consolidated Edison is investing \$6 million of its own money to retrofit a V.A. hospital that will save the V.A. and taxpayers \$1 million a year.

Clearly, the common ground in the climate change debate is technology. From Mobil Oil to the Sierra Club, there is agreement that substantial industry and government support for energy R&D is a key element of an effective response to climate change, independent of opinions about the science or diplomacy of the issue. Last year, a peer-reviewed study conducted by five national laboratories recognized that the United States can hold down the costs of meeting climate change goals by developing clean energy technologies. In fact, the study concluded that significant progress in reducing greenhouse gas emissions can be achieved without increasing the nation's total energy bill. Just yesterday, eleven laboratory directors issued a study that outlined almost 50 separate technology pathways for reducing greenhouse gas emissions over the next 30 years. This

study should prove very helpful to policy makers because it attempts to assess the likelihood of success and magnitude of reductions for each technology.

Finally, technology is a key to ensuring the meaningful participation of developing nations in a climate treaty. It is technology that will provide developing nations with what they seek -- the ability to grow their economies while they limit their greenhouse gas emissions and simultaneously reduce the traditional air pollutants choking many of their cities. And, clean technology will help ensure that developing countries become not a challenge but an opportunity for the U.S. Mr. Chairman, over the next four decades, developing countries alone will require new electricity generating capacity worth trillions of dollars. In order to meet this explosive energy demand and reap the resulting technology sales and jobs, we must invest now in the research, development, and deployment of energy technologies. U.S. companies and workers can have the largest piece of this huge market if we win the R&D race. But, if our commitment to energy technology R&D is stalled by debate over the Kyoto Protocol and economic and scientific models, then the U.S. economy, our citizens, and the global environment will be the real losers.