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Administration Documents on Climate Change

John Gibson
White House Task Force on Climate Change

Administration Documents on Climate Change

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White House Press Release

REMARKS BY THE PRESIDENT ON GLOBAL CLIMATE CHANGE

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release October 22, 1997

REMARKS BY THE PRESIDENT
ON GLOBAL **CLIMATE CHANGE**

National Geographic Society
Washington, D.C.

2:57 P.M. EDT

THE PRESIDENT: Thank you very much. Mr. Murphy, Mr. Vice President, to all of you who are here. I thank especially the members of Congress who are here, the leaders of labor and business who are here, all the members of the administration, and especially the White House staff members that the Vice President mentioned and the Secretary of Energy, the Administrator of the EPA, and the others who have helped us to come to this moment.

On the way in here we were met by the leaders of the National Geographic, and I complimented them on their recent two-part series on the Roman Empire. It's a fascinating story of how the Empire rose, how it sustained itself for hundreds of years, why it fell, and speculations on what, if any, relevance it might have to the United States and, indeed, the West.

And one of the gentlemen said, well, you know, we got a lot of interesting comments on that, including a letter referencing a statue we had of the bust of Emperor Vespasian. And one of our readers said, why in the world did you put a statue of Gene Hackman in a piece on the Roman Empire? (Laughter.) And I say that basically to say, in some senses, the more things **change**, the more they remain the same. (Laughter.)

For what sustains any civilization, and now what will sustain all of our civilizations, is the constant effort at renewal, the ability to avoid denial and to proceed into the future in a way that is realistic and humane, but resolute. Six years ago tomorrow, not long after I started running for President, I went back to my alma mater at Georgetown and began a series of three speeches outlining my vision for America in the 21st century -- how we could keep the American Dream alive for all of our people, how we could maintain America's leadership

that if the countries of the world do not work together to cut the emission of greenhouse gases, then temperatures will rise and will disrupt the **climate**. In fact, most scientists say the process has already begun. Disruptive weather events are increasing. Disease-bearing insects are moving to areas that used to be too cold for them. Average temperatures are rising. Glacial formations are receding.

Scientists don't yet know what the precise consequences will be. But we do know enough now to know that the Industrial Age has dramatically increased greenhouse gases in the atmosphere, where they take a century or more to dissipate; and that the process must be slowed, then stopped, then reduced if we want to continue our economic progress and preserve the quality of life in the United States and throughout our planet. We know what we have to do.

Greenhouse gas emissions are caused mostly by the inefficient burning of coal or oil for energy. Roughly a third of these emissions come from industry, a third from transportation, a third from residential and commercial buildings. In each case, the conversion of fuel to energy use is extremely inefficient and could be made much cleaner with existing technologies or those already on the horizon, in ways that will not weaken the economy but in fact will add to our strength in new businesses and new jobs. If we do this properly, we will not jeopardize our prosperity -- we will increase it.

With that principle in mind, I'm announcing the instruction I'm giving to our negotiators as they pursue a realistic and effective international **climate change** treaty. And I'm announcing a far-reaching proposal that provides flexible market-based and cost-effective ways to achieve meaningful reductions here in America. I want to emphasize that we cannot wait until the treaty is negotiated and ratified to act. The United States has less than 5 percent of the world's people, enjoys 22 percent of the world's wealth, but emits more than 25 percent of the world's greenhouse gases. We must begin now to take out our insurance policy on the future.

In the international **climate** negotiations, the United States will pursue a comprehensive framework that includes three elements, which, taken together, will enable us to build a strong and robust global agreement. First, the United States proposes at Kyoto that we commit to the binding and realistic target of returning to emissions of 1990 levels between 2008 and 2012. And we should not stop there. We should commit to reduce emissions below 1990 levels in the five-year period thereafter, and we must work toward further reductions in the years ahead.

The industrialized nations tried to reduce emissions to 1990 levels once before with a voluntary approach, but regrettably, most of us -- including especially the United States -- fell short. We must find new resolve to achieve these reductions, and to do that we simply must commit to binding limits.

Second, we will embrace flexible mechanisms for meeting these limits. We propose an innovative, joint implementation system that allows a firm in one country to invest in a project that reduces emissions in another country and receive credit for those reductions at home. And we propose an international system of emissions trading. These innovations will cut worldwide pollution, keep costs low, and help developing countries protect their environment, too, without sacrificing their economic growth.

Third, both industrialized and developing countries must participate in meeting the challenge of **climate change**. The

way to get moving now. We will start with our package of strong market incentives, tax cuts, and cooperative efforts with industry. We want to stimulate early action and encourage leadership. And as we reduce our emissions over the next decade with these efforts, we will perform regular reviews to see what works best for the environment, the economy, and our national security.

After we have accumulated a decade of experience, a decade of data, a decade of technological innovation, we will launch a broad emissions trading initiative to ensure that we hit our binding targets. At that time, if there are dislocations caused by the **changing** patterns of energy use in America, we have a moral obligation to respond to those to help the workers and the enterprises affected -- no less than we do today by any **change** in our economy which affects people through no fault of their own.

This plan plays to our strengths -- innovation, creativity, entrepreneurship. Our companies already are showing the way by developing tremendous environmental technologies and implementing commonsense conservation solutions.

Just yesterday, Secretary Pena announced a dramatic breakthrough in fuel cell technology, funded by the Department of Energy research - a breakthrough that will clear the way toward developing cars that are twice as efficient as today's models and reduce pollution by 90 percent. The breakthrough was made possible by our path-breaking partnership with the auto industry to create a new generation of vehicles. A different design, producing similar results, has been developed by a project funded by the Defense Advanced Research Products Agency and the Commerce Department's National Institute of Science and Technology.

The Energy Department discovery is amazing in what it does. Today, gasoline is used very inefficiently in internal combustion engines -- about 80 percent of its energy capacity is lost. The DOE project announced yesterday by A.D. Little and Company uses 84 percent of the gasoline directly going into the fuel cell. That's increased efficiency of more than four times traditional engine usage.

And I might add, from the point of view of all the people that are involved in the present system, continuing to use gasoline means that you don't have to **change** any of the distribution systems that are out there. It's a very important, but by no means the only, discovery that's been made that points the way toward the future we have to embrace.

I also want to emphasize, however, that most of the technologies available for meeting this goal through market mechanisms are already out there -- we simply have to take advantage of them. For example, in the town of West Branch, Iowa, a science teacher named Hector Ibarra challenged his 6th graders to apply their classroom experiments to making their school more energy efficient. The class got a $14,000 loan from a local bank and put in place easily available solutions. The students cut the energy use in their school by 70 percent. Their savings were so impressive that the bank decided to upgrade its own energy efficiency. (Laughter.)

Following the lead of these 6th graders -- (laughter) -- other major companies in America have shown similar results. You have only to look at the proven results achieved by companies like Southwire, Dow Chemical, Dupont, Kraft, Interface Carpetmakers, and any number of others in every sector of our economy to see what can be done.

higher profit. We have to tear down barriers to successful markets and we have to create incentives to enter them. I call on American business to lead the way, but I call upon government at every level -- federal, state, and local -- to give business the tools they need to get the job done, and also to set an example in all our operations.

And let us remember that the challenge we face today is not simply about targets and timetables. It's about our most fundamental values and our deepest obligations.

Later today, I'm going to have the honor of meeting with Ecumenical Patriarch Bartholomew I, the spiritual leader of 300,000,000 Orthodox Christians -- a man who has always stressed the deep obligations inherent in God's gift to the natural world. He reminds us that the first part of the word "ecology" derives from the Greek word for house. In his words, in order to **change** the behavior toward the house we all share, we must rediscover spiritual linkages that may have been lost and reassert human values. Of course, he is right. It is our solemn obligation to move forward with courage and foresight to pass our home on to our children and future generations.

I hope you believe with me that this is just another challenge in America's long history, one that we can meet in the way we have met all past challenges. I hope that you believe with me that the evidence is clear that we can do it in a way that grows the economy, not with denial, but with a firm and glad embrace of yet another challenge of renewal. We should be glad that we are alive today to embrace this challenge, and we should do it secure in the knowledge that our children and grandchildren will thank us for the endeavor.

Thank you very much. (Applause.)

END 3:24 P.M. EDT

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THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

October 22, 1997

PRESS BRIEFING
BY
CHAIR OF THE NATIONAL ECONOMIC COUNCIL GENE SPERLING,
ASSISTANT TO THE PRESIDENT FOR INTERNATIONAL ECONOMIC POLICY
DAN TARULLO,
DEPUTY NATIONAL SECURITY ADVISOR JIM STEINBERG,
STAFF SECRETARY TODD STERN,
CHAIR OF COUNCIL ON ENVIRONMENT QUALITY KATIE MCGINTY,
AND DEPUTY SECRETARY OF TREASURY LARRY SUMMERS

The Briefing Room

1:15 P.M. EDT

MR. MCCURRY: We are bringing before you a parade of administration officials, harmoniously and vigorously united together -- brown and green alike, they march out, and all colors in between.

The President's global climate change team is here with you, including all of the following and more: Gene Sperling, Assistant to the President for Economic Policy, Chair of the National Economic Council; Dan Tarullo, Assistant to the President for International Economic Policy; Jim Steinberg, Deputy Assistant to the President for National Security Affairs; Todd Stern, Assistant to the President and Staff Secretary and really the shepherd of all of our global climate folks at the White House; Katie McGinty, the Chair of the Council on Environmental Quality; and Larry Summers, Deputy Secretary of the Treasury.

They are here at your disposal, but we are going to do the following. We'll start with Gene giving a little overview of the policy directions the President has now put in place as we head to Kyoto. Katie will tell you a little bit, expand a little bit on the specifics of the policy. And I guess Jim and Todd can talk about the negotiating process that we foresee looking ahead to Kyoto.

Mr. Sperling.

MR. SPERLING: The President, the Vice President and everyone in the administration who has worked on this issue feels very strongly that this is perhaps the major environmental challenge of our generation. All of us believe strongly that the science compels action; that the science, based on the scientists that came together from over 150 countries, makes clear that there has been a discernable human influence on the climate with potentially disruptive effects for our future; and that the United States must play a leadership role in addressing this environmental challenge.

The President today puts forward an ambitious, but sensible and sound approach for addressing this. He sets timetable and targets of reaching 1990 levels by the period of 2008 to 2012. Our policies will be based on five fundamental principles, that we be, one, guided by the science; two, that our approach be market-based and common sense; three, that we should first look for the win-win, positive solutions that exist before us; fourth, that there must be global participation, that this is a global problem that requires a global solution; and, fifth, recognizing the uncertainty in engaging on a long-term we need to have common sense, economic and scientific review periodically.

The President puts forward a proposal today that one can see in three stages. The first stage is where the President says, here are the things America can do without waiting, without, we think, conflict in addressing this problem. And if you look on the materials we've handed out, on the third page, it runs through the specific items from the tax incentives to the industry action to the early credit. These are the things this President is committed to doing as soon as possible. This is what we can do without waiting. This is what we can do right now to utilize the opportunities that are before us. And it very much fits the principle that to the degree there are under-utilized energy efficiencies that exist right now, it would be irresponsible for us to not first do everything within our power to make sure that our industries and our people utilize those efficiencies and get the gains that are before us.

The second period would be, in having a five-year review, would be to look at 2004, to evaluate what has worked; to do more of what is being effective; to take account of what new things we have learned on the science, the environment and the economics; and to go forward and to start planning for the third stage, the binding stage, between 2008 and 2012. It is at this stage we would call for a broad-based emissions trading system, both domestically and internationally, that we believe would ensure that we hit the binding targets that the President has set out.

I should stress that by the time a President and the Congress would have to implement this, we would have under our belt a decade of experience, a decade of innovation, a decade of technology, a decade of science and economic review. So this is a strong approach, but it is handled in a sound and sensible way that recognizes both the uncertainties we face, but both -- that we have an imperative to reach the binding target that the President is setting forward.

If you look in the materials we have, we try to give some examples as you go through on some of the places where the President feels very strongly in the area of electricity, in the area of cogeneration, others where there is, we think, significant waste and, therefore, significant opportunities using existing technologies and energy efficiency, and our hopes for where there can be innovation and breakthroughs, the type that you heard Secretary Pena talk about yesterday, that can put us on a path.

There will be many people who will suggest that down the road, in 2008, that this would be difficult to implement. But as with so many other issues -- entitlement reform and others -- the thing we know for sure is that if we act early we make it easier to deal with a long-term problem. It is only when we wait too long and too late that the choices become too difficult. We have before us the opportunity to deal with these things in a way that this country is best at -- through innovation, through technology, through mobilizing this country, through using the powers of the market. And this President is committed, that without waiting, he is going to try to mobilize those forces to go forward and do our part in dealing with our generational responsibility in addressing this environmental issue.

MS. MCGINTY: Thanks to my partner, Gene. Good afternoon. I just want to underscore a few of the points that Gene made, maybe elaborate briefly.

First of all, today President Clinton is exercising strong leadership in putting forth a bold plan to take on the challenge of global climate change. Four points that I think are worth underscoring and emphasizing: The President's exercise of leadership today will, first and foremost, get this country moving today to begin to secure the opportunities we have before us to

reduce emissions, to improve the environment and to seize economic opportunity in doing that.

How? One, through a very innovative new initiative on tax incentives to encourage investments in energy-efficiency, renewable energy, in encouraging the turnover of older, less efficient capital stock -- things like that. Second, through a program of designing and affording credit to industries who are willing to step up to the plate and take action early -- earlier than any of the periods that are being discussed in the international arena. The President will want to work in partnership with industry, affording them credit for taking early action to reduce emissions, through new investments in the important technologies that the United States can develop and has the opportunity to lead the world in developing.

And, fourth, and importantly, by unleashing the forces of competition in the electricity markets. Today, electricity generation and transmission is governed by rules that in some instances are 70 years old. That antiquated system has stifled some of the most efficient and effective technologies we have that can dramatically reduce greenhouse gas emissions from the electricity sector. The President is putting that forward today, something we can begin to move forward on that can help us to reduce emissions and seize tremendous economic opportunity.

The President has underscored in previous statements on this issue that today we throw out two-thirds of the energy we generate. These policies are about capturing those inefficiencies, enhancing the economy and the environment at the same time. So the first principle, through the President's leadership, we are getting to work today.

Second, the President's leadership increases our ability to bring the entire world to a binding, but realistic and achievable set of goals in reducing greenhouse gas emission -- binding first. Why? Because our experience since 1992, the Rio Earth Summit, shows us that simply voluntary actions aren't sufficient to meeting this challenge. The voluntary actions have achieved some reductions, but not enough, and we have continued to see emissions grow.

So the President is saying it's time to give the issue the seriousness it merits; binding reductions are very important. But those reductions should be realistic and achievable. What the issue really demands is action, not the pie in the sky kind of rhetoric we've heard, nor the doomsday scenarios we've heard, either -- 1990 levels by the year 2008 to 2012 is significant, first; it represents a reduction in U.S. emissions on the order of 28 percent from where we would otherwise be in the year 2010. But it's realistic and achievable. As Gene underscored, the President is seizing on this decade of opportunity we have from 1998 to 2008 to find those ways to harness market forces to help us get this job done.

That leads to the third principle. The President's leadership here is about harnessing market forces to help us to achieve environmental objectives in a cost-effective way and in a way that helps us build new industries. We have great experience in this country in using market forces to reduce the costs of achieving environmental goals.

The Clean Air Act has provided us with a wonderful example. We've reduced the emissions that cause acid rain by more than 40 percent of what was required under the law for less than a tenth of the price that was predicted. How? Because we used innovative means, a marketable permit scheme, where firms can trade among themselves the right and the obligations to reduce emissions. We've reached targets that way, but in a much more cost-effective

manner. So the President is exerting leadership here by saying we will put those market forces to work to help us take on this objective.

Fourth and finally, the President's leadership is also about recognizing that climate change is a global challenge and it, therefore, requires a global solution. The United States has put proposals on the table that can help encourage the participation of developing countries -- our initiative on joint implementation, for example, where U.S. businesses can act in partnership with developing countries jointly to reduce emissions.

And today the President will emphasize this important principle again and underscore that for the U.S. to undertake binding obligations, we will secure the participation of developing countries in this effort as well. And as you saw last week, the President has made this a priority as he has spoken to leaders around the world, and was joined last weekend by President Menem as President Menem recognized also that developing countries have to be part of the solution as well.

So with these four principles, the President is putting us on the road today to take on this challenge in a way that will significantly reduce U.S. greenhouse gas emissions, that offers us the promise of seeking and achieving a global agreement on this issue, and that will unleash market forces so that we can secure new and important economic opportunities as we pursue our goals.

Thank you.

MR. STERN: Let me say just a couple of things briefly on the international context. Gene and Katie have already alluded to a number of the more salient factors involved in the negotiation. As you know, international attention to climate change did not begin last month, and it won't end at Kyoto. As important as Kyoto is, this is part of an ongoing process that the world community is going to have to engage in over the course of the coming decades.

I think what has changed in the relatively recent past is the attention that the leaders of the world themselves are paying to this issue. It has, over the course of the last six months, been a topic of conversation in numerous presidential meetings, of our President with his counterparts from around the world. As Katie alluded, in just the last few days, the President has been on the phone with a number of his colleagues from other industrialized countries talking about Kyoto, about the approach that we are all taking. He has also, I might add, been consulting in follow-ups to the climate change conference with industry leaders, environmentalists, and others to discuss how we move forward in a realistic fashion.

The second point I would make is factual. As you probably are aware, our negotiators are in Bonn this week and will be there next week in the final set of formal discussions before the Kyoto Conference itself. The positions that the President announces this afternoon will be tabled by our negotiators and they will pursue those positions over the course of the next week and a half.

Third, I just wanted to re-emphasize some of the key negotiating instructions, position, what we have laid out as our position this afternoon, which are relevant for the international negotiations.

First, Gene mentioned the target and timetable itself, the 2008 to 2012 period returning to 1990 levels of emissions.

Secondly, as I think Katie mentioned, flexibility is of key importance. It is an essential component of the President's

domestic agenda on climate change; it must be an essential component of the international agenda on climate change. That means international emissions trading; it means international joint implementation proposals and mechanisms so that the most cost-effective means of reducing emissions are available to all the countries of the world to seize.

Third, the President will say this afternoon, as I think both my colleagues have mentioned, that the United States cannot assume binding obligations in this area without developing country participation. The developing countries of the world will, over the course of the next couple of decades, become the most significant, in quantitative terms, emitters of greenhouse gases. That is notwithstanding the fact that, to date, the developed countries have been. Thus, as a matter of science as well as policy, we simply cannot solve this problem without the participation of developing countries.

Now, in pursuit of that, we have made quite clear, Katie alluded to the President's discussions with President Menem -- this has been the subject of numerous consultations at a staff and ministerial level as well, and this will be an important component of our negotiators' positions taken in Bonn and all the way to Kyoto.

I think I'll stop there. Who is running the questions here?

Q The word "bold" isn't very -- the environmentalists don't think this is very bold. You haven't mentioned -- emissions. It's a real retreat, is it not?

MS. MCGINTY: Let me say, first of all, that many in the environmental community have spoken very favorably, especially to the President's insistence that we are going to get to work now. The President's idea that we will offer incentives to industry to step up to the plate and take early actions to reduce emissions is a proposal that is very important to the environmental groups and that they support wholeheartedly.

Would they like to see additional reductions, reductions on the order of what the European countries and others have been talking about? Certainly. Would some in the business community like to have seen less reductions? Certainly. But what the President has put together here is an ambitious plan that will reduce U.S. emissions by 28 percent in the year 2010. It's an aggressive plan to move us forward.

Q -- on developing countries -- you talk in terms of assuring that developing countries must participate in whatever regime results. But I don't hear you saying that there would have to be some point at which they accept binding obligations. Would there be, perhaps at a later date, perhaps on a case-by-case basis different standards, but are you going to propose in Kyoto that there be binding totals and limits on the developing nations?

MR. STERN: As I said a moment ago, our position is one of the indispensability of participation. The nature of that participation is to be defined obviously in the course of negotiations. I think it is useful, however, to refer to President Menem's own observations on the subject last week where he did make reference to the need for developing countries to take on obligations on emissions as well.

Q How is this package tailored to meet the requirements on the Hill and to win the ratification you'll need for anything coming out of Kyoto?

MR. STERN: That's the next briefing. (Laughter.)

MR. SPERLING: Well, I think that there is no question that, despite what some, for honorable reasons in the environmental community might have preferred, I think in what was considered the range of potential options the President did pick will probably be perceived on the Hill as the most ambitious within that range.

But the President is also I think providing people assurance that what he is going to be presenting to Congress -- what we will present in our budget in detail further -- is the type of things that we think the country should be able to rally behind, which is the focus on R&D and technology, tax incentives to encourage more use of renewable energy sources. I think that this is the type of mobilization that I think many people would consider win-win, market-based solutions. And the fact that there is review in different stages I think reflects the concern that people would have that we would, in the year 1997, seek to say that we knew exactly how a decade from now exactly what would be the right -- what energy prices would be, where the technology would have been. I mean, most people, if we were to look back 13 years wouldn't look very good at predicting the Internet and other things.

So I think when you're trying to deal with something like this and have binding targets, it is a sensible approach to assure people that you are going to try to do all of the positive things that people can rally around first, and see how far you can get there and assure people that you are going to be reviewing the science and the economics periodically, so that when the time comes that you do put forward an emissions training program you do have a decade of experience and review behind us.

And, ultimately, Congress and the President, at a later time, will ultimately have to pass things and have that judgement. So I think the President has put a sensible path that I think should also be reassuring to people on the Hill that we are taking a sensible path. I don't know what the specifics the President has put forward, people should find particularly objectionable.

Q Gene, you make it sound as if this plan, 30 percent reductions, is almost entirely painless.

MR. SPERLING: Well, let me go back five years on our budget. There were people who said at that point that if we did not do something dramatic -- dramatic reduction on Medicaid or Medicare, dramatic increase on discretionary budget -- if we didn't do those things we would never get near balance.

Now, we put forward what we thought at the time was a prudent plan to go forward, under the notion that it would not make sense to rush to do things that may not be necessary, that you should try to do things in a prudent, sensible, market-based way. As it's turned out, that plan and the subsequent growth of the economy has led us to arrive at a goal. Looking back five years, having done more controversial, more painful things would not have made sense when we were able to reach that goal.

The President takes the approach here that there is tremendous -- as Katie described, tremendous inefficiencies out there. There is tremendous potential to alert the American public and to work with industry to capitalize on the inefficiencies that are out there. And by alerting the public and making the public more conscious, you do start to create the market for more people to think that there is profit to be made and reason to research and to do more. And to give you a chance to have a positive cycles.

Now, in the years 2008-2012, when you're in that binding period and you have emissions trading, that is the period where there could be arguments as to what the possible impacts would be on

energy. But the truth is, it's pretty hard for any of us to know. And so I think the President, in providing a sensible path, in going forward and making sure that we are doing all of the win-win, positive things first, that down the road Congress and the President will have to evaluate whether those have been enough and whether we have to take more strenuous steps.

Q So no increase in energy prices?

MR. SPERLING: The plan that we have as you look forward does not include increased energy prices. I think that one has to acknowledge that one you enter the emissions trading period in 2008, that there will probably be costs, those emissions. But how much and what the price of energy will be and what kind of success we've had at having other efficiencies by then is, again, very hard to predict. I doubt people would have predicted the tremendous real decrease in gasoline oil prices we've had.

Q Do you have a target for the five-year period after 2012 for those reductions?

MS. MCGINTY: The President will indicate that the United States proposal includes both a binding target of reaching 1990 levels emissions between the year 2008 and 2012; and that then in the next five-year period of years, that emissions should be reduced below 1990 levels. And the extent to which they should be reduced is an issue that we will take up in the international arena and have discussions there.

MR. SPERLING: I'm just going to let Larry follow up on mine, and then we'll take the next question.

DEPUTY SECRETARY SUMMERS: Thank you, Gene.

If I could just add, this is a helping-hand approach, rather than a heavy-handed approach to working to reduce energy consumption. It doesn't provide for mandated increases in prices on energy over the next decade. And it does contain a number of provisions that are likely to work to reduce energy costs.

Those provisions include measures that will support the introduction of technologies that will increase fuel efficiency, such as vehicles that have more miles per gallon. Those provisions include measures that by encouraging energy conservation will reduce demand for energy, which will tend to reduce its price worldwide. And those provisions include electricity restructuring, which by harnessing competition in an important network industry has the potential to bring down the costs of energy to consumers, just as we've seen in telecommunications and in airlines, and that on fairly conservative estimates could mean as much as $20 billion to households.

So this is an approach that is, as Gene has emphasized, one that is very much focused on doing all we can over the next decade to exploit win-win solutions that can come from harnessing market forces to do things that are both good for the economy and good for the environment.

Q Can I stay on this question of cost for a second? What you guys are saying is we're kind of hazy in this 2008 to 2012 period, we can't know for sure. But I seriously doubt that the administration's economic team would have signed off on these 1990 levels without doing a hard analysis that said, based upon our knowledge now we predict that this scheme would mean energy cost of X by the year 2008 or 2010 or 2012. Are you saying you don't and haven't done that? Or if you have, what are the numbers?

MR. SPERLING: First of all, I think we were pretty clear that, as Larry said, there is not a mandated energy price increase between the year 1998 and 2008. We're acknowledging that in the binding -- in the emissions trading period that it can't be ruled out that there could be some effect on energy prices. We're saying that part of that is going to depend on what the success of the variety of different efforts, many of the nine steps that the President has had there.

Q Well, what I'm saying is, haven't you guys done an analysis that say best case scenario it's X, worst case scenario it's Y. And if you have, won't you share that with us?

MR. SPERLING: I think I'll let Larry speak. First of all, there is -- you know, I've been around here five years. If you want an econometric model to show you something 13 years out, you can do anything you want. You can show anything that you want. What we're trying to do is --

Q We'll keep that in mind the next time you -- (laughter.)

MR. SPERLING: What's that? The next time that we predict what a particular policy right now will be 13 from now with an econometric model, you can be free to show that to me, and I would say you'd have a hard time showing a time in the past that we've tried to predict 13 years out in that sense. But we have certainly been locked in doing a tremendous amount of economic analysis. When you look at the things there, you will see, for example in the five-lab study, that there is, from the Energy Department, there is very careful analysis on what the potential is for reducing metric million tons of carbon through the efficiencies in the three main sectors -- the building, the transportation, and the industrial sectors.

As Larry said, and this really is the first time today that the President will be and is announcing that he will be supporting an electricity restructuring proposal, there is certainly in that area a tremendous amount of waste because there is not incentives to capture the full amount of energy that is used.

We have gone through all of this analysis, but I think that what we have tried to do, and I think what the economic team has worked to stress, was to recognize where there is really is uncertainty, that rather than to try to pretend that you can draw a road map from here to Los Angeles with every street and turn in it over the next 13 years, is to try to have a process where we have the ability to incorporate what we are learning, what we are seeing, what works. That is, I think, the soundest and most realistic approach for us going forward.

We clearly think that if things -- if this country mobilizes the right way, that we can get there without having a significant price increase, even after the year 2008. One of the things that will be a key element, and I can let Larry speak to that, is the success of having a truly international system with international trading. Where you allow for the most market efficiencies, where people have the ability to seek out the places where there is the greatest capacity to reduce carbon greenhouse gas emissions at the lowest price, that will be one of the most key elements in determining how much we can do this in a cost-effective way.

And that's one of the points one has to understand in climate change. When you reduce a million metric tons of carbon, when you reduce carbon emissions anywhere in the globe, it has the same impact. And so having a system develop over time that allows that to happen will be absolutely critical and vital to what the costs are. If you assume that that will work very well, extremely

well, then you can have very, very, very, very low cost impacts. If you assume that it won't, then it would be more difficult.

And I think, again, what we've tried to do is incorporate a process where we can constantly review that and where the country can make adjustments accordingly.

Q I just want to get back to something you didn't finish. Do you have a targeted number, or any range --

MS. MCGINTY: We're not specifying a number at this time.

Q At what point would you get around to specifying a number?

MS. MCGINTY: To hearken back to what Gene has outlined, at this point the President is outlining a very clear plan that takes us, not from today to tomorrow, but a clear plan for the next decade, for the five years that follow that decade, in that five years to hit 1990 levels on average between 2008 and 2012, and beyond, to say we need then to move to reduce emissions below 1990 levels. We're not going to specify that specific target today.

Q When will the period come when you begin to specify?

MS. MCGINTY: It's still under discussion.

Q Is it within the next year or is it --

MR. STERN: The point I think that Katie just made is we're not going to start negotiating in public. That's why we have negotiators who go to Bonn and then to Kyoto.

Q How does the $5 billion in tax cuts on R&D break down? And over what period of time would that be? And when you might get something like that before Congress?

MR. SPERLING: That will be in our fiscal year 1999 budget. We met, the team working on this, with the budget team, including Frank Raines, and we tried to almost do an early budget review so that we could make sure that we have room in our budget for a significant initiative. And so what we are comfortable doing this time is announcing that there will be a $5 billion, or at least a $5 billion in R&D and tax incentives. What the exact composition is of those will be announced with the rest of our budget.

Q Over what period of time will that $5 billion --

MR. SPERLING: That's $5 billion over five years. So at least $1 billion a year of additional funds beyond -- or tax incentives beyond what we have currently.

Q If I could follow up, Gene, you said that most of those ideas, or many of them, will come from this report from the President's committee on science and technology. So could you at least outline a few or highlight a few from that report that are likely to be in your package?

MR. SPERLING: We are announcing almost, as you see, almost every element we have now. It is not our intention to announce the specifics of every single thing we're going to do now, quite honestly. This is something the President cares very deeply about. He wants to return to this, and we will roll out the details of our plan periodically. But also, you have to understand, we do our budget review in the first two weeks of December, and so we will have time and opportunity to spell out in detail as we present our

budget the exact specifics. Certainly, the -- recommendations will be highly considered and certainly many of those will make it into our budget.

Q How flexible, Gene, are you going to be in the negotiations this week, next week, up to Kyoto, with regard to your binding target proposal for the industrialized world? Is this a take it or leave it proposal from the United States, or are you flexible enough in these pending negotiations to perhaps strengthen the binding targets the President outlined today?

MR. SPERLING: This is our position; this is a position that the President has worked on himself. He has developed this plan himself. He took this from a variety of different recommendations, all of this, gave him -- he pulled different pieces and put together a strategy that he feels comfortable with. This is our position. And when I say that we're not seeing anymore, I'm not commenting one way or the other on what would happen in negotiations. This is our position and this is where we stand.

Q Gene, what has happened since the time the President set the year 2000 as the goal? What's changed since then?

MS. MCGINTY: I think this is an important point. We have a lot of attention to this issue now because Kyoto is on the horizon, but the fact is that the President has been hard at work on this issue since 1993. First, he reversed the position of the previous administration and signed the United States up to the goal of reducing emissions to 1990 levels by the year 2000. He followed that immediately with a 50-point plan to help us to achieve that goal.

Now, that plan has delivered very significant reductions in emissions from where they otherwise would have been. Did it get us or are we on track to get to the year 2000? As we articulated more than a year and a half ago, we are not on track to do that. Why? One, economic growth has been quite robust and more robust than even we had anticipated in the beginning of 1993. Two, oil prices have proven to be lower than were anticipated in early 1993. But, three, and most compellingly and importantly, is that the Congress had as part of its anti-environmental agenda, had not funded the President's initiatives in energy efficiency and renewable energy. Now, despite those three factors, the President's efforts have delivered significant emissions reductions from where we otherwise would have been, on the order of about -- for the jargon -- on the order of about 40 million metric tons of carbon emissions.

You will see today major utilities in the United States standing up and saying that the President has outlined today a very sensible and very strong policy to move forward on reducing greenhouse gas emissions. Many of those utilities have been working in partnership with us since 1993, with the President's leadership. They have signed up voluntarily and have voluntarily reduced their emissions significantly.

So we have been at this consistently since 1993. Kyoto presents us an opportunity with taking this issue now to the next steps where we can join together with the world community, looking beyond the year 2000 and the steps that have to be taken then.

Q Are the utilities that began participating in '93 going to get credit for those reductions?

MS. MCGINTY: One of the points that the President wants to emphasize today is that we will build a program to provide credit for those who will take early action. As part of our effort to do this, to undertake this effort in partnership with industry, we will

work with them, we will work with members of the environmental community to put the details of that initiative together.

But the idea is simple: We want to incentivize industry to take action now to reduce emissions -- not to wait until the year 2008 to begin. If we have a marketable permit scheme in the year 2008, for example, then what we would be talking about here is working with industries so that they could get credits to play in that tradeable permit scheme that would be set up in the year 2008 for the actions that they take to reduce emissions now. That's one of the ideas we would pursue.

Q Does that have budgetary impact, the provision of credits --

MS. MCGINTY: Budgetary in what sense?

Q Does it cost any money off the budget? Is it a tax incentive? I don't understand your credit.

MS. MCGINTY: No. The notion of a marketable permit system is that you provide permits to various actors in the economy and they have a choice: They can reduce their emissions to the level required, or if it's more cost effective for them, they can purchase permits from other players in the economy who have not only met their target, but gone over and above it. And the idea is simply that those who take actions now won't be penalized for having taken action early, and that those reductions in emissions that they achieve will be recognized when the binding period comes into play.

Q -- this document, it does indicate here, we reject the European proposal for more stringent early reductions. Would you remind us of the reasons for that rejection?

MS. MCGINTY: Well, I'll first of all remind you of what the European policy is. Overall, the European Union has called for a 15 percent reduction from 1990 levels by the year 2010. Now, the reasons that that approach is not appropriate for the United States, that we feel is not realistic or achievable, is also related to why we believe our plan is significant, but realistic and achievable.

The President's plan will reduce U.S. emissions by 30 percent from where they otherwise would be in the year 2010. That's an ambitious undertaking. To go further and add to it 10 or 15 percent additional reductions, we don't believe is realistic or achievable in the time period that we are looking at. It just underscores the fact that what we've tried to do here is a very significant and ambitious plan, but one that is built on the opportunities that we know that are out there, that can enable us to get started now and seize some economic opportunities; that's what the President's target represents.

Q What's the number now, from this point to back to 1990 levels? I've heard between 15 percent and 20 percent. What is it from today's date?

MS. MCGINTY: Well, in the year 2000, business as usual, it would be 13 percent. But do we know today -- I think it's about 7.5 percent -- 7.5 percent. Today I think we are on the order of about 7.5 percent above 1990 levels of emissions.

Q -- you expect emissions in the United States to start --

Q What's the point of having an economic review of how we're doing five years out if we're committing to binding targets? I mean, if you're saying we absolutely will meet these by this date, and your economic review says, geez, you know what, it's

going to cost a lot more money than we thought it would? There's no opt out, is there?

MS. MCGINTY: The notion of economic reviews as scientific reviews is just common sense. We are putting forward here some very ambitious ideas that we think can deliver both environmental and economic results. But we want to make sure we are seizing all the best opportunities that are out there, and the point of that review is to make sure that all the best ideas are ideas that we are implementing.

Q If you don't envision a clause that lets you out -- is what I'm asking, is there any clause that lets you out of this? If it says this is going to cost a lot more than we thought and we can opt out or not, is it really binding?

MS. MCGINTY: It is a binding treaty and it's very important to the President and a principle that he has consistently put forward is that we are now moving into a period where binding emissions reductions are absolutely required, certainly.

Q So there's no -- if five years from now we say it's going to cost a lot more money --

MS. MCGINTY: Look, there's no treaty in the world that would require a country to bankrupt itself. And this treaty is no different than any other treaty in the world in that respect.

Q When does the United States expect to stop increasing its greenhouse gas emissions and start decreasing them? How will we know if we're not performing, because the track record so far is one of saying you are going to meet targets and then missing them, saying you were going to review them and then postponing them. When are we going to actually turn the corner and start cutting down?

MS. MCGINTY: Well, let me just say that the whole point of the series of efforts that we have announced today is to enable us not to wait until the year 2008, but to move forward now. We are going to do our level best through providing the tax incentives we've spoken about, by designing a program that affords credit to industries for taking early action, by investing in new technologies to begin to turn those curves just as soon as we can. But we are moving as ambitiously and as aggressively as we can toward that target period.

Q When do you expect U.S. greenhouse gas emissions to start going down?

MS. MCGINTY: From where they would otherwise be, we would hope --

Q To stop going up. They're going up. It's a very simple question.

MS. MCGINTY: You may be on a level of technical detail that I can't provide.

Q Can anybody say when the emissions are going to start going down?

Q The EU has put forward a much stricter proposal and the developing countries in Bonn just signed a statement saying they support the EU proposals. So how good do you think the chances are of getting a treaty out of Kyoto?

MS. MCGINTY: Well, let me underscore, this is a very difficult undertaking, and the President is addressing it with tremendous seriousness of purpose, as was referred to here before. He has worked this issue very hard with leaders from around the world. Now, I just say and underscore that U.N. processes operate

often, and this one does, on the basis of consensus proposals and moving forward on a consensus basis.

What we are trying to do here is not only hear the voices who want to go much quicker, much further, much faster, but recall that there are many voices out there, too, many countries who are saying much less, much slower, if not, nothing at all. And what we are trying to do is provide that leadership that can hopefully take those two extremes of the debate and find that common ground that would enable the world to move forward in a reasonable and effective way in the years post-2000.

Q I don't understand the global thing. Could I just ask for clarification on what the President today envisages in the treaty with regard to global obligations from the developing countries? Would it necessarily be binding targets and timetables, or could it take another form?

MR. MCCURRY: That's been asked and answered.

Q That's not been answered.

MR. MCCURRY: It's been answered as well as it's going to be answered.

Q The previous proposals on developing countries, do they still stick? That is, some may -- that the large developing countries should graduate into commitment, into binding targets? What's been going on the last six months, does that still hold?

MR. STERN: Well, I'm not sure exactly what you're referring to, but what I think you are bringing up is the nature of the problem, which as I said earlier, there is general agreement that the problem of global warming, of global climate change, is not going to be resolved without the participation of developing countries. What, when and exactly what participation will mean is obviously what our guys are going to be doing in Kyoto, and therefore, it is premature to indicate exactly what that means.

What we can say, and what the President will say this afternoon is we will not assume binding emission reduction obligations without the participation of the developing countries.

Q On the post-2012 role, you all are saying you are not taking a specific target. But yesterday environmental groups say that they were told there would be a five percent reduction as a goal and then that was abandoned last night. Can you say why that -- the President backed off that as a specific target?

MS. MCGINTY: That is a number that some of the environmental community have suggested. We just have not arrived at a number and are not prepared to discuss one right now.

Q They said the administration told them that. That's not true?

MS. MCGINTY: It's a number that I've heard them discuss.

Q But you all never told them that?

MS. MCGINTY: No.

THE PRESS: Thank you.

END 2:04 P.M. EDT

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REMARKS BY PRESIDENT CLINTON AND PRESIDENT CARDOSO AT SIGNING OF DECLARATION ON EDUCATION

THE WHITE HOUSE

Office of the Press Secretary
(Brasilia, Brazil)

For Immediate Release October 14, 1997

REMARKS BY PRESIDENT CLINTON
AND PRESIDENT CARDOSO
AT SIGNING OF DECLARATION ON EDUCATION

Garden of Alvorada Palace
Brasilia, Brazil

1:40 P.M. (L)

PRESIDENT CARDOSO: Mr. President of the United States of America, William Clinton, ladies and gentlemen, may I say to you first what a pleasure it is, Mr. President, for me and for Ruth, my wife, to welcome both you and Mrs. Clinton. And I'd like to take advantage of this opportunity to state our pleasure, and I'm quite sure the pleasure of the Brazilian people as a whole. This is particularly due to the excellent relations between the two of us, which I think makes it obvious to everyone that there is a friendship that joins these two Presidents, and that we share a great many interests -- and by "we," I mean our two peoples.

On both sides, we are interested in ensuring that we will draw closer together and bring our societies closer together as well in very practical ways. We've had a number of opportunities in which to chat. We've covered, I think, just about every problem that was on our agenda before this meeting, including the most general problems, such as peace throughout the world; including the possibility of working together in a number of situations which might require more direct action on the part of the United States or Brazil -- not just in our region, of course, but also views were exchanged, opinions were exchanged about a number of international problems as well. And I can assure you that we both agree with regard to the overall objective, which is to increase the prosperity of people on the Earth as a whole.

It is also our conviction that prosperity is something that needs to be made a general phenomenon. The prosperity of one nation should not harm the prosperity of any other nation, and nothing leads us to believe this. On the contrary; we feel that what's good for Brazil is good for the United States, and what's good for the United States is good for Brazil as well.

Just in terms of commercial relations, for example, the United States is our number one trading partner. But Brazil, as we like to say, is also a major global trader. We have excellent relations with the Mercosur countries, other countries in Latin America, with Europe and Asia, not to mention Africa. And it is with a full understanding of the comprehensive nature, the global nature of our relationships that we, in turn, have been able to reach a closer relationship.

We have underscored our commitment to the sort of endeavor that we have embarked upon, for example, in Mercosur, which is a very important part of our foreign policy in Brazil, which we feel to be an example of the success of the work of these four countries -- Paraguay, Uruguay, Brazil, Argentina, and now Chile as well.

Much agreement has been reached with regard to trade, democracy, keeping peace. And we also believe that by working together we can move towards the integration of the Americas as a whole in such a way as to avoid harming our Mercosur interests and in such a way as to avoid harming the interests of the NAFTA countries. But we should integrate the hemisphere as a whole in the line with the view that has already been expressed just a moment ago -- in other words, prosperity for all is best for each and every one.

On the other hand, it also became quite clear that we agree on a number of other issues, even at a personal level. For example, our take on problems is quite similar in our two countries. An example of that fact can be seen via the declaration that we are now signing in the area of education, one of the social area endeavors. I was extremely pleased when I heard President Clinton's State of the Union address, because he spoke about education and what he said certainly made me feel quite enthusiastic. What he said moved us. As a former professor and as two human beings, I'm sure that we agree that education is an instrument which will allow us to equalize relations within a society and to do away with so many of the differences and asymmetries that can exist among countries as well.

In this meeting we would like to reaffirm our full commitment to all the programs in the educational field as a symbol of our concern of the social issues. The integration that we are seeking to pursue as the regional, sub-regional and even at a broader level, as soon as that becomes timely, is going to be integration that will exclude no countries, no fragments within countries, either. Integration is designed to improve the standard of living of the peoples who integrate.

Another thing that we can go over is a list of key issues that have to do with, for example, the **climate change**. President Clinton, for example, holds the view that I think is quite proper vis a vis **climate change**. He talks about shared responsibility. He talks

about the fact that responsibility should exclude no segment of humanity because the **climate** is something that involves the preservation of the conditions of life for future generations throughout the planet. So we must come up with mechanisms which will allow us to reduce the greenhouse gas effect. We should reduce the greenhouse gases, but in such a way as to ensure that we're not harming the interests or the development of any country -- the United States, Brazil or developing countries. These things should be done in a balanced way to ensure that we will solve the problems and do so in the best way for our countries, which is what we're going to try to do in Kyoto in December.

Another thing that we're doing is broadening our cooperation in the field of space studies in a clear demonstration of a number of possibilities that exist for cooperation between Brazil and the United States, certainly in terms of advanced technology.

I don't want to take up too much time, but may I reaffirm the fact that -- very simply, because we did cover such a broad range of topics -- the fact that we avoided no single topic is a clear sign that we can reach an understanding even upon those things that we have some slight misunderstandings on. And, of course, misunderstandings usually just reflect the interests of our individual countries that we, of course, must defend properly, but at the same time in a way which shows that we have an old friendship, a long-term friendship and this friendship allows us to deal with these issues in such a way.

I'd like to repeat something I said in the Panalto Palace. Since the second world war never have we seen so many possibilities for cooperation in so many broad fields -- certainly nothing compared to the many opportunities that are opening up for Brazil and the United States right now, which is why I'm particularly pleased to speak via the media to the peoples of our countries to reaffirm the tremendous satisfaction that I feel in being able to welcome this great President, Bill Clinton, in our country.

Thank you so much. (Applause.)

PRESIDENT CLINTON: Thank you very much, Mr. President. Let me begin by thanking you and Mrs. Cardoso and the representatives of your government for the warm welcome you have given to us, including our very large delegation, the senior members of our administration, a big percentage of our Cabinet and the distinguished delegation from Congress. We are delighted to be here.

I believe this visit marks a new phase in the long friendship between the United States and Brazil. This is clearly a unique moment of opportunity in the Americas. A quiet revolution is bringing our hemisphere together around common values of democracy, free markets, mutual respect and cooperation. It gives us the opportunity to advance the welfare, the freedom and the security of all of our people in a way that has not been possible before.

Because we have the largest economies and the most diverse populations in the hemisphere, Brazil and the United States have both a special ability and a special responsibility to help lead the Americas into the 21st century. Under President Cardoso's leadership, Brazil clearly is meeting that challenge in fulfilling

its destiny as a great nation. Through your own remarkable economic reforms, your strategic partnership with Argentina, your leadership in Mercosur and throughout the hemisphere, and increasingly on the wider international stage, Brazil has helped to consolidate peace and democracy and to promote prosperity and stability.

Brazil and the United States share a fundamental belief that opening the markets of our hemisphere to trade and investment is the best way to create good jobs and strengthen democracy and cooperation in all our countries.

Three years ago, when we met at the Summit of the Americas in Miami, we pledged to pursue a free trade area of the Americas by early in the next century. Today, the President and I agreed that at the next Summit of the Americas in Santiago, we should launch comprehensive and balanced negotiations to achieve that goal, turning our common agenda into a common plan of action.

If I might, I'd like to just speak a moment about what I think has been the cause of some misunderstanding between our two countries, which is the question of what the American attitude toward Mercosur is and what its relationship to our support for a free trade area of the Americas is.

I support Mercosur. I think it has been a good thing for Brazil, a good thing for all the member nations, a good thing for stability, for growth and cooperation in the region, and quite a good thing for the United States. Our exports to the Mercosur countries have grown substantially since 1991. And we believe that these sort of regional trade arrangements everywhere -- if they serve to open borders, to increase economic activities and to promote growth, promote stability and opportunity that benefit Americans.

We believe that we can create a free trade area of the Americas consistent with Mercosur and the leadership and role of Brazil and the other members in it. So to me, this is a false choice that we don't intend to ask the Brazilians, the Argentineans, or the other members of Mercosur to make. We believe we can build on this and go forward to a free trade area of the Americas.

Trade has produced about a third of the economic growth the United States has enjoyed since I became President in January of 1993. And I'm working hard to continue to expand our capacity to trade and to create good high-wage jobs in our own country by securing the presidential negotiating authority necessary to tear down more of the trade barriers of the past so that we can open wider the doors of the future to good jobs and higher incomes.

Now, let me say that as we promote more free markets and more free trade, I believe that all of us must work harder to extend their benefits to all citizens. No great democracy has succeeded in doing that so far. We know we have to begin by ensuring that all of our citizens receive the education and training they need to succeed in this new economy. And I applaud the President's empnasis on education. The education declaration we have just signed focuses on what I believe the keys to making education work in both our countries are.

First, high standards for what children must learn and testing to measure their progress. Second, training our teachers so that those to whom we entrust our children's future are, themselves, well-prepared. Third, intensive parent and community involvement. And fourthly, something the President has worked very hard on, access to technology to realize the possibilities of the information age for all our children.

In the United States we're working hard to make sure that every classroom and library in our country is hooked up to the Internet by the year 2000. We're giving discounted rates to our schools so that they can afford to be on the Internet. And we are finding something I am certain will be the experience in Brazil as well, and that is that very often the largest benefit of this technology revolution will flow to the children who are most in need, who tend to be in isolated rural or urban school districts where they have not had the chances and the opportunities many of our other children have. So I think that the Internet can be an instrument by which we democratize as well as increase the excellence of educational opportunity.

We've also agreed that we can't have today's progress at tomorrow's expense. The President talked a little bit about our common commitment to the environment. The clean energy agreement we have signed will help Brazil to continue to grow, fueled by renewable and efficient energy technologies. Our park services will work together to protect wetlands like the Everglades and the Pantanal Park in Brazil. We share Brazil's determination to conserve the Amazon, one of the most wondrous and biologically diverse environmental habitats in the world. The United States will contribute another $10 million to the G-7's cooperative program with Brazil to sustain the rainforests. And we will help Brazil to put 21st century technology into this effort, including research done by Brazilians in space.

The fires throughout the Amazon have added urgency to these efforts, and the uncertainties about the climatic effects of this El Nino, both in South America and in the United States, have also added urgency to our efforts.

We did, as the President said, discuss the challenge of **climate change.** Five years ago in Rio, the world community began to chart a common course to reduce the greenhouse gas emissions that lead to global warming. Developed countries have a special responsibility to lead. I told President Cardoso that the United States will meet that responsibility with a commitment to limit our emissions when we meet in Kyoto on December the 6th. But as we do our part, I believe so, too, must the developing world. **Climate change,** after all, is a global problem that requires a global solution.

So here is the question, it seems to me -- and I would like to talk a little about this because I think it's quite important -- I think it's very important that the people of Brazil understand that just as with the trade issue and Mercosur, the United States would never knowingly make any suggestion that would undermine the growth of Brazil or any other country. It is not in our interest. We, after all, only have 4 percent of world's people. We enjoy a very high standard of living. We can only maintain our own standard of living if you grow. If there are more good jobs for Brazilians, higher incomes, more people are brought into the social compact in this country, then you can be a stronger partner, not only for us,

but for your neighbors in this continent and throughout the world.

So our strategy is to aggressively support the growth of the emerging economies of the world, the strength of their democracies, and our capacity to cooperate together. I do not believe that any reasonable person can look at the world of today and imagine the world of tomorrow and believe that America can gain by someone else's economic loss. We have an interest in finding a way to grow together.

By the same token, the world will not gain if some countries limit their greenhouse gas emissions and other countries grow in the same old way with the same old energy base so that the **climate** continues to warm more rapidly than it has at any time in the last 10,000 years.

So what we want to do is to find a way for the developing countries to fulfill their responsibilities within the framework of Kyoto, recognizing that those of us in developed countries must do more, but that we must all participate. And we want to be very explicit that any participation on your part would not come at the expense of economic growth.

Developing nations have an opportunity to chart a different energy future than some of the developed countries. And if we share our technology and we share our knowledge, then we can achieve that. This is very important.

Brazil has already gone a long way toward proving this point, because you have developed so many non-traditional fuels, biologically-based fuels, for running your vehicles. So you have given evidence to the general point that I hope will be embraced by all the countries of the developing world. And I encourage that.

Finally, let me say, we talked about expanding our cooperation in regional and global security, and I want to say a word of appreciation to Brazil as the guarantor of the Peru-Ecuador peace process, and appreciation for its historic decision to join the Nuclear Non-proliferation Treaty and to sign the Comprehensive Test Ban Treaty. In all these actions, Brazil has taken its place as a world leader for peace and security.

Today, the Mutual Legal Assistance Treaty we signed will help us to crack down on drug production and trafficking and fight transnational crime in a way that benefits all of our people.

President Cardoso said two years ago when he visited me at the White House -- and I quote -- "The vocation of Brazil and the United States is to stand together." I believe we stand together today as never before. The issues we face are central to the well-being of both our peoples. The fate of our hemisphere, with strong democracies, a commitment to fight crime and drugs, to work for lasting peace, the future of the new economy, preparing our people for the 21st century -- that's what this trip is all about. These are all objectives we share, and they really matter to ordinary citizens in both our nations and throughout this hemisphere.

Thank you. (Applause.)

PRESIDENT CARDOSO: President Clinton, I'd like to ask you to begin if you don't mind.

Q Mr. President, Attorney General Reno has made her decision and will extend her inquiry into your telephone fundraising to determine whether a special counsel should be named. How do you feel about that hanging over you for another 60 days at least?

PRESIDENT CLINTON: I feel nothing about it. There is a law and there are facts. And I feel that it would be much better is she were permitted to do her job. I know I didn't do anything wrong. I did everything I could to comply with the law. I feel good about it. But I told you yesterday, the thing I don't feel good about is the overt, explicit, overbearing attempt to politicize this whole process and to put pressure on more than one actor in it. That's wrong. There's a law. There's a fact-finding process. And I'm going to cooperate with it in every way I possibly can.

Q Mr. Clinton, will the recent -- between the European Union and Mercosur affect how you formuiate your strategy for commerce in the Americas?

And for President Fernando Enrique, the question is, what is the relative importance of Europe as far as Brazil's commercial strategy or trade strategies concerned, especially vis a vis the United States?

PRESIDENT CLINTON: Well, first of all, if I were in Brazil I would be trying to sell as much as I could to America and to Europe. I think that's the way this market works. Both the European Union and the United States have increased our exports to Brazil and to the Mercosur countries in the last few years markedly. So I don't feel threatened by it, I just want to make sure we're fully competing. And if we don't fully compete, it will be our fault, not yours and not Europe's.

That's one of the reasons that I'm seeking fast track authority. It's up to the United States to decide whether it's going to be a fully competitive nation, but we have -- in the last two years, for the first time in a long time, more than half our new jobs have come in the higher wage categories. And it's the direct result of our aggressive pursuit of trade opportunities.

So I'm prepared to compete and all I want is a fair chance to compete with the Europeans here or anywhere else. But I don't see that as a bad thing. If I were in your position, I'd be trying to sell more to everybody.

PRESIDENT CARDOSO: Well, I believe that what President Clinton said is most helpful to us. The more competition we have between the United States and Europe for trade, the better it is for us because it makes our products much cheaper. So I agree with President Clinton. It is true that Brazil's number one individual client is the United States today. But the European Union, as a whole, or taken as a whole, imports and exports a bit more than the United States, actually. We

are now, as I said before and I'm going to repeat this, global traders. We actually trade with a number of countries and areas throughout the world and we're very interested in increasing these trade flows.

With regard to the United States, we have increased such trade flows. Unfortunately, we have an increasing trade deficit as a result of the increased trade with the United States. So we have to review this situation and try to balance it better to the benefit of both. We want to increase imports and exports. We don't want a zero-sum game and we don't want a game in which one loses and the other wins. We want a win-win situation in the trade arena.

That is why we say that our trade policy with Europe is very active. It will continue to be very active. But I agree wholeheartedly with President Clinton -- we cannot think about such economic blocks as isolated fortresses. They have been designed to increase trade, and we're going to take advantage of every opportunity that we can find to intensify our trade abroad, to sell things abroad. We will do so whenever we can. We're not going to close off our economy because our competitiveness, our progress in the area of technology and the cheapening of the products for own people depend on such trade.

Thank you.

Q Mr. President, in Venezuela your discussions included alternative energy sources. Here you've also discussed safe or clean energy sources. I wonder, given that in the United States there is opportunity for improvement in the area of both energy incentives and also reducing the amount of emissions, do you find it difficult to discuss this topic while abroad?

PRESIDENT CLINTON: No, because I don't think the two things are inconsistent. I think we are -- a real responsibility in the United States to do energy conversion. We were on that path, ironically, 20 years ago, when our experts underestimated the amount of natural gas reserves that would be available to us in the United States and throughout the world. And we thought we could move to a clean coal technology and do the job. We now know that that decision was not accurate. But the people who made the decisions 20 years ago did it based on the best evidence they had at the time.

So I think we're going to have more reliance on natural gas and other forms of energy that are even cleaner. And we have to do more conservation. If you were there at the **climate change** conference we had at Georgetown a couple of weeks ago, we learned, among other things, that two-thirds of all the heat generated in the production of electricity is wasted. If we can recover half of that waste heat, we will generate enormous new capacity for growth without adding one single pollutant in the form of greenhouse gases to the atmosphere. So we've got a lot to do on our own account.

But as I said -- let me reiterate what I said. What I want to do is to try to help the developing countries grow their economy just as fast as would otherwise be the case, but chart a different energy future than the one we charted in the past when we were at the same stage of development. And the question is, can they do that. I think it's absolutely clear, crystal clear that they can.

And this is a big problem. In China today, bronchial disease is, among children, the number one health problem for kids in the country already. So I want the Chinese economy to grow and the Chinese people to prosper, but I think they should choose a different energy course for the same growth. And I think they can and we should be trying to help them. If we don't do it, then no matter what we in the developed countries do, within 30 to 40 years we'll be right back in the same pickle we're in today, except worse.

Q I have two questions for both Presidents. For President Clinton, since 1995 both governments have worked on the bilateral trade with you, but so far they have no concrete results. And the perception is that Brazil is still complaining about trade barriers and better access to the U.S. market. So I'd like to know if both Presidents have now a new orientation toward a new phase in the trade bilateral relationship.

For President Fernando Enrique, my question is, if there is no fast track authority, if this is not granted, would Brazil be willing to negotiate -- if there is no fast track, do you believe that there will be an continuity in the negotiations of FTAA? And if there isn't, would Mercosur take on this role -- in other words, the role of the principal protagonist in terms of trade in the region?

PRESIDENT CARDOSO: I don't want to make any bets on American policy. If there is going to be this sort of a policy or not is the United States' problem. I think that President Clinton is going to be in a position to get the fast track authority he wants.

But integration, whether we're talking about integration throughout the hemisphere or Mercosur, are two processes that are very interesting to our economies, quite apart from any political issues, which will simply decide the speed at which such issues are decided.

So what President Clinton said was crystal clear when he talked about his view of Mercosur and FTAA. He said there is no clash between the two; there is no opposition. There is simply a situation, and we have to give ourselves enough time so that we will be in a position to prepare for increased competition. It's just a matter of time, procedures, so that we will be in a position to participate fully in conversations and understandings.

So with or without a fast track authority, the question is, is it good or bad for us to increase international trade, and the answer is always the same -- it's always good to increase international trade. So I would say that the other factors are just conditioning factors, but the key objectives are out there and they're unchanging.

We will continue to work to our utmost to consolidate Mercosur, but simultaneously to work on the FTAA. We signed an agreement in Miami -- I didn't sign it myself personally, but I was just the President-elect, but President Clinton was kind enough to ask me to come and observe. And this is not just a commitment on paper. It's a real commitment -- we really want to increase our trade foundation.

Now, people are talking about the United States, Europe and so forth -- trade is trade. We have to look at things one question at a time, how we're going to deal with the interests that are being affected, how can we build bridges in such a way as to benefit the parties involved. All of this involves a long construction process.

PRESIDENT CLINTON: Let me say, first of all, I would only add to what the President said that I believe, and I think he believes, as well, that if we can proceed with this free trade area of the Americas, it's also a way of stabilizing the democratic governments of many smaller countries in our hemisphere and giving them some assurance that, if they stay with democracy and reform, their people will also be able to reap some economic benefit from it.

So I think it is important that Brazil assume a leadership role in this fashioning of this whole agreement. And I hope they will, because I think what we're trying to do is to say, this is, first and foremost, about economics, but economics supports freedom and democracy and stability if we do it properly.

Now, on the question you asked me, the trade question, let me just briefly say, we went over the specific trade issues that Brazil has with the United States and the specific trade issues the United States has with Brazil. And we -- obviously, neither one of us are trade negotiators and these are somewhat specific and, in some cases, almost arcane issues involved, but what we did do is we resolved that we would give both sides instruction that we want these matters resolved if at all possible and as quickly as possible. They're dragging on, they're an irritant to our relationship. And they're, in the context of our larger objective, a negative rather than a positive force and we'd like to have them resolved. And that's basically the decision we made.

Q Mr. President, just to go back for a moment to Janet Reno and her investigation -- I'm wondering if you can tell us, has this whole affair complicated your relationship with her and your ability to actually function with your highest ranking law enforcement official? For instance, do you find yourself not talking to her because you're hesitant to have too much contact with the Attorney General?

PRESIDENT CLINTON: Well, I don't really have anything to add to what I said yesterday about that. I think you all are perfectly capable of drawing your own conclusions and evaluating whether this puts our political system in balance or out of balance, and I don't think that we should discuss it here.

The most important thing is we've got a law; we've got a fact-finding process. The fact-finding process should proceed with integrity; the law should be implemented without pressure either way. I am doing my part. I wish others were doing as well.

Q Mr. Fernando Enrique, I hope you don't mind if I ask Mr. Clinton the question. Mr. President, your visit was preceded by diplomatic turmoil. A document was disseminated that said that Brazilian corruption was endemic. This was commented on by the American Ambassador and his comments made things worse. The head of the Supreme Tribunal, the Superior Court in Brazil reacted badly, as did some other people in the federal government -- even a governor

of a federal district. And they also reacted not just to this issue, but to a number of other issues in which excess security was demanded by some of your advisors.

Brazilian authorities called this people's attitude rather aggressive. Not only authorities, but people as a whole in Brazil felt that they had been badly mistreated. I would like to know your view, sir. Do you think there was any exaggeration? Do you think there were any diplomatic mishaps in this situation?

PRESIDENT CLINTON: Well, first of all, I became aware of tis document and the characterization of the Brazilian culture after it had been released. The document was wrong and it represented an appalling error of judgment for anybody to write such a thing. It has been decisively rejected by every American authority, beginning with the Ambassador here now. And it has been excised from the document.

So I regret very much that it happened, but once in a while such a thing may even happen in Brazil, where someone who works for some agency will put out something in printing which shouldn't happen. I can only ask the Brazilian people not to infer that that is the feeling of either the government or, more importantly, the people of the United States toward Brazil. I assure you that no Brazilian could have been any more upset about it than I was. I thought it was terrible and I did everything I could to correct it.

Now, in terms of the trip here, I just don't have enough facts to know. I know that our people historically, because of the problems that have periodically affected our Presidents -- always on our own home turf, I might add, always when we're at home -- that the security for an American President often seems to others to be too rigid and too uncompromising. But, as I said, we've never had problems with our Presidents' security in a foreign country, but we've had enough problems at home over the last 35 years and before that I hope you will at least understand that. But I try to make sure that our people are as understanding and cooperative with the people in every country and community they visit as possible, and I hope they have been. That's all I can say. I don't know the facts.

Q Sir, does it embarrass you when these questions about fundraising follow you on foreign trips, as they have on this one, or does it embarrass the country?

PRESIDENT CLINTON: Well, I can't be embarrassed by other people's judgment. I have no control over what you decide to ask about. That's your decision, not mine. That's a question you should ask somebody besides me. I didn't have anything to do with what was asked. I think other people sometimes in other countries wonder what it's all about, especially when everyone concedes that there was no request or improper public action in any way, nor did any occur as a result of whatever communications are in dispute.

But that's a decision for you. You have to decide what questions you're going to ask. I can't be embarrassed about how you decide to do your job.

Q I have a question that I want to ask both Presidents. People

who monitor relations between Brazil and the United States feel that the problems that we have had most recently are often exacerbated by the bureaucracies of our two countries simply because there's not enough involvement of the Presidents and the leaders of the two countries. This is criticism that's been leveled against our countries. I wonder if you would agree.

The United States has a difficulty being a superpower, and the only superpower, to deal with an emerging power in the Americas that is asserting its leadership as a democracy as a freer market. Former Secretary Kissinger told me recently that he believed that really you have to adapt, because you are not used to that. You have to adapt intellectually to that. I'd like you to talk about this issue. Does our emerging role bother Americans or the United States of America?

PRESIDENT CARDOSO: Well, at least as far as the Brazilian side is concerned, I was so very pleased because the touchiest issues are always being brought up for President Clinton. No one is asking me these touchy questions. I was so pleased up until now.

However, my involvement and President Clinton's involvement can only be that of people who are involved at a very general level involving problems between our two countries. Of course, there are always going to be some sort of bureaucratic problems, but I'm quite sure that we can deal with them quite easily. I think bureaucratic problems and red tape dissolve as soon as people see the warmth of our warm and direct personal relations, which are much more important than any bureaucratic entanglement.

Now, of course, we do understand fully that for security reasons, you do have some problems of your own. Luckily enough, we in Brazil don't have to face these major threats. It's not the case of every country. The United States particularly has had to face some very difficult situations. Of course, our security forces try to pay attention at all times in Brazil. But I'm always breaking the rules in Brazil and so far nothing has ever happened and things are very tranquil and I'm sure they'll continue to be so in the future.

But I'm quite sure that anything that comes up can be dealt with quite easily because of the warmth and the openness that President Clinton and Mrs. Clinton have shown to us in Brazil at all times. They have shown to all Brazilians that their trip is an open-hearted visit.

PRESIDENT CLINTON: I'd actually like to respond, if I might, to both your questions. Because the question you asked the President, I think the answer to your question is a lot of -- people who work in government bureaucracies the world over are following established policies, and they tend to acquire an interest in maintaining the established policies, and most of them don't have the authority to **change** it, which is why these kind of personal relationships are so important. Because it's our responsibility if we want to **change** the direction of the country not to blame the people who work for us -- and particularly the people who many not even be political appointees, they work through from one administration to another -- but to try to give different instructions, to send different messages down there.

And that's why -- sometimes I think, with all respect, sometimes members of the press and even our own publics say, well, why did they spend all that money and do that foreign trip, all the money we spent to come here, all the money we spent to entertain us -- why did they do all that? There didn't seem to be an great earth-shaking specific agreement. And the main reason is the very thing you said -- that we have to increase understanding, we have to increase sensitivity. And even subtle shifts in our position can send a different message to those down in the governmental hierarchies that have to implement these decisions on a daily basis. So I think that's a very good question.

The second thing is, does the United States, at the end of the Cold War left as being the world's only superpower, feel threatened by the emergence of Brazil or any other country. The answer to that is, I actually support the emergence of countries to a greater role of influence and responsibilities, as long as they share our basic values -- not agree with us on everything, but share our basic values.

If they're committed to freedom and democracy, if they're committed to open trading systems, if they're committed to giving all their people a chance to participate in the wealth that the global economy generates, if they're committed to a responsible global approach on the environment, if they're committed to working with us against threats that cross national borders -- terrorism, weapons proliferation, criminal syndicates and drug trafficking -- if they're committed to those things, then I don't see this as competition. I see this as people emerging to take on more responsibility. And if we work together, more good will happen.

I'll give you another example. When I became President, there was the question of whether the United States would object if, in addition to NATO in Europe, there were an independent European security force working with NATO. And I made it clear from the beginning, I support this. I don't see these things as competing.

We have to **change** because most of the threats to nations in the years ahead will come not from other nations, but from threats that cross national borders -- guerrillas, terrorists, weapons proliferation, drugs, crime, environmental and disease problems -- number one. And because most of the benefits that nations can derive for their people require them to cooperate with people beyond their borders, we will have to **change** our conception of how national power and influence is acquired.

National power and influence is acquired, ironically, by becoming more interdependent and cooperative with others who are strong and self-sufficient and self-reliant, but need to be allied with you. And I do believe, frankly, that this will require a big **change** in the way people look at politics -- not just in the United States, but elsewhere.

Q Since you spoke yesterday on Air Force One, it's been reported that the White House and the Justice Department have been negotiating to figure out a way that you could speak to investigators about campaign finance. Have you reached such an agreement? And under what conditions would you speak to the Justice Department?

PRESIDENT CLINTON: I know nothing about that I didn't say yesterday. I literally -- no one has talked to me about it and I know nothing to add to what I said yesterday.

Q Mr. President, Mr. President of Brazil, Fernando Enrique Cardoso, Brazil defends negotiations with the FTAA in complementation to tariff laws. Now, what complements are we talking about specifically as long as Brazil adheres to the calendar?

And for President Bill Clinton, last night, Mr. Clinton, you said that you felt touched by Brazil and had felt touched by Brazil for over 30 years. Have you been touched enough to say that you're going to give support to Brazil's candidacy on the Security Council so that Brazil will become a full member of the Group of Nine as well next year?

PRESIDENT CARDOSO: Okay, I'm going to break a couple of the rules here once again. Go ahead, one last additional question, very, very quickly before we answer.

Q The United States government wants that Brazil open the Brazilian market, but there are many restrictions against Brazilian products, like oranges. My question is, why not the USA don't **change** the situation, keep the situation and allow the free commerce for many Brazilian companies?

Fernando Cardoso, I would like to know what the Brazilian government's view on these non-tariff barriers against a number of Brazilian products that are trying to get into the U.S. market.

PRESIDENT CARDOSO: All right, I'm going to begin by answering the question on the additional agreements or side agreements to the FTAA. I think that President Clinton talked about his views very clearly when he talked about the meaning of the overall proposal for hemisphere-wide integration. And he made his comments in a way that I think was quite proper.

He said it's not just a matter of tariffs -- I'm going to talk about the tariffs in a minute -- but it's not just a matter of tariffs. It's a much broader concept that we're fighting for here, because we're talking about the fact that there are some political considerations that come into play. And, of course, political considerations are based on values -- a common desire, a shared desire to keep the peace, to control drug trafficking, to avoid criminal activities on the international level or in the international sphere.

So we're not just talking about trade here, so much so that what we proposed in the meetings that we've had thus far and that we're going to continue to have over the next few days, is that the key topic be education. And in Santiago, we're going to keep insisting on education as the key issue, because people can say, all right, very generously, let's talk about something that will move people, but that means that we have to talk about something that goes beyond tariffs.

Tariffs, of course, are very important to countries and their economies and especially interesting to specialists. But countries have much more that they talk about and disagree with in the area of

international relations aside from tariffs. And so we have to talk about things that will bring our people closer together.

Education is ideal because the basic tenet of education is equality, and I think that what President Clinton said here pretty much follows along the same line of thought. And we do not want to limit our relationship to issues that don't even require a meeting between Presidents, because technical-level meetings will be enough.

What we are here to express and symbolize is something far greater than this. It's the desire for democracy and greater equality. A country such as Brazil that has no reason to hide its problems, especially our social problems, which are so great in nature, is in a position to want very much to improve the standard of living of its people. Within Mercosur, outside of Mercosur, we're very interested in seeing that all agreements be broader in scope, just as President Clinton just said.

So with regard to the specific issues that were brought up -- you talked about steel and orange juice and footwear and -- everywhere throughout Latin America where President Clinton goes, he's going to hear the same issues being brought up. And elsewhere as well, because the French, the Japanese, the British, they all have the same problems. To the degree that our countries move forward and progress, especially Brazil, where the industry sector is growing rapidly, of course we're going to begin to compete and problems and are going to crop up. And, of course, some moment in time is going to require arbitration of some nature, which is not meant to be just political in nature. But the greater our understanding is, the better our possibilities will be of reaching an understanding as to these issues.

Now, there are specific points on the agenda of demands of our two countries that neither one of us have really talked about them much. Some were brought up now, but we both know what they are. And when President Clinton goes back to the United States, people are going to ask him, did they ask you about this, that, or the other. I'm not even going to mention what they are. He's going to say, yes, I did talk to President Cardoso about it. What did he say? Well, President Cardoso said he's going to give utmost consideration to these issues. And that's what I'm going to say to you. We're both going to work hard to try to solve these issues.

PRESIDENT CLINTON: Let me say again, on balance, the United States has a lower tariff structure than virtually any country in the world, and fewer restrictions on trade than the European Union, for example. And I hope we can work these last remaining areas out. If you think about how big and complicated our countries are and the fact that we have now two-way trade in the neighborhood of $23 billion a year. The number of disputes is actually relatively small and I'm encouraged by that.

I'm not going to ignore the gentleman's clever question on the United Nations. First of all, you should know that today Brazil has been elected to a two-year term on the Security Council. Congratulations, Mr. President, that's a very good thing for the United Nations, as well as for Brazil.

The United States' position has been that the Security Council

ought to be expanded, that a permanent seat ought to be given to Latin America, and that the Latin American nations themselves should resolve how that permanent seat should be filled. This really is one of those areas where I don't think it's our place to tell the people of Latin America how to proceed here. I hope we will proceed and give a permanent seat on the Security Council to Latin America, because I think that the actions of the last several years clearly warrant that. And, again, that's another one of those questions like the gentleman who asked me about Brazil's emergence. The more there is a stable, constructive presence in global affairs presented by Latin America, the better off the world's going to be.

Q Thank you, Mr. President, and good afternoon. Based on your comments yesterday on Air Force One, sir, it would seem that you've been briefed on the videotapes that are soon to be released. What is your understanding of what's on them? And is there anything on them that causes you any concern?

PRESIDENT CLINTON: No, I think it's the same old stuff. As I said, those of you who have been going to the fundraisers with me, you've already seen it live so the replay will probably be boring for you. That's what I understand and I'm not worried about it.

Q Mr. President -- are already saying that -- (inaudible.)

PRESIDENT CLINTON: I've not made a decision yet about what to do. But let me say this, I intend to take a strong position there and I expect to probably be criticized by all sides. The United States, as our friends in Europe are well aware, is in a particularly difficult position when the benchmark is 1990, for three reasons.

Number one, we've had economic growth since 1990 far greater than Europe, so our greenhouse gas emissions have gone up more, which means we have more to do to go down. Number two, the Europeans are -- particularly if they're treated together --benefit from the incorporation of East Germany into Germany and the dramatic drop in production in East Germany, which has a high level of pollution. Therefore, they get a big reduction in pollution for something that - not because of any independent policy action taken, but because of the incorporation of East Germany into Germany.

And, thirdly, the presence of the North Sea oil for Great Britain gave Britain the ability to sell the oil, which is relatively polluting to other countries and keep the natural gas, which is quite clean, and substitute that for coal. So using the 1990 base mark, they have a lot of inherent advantages over the United States in terms of the degree of rigor required to meet any given target.

Nonetheless, I think there's so much we can do through technology and different purchasing patterns and conservation patterns, that I think that we can do quite a great deal. And I intend to propose that we do a great deal. What I'm trying to do is to put together a comprehensive agreement in Kyoto that will actually do what everybody wants, which is do reduce greenhouse gas emissions into the atmosphere substantially in the next century.

Right now we're at about double the volume of greenhouse gases

in the atmosphere that existed before the dawn of the Industrial Age. If we don't do something we'll be triple the volume by the middle of the next century. And we know that something bad will happen. Even though the skeptics on the other side say we don't know exactly what and when, we know enough to know it's not going to be good, and we've seen enough evidence of that so far.

So I'm going to have a credible plan. I'm going to do my best to get everybody involved in it. I hope I'll even have some success at selling it to the Congress. Right now, it may be a lot easier to sell it to the environmentalists and to the business community than to sell it to the Congress, but I'll do my best.

Q Mr. President, have you decided against using your line item veto authority? And am I mistaken, or is this becoming habit forming?

PRESIDENT CLINTON: Well, it's not habit forming but, yes, I used it again today -- as I told you yesterday I would -- on I can't remember how many projects, but more than a dozen worth more than $140 million that were not either in my budget or recommended by the Department of Defense. I thought it was appropriate.

I know that a lot of members that voted for the line item veto in Congress now wonder whether they did the right thing, now that I'm exercising it. But I'd like to remind you that, again, I have deferred, in great measure, to Congress. Congress put in 750 projects not requested in our budget or in the Defense Department plan, and reduced overall weapons procurement, reduced overall research and development to pay for virtually all of them.

And I'm hoping that in the years ahead I won't be using it as much and future Presidents won't use it as much because it will lead to a different kind of negotiation in the budgeting process.

But I think what I did today was responsible and quite restrained. And I believe that it's important to send a signal to the American people that we're going to stay on the budget track we started on, and we're going to stay within these numbers and balance the budget. That's one of the things that's given us the big economy we've got.

PRESIDENT CARDOSO: I'd like to thank all the Brazilian and American journalists for having joined us and for being so good about answering all our questions. And may I say that the emphasis that President Clinton has put on the environmental issue is one that I would like to bring up for Brazil as well. We have an energy matrix that is very, very clean. We use hydro power and now gas, natural gas. And we are strengthening our links with regard to the energy matrix throughout the rest of Latin America. So I think that our dialogue in terms of **climate** has been extremely positive.

Thank you to everyone.

END 2:35 P.M. (L)

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White House Press Release

REMARKS BY THE PRESIDENT AT DNC YOUNG DEMOCRATS COUNCIL RECEPTION

THE WHITE HOUSE

Office of the Press Secretary
(Philadelphia, Pennsylvania)

For Immediate Release October 8, 1997

REMARKS BY THE PRESIDENT
AT DNC YOUNG DEMOCRATS COUNCIL RECEPTION

CoreStates Arena
Philadelphia, Pennsylvania

7:52 P.M. EDT

THE PRESIDENT: First let me thank my good friend, Steve Grossman, for the hard work he's done as Chair of our party. And I want to ask him and our national Finance Chair, Alan Solomont, who is here, who is also from Boston -- I appreciate what they said about Philadelphia in Philadelphia. Please don't ever say it in Boston. (Laughter.) We're trying to hold both beachheads in a tough time.

Let me say to the Mayor, Philadelphia has a wonderful Mayor, flack, promoter, arm twister, and leader in Ed Rendell. He always thinks -- (applause.) He's never ashamed to ask for the business, and I like that. And I feel pretty good at this podium. (Applause.) Somewhat to my regret, I will not be the nominee of our party in 2000. (Laughter.) And so, ultimately, it will not be my decision to make, but I will say this -- the last time we had a convention in Philadelphia, in 1948, it worked out pretty well for us. (Applause.) And I like that.

I'd like to thank the Saxophone Club and the Young Democrats from Philadelphia, tonight's co-chairs, Lou Magazzu, Don Schroeder, Jill Ross-Stein, Jerry McCabe, and David Maser, and all of you who worked hard to make this a success. I'd like to thank you for coming here and for your good spirits, and for helping us to take this country in a new direction.

Through you, I would like to thank the people of Philadelphia who gave me nearly 80 percent of the vote here in the last election. I am very grateful for that. (Applause.) And the people of Pennsylvania, for twice supporting Al Gore and me and our administration and what we were trying to do.

Last week was the sixth anniversary of my declaration for the presidency, back in October of 1991. It's hard for me to believe that six years have passed and that almost five-eighths of my presidency is behind me. But I am very proud of what we've been able to do together. And I did it mostly for the young people of this country and for the future of this country -- because I wanted you to -- (applause) -- I believed that if we **changed** the direction of America we could create a nation in the 21st century where the American Dream really was alive for every person, without regard to race or gender or background, everybody who was willing to work for it.

I believe that we can create an America still leading the world toward peace and freedom and democracy and prosperity. And I believe we can create an America out of all of our diversity where we celebrate our differences and respect our differences and we're still bound together as one America -- a stunning challenge to all those countries where people are killing each other because of their differences. And that's what I want for you and your future and our children's future. (Applause.)

It seems hard for me to believe it was six years ago. I said, okay, let's all get together and work at this and we'll **change** this country. We will pursue a course based on the future, not the past; based on **change**, not the status quo; based on unity, not division; based on helping everybody, not just a few; based on leading, not following. And we'll have a government that doesn't try to do everything, but doesn't walk away from our challenges, either. And we'll **change** this country. And six years later, look at what's happened. In four years and eight months in office we've got over 13 million new jobs and the strongest economy in a generation; a lot of our most distressed neighborhoods are beginning to come back. (Applause.)

We just learned today that last month alone -- in one month -- there were 250,000 people who moved from welfare to work. (Applause.) That there has been a 26 percent reduction in the number of people who were living on welfare, moving instead into families living on pay checks -- the biggest drop in the history of the country. Five years of declining crime, thanks to the efforts of people like Mayor Rendell who took those police officers and put them on the streets in community policing programs.

This country has a stronger and cleaner environment than it had five years ago. This country has a smaller government and stronger partnerships with cities and states and the private sector. But we also stood against the Contract On America and the attempt to take away the things that bind us together as a country -- our common commitments to education, to the environment, to the health of our children, and to the future of our country. (Applause.) That's what this was about.

And as we look ahead, we've still got a lot of challenges ahead of us and a lot of things I hope we can do to build that bridge to the 21st century before we begin to celebrate the millennium in 2000, and I have to depart in January of 2001. And I just want to mention three or four of them now.

First of all, all of you are here at this Saxophone Club Young Democrats event at ticket prices of $25 to $100. It's my favorite group. We started this when I was running for President - the Saxophone Club. A young American with a great idea started it and we tried to promote it all over the country. (Applause.) If we can get the other party to stop trying to kill campaign finance reform in the Senate we could all raise all of our money this way and be on an equal footing and we'd see who had more bodies, more citizens, more people, more voices and better ideas. And I hope you'll help us do it. (Applause.)

Secondly, we have a great challenge before us long-term that will affect the youngest people in this audience I'm convinced in your lifetime if we don't do something about it. And that is confronting the challenge to the **change** in our **climate** by the warming that is going on all across the Earth as we put more greenhouse gases into the atmosphere. Now, what the challenge is, is for us to figure out a way to do less of it without throwing people out of work, without diminishing incomes, without cutting off future growth. Can we do it? You bet we can.

Don't let anybody tell you that we can't improve our environment and still grow the economy. Two-thirds -- let me just give you one example -- two-thirds of all the heat generated by electric power plants is wasted -- two-thirds. Of all the inputs of coal and oil, only one-third of it goes to actually giving you electricity you can use for heating or cooling or lighting or for manufacturing purposes. What happened to the other two-thirds? If we go get it back, we'll be putting less into the atmosphere that warms the atmosphere and compromises the future of our children and grandchildren.

So I ask you to help me in that. The young people of America have been the strongest environmentalists, and yet, we owe it to you to give you a strong economy. We have to find a way to do both. I know we can and I need your help to do it and to send a message loud and clear: We do not want to have to make a choice in the 21st century and we refuse to do so. We can clean our environment and grow our economy and we're determined to do it. (Applause.)

The third thing that I would ask you to do in thinking about the future is to support our efforts to continue to lead the world toward peace and freedom and prosperity. I know most Americans believe on a daily basis that what happens halfway around the world doesn't affect them -- but it does. Not just in the **climate changes**, which affect us all no matter where the problems occur, but in other ways as well.

If we had not stepped in to stop the slaughter in Bosnia, eventually the United States would have been pulled in to a wider, deeper conflict in Europe, and more American lives would have been put at risk. If we had not stepped in to try to restore democracy in Haiti, eventually we would have had much more disruption on our

own shores and much more human destruction on the island of Haiti that we would have been forced to come to grips with.

If we don't continue to try to reach out and trade on honorable and fair terms to sell more American products in Latin America and Asia and Africa and the other growing countries of the world, not only will we see other countries with weaker economies and weaker democracies, we won't grow as wealthy as we would grow. Because we only have 4 percent of the people in the world, we have to sell to the other 96 percent. These things matter.

It matters that we're banning chemical weapons. It matters that we're trying to do something about land mines. It matters that we're trying to stop nuclear testing for all times. It matters that we're trying to make this a safer, freer, more prosperous world. And someone has to take the initiative.

So all of you who are young -- you look around here at the students who are here who come from all these different heritages and backgrounds -- you should want your country out there working for peace in the Middle East, peace in Northern Ireland, to continue to make the peace in Bosnia hold. You should want your country out there working to reduce the nuclear threat, to fight terrorism, and to take the lead in global efforts to grow the economy and preserve the environment. And you have to develop this attitude. Just like you see people from all over the world in Philadelphia - that is our meal ticket to the future, if we relate to the rest of the world in a constructive and friendly and strong way.

So I ask you -- say we want America to lead the world, not to follow, and we will support that. That's part of the new Democratic Party we're trying to build. (Applause.)

Finally, and most importantly, let me come back to where I began. The biggest challenge we face is to embrace our diversity, celebrate our diversity, respect our differences -- our racial, our ethnic, our religious, all our other differences -- and say that still the most important thing is we can find common ground as one America.

When you look at the time I spend as your President, trying to stop people from Bosnia to Burundi and Rwanda, from the Middle East to Northern Ireland -- people who look as different as daylight and dark, united only by one thing -- they are caught in the grips of ethnic or religious or racial hatred, and it dominates their lives and destroys their countries -- we can stand as a shining alternative to that.

One of our school districts, the one just across the Potomac River from Washington -- Fairfax County -- now has students in the public school district from 182 different countries, speaking over 100 different languages. One school district. Many -- I'll bet you the number is not much smaller in Philadelphia. I know it's not in New York or Chicago or Los Angeles. The point is we are really becoming the world's first truly multiracial, multiethnic democracy in the sense that here, we all, more or less, live and work together. And yet we know that there continue to be problems that divide us.

That's why I had this national advisory board on race, and I asked the American people to join me in trying to deal with our racial differences. And we know that not everybody has an equal economic and educational opportunity. We know there are still some neighborhoods where all this economic recovery has not reached. We know there are still some schools that are not doing the job they should be doing for their children. We know, in other words, that our ideal of liberty, which was forged in Philadelphia around the Liberty Bell so long ago, is still not real for everyone.

This country will always be a work in progress. But as we move into a global information age, where not only the **changes** in the economy and technology, but the **changes** in how we live and patterns of immigration have brought us closer to others and to each other than ever before, the great test of our time and your future will be whether we can learn to live together, both respecting our differences and saying what unites us in the end is more important -- the shared values, the shared devotion to the Constitution and the Bill of Rights, the belief that everybody has a place in this country if they work hard, obey the law, and show up every day as good citizens.

That's what I want you to really fight for, because if you do it, believe me, the best days of this country are still ahead, and the Democratic Party that came into power in the United States by a vote of the American people in 1993 and **changed** the course of this country to bring us together and move us forward, will have a proud claim to its contribution to that for the 21st century, thanks to you.

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

END 8:06 P.M. EDT

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White House Press Release

REMARKS BY THE PRESIDENT AT DNC RECEPTION

THE WHITE HOUSE

Office of the Press Secretary
(Philadelphia, Pennsylvania)

For Immediate Release October 8, 1997

REMARKS BY THE PRESIDENT
AT DNC RECEPTION

The Kushner Companies
Florham Park, New Jersey

THE PRESIDENT: Thank you very much. Thank you, Jim, and thank you, ladies and gentlemen, for being here for him and for our Party and for what we're fighting for.

I want to thank my longtime friend, Alan Solomont, for being here and for being the Finance Chair of our Democratic Party -- yes, you can clap for him, that's a nice -- why don't you do that? He has a thankless job. (Laughter.) When he calls people, you know -- even when he calls me, I think he's going to call and hit me up for a contribution any day. (Laughter.)

But most of all I'd like to thank the Kushners, Charles and Seryl, and thank you, Rae Kushner; and thank you Mrs. Felsen. And I thank the children who gave me the shofar. Joshua and Nicole, Dara and Miryam, thank you. And I'm glad we've got a long-distance connection to Israel. In a way, I always have a long-distance connection to Israel. (Laughter.) President Weizman was just here and we had a great visit. And of course Mr. Arafat and Prime Minister Netanyahu had a visit of their own, and we're hopeful that the peace process is back on track and so is the -- that the security process is back on track, and I know all of you hope that, as well. But we're working hard on it.

Let me just briefly say that I came to New Jersey today for Jim McGreevey for what I think is a very good reason -- it is entirely positive, there's nothing negative about it --and that is that in the next several years, for the foreseeable future in the 21st century, who happens to be governor of any state and what decisions they make will have a bigger impact on how people live than in the previous 20 years, as an inevitable outgrowth of the

way the world is **changing**, the way we **change** how we govern ourselves, how we make decisions, and how we go forward. And I think it's very important.

Let me say that a lot of you have helped me a lot over the last several years, and for that I am very grateful. I think we are much closer than we were five years ago to realizing the vision that I started out with when I announced for governor -- for President, and I was a governor. I'm going to talk about that in a moment.

That is, I think we're closer to the time when every American has a chance to live out the American Dream if he or she will work for it. I think we're closer to the time when our country has articulated a vision that will maintain our world leadership for peace and freedom and prosperity and security. And I think we're closer to a time, although we still have a lot of challenges, in which we can reach across all the racial, the ethnic, the cultural, the religious lines that divide us, and stand in stark contrast to what is going on in so much of the world today and to the terrible story that Charles told us that had such a wonderful ending -- of his family -- by being a country that really can embrace all this diversity, celebrate it, respect it, honor it, and say we're still bound together as one America. And I feel very good about that.

There is still a lot to do. There is a lot going on in Washington. I'm still trying for the fifth year in a row to pass campaign finance reform. And the opponents thought they had killed it yesterday, but we've got a little life left in us up there. And if you can influence anybody, I hope you will -- although I want to say that Senator Torricelli and Senator Lautenberg are part of the unanimous vote in our caucus for the McCain-Feingold bill and for campaign finance reform, which I very much appreciate.

We're dealing with the trade issue and the question of the extension of the President's authority to conduct trade negotiations with other countries and then have the Congress vote up or down on the bill, which is essential for me to make those agreements and to continue to expand trade. Otherwise, no one wants to negotiate with 535 people; they want to negotiate with one person.

And there's a lot of debate and it's a healthy thing. Because what we really want in the global economy is more involvement in the world economy in a way that benefits America, but also having our communities make the appropriate response for people who have or will suffer as a result of dislocations in that economy. We owe that to them. That's what we're trying to achieve.

We had a fascinating conference this week on **climate change**. I'm convinced the **climate** is warming at an alarming rate and that we have to do the responsible thing to lower our emissions of greenhouse gases into the atmosphere. But it's a difficult problem for a democracy to address because it's not on anybody's back right now. It's something that's out there ahead of us. But if we do a little bit now we can avoid disastrous consequences and much more burdensome actions later.

Hillary and I are going to have the first White House

Conference on Child Care at the end of the month. And that's a huge problem. We have more people in the work force than ever before, a higher percentage of people in the work force than ever before. But the most important job any of us has is our job to raise our children well. I know you believe that. I had more people -- we just all took our picture -- I had a higher percentage of people in the line that I just stood in ask me about my family and my daughter than any photograph line I have ever stood in in my whole life. And that's a great tribute to you and your values. And I thank you for that.

But this child care issue is really about whether all these people who have to work who also have children, can succeed at work and at home. And we shouldn't have our country making a choice there. We don't want to crater to the economy, but our most important job is to raise our children well.

So we're full of all these challenges, and it's exciting. But we have to -- when I took office, we had this huge deficit and basically a yesterday's government. And I made a commitment, as I've said many times, to policies that favored the future over the past, **change** over the status quo, unity over division, and things that benefit everybody instead of just a few people. And that required **changes**, so we down-sized the government, we shared more responsibility with state and local government and the private sector. And state governments, anyway, have primary responsibility for things like auto insurance rates and, constitutionally, education.

So I could go out here and talk until I'm blue in the face about the importance of embracing national education standards. The United States is the only great country in the world that has no national standards of academic achievement that guarantees international capacity -- in terms of operating the economy -- that everybody has to follow. We're not talking about federal government standards. We're not talking about imposing anything on anybody. It's totally voluntary. But that means that every governor may will decide whether to participate in the standards movement.

So the decisions made by the Governor of New Jersey in the next 20 years, almost certainly, will range over a wider scope and have a deeper impact on the lives of the people of New Jersey than in the previous 20 years. And if my vision is going to be fulfilled, we have to have a partnership that really works: to grow the economy, to fight crime, to preserve the environment, to deal with social problems, and most importantly, to make sure that every child in this country has a chance to live out his or her dreams with a decent education.

That's why I showed up here today -- because this young man actually has an idea of what he will do if he gets elected. He's not running for Governor because he wants to live in that magnificent old house. New Jersey I think has the oldest and perhaps the most beautiful old governor's mansion in the country. He actually has an idea of what he wants to do, and I think it's the right idea.

And I hope you'll help me achieve it. Thank you. Bless you. (Applause.)

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White House Press Release

REMARKS BY THE PRESIDENT TO WEATHER FORECASTERS

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release October 1, 1997

REMARKS BY THE PRESIDENT
TO WEATHER FORECASTERS

East Room

2:10 P.M. EDT

THE PRESIDENT: Thank you very much, Mr. Vice President. Welcome to the White House on a cool, overcast day, about 60 degrees. (Laughter.) How am I doing? I'm auditioning. (Laughter.) You know, I have to leave this job after three years, and I don't know what I am going to do. And I am too young to retire, and I'm used to delivering bad news. (Laughter and applause.)

Let me say, we are delighted to have you here in the White House. I thank you for coming and for devoting this much of your time to the briefings and to giving us a chance to meet with you on what is a profoundly important issue -- and one, frankly, that you, just in the way you comment on the events that you cover, may have a real effect on the American people.

People look to you to figure out what they're going to wear in the morning and whether something really bad is going to happen. If so, they expect a timely warning and advice. So you not only get watched more than anyone else on the television news programs to find out about the weather, sometimes you are actually saving lives and always performing a public service. And we thank you for that.

I'd also like to thank your outstanding partners at NOAA and the National Weather Service. I'm very proud of them and what they have done. In the past decade alone, they have doubled the amount of warning time we have to prepare for tornadoes, quadrupled

the time for flash floods. And those are just two of the ways that our people here, with NOAA and the National Weather Service, and their research and technology have improved our nation's safety and planning.

You know, I spent most of my time over the last four and a half years telling the American people that we had to prepare for the 21st century, with all of its new opportunities and all of its new challenges if we want to keep the American Dream alive for everyone who will work for it and maintain our leadership for peace and freedom, and keep our country coming together with all of its diversity and clash of interests, whether it's racial and ethnic or religious or whatever. And we have really focused on trying to just get the country to think about how we have to build these bridges to the future, how the future will be as we want it to be.

Clearly, to me, this **climate change** issue is one of the principal challenges that we face -- a challenge that, if we meet it, will ensure the continued vitality of our small planet and the continued success of the United States throughout another hundred years; a challenge that should we fail to meet it, could imperil the lives of our children and, if not our children, our grandchildren on this planet -- how they live, how they relate to others and whether they are able to continue to pursue their dreams in the way that our generation has.

In trying to come to grips with this **climate change** issue, and then talk to the American people about it, there are four principles that have guided me and I'd like to go over them very briefly.

First, I am convinced that the science is solid, saying the that **climate** is warming at a more rapid rate, that this is due in large measure to a dramatic increase in the volume of greenhouse gases going into the atmosphere, and that nobody knows exactly what the consequences are going to be or when they're going to be manifest, but, on balance, it won't be all that long and they won't be good. That is sort of a summary of what the prevailing scientific opinion is.

I know there are those in a distinct minority who have a different view, but I am persuaded, having carefully looked at all this, that the vast majority opinion is, in fact, in all probability, accurate. And that, therefore, we would be irresponsible not to try to come to grips with the results of these findings.

Now, unlike a lot of weather forecasts, there is something we can do about this weather forecast because we've got enough lead time -- at least we believe we do. So I think that's very important.

Now, the second thing I want to say is that if we know that the majority of our scientists have this view, and they say, we don't know precisely what the bad effects of global **climate change** are or exactly how fast the **climate** will **change**; that means we don't know how severe the droughts and the floods of the future

will be in a particular region, but we know that it won't be long and the consequences won't be good -- if we know that, then it seems to me it is incumbent on the United States, when the nations of the world meet in December in Kyoto, Japan, to discuss **climate change,** that we be prepared to commit ourselves to realistic and binding limits on our own emissions of greenhouse gases.

With 4 percent of the world's population, we enjoy over 20 percent of the world's wealth. That also explains why we produce over 20 percent of the world's greenhouse gases. Those two things are related. Now, I believe that we have a responsibility to cut back. First, because the world is looking to us for leadership, and, secondly, because we won't have any influence in getting anybody else to cut back if we don't.

To give you an example of how significant that is, we've got all these other countries that are growing that have far larger populations than we do. We estimate the that the developing countries of Asia and Latin America will grow at roughly three times the rate of the United States, Japan, Europe and Canada in the next 20 years. If that is true, we'll have to work very hard to maintain our 20 percent share of wealth. But even if we do maintain our standard of living and grow our economy, we won't be for long the world's largest producer of greenhouse gases. So if we expect others to show restraint, we must do the same and we must lead the way.

The third principle is that we must embrace solutions that allow us to continue to grow the economy while we honor our global responsibilities and our responsibilities to our own children. We have worked too hard here, from the first day, to revitalize the American economy to jeopardize our progress now. And, furthermore, we cannot make **changes** that will leave whole chunks of that economy out in the cold without having a response to them.

So the question is: Can we emphasize flexible, market-based approaches? Can we embrace technology to make energy production more efficient and put fewer greenhouse gases into the atmosphere? Is there, in short, a way out of astronomical taxes or heavy-handed governmental regulation that will permit us to gradually bring down our greenhouse gas production and still grow the economy and enjoy what we've been enjoying here for the last four and a half years? I believe the answer is, yes.

Now, let me just give you one example. Typically, about two-thirds of the energy produced by power plants is absolutely lost in the form of wasted heat, billowing out in clouds of steam or pumped out into rivers. A company called Trigen has doubled the efficiency of power plants in Philadelphia, Chicago and Tulsa, simply by capturing the waste heat and turning it into steam to warm office buildings a fuel factories, and in the process, by definition, dramatically cutting the volume of greenhouse gases going into the atmosphere to do the same amount of work in all those places.

That is just one small example. The Vice President and I have been working with the Big Three automakers, our energy labs, and the UAW for years now on a new generation of vehicles that we hope will get triple the gas mileage of a typical car. Perhaps the design

will even include a blend of gasoline and electricity in a way that avoids the worst problems of electric cars -- that is, they don't go very fast, and you have to charge them up too often -- but gets the benefit of the energy conservation elements of the cars.

All these things are out there, and we found over time -- how many times have you seen America rise to a challenge? We didn't know how we were going to get to the Moon when President Kennedy said we were going there, but we got there because we put our resource behind it, and we started with what we knew, and then, in the process of exploring the outer limits of what we knew, we found a lot of things we didn't know, and we were able to put them to work toward a common mission. This is a scientific mission even more important in its implications than our race to the Moon in the 1960s. And yet we know a very great deal about how to do it without crippling the American economy.

Finally, because of what I said earlier, because we represent only 4 percent of the world's population, and because the developing countries of Asia, Latin America and Africa, increasingly, are going to grow at three times the rate of the developed countries, I believe we have to ask all nations, both industrialized and developing, to be a part of this process.

I'm happy that other countries are developing. It's actually good for our economy when countries move from the ranks of the very poor countries into middle income countries, because then they can do more business with us. So it helps us when other people lift their children out of poverty and have a brighter future. It also means that they, too, however, become bigger energy users, and it imposes on us even heavier responsibilities, all of us, to **change** our patterns of energy use so that all of us can grow our economies without contributing to this greenhouse gas problem.

But because of the growth rates in the future, both the population and economic growth and the associated energy use, we could have a great deal of effort by Europe, by the United States, by Canada, by Japan, and still be in very difficult straits on this issue within 40 years, unless we get real solid support from the developing countries. Should we make allowances for their growth? Of course, we should; but in some way, in a fair and appropriate way they should also participate in this agreement. Now, if that doesn't happen, then their emissions, the emissions of the developing world will exceed the emissions of the developed world by about 2035.

Now, those are the things I want to do. I want to try to get America to accept the fact that the majority scientific opinion, the overwhelming majority scientific opinion is accurate. I want us to make a commitment, therefore, to go to Kyoto with binding targets. I want us to implement our commitment in a way that continues to grow the economy in a different way, but still maintains our robust entrepreneurial economy. And I want to find a fair way for the developing countries to participate. Those are my four objectives.

On Monday, we're going to try to take another step toward putting these principles into effect. We invited noted economists and industrial leaders, state and local governmental leaders, and leaders from the environmental and scientific communities here to

the White House Conference for a White House Conference on **Climate Change**. Our goals are simple. We want the American people to understand the importance of the challenge and to allow outside experts to help inform the policy process so we'll make the best decisions.

Now, I'd like to ask you to think about this in terms of the work you do. When we had the terrible floods in the Dakotas and Minnesota not very long ago, a young congressman from South Dakota was in my office -- happened to be a member of the other party -- I don't believe there's a partisan aspect to the weather, (laughter) -- although some days it seems stormier than others around here. (Laughter.) And this young man said -- I was talking about **climate change**, and he said, Mr. President, we've had 300 year floods in the last nine years. He said, does that mean I get to go 500 years without one? (Laughter.) And you'd be amazed how many people just sort of from their anecdotal, personal experiences have this sense that there is more instability in the **climate** than there used to be, and understand that it has something to do with the **changes** in the relationship of where we live and whatever little patch of land we occupy and this larger globe and the atmosphere which envelopes it.

So what I hope will happen at the **Climate Change** Conference I also hope has happened a little here today. What I want to do is to deal with the central political problem here -- and I don't mean political in terms of party politics; I mean political in terms of how the body politic, how our society responds to this -- if we have a problem that is a clear and present danger that we can see and feel, we get right on it. How did we get to the Moon? Because the Russians beat us into space, so we knew how to keep score, we would beat them to the Moon. And if we didn't, since there was a Cold War and nuclear weapons, goodness knows what the consequences would be.

Now, it is much harder when you have no manifestation of this problem unless you happen to live in a place which has experienced an unusual number of or intensity of weather aberrations. And, even so, they go away and then you can start thinking about something else. It is difficult when you are not quite sure how to keep score, and you don't know who the enemy is.

All of you live with the weather as a fact of life, and a pre-condition for life on our planet in a way that nearly no one else in the world does. The men and women of America who tune in and listen to you talk about the weather and rely upon you are either enlightened or entertained or disappointed by whatever it is you say and however you say it. Most of them are sort of like Sergeant Joe Friday -- they just want the facts.

This is a case where people need the facts and the context. Where if all you do is just try to get people to start thinking about this -- you might not even know how you feel about it, or exactly what you think should be done. That's okay. But I would ask you to think about whether you should ask people to think about this.

Because our country always gets it right. We always get it right once we focus on it. But right now, while the scientists see the train coming through the tunnel, most Americans haven't heard

the whistle blowing. They don't sense that it's out there as a big issue. And I really believe, as President, one of my most important jobs is to tell the America people what the big issues are that we have to deal with. If we understand what the issues are, if we start with a certain set of principles, we nearly always come to the right place.

That's what we did -- we passed the first balanced budget in a generation earlier this year, partly because we had already gotten the deficit down by over 85 percent, but partly because we got people in both parties to agree that there's a goal -- we're going to balance the budget -- and then the Republicans said, here are the things we want in the balanced budget plan, and the Democrats said, here are the things we want, and we found out a way to reconcile them, and still do the most important thing, which was to balance the budget, and we did it.

That's how we have to deal with this **climate change** issue. We have to say, there's a challenge out there, we have to respond to it, here's the principles we want in our response. And then we have to get after it. But we can't do it until we build the awareness of the American people.

So I hope you will think about how your work has been affected by what we believe is going on in the **climate**. And, again, I don't ask for you to advocate or do anything outside whatever your own convictions or parameters of permissible speech are, but I do think it's very important, since you have more influence than anybody does on how the American people think about this, that at least you know what you believe and how you think we should proceed.

Thank you for being here, and thank you for your leadership. (Applause.)

The first time I ever really thought about this issue in this way was when I was reading Al Gore's book -- (laughter) -- which preceded our partnership. Sometimes he thinks all the great things he did preceded our partnership. (Laughter.) I think most of the greatest things he's done occurred after our partnership started. (Laughter.) I remember so well -- one of the first times -- we have lunch once a week, and I remember one week we were having lunch very early in this term -- this is over four years ago. And he said, just in case you missed it in my book, here's the chart -- (laughter) - of how much we are increasing the emission of greenhouse gases into the atmosphere, and here's 10,000 years and here's the last 50, like that.

So I can now pass Al Gore's **climate** test -- (laughter) -- and I'm very proud of that. I think we should be proud that we have a Vice President who not only cares about this issue, but knows enough about it to have an opinion worthy of the respect of any scientist in the world.

Ladies and gentlemen, the Vice President.

END 2:30 P.M. EDT

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White House Press Release

REMARKS BY THE PRESIDENT TO THE 52ND SESSION OF THE UNITED NATIONS GENERAL ASSEMBLY

THE WHITE HOUSE

Office of the Press Secretary
(New York, New York)

For Immediate Release September 22, 1997

REMARKS BY THE PRESIDENT
TO THE 52ND SESSION OF
THE UNITED NATIONS GENERAL ASSEMBLY

United Nations
New York, New York

10:50 A.M. EDT

THE PRESIDENT: Mr. President, Mr. Secretary General, distinguished guests: Five years ago, when I first addressed this Assembly, the Cold War had only just ended and the transition to a new era was beginning. Now, together, we are making that historic transition.

Behind us we leave a century full of humanity's capacity for the worst and its genius for the best. Before us, at the dawn of a new millennium, we can envision a new era that escapes the 20th century's darkest moments, fulfills its most brilliant possibilities, and crosses frontiers yet unimagined.

We are off to a promising start. For the first time in history, more than half the people represented in this Assembly freely choose their own governments. Free markets are growing, spreading individual opportunity and national well-being. Early in the 21st century, more than 20 of this Assembly's members, home to half the Earth's population, will lift themselves from the ranks of low-income nations.

Powerful forces are bringing us closer together, profoundly **changing** the way we work and live and relate to each other. Every day millions of our citizens on every continent use laptops and satellites to send information, products and money across the planet in seconds. Bit by bit, the information age is chipping away at the barriers -- economic, political, and social

-- the once kept people locked in and ideas locked out. Science is unraveling mysteries in the tiniest of human genes and the vast cosmos.

Never in the course of human history have we had a greater opportunity to make our people healthier and wiser, to protect our planet from decay and abuse, to reap the benefits of free markets without abandoning the social contract and its concern for the common good. Yet today's possibilities are not tomorrow's guarantees. We have work to do.

The forces of **global** integration are a great tide, inexorably wearing away the established order of things. But we must decide what will be left in its wake. People fear **change** when they feel its burdens but not its benefits. They are susceptible to misguided protectionism, to the poisoned appeals of extreme nationalism, and ethnic, racial, and religious hatred. New **global** environmental challenges require us to find ways to work together without damaging legitimate aspirations for progress. We're all vulnerable to the reckless acts of rogue states and to an unholy axis of terrorists, drug traffickers, and international criminals. These 21st century predators feed on the very free flow of information and ideas and people we cherish. They abuse the vast power of technology to build black markets for weapons, to compromise law enforcement with huge bribes of illicit cash, to launder money with the keystroke of a computer. These forces are our enemies. We must face them together because no one can defeat them alone.

To seize the opportunities and move against the threats of this new **global** era, we need a new strategy of security. Over the past five years, nations have begun to put that strategy in place through a new network of institutions and arrangements with distinct missions, but a common purpose -- to secure and strengthen the gains of democracy and free markets while turning back their enemies.

We see this strategy taking place on every continent -- expanded military alliances like NATO, its Partnership for Peace, its partnerships with a democratic Russia and a democratic Ukraine; free trade arrangements like the WTO and the **Global** Information Technology Agreement; and the move toward free trade areas by nations in the Americas, the Asia Pacific region, and elsewhere around the world; strong arms control regimes like the Chemical Weapons Convention and the Nonproliferation Treaty; multinational coalitions with zero tolerance for terrorism, corruption, crime, and drug trafficking; binding international commitments to protect the environment and safeguard human rights.

Through this web of institutions and arrangements, nations are now setting the international ground rules for the 21st century, laying a foundation for security and prosperity for those who live within them, while isolating those who challenge them from the outside. This system will develop and endure only if those who follow the rules of peace and freedom fully reap their rewards. Only then will our people believe that they have a stake in supporting and shaping the emerging international system.

The United Nations must play a leading role in this effort, filling in the fault lines of the new **global** era. The core missions it has pursued during its first half-century will be just as relevant during the next half-century: the pursuit of peace and security, promoting human rights, and moving people from poverty to dignity and prosperity through sustainable development.

Conceived in the cauldron of war, the United Nations' first task must remain the pursuit of peace and security. For 50 years the U.N. has helped prevent world war and nuclear holocaust. Unfortunately, conflicts between nations and within nations had endured. From 1945 until today, they have cost 20 million lives. Just since the end of the Cold War, each year there have been more than 30 armed conflicts in which more than a thousand people have lost their lives, including, of course, a quarter of a million killed in the former Yugoslavia and more than half a million in Rwanda.

Millions of personal tragedies the world over are a warning that we dare not be complacent or indifferent. Trouble in a far corner can become a plague on everyone's house.

People the world over cheered the hopeful developments in Northern Ireland, grieved over the innocent loss of life and the stalling of the peace process in the Middle East, and longed for a resolution of the differences on the Korean Peninsula, or between Greece and Turkey, or between the great nations of India and Pakistan as they celebrate the 50th anniversaries of their birth.

The United Nations continues to keep many nations away from bloodshed: in El Salvador and Mozambique, in Haiti and Namibia, in Cyprus and in Bosnia, where so much remains to be done but can still be done because the bloodshed has ended.

The record of service of the United Nations has left a legacy of sacrifice. Just last week, we lost some of our finest sons and daughters in a crash of a U.N. helicopter in Bosnia. Five were Americans, five were Germans, one Polish and one British; all citizens of the world we are trying to make, each a selfless servant of peace. And the world is poorer for their passing.

At this very moment, the United Nations is keeping the peace in 16 countries, often in partnership with regional organizations like NATO, the OAS, ASEAN and ECOWAS, avoiding wider conflicts and even greater suffering. Our shared commitment to more realistic peacekeeping training for U.N. troops, a stronger role for civilian police, better integration between military and civilian agencies -- all these will help the United Nations to meet these missions in the years ahead.

At the same time, we must improve the U.N.'s capabilities after a conflict ends to help peace become self-sustaining. The U.N. cannot build nations, but it can help nations to build themselves by fostering legitimate institutions of government, monitoring elections and laying a strong foundation for economic reconstruction.

This week, the Security Council will hold an unprecedented ministerial meeting on African security, which our Secretary of State is proud to chair, and which President Mugabe, chairman of the Organization of African Unity, will address. It will highlight the role the United Nations can and should play in preventing conflict on a continent where amazing progress toward democracy and development is occurring alongside still too much

discord, disease and distress.

In the 21st century, our security will be challenged increasingly by interconnected groups that traffic in terror, organized crime and drug smuggling. Already these international crime and drug syndicates drain up to $750 billion a year from legitimate economies. That sum exceeds the combined GNP of more than half the nations in this room. These groups threaten to undermine confidence in fragile new democracies and market economies that so many of you are working so hard to see endure.

Two years ago I called upon all the members of this Assembly to join in the fight against these forces. I applaud the U.N.'s recent resolution calling on its members to join the major international antiterrorism conventions, making clear the emerging international consensus that terrorism is always a crime and never a justifiable political act. As more countries sign on, terrorists will have fewer places to run or hide.

I also applaud the steps that members are taking to implement the declaration on crime and public security that the United States proposed two years ago, calling for increased cooperation to strengthen every citizen's right to basic safety, through cooperation on extradition and asset forfeiture, shutting down grey markets for guns and false documents, attacking corruption and bringing higher standards to law enforcement in new democracies.

The spread of these **global** criminal syndicates also has made all the more urgent our common quest to eliminate weapons of mass destruction. We cannot allow them to fall or to remain in the wrong hands. Here, too, the United Nations must lead, and it has, from UNSCOM in Iraq to the International Atomic Energy Agency, now the most expansive **global** system ever devised to police arms control agreements.

When we met here last year, I was honored to be the first of 146 leaders to sign the Comprehensive Test Ban Treaty, our commitment to end all nuclear tests for all time -- the longest-sought, hardest-fought prize in the history of arms control. It will help to prevent the nuclear powers from developing more advanced and more dangerous weapons. It will limit the possibilities for other states to acquire such devices. I am pleased to announce that today I am sending this crucial treaty to the United States Senate for ratification. Our common goal should be to enter the CTBT into force as soon as possible, and I ask for all of you to support that goal.

The United Nations' second core mission must be to defend and extend universal human rights and to help democracy's remarkable gains endure. Fifty years ago the U.N.'s Universal Declaration of Human Rights stated the international community's conviction that people everywhere have the right to be treated with dignity, to give voice to their opinions, to choose their leaders; that these rights are universal -- not American rights, not Western rights, not rights for the developed world only, but rights inherent in the humanity of people everywhere.

Over the past decade, these rights have become a reality for more people than ever -- from Asia to Africa, from Europe to the Americas. In a world that links rich and poor, North and South, city and countryside, in an electronic network of shared images in real time, the more these universal rights

take hold, the more people who do not enjoy them will demand them.

Armed with photocopiers and fax machines, e-mail and the Internet, supported by an increasingly important community of non-governmental organizations. They will make their demands known, spreading the spirit of freedom, which as the history of the last 10 years has shown us, ultimately will prevail.

The United Nations must be prepared to respond, not only by setting standards but by implementing them. To deter abuses, we should strengthen the U.N.'s field operations and early warning systems. To strengthen democratic institutions, the best guarantors of human rights, we must pursue programs to help new legal, parliamentary and electoral institutions get off the ground. To punish those responsible for crimes against humanity and to promote justice so that peace endures, we must maintain our strong support for the U.N.'s war crime tribunals and truth commissions. And before the century ends, we should establish a permanent international court to prosecute the most serious violations of humanitarian law.

The United States welcomes the Secretary General's efforts to strengthen the role of human rights within the U.N. system and his splendid choice of Mary Robinson as the new High Commissioner. We will work hard to make sure that she has the support she needs to carry out her mandate.

Finally, the United Nations has a special responsibility to make sure that as the **global** economy creates greater wealth, it does not produce growing disparities between the haves and have-nots, or threaten the **global** environment -- our common home.

Progress is not yet everyone's partner. More than half the world's people are two days' walk from a telephone, literally disconnected from the **global** economy. Tens of millions lack the education, the training, the skills they need to make the most of their God-given abilities.

The men and women of the United Nations have expertise across the entire range of humanitarian and development activities. Every day they are making a difference. We see it in nourished bodies of once starving children, in the full lives of those immunized against disease, in the bright eyes of children exposed to education through the rich storehouse of human knowledge, in refugees cared for and returned to their homes, in the health of rivers and lakes restored.

The United Nations must focus even more on shifting resources from hand-outs to hand-ups, on giving people the tools they need to make the most of their own destinies, spreading ideas in education and technology, the true wealth of nations, is the best way to give people a chance to succeed.

And the United Nations must continue to lead in ensuring that today's progress does not come at tomorrow's expense. When the nations of the world gather again next December in Kyoto from the U.N. **Climate Change** Conference, all of us, developed and developing nations, must seize the opportunity to turn back the clock on greenhouse gas emissions so that we can leave a healthy planet to our children.

In these efforts, the U.N. no longer can and no

longer need go it alone. Innovative partnerships with the private sector, NGOs, and the international financial institutions can leverage its effectiveness many times over. Last week, a truly visionary American, Ted Turner, made a remarkable donation to strengthen the U.N.'s development and humanitarian programs. His gesture highlights the potential for partnership between the U.N. and the private sector in contributions of time, resources and expertise. And I hope more will follow his lead.

In this area and others, the Secretary General is aggressively pursuing the most far-reaching reform of the United Nations in its history -- not to make the U.N. smaller as an end in itself, but to make it better. The United States strongly supports his leadership. We should pass the Secretary General's reform agenda this session.

On every previous occasion I have addressed this assembly, the issue of our country's dues has brought the commitment of the United States to the United Nations into question. The United States was a founder of the U.N. We are proud to be its host. We believe in its ideals. We continue to be, as we have been, its largest contributor. We are committed to seeing the United Nations succeed in the 21st century.

This year, for the first time since I have been President, we have an opportunity to put the questions of debts and dues behind us once and for all, and to put the United Nations on a sounder financial footing for the future. I have made it a priority to work with our Congress on comprehensive legislation that would allow us to pay off the bulk of our arrears and assure full financing of America's assessment in the years ahead. Our Congress' actions to solve this problems reflects a strong bipartisan commitment to the United Nations and to America's role within it.

At the same time, we look to member states to adopt a more equitable scale of assessment. Let me say that we also strongly support expanding the Security Council to give more countries a voice in the most important work of the U.N. In more equitably sharing responsibility for its successes, we can make the U.N. stronger and more democratic than it is today. I ask the General Assembly to act on these proposals this year so that we can move forward together.

At the dawn of a new century, so full of hope, but not free of peril, more than ever we need a United Nations where people of reason can work through shared problems and take action to combat them, where nations of goodwill can join in the struggle for freedom and prosperity, where we can shape a future of peace and progress and the preservation of our planet.

We have the knowledge, we have the intelligence, we have the energy, we have the resources for the work before us. We are building the necessary networks of cooperation. The great question remaining is whether we have the vision and the heart necessary to imagine a future that is different from the past, necessary to free ourselves from destructive patterns of relations with each other and within our own nations and live a future that is different.

A new century and a new millennium is upon us. We

are literally present at the future, and it is the great gift it is our obligation to leave our children.

Thank you very much. (Applause.)

END 11:09 A.M. EDT

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White House Press Release

REMARKS BY THE PRESIDENT TO THE DEMOCRATIC BUSINESS COUNCIL

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release August 7, 1997

REMARKS BY THE PRESIDENT
TO THE DEMOCRATIC BUSINESS COUNCIL

The Mayflower Hotel

Washington, D.C.

8:35 P.M. EDT

THE PRESIDENT: Thank you very much. Governor Romer, Tom, thank you. Thank you, Alan Solomont. I want to thank all the members of the administration who came to be with us tonight, and I thank all of you for your presence here and for your support.

I was -- a little insight on presidential decision-making - here are the notes my staff gave me. Here are the notes I made at dinner. (Laughter.) You can have either speech -- which one do you like? (Laughter.) Two, two! (Applause.)

I'd like to talk to you a little bit about how I think you fit into all this, and what we've been trying to do and where we're going. When I ran for President, first, beginning in 1991, I was obsessed with the idea that we had to prepare this country for a new century and a completely different economy, and a whole different way of living and relating to each other and the rest of the world, and that we didn't have any strategy to do it. And I believed that if we were going to succeed we had to create a country where, as you've heard me say a thousand times, there was opportunity for everyone responsible enough to work for it, where we were coming together instead of being driven apart, and where we maintained our world leadership for peace and prosperity and freedom.

I thought to do that it would be necessary to save progressive government and to save the progressive political party, to be vital forces as a part of that future. I thought it was necessary to break through a lot of these dichotomies that seem to me to be false -- that you were either for growing the economy or preserving the environment

-- if you have to choose we're in trouble. That you couldn't be pro-business and pro-labor -- if you have to choose, I think in the end the country loses. That you couldn't be tough on crime where it was appropriate and still be smart and compassionate where it made sense and where it was the right thing to do. That you couldn't be for respecting our diversity and still believe the most important thing is that we wind up being one America. I just think a lot of these dichotomies that have always been set up for us to argue about and take sides over are choices that we would never make in our own lives, and that we should not make in the life of our nation.

And you heard Tom talking about a little of it and Roy talking about a little of it. It seemed to me that the right thing to do for our country also in the end would wind up being the right thing to do for the progressive cause in America and for the Democratic Party, the progressive party in America. We almost had to save ourselves from a legacy in some ways that was not entirely of the Democrats own making. It was obvious to me that if we didn't do something about the deficit there would be no more progressives in America because the middle class would always be completely insecure.

We had a meeting today at the White House and my distinguished Treasury Secretary from New York City, Mr. Rubin, was making a comment about how people viewed a certain economic situation. And Erskine Bowles said -- did I say North Carolina? I meant New York. Erskine Bowles is from North Carolina. So Erskine Bowles says, "Mr. President, tell Bob that that's like the farmer from Louisiana with three hogs." And Bob Rubin doesn't know many farmers from Louisiana. (Laughter.)

So I told him -- some of you may have heard me tell this story before, but when Huey Long was Governor of Louisiana in the middle of the Depression, he was out on a country crossroads one day making a speech to all of these farmers. And he was railing against people that had too much and how it ought to be spread around. And he saw a farmer in overalls and he said, "Now, Farmer Jones, if you had a million dollars, wouldn't you give up about a third of it and go out here on these crossroads and spread that money around so all the little kids could have plenty to eat and people would have a roof over their heads at night?" He said, "Of course, I would."

And he said, "If you had a brand-new Cadillac car, wouldn't you ride up and down these roads and take the old folks to the hospital and the young people to school that couldn't afford to get there themselves?" He said, "You bet I would." He said, "And farmer if you had three hogs." And he said, "Now, wait a minute Governor, I've got three hogs." (Laughter and applause.)

It seemed to me that we had to restore some economic discipline to this country so that people would know that their three hogs would be all right. So that people would know that at least they would not be robbed of the benefits of their own labor by the defects of the system in which they lived.

And so I proposed what, at the time, was a controversial and very difficult budget in 1993, that only members of our party voted for, that was predicted to drive us into a recession. And instead in four and a half years it cut the deficit by 80 percent -- before this last budget even passed. And I'm proud of that. (Applause.) But no one doubts the ability of Democrats to manage the economy now.

I fought for expanded trade, and we had 200 trade agreements, and a lot of it was controversial, even within our own party. But it is clear from all the economic analysis that 25 percent of the growth that we have enjoyed in the United States in the last four and a half

years has come from expanded trade -- selling more American products and services around the world. It is also clear that we have, on matters of principle, have always kept a more open market so we don't continue to open other people's markets who are just going to take advantage of us.

It was clear to me that if people felt insecure on their streets, in their homes and their schools, that we would never feel fully free and prosperous even if the economy returned. So we tried to join what was already a developing movement toward community policing and other proven strategies to fight crime. And I determined that ours would be the first administration that would ever take on the issue of the irresponsible use of handguns in this country. And I come from a state where more than half the people have a hunting or a fishing license or both, and I figured if I can't take this one and talk to people and talk sense to people, who can?

And so we did the Brady Bill, we did the assault weapons ban. I still want trigger locks on these guns that children can get their hands on. I think that these are responsible things. But we've had a drop in serious crime in every single year, and last year we had the biggest drop in violent crime in 35 years. And the American people are safer and they know it. And no one seriously doubts the ability of our party to be a responsible partner in keeping our streets safer and giving our children a more secure future. And I think that's important. (Applause.)

I had to fight a very difficult battle on welfare. I did not want the welfare reform bill to be an excuse to hurt children and I vetoed two bills that I thought were. But it seemed to me that since there was already no uniform national benefit, that the states were already in effective control over what the size of a welfare check was, but they didn't have any real responsibility because the authority was divided between the states and the federal government. And it seemed to me the responsible thing to do was to set up a uniform set of standards about how we thought the welfare program ought to work, to put guidelines and limits on people who could go to work if there were jobs available and required them to do so, or to be in education and training programs, but to take better care of the children with adequate child care and other supports and nutrition and medical care.

And that's what the welfare reform bill was all about. There were a lot of things in it I didn't like -- cutting benefits to legal immigrants -- but as you see, we've largely restored all the things that we didn't like. And we now have a bill that is contributing to by far the largest drop in the welfare rolls this country has ever seen. And we now have the smallest percentage of Americans receiving public assistance since 1970 -- smallest percentage since 1970. (Applause.) Now, I thought that was important. I thought it was important that we prove that we can conduct the defense and the foreign policy operations of this country. I no longer think that's open to serious doubt. This country is stronger, more secure, and is helping to build the world of the 21st century in the aftermath of the Cold War. And I feel good about that.

I also wanted to do things to increase people's sense of obligation to serve -- that's what the AmeriCorps program was about; that's what the President's Service Summit was all about.

And, finally, let me say, in the Democratic Party, what I tried to do is to bring in people who had previously not been active before. And the most important things we've done in our party is the Women's Leadership Forum, the Saxophone Club -- (applause) -- and your group - your group -- because we want people in this party to feel that they have a home, they have a role, and they have a contribution to make,

and that their voices will be heard.

Now, we've had a very good first seven months of this year. The budget is a good budget, and it is a progressive one. The tax cuts are confined. Some of us have received some criticism from people who believe that I should not have signed the tax bill because it had a capital gains tax cut and an increase in the estate tax. But let me just remind you that Republicans are still in the majority in the Congress -- I hope it won't be so after '98, but they are now -- but 80 percent of that tax bill went to the children's tax credit, to education, and to a whole array of urban and poor rural redevelopment initiatives designed to bring the areas that are still isolated from our prosperity into the mainstream -- 80 percent.

Secondly, there are strict caps on how much money can be spent in the first five years and in the second five years of this tax program. And even with the little we added on to the size of the tax package, it's still about one-eighth -- one-eighth -- the size of the tax bill adopted in 1981, which led to these permanent deficits. We did not go off in some sort of tax-cutting binge designed to erode the future stability of this country. And we now estimate with conservative estimates that this budget will produce a surplus by 2002 at the latest and a surplus for several years thereafter.

So we are doing the right things, and we've had a good fall. We've also invited the first new members to join NATO. We've established alliance with Russia and Ukraine. We have worked very hard to get the country, for the very first time, to embrace national education standards. And I hope all of you will help us get every state in the country to do that.

We had the Summit of Service that I mentioned, and I launched a very important initiative on race relations which will last for at least a year, as we examine for the first time in a non-crisis way not only what the unfinished business is in America between the white majority and African Americans or Hispanic Americans, but an equally, perhaps even more important question over the long run, which is what are we going to be like as a nation in 30 years when, unless something happens, there will be no majority race in America and we will become the world's first truly great multiracial, multiethnic democracy.

And unlike -- there are many ethnic groups, for example, in a nation like Russia, but most of them live in discreet parts of the country. In our country we're going to have 150 -- actually, more than 150 different racial and ethnic groups largely sharing the future together.

So it's been an exciting time. In the fall we have a lot of other agendas coming up. And let me just mention some of the things that I hope to get done in the remainder of this year. I think it's important that we continue our work to expand trade. This year we have already concluded an agreement on information technology and telecommunication services that will amount to a $5 billion tax reduction on American products in these areas sold around world; that will open up 90 percent of the world markets to American products in a area where we lead the world and we are creating very good jobs. We need more of this.

I know there's going to be a great controversy over this trade debate, but let me put it to you this way: We have four percent of the world's population. We have 20 percent of the world's wealth. The rest of the world's economy, even though it's on a lower base, is growing at three times the rate of the American economy - even under the astute management of our administration. (Laughter.)

Because if you start from a lower base, you grow faster.

Now, if you want your children to live in a country that may have even less than four percent of the world's population and still around 20 percent of the world's wealth because of how hard we work and our skills and our ability, there are only two things we can do. The first is to go into our cities and our isolated rural areas and make markets and taxpayers and successful employers and employees and businesspeople out of the people that haven't been reached in our own country, number one. And the second is to sell to the other 96 percent of the people in the world. This is not rocket science. We don't have an option. And the things that we sell by and large are higher value-added products that create good jobs in America.

Are there issues of trade fairness? Of course, there are. We have relatively more open markets than other countries. We have done it for years as a matter of responsibility to try to help poor countries lift themselves up; also keeps us on our toes more and makes us more competitive, and that's one reason we're in the shape we're in today.

Should we fight for a fair deal for our workers? Of course, we should. Should we fight to improve the **global** environment as we increase trade? Of course, we should. But we can't walk away from this.

I'm going to Latin America in the fall. About a year after I took office, we had this great Summit of the Americas. And all the countries in the Americas said, we want to have a free trade area that America and that Canada are a part of. We want our future to be with you. There will soon be a billion people in Latin America, the second fastest-growing area of the world. When I go down there, I want them to believe America is still leading the way toward greater prosperity. The rest of the world economy is on a fast track. The only question is whether we're going to be leading it or dragging up the rear. And I hope we can prevail upon the Congress to work through this in a way that is as satisfactory as possible to the people who have legitimate concerns about the disruptions that the **global** economy can cause.

The second thing we're going to try to do is pass the McCain-Feingold campaign finance reform bill. Now, the good news from my point of view is not such good news for you; we can still have the Democratic Business Council with its price of entry under McCain-Feingold. (Laughter.) But, it will eliminate most of the serious questions people have about the campaign finance system as present, and it will put more pressure on both the Democrats and the Republicans to go out and get more people to contribute, to make more people feel like they're a part of the system, and that will be a very good thing. It will require us to involve more and more and more people.

But let me finally say -- this is very important -- if it's going to work we have to lower the cost of campaigns. And the only way you can lower the cost of modern campaigns is to provide free air time or drastically reduced air time -- which is why I have also worked so hard on that.

We're going to try to pass the juvenile justice bill, modeled on what has happened in a number of cities, but especially in Boston where -- this may surprise you if you don't live in Boston -- it has been almost two full years since a single child has lost his or her life to a handgun. Almost two full years. And, again, it's not rocket science. They have good community policing. They have good neighborhood block watch groups. The neighbors and the police

work together. The police and the probation officers work together. They make house calls in Boston, just like doctors used to. The kids in trouble, they go to the child's home and they sit on the couch in the living room and they talk to the parents.

And, unbelievably enough, they have a 70 percent compliance rate with probation orders. There's no city in the country that's even close to that. Why? Old-fashioned, human contact in an organized, disciplined way, doing what is smart as well as being tough. We want to do that everywhere.

We want to begin the work of dealing with entitlement reform. And people say, well, there's no an emergency now; Social Security is all right until 2029; you just put another decade on the Medicare trust fund. That's true. But when the baby boomers retire, there will be almost just about two people working for one person in his or her retirement years. A lot of us will work longer -- by choice. But the ratio will be awesome.

By making modest **changes** now, we can avoid imposing severe **changes** that will have to be made by our children. And for those of us that are part of that baby boom generation, which are basically everybody between the ages of 34 and 50, it seems to me that we owe it to our children and to the strength and long-term health of our economy and our society to deal with the long-term entitlement issues now, when by making modest **changes** we can avoid more severe **changes** later.

We're going to have to deal with the issue of **climate change** in a responsible way. No one seriously questions anymore that the **climate** is warming and that it is going to have some adverse consequences. The question is, how do you do that and grow the economy? Is there a way to do it? Of course, there is. If we would **change** our habits tomorrow, just some of our habits, we could with no extra charge, no cost at all on society, get rid of 20 percent of the greenhouse gases with presently available technology -- tomorrow. So what we have to do is to try to find a way to organize ourselves, increase our awareness and do this in a way that doesn't cripple the economy. I think we can do that.

Finally, the First Lady and I are going to have a conference on child care in late October. It is still the number one concern of many, many, many working people who believe that they cannot afford or find or have access to quality, affordable child care.

Now, those are the things we're going to be doing. In addition to that, Eli Segal, who's here tonight, heads my national organization where we are mobilizing employers who will agree to hire people from welfare to work. Next week we're going to St. Louis to announce several hundred businesses that have joined us in that endeavor. We've still got a long way to go. We only have about 22 percent of the schoolchildren in the country committed, whose leaders have committed to take the national test, 4th grade reading test, the 8th grade math test by 1999. We're going to keep working on that.

But the point I want to make is, every single one of these things is something that I hope you are proud of that is part of a dynamic mainstream political movement in America that your contributions and your support have made possible. And this is a better country because of it. It's a better country because we're not out there trying to split everybody all up and divide people every day and keep people full of hot air instead of trying to get people together and keep working forward and moving forward. And that's what I'm trying to build for the future and what I want you to be a part of.

Let me just say this in closing. Every day I try to imagine what I hope the country will be like 30 years from now. And if that guides a President and you work back from there, you'll be amazed how much easier that makes the decision-making process. And when I think of the young people that are here tonight, all these fine young people that are working for the Democratic Party and did all the work to make this possible tonight -- what will determine what kind of America they live in?

Number one, will we succeed in being a truly multiracial, multiethnic democracy, where we not only respect, but celebrate our diversity and still say the most thing is we're one America? Number two, will we stop making excuses for ourselves and finally embrace the idea that all children can learn and we're going to see that they learn at internationally accepted levels of excellence? Number three, will we reach into the areas that have not been touched by our prosperity and figure out a way to hook them into the future? Number four, will we figure out a way to grow the economy while enhancing the environment? And, finally, will we continue to do what it takes to lead the world when it comes to peace and freedom and prosperity?

If we do those things, the best days of this country are still ahead. And when we are all much older we can look back on this moment and say, because we were here then and because we did what we did, we did prepare our country for the 21st century. We saved progressive government for its higher purposes and we revitalized America's progressive party to make it go on.

Thank you and God bless you. (Applause.)

END 8:57 P.M. EDT

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White House Press Release

REMARKS BY THE PRESIDENT ON CLIMATE CHANGE

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release August 4, 1997

REMARKS BY THE PRESIDENT
ON **CLIMATE CHANGE**

The Cabinet Room

10:25 A.M. EDT

THE PRESIDENT: Before we start, I think it's only fair to note that we are observing another anniversary of Helen's 50th birthday. (Laughter.) We wanted to give you a birthday cake with a tell-tale number of -- ("Happy Birthday" song is sung.) (Laughter and applause.)

MS. THOMAS: Now, may I have a press conference? (Laughter.)

THE PRESIDENT: I'm going to make a statement and you get the questions. (Laughter.)

MS. THOMAS: Thank you.

THE PRESIDENT: Take it to the press room and cut it up. (Laughter).

MS. THOMAS: Thank you. This is painful. (Laughter.)

THE PRESIDENT: You don't make it look that way. It's painful for me, too. (Laughter.)

I'm glad to be joined today by the CEOs of 10 Fortune 500 companies who have come here to meet with me on **climate change**. These companies represent electric utilities, the oil and gas industry, finance, high technology, and heavy industry. They are all intimately interested in this issue and will be affected by whatever happens on it in our country and throughout the world.

We want a responsible approach to **climate change**. We believe that the science makes it clear that the **climate** is **changing**. I want to proceed based on some fairly straightforward and simple principles. First of all, as we get ready for the Kyoto conference, I believe there should be realistic but binding limits to emissions of greenhouse

gases. I believe that we have to do it in a way that keeps our economy growing. And I believe that we ought to embrace flexible, market-based policies. I believe we should reemphasize and reenergize our efforts in research and development to find as many technological solutions to this as possible, and to keep our nation in the forefront of what is now a $400 billion market for environmental technologies.

And finally, I believe the agreement has to be a global one. I think all nations, developed and developing, should be a part of this. So this is part of an ongoing process that I and our administration have undertaken to try to make sure we're working together with all the people who would be affected by this issue and try to reach, hopefully, a common position.

We're going to have a good meeting today, and I'm looking forward to it. And, again, I want to thank all the executives for coming here and giving vent to their views.

Q What do you think of the opposition, who says there is no such thing as global warming and that they don't agree with the scientists -- some of the scientists?

THE PRESIDENT: Well, I think that the real question is -- I don't think that very many people disagree with the fact that there is **climate change** now, I think there's some disagreement about what the impact of it is and what the appropriate response is. There's still some debate there. But I think the scientific evidence for the fact of **climate change** is pretty compelling.

We had that panel of scientists, including the Nobel Prize winners here the other day, and I received a letter from -- I don't know -- over 2,500 of them, from scientists about it. So I think that there's pretty clear evidence that the **climate** is **changing** and could be **changing** substantially. There is still some difference about what the consequences of that will be and what we ought to do about it.

But I think if we follow these principles, we'll be staking out a responsible position, which will permit us to continue to grow economically and do our part in the world. After all, we have only four percent of the world's population, but we account for 20 percent of the greenhouse gas emissions, which you would expect since have slightly over 20 percent of the world's output.

Q Mr. President, how seriously are you considering using a line-item veto to kill some provisions of the budget you'll sign into law tomorrow?

THE PRESIDENT: Well, I asked Mr. Bowles to -- once we got a budget agreement and it passed -- to institute an intensive process to review both the spending and the tax bills to see if there were any items that would be appropriate for the line-item veto. And I have not yet received the results of that review.

I support the line-item veto; I did all along. And I think if we have it, it ought to be used -- I believe that it ought to be used somewhat sparingly. And my experience as Governor was that once I used it a few times I didn't have to -- I didn't need to use it very much anymore. And that's what I would hope would happen. We'll just see -- you probably know more about the likely targets for it than I do at this point. I was interested in the big-picture items in the budget. We got virtually 100 percent of what I sought and I'm elated with the budget. I think it's good for America. I think it will keep the economy growing, and I think it's a responsible thing to do. So whatever I do on that shouldn't be in any way detracting from the

terrific job that the Congress did on it.

Q Mr. President, one question on UPS -- the standards for presidential intervention are relatively high. Are you considering doing anything else to intervene to bring an end to the strike?

THE PRESIDENT: On UPS?

Q Yes, UPS.

THE PRESIDENT: Well, first we urged the federal mediator, and we got that. And we got -- obviously, it didn't work. I still think the parties ought to go back to the table. UPS is a very important company to our country and there are a lot of employees there, and I hope they go back to the table. But at this time I don't think any further action by me is appropriate.

THE PRESS: Thank you.

END 10:32 A.M. EDT

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White House Press Release

OPENING REMARKS BY THE PRESIDENT AND THE VICE PRESIDENT AT LAKE TAHOE FORUM

THE WHITE HOUSE

Office of the Press Secretary
(Incline Village, Nevada)

For Immediate Release July 26, 1997

OPENING REMARKS BY THE PRESIDENT
AND THE VICE PRESIDENT
AT LAKE TAHOE FORUM

Hyatt Hotel
Incline Village, Nevada

11:55 A.M. PDT

THE VICE PRESIDENT: Please be seated, ladies and gentlemen. Thank you very much. It's a great honor to be here. And as you can imagine, it's a wonderful pleasure for the President and me to be able to come to this beautiful place and to take part in this important process.

A couple people, just as we were coming in to this room, said, why don't we have this down by the lake site this morning? And you want to know the answer? The answer is, there was no way to do that without closing down a public beach on a Saturday and we thought it would be better to let people continue enjoying this lake while we all go about the work of trying to preserve it for the future. (Applause.)

On behalf of the President, I want to acknowledge some of the distinguished guests who are here. Then I'll make some brief remarks and present the President. After the President's remarks, I'll call on some presenters to start us off, and then we'll have a series of five short panel discussions on topics that are critical to the future of Lake Tahoe.

First, let me acknowledge Governor Miller. We appreciate your hospitality, Governor, and thank you very much. And representing Governor Wilson, Doug Wheeler is present. We appreciate his presence. Of course, we're delighted to have the senators from the two states who are here -- Senator Harry Reid, who suggested this forum; Senator Richard Bryan, both from Nevada. And Senator Dianne Feinstein and Senator Barbara Boxer, both from California. Congressman Jim Gibbons and Congressman John Ensign, both from Nevada; and Congressman Dick

Fazio, Congressman John Doolittle, Congressman George Miller, who was here yesterday -- all from California.

Members of the President's Cabinet who are here and who have been here, working hard on this issue include Secretary of Interior Bruce Babbitt, Secretary of Agriculture Dan Glickman, the Administrator of the Environmental Protection Agency, Carol Browner. Also, the Chair of the Council of Environmental Quality Katie McGinty. And all the members of the Tahoe Basin Steering Committee who are here -- we want to say a special word of thanks to you.

And there are two statewide elected officials, constitutional officers here -- the Attorney General of Nevada, Frankie Sue Del Papa, who was, incidentally, a former member of the TRPA, and Lt. Governor Gray Davis of California.

And, Mr. President, in addition to the Cabinet members, I want to note that the Secretary of Transportation, Rodney Slater, played a major role in the lead-up to today's conference, and his Deputy, Secretary Mort Downey, is here. And two other Deputy Secretaries are here -- both of them happen to be Californians -- Rich Ruminger, Deputy Secretary of Agriculture; and John Garamendi, Deputy Secretary of the Interior; and John Zhirsky, from the Department of the Army for Civil Works.

Mr. President, yesterday was my kind of day. I've had a chance to tell the President about this, but I got the better end of this deal. (Applause.) Right after I arrived in Lake Tahoe, a park ranger guided me on a hike near the Desolation Wilderness. The trail finished at a summit with a breathtaking view of the Fallen Leaf Lake where Tipper and I stayed last night, and a backdrop of the majestic Mount Tallac.

And then after the hike, I went to the Forest Service Visitors Center to take part in the conference on Lake Tahoe's future. And I want to emphasize that that discussion yesterday, which was very lengthy and very detailed, was actually a wrap-up session following a much lengthier and much more detailed series of intensive issue workshops, five of them led by members of the President's Cabinet and others, and all of them based on the premise that throughout the world, but especially here in Lake Tahoe, the environment and the economy go hand and hand.

Lake Tahoe demonstrates clearly that the economy is the environment, and the environment is the economy. That's the fundamental foundation of all of our conversations. And that's where we will start in the first of our five panels today.

But yesterday we talked in depth about Tahoe's stunning water clarity and how we can work together to keep Tahoe blue. We discussed the importance of forest health and what we must do to prevent wildfires and reduce erosion into the lake. And we spoke about transportation and its critical role, and recreation and tourism -- how we can balance the demands of development and traffic with the constant need to protect the air and the water.

The discussions yesterday yielded a lot of information and insights. The discussion on water clarity emphasized the fact that this lake is unique throughout the world, and the bright, cobalt blue quality just has to be preserved. Everybody agrees on that.

And there was a discussion of the critical role of nitrogen and phosphorus in feeding the algae growth, which is, of course, the main reason why the clarity is slowly disappearing. And the scientists

make the point that the phosphorus is critical as a limiting factor, and that's why soil erosion must be controlled. And nitrogen, the other critical element, comes predominantly, it seems, from the emissions from cars and trucks and buses, both directly through the air and indirectly after being deposited on the land and then washed in with the soil erosion.

On the panel dealing with forest health, we had an extensive discussion about the history of the forest and what can be done in practical terms to restore forest health. We had an extremely interesting conversation about the planning that's under way to deal with the transportation issue. And I was extremely impressed with what the business community talked about for the future of recreation and tourism here to emphasize the quality of the recreation experience here at Lake Tahoe, the creation of partnerships and how in the future the economy and the environment will go hand in hand as well.

We heard, Mr. President, from a lot of people -- Democrats and Republicans, Nevadans and Californians, environmentalists and business owners, public officials, private citizens, and tribal leaders. There were a lot of different viewpoints, but there was one thing that everybody agreed on: this place is amazing. It's a national treasure that must be protected and preserved.

Lake Tahoe sits on the edge of two states, but it's smack-dab in the middle of paradise. And all who benefit from the Lake Tahoe Basin bear responsibility for keeping it that way. In fact, it's our moral obligation to be faithful stewards of our heritage and protect this area for future generations. So that's why we're here today -- to make sure that this special place is protected, as the President's doing with Yellowstone and the Everglades and the Grand Canyon. This is one of crown jewels, unique among them all.

We'll succeed if we remain committed and especially if we recognize the overriding importance of the other great asset here in Lake Tahoe, in addition to the natural beauty, the unique partnership and consensus that has emerged here.

Now, it is my pleasure to present the individual who has made possible and led the growing national consensus on protecting the environment and growing the economy at the same time; someone whose commitment to our national heritage is unparalleled, who understands that environmental protection and economic growth are one in the same, not only here, but all over our nation; someone who knows that we need to come together and find common ground if we're to preserve America's sacred ground.

Ladies and gentlemen, the President of United States, Bill Clinton. (Applause.)

THE PRESIDENT: Thank you very much. First of all, ladies and gentlemen, I want to thank all of you who have had anything to do with these efforts in working with us over the last several months. The members of the Cabinet and the deputy secretaries have been acknowledged. The members of the Congress have been acknowledged. The other distinguished state officials from California and Nevada have been acknowledged. But there are a lot of people who work for these federal agencies at other levels who have just been out here killing themselves for the last few months to try to make this a good, successful two days. And to all the citizens who worked with them, and to all the federal employees who are here, I want to thank all of you for what you did to help these last two days be successful.

(Applause.)

In addition, there are four people who worked with us to help make these workshops and in this forum a success -- Katie McGinty, Jim Lyons, Tom Tuckman, Phil Bayles -- I can't count; six -- Jeff Bailey and Dave Van Note. And I want to thank them.

I want to say a special word of appreciation to the members of Congress from these two states who have proved that this is a bipartisan, perhaps even a nonpartisan endeavor, that we all have a stake, not just as Westerners, but as Americans, in not only preserving Lake Tahoe, but, if possible, reversing some of the difficulties of the last two years.

But I would be remiss if I did not say a special word of thanks to the person who thought this idea up and got my commitment months ago -- months ago -- to show up, if you'll forgive me, come hell or high water. And here we are in the middle of the budget negotiations we're trying to finish today back in Washington, but I am here because I promised Harry Reid months ago I would be here. (Applause.) Thank you.

I also want to thank the people who took us out on the boat today and who do all this wonderful research here, and everybody who took the Vice President around yesterday. When I got up at 5:00 a.m. in the morning my time, 2:00 a.m. your time, to come here today -- and I ought to be tired but I'm exhilarated, partly because of the beauty of the surroundings. And I always -- on the few times in my life I've been privileged to be at this great site, I've always been exhilarated by it.

The other reason I am pumped up is that when I saw the Vice President this morning he was virtually glowing, and I knew he had been here in his element. (Laughter). And the minute we got on the boat, I got my Marine Biology 101 lecture -- (laughter) -- about, phosphorous, nitrogen, what does what, what does the other. I looked at the plankton. I mean, I could pass anybody's test now. (Laughter.)

And you have made Al Gore a happy man. (Laughter and applause.) He thinks that he is a -- this may be one of the deepest lakes in the world, but he's just about 6 inches below heaven right now. (Laughter.)

Let me say that the first stewards of this land, of course, were the Washoe People. They tell us that Lake Tahoe was the product of the Good Spirit's benevolent hand. They've also treated it that way. Perhaps now more and more Americans and more and more citizens of the world are tending to look at our environment that way. I certainly hope so.

When Washoe families came to the lake each spring, they blessed the water and shared its bounty. And when they left their campsites each winter, they hardly left a track behind. Today, it appears to me that all those who are involved in this great endeavor revere this region and have worked hard to keep it safe from harm.

Your cooperation to protect Lake Tahoe is, frankly, as the Vice President said, an outstanding model for the work we have to do to protect all kinds of national treasures and deal with all kinds of environmental challenges in the new century. And if I could be quite candid here, one of the reasons that I wanted to come here was not only to highlight to the nation the importance of Lake Tahoe, but also to show the nation that there is a place where environmentalists and business people and ordinary citizens, where Republicans and

Democrats, where tribal leaders and governmental people, where everybody is working together in common cause recognizing that there cannot be an artificial dividing line between preserving our natural heritage and growing our economy.

That is the fundamental lesson as Americans we have to absorb if we hope to be able to have our grandchildren and our grandchildren's grandchildren 100 years from now celebrating the kind of country we're celebrating on the edge of this new century. So you are doing something important for the country. (Applause.)

As all of you know, the Vice President and I got to go out on the UC Davis research vessel this morning to see how the scientists monitor the lake's clarity and quality, and we also learned just how not only pristine Lake Tahoe still is, but how much it has degraded over the last 40 years or so. We could see from measurable evidence and the charts that are tacked up inside the vessel what we have to do to reverse the decline.

We also have gotten the message in the workshops the Vice President has described. Over the last two months, I think it's astonishing that more than 1,000 people have participated in these workshops. I believe this is the seventh such meeting -- I think that's accurate. And for all of those 1,000 people plus, I want to thank you because the announcements that will be made today and the work that will be done in the months and years ahead is in no small measure the direct result of your willingness to give your time to participate in this process.

We learned that all of us have to find even better ways to work together. And I think you know that just a few moments ago, I signed an executive order to ensure greater cooperation among all the governments, agencies and businesses working here. It's not a top-down federal mandate, but a pledge to collaborate and share resources more than ever. We will work with you, we will support you, but you -- the states, the tribes, the local citizens -- you will lead the way. The executive order simply embodies the ratification of our obligation to help and to support.

The workshops also convinced us that the federal government must take new actions now to help protect Lake Tahoe's environment and, with it, the area's economy and quality of life. Today, with real projects based on listening to local people, we commit to take more than 25 specific actions and more than double the federal government's investment in the basin in each of the next two years to well over $50 million. (Applause.)

Among the things that we intend to do are, first, to expand our efforts to restore the forest and reduce the risk of catastrophic fires. The Forest Service will use prescribed fire and other means to clean out the dry brush and wood on more than 3,500 federally owned lots and 3,000 acres of open forest each year.

Second, we'll take steps to protect and restore the lake's fabled water quality. We will work with UC Davis to develop computer tools that can predict how various watershed improvements will contribute to water quality. Every federal agency here will work to increase efforts to restore natural habitat, reduce erosion, and keep the water clean.

One crucial measure we'll work hard to deliver is a new pipeline to

carry waste water out of the Tahoe Basin. (Applause.) And I thank all the members who have supported that, but I particularly want to recognize the efforts of Senator Boxer and Congressmen Fazio and Doolittle.

Third, we will help to cut down on traffic congestion and auto pollution by joining with you to improve mass transit throughout the region. I'm pleased to report that the U.S. Postal Service will help by switching to cleaner natural gas trucks and expanding home mail delivery to people on the west side of the lake. The Sierra Nevada's legendary 19th century mail carrier, Snowshoe Thompson, would probably be proud of that. (Laughter.)

And let me say, if I might do a little home cooking here, there are natural gas buses manufactured in Chattanooga, Tennessee -- (laughter) -- now being sold all over the world, now in use in the rainforest in Costa Rica, that would be very good for reducing air pollution around the lake. (Laughter.) And I know someone who would be helpful in getting you in touch with the appropriate people. (Applause.)

Finally, the Vice President met with Washoe elders yesterday and announced that we will assist the tribe in their efforts to protect sacred areas and preserve their culture. (Applause.) The Forest Service intends to provide approximately 350 acres to the Washoe for use in growing traditional plants, and another section of land where the Washoe will establish a cultural center. As part of this action, the Forest Service intends to provide tribal members access to the water's edge for the first time in a century. (Applause.)

I learned today from their leader that the Washoe first wrote to the President of the United States asking help on these matters in 1877. It just took 120 years, but I can tell you, from now on, the mail will run more rapidly between Lake Tahoe and Washington, D.C. (Applause.)

We hope to do more beyond today's announcement as we work with leaders from California and Nevada and Lake Tahoe's many friends in Congress. I also want to recognize the efforts of Governor Miller, Governor Wilson earlier this week in recommending their states' resources to the lake -- recommitting their states' resources to the lake.

I'm convinced we can succeed in this endeavor. And, as I said before, I'm convinced, as we do, the model of cooperation you have established will be a model that we'll want to follow throughout the country.

We have a lot of work to do today to preserve the pristine Head Water's Forest in northern California, something of great concern I know to Senator Feinstein and many others; to restore the Florida Everglades; to protect the endangered Sterling Forest in the Northeast; to save Yellowstone from gold mining. We have an awful lot of work to do I think in perhaps our biggest challenge of all in confronting the challenge of **global climate change** as we move into a new century.

President Theodore Roosevelt said, standing not far from here, "We are not building this country of ours for a day. It is to last through the ages." Well, as we approach the 21st century and deal with these huge mega-challenges like **climate change**, you have given us a way to meet the challenge of the ages -- by working together and understanding what our forebears knew centuries ago. We cannot

divide our quest for prosperity from our obligation to hand nature, God's great gift to us, on down to the generations.

We can do that. You have shown us the way. And we are determined to do our part. Thank you very much. (Applause.)

END 12:16 P.M. PDT

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White House Press Release

OPENING REMARKS BY THE PRESIDENT AND THE VICE PRESIDENT AT DISCUSSION ON CLIMATE CHANGE

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release July 24, 1997

OPENING REMARKS BY THE PRESIDENT
AND THE VICE PRESIDENT
AT DISCUSSION ON **CLIMATE CHANGE**

The East Room

1:57 P.M. EDT

THE VICE PRESIDENT: Please be seated ladies and gentlemen. On behalf of the President and the First Lady, it is my pleasure and honor to welcome all of you to the White House. I'm going to present the President in just a moment.

Before doing so, on his behalf, I would like to acknowledge the distinguished guests who are present. I will formally introduce our panel of Nobel laureates and university scientists in just a moment. I want to acknowledge members of the President's Cabinet who are here -- Administrator of the EPA Carol Browner; Secretary of Commerce Bill Daley; Secretary of Labor Alexis Herman; Secretary of Energy Federico Pena; Under Secretary of the Treasury Larry Summers; Director of the Federal Emergency Management Agency James Lee Witt; Chair of the Council on Environmental Quality Katie McGinty; the President's Science Advisor, Dr. Jack Gibbons, and other distinguished guests who are present. We meet today to discuss the future of our planet and the realities of global **climate** disruption.

I want to acknowledge one other person who is in the room somewhere and I haven't had a chance to see him yet, but Charles David Keeling is here. And, Dr. Keeling, thank you very much for joining us. And he was responsible, along with one other, in measuring carbon dioxide in the atmosphere for the very first time back in the last 1950s. And my own introduction to this issue came about as a direct result of the

measurements which showed the annual cycle of carbon dioxide and the steadily increasing peaks of concentrations of carbon dioxide, and now, of course, we know other greenhouse gases, as well, that resulted from those measurements.

Later, when I came to the Congress quite a few years after that, in holding hearings I saw that those concentrations had increased dramatically and, of course, all around the world scientists were studying it intensively. And now we will soon hear from these scientists about what the world's scientific conclusion is about what this means for increased droughts and floods, dramatic **changes** in the distribution of forests and croplands. And all of this gives rise to great concern that we are committing future generations to a planet that is altered in profound ways that can cause great harm to future generations.

This administration has always worked on a simple principle when addressing problems of a scientific and technical nature, and that principle is: Science must inform policy decisions. Scientists are by nature a cautious group, but the world's scientific community is telling us in many ways that they believe that we as a civilization are disrupting the balance of the world's **climate**. In the words of the 2,000 scientists who participated in the intergovernmental panel on **climate change** -- and I quote -- "there is a discernable human influence on global **climate**."

More than 2,600 scientists have signed a letter about global climatic disruption, which we'll be hearing more about in just a few minutes. Today, we hear about the concerns of scientists. They speak as eminent experts and as U.S. citizens who care about the future of this planet. Each has a resume far too long to recount, but let me briefly introduce those who are with us today.

Dr. Sherry Rowland won the 1995 Nobel Prize for Chemistry for his pioneering research in atmospheric chemistry, explaining the destruction of the stratospheric ozone layer. He is also a professor at the University of California at Irvine and an official with the National Academy of Sciences.

Dr. Mario Molina shares the 1995 Nobel Prize with Sherry Rowland. He is the Lee and Geraldine Martin Professor of Environmental Science at MIT.

Dr. Jane Lubchenco is an eminent ecologist, past President of the American Association for the Advancement of Science, very active with the AAAS, and also past President of the Ecological Society of America. She is currently the Wayne and Gladys Valley Professor of Marine Biology and a distinguished Professor of Zoology at Oregon State University.

Dr. Stephen Schneider is a **climate** scientist and professor at Stanford University, recipient of a MacArthur Fellowship and winner of the American Association for the Advancement of Science's Westinghouse Award for Public Understanding of Science and Technology.

Dr. Bob Shope has devoted his professional life to the study of viruses carried by biting insects. He is currently a professor in the Departments of Pathology and Microbiology and Immunology at the University of Texas.

Dr. Henry Kendall won the Nobel Prize for physics in 1990. He is Chairman of the Board of the Union of Concerned Scientists and the J.A. Stratton Professor of Physics at the Massachusetts Institute of Technology.

And John Holdren is an expert on energy and environmental science and delivered the Nobel Peace Prize acceptance lecture on behalf of the Pugwash Conferences. He is currently the Director of the Program on Science, Technology and Public Policy at the John F. Kennedy School of Government and Professor of Environmental Science and Public Policy in the Department of Earth and Planetary Sciences at Harvard.

And now I would like to introduce the person who is leading our country and the world toward a recognition of what must be done to deal with this issue. It is my honor, ladies and gentlemen, to present the President of the United States, President Bill Clinton. (Applause.)

THE PRESIDENT: Thank you very much. Ladies and gentlemen, first let me thank you for being here -- members of the administration and concerned members of the public, the scientists and other experts that are here.

I would also like to say a special word of thanks to the Vice President. In one of our earliest meetings together -- we meet once a week and have lunch -- he went over the whole history of greenhouse gas emissions and climatic **change**. And I became convinced first that he was convinced that something was wrong. (Laughter.) Then I became convinced something was wrong. And it's been a great help to me, and I believe, to the people of the United States to have him in the position that he's in not only with the convictions that he has, but with the knowledge that he has. And I'm very grateful to him for what he has done to help me come to grips with this issue.

To me, we have to see this whole issue of **climate change** in terms of our deepest obligations to future generations. I have spent most of my time in the last four and a half years trying to prepare the American people for a new century and a new millennium. It is also very important that we protect the Earth for that new millennium, to make sure that people will be able to take advantage of all the things we are trying to do, the opportunities we are trying to create, the problems we are trying to solve.

It is obvious that we cannot fulfill our responsibilities to future generations unless we deal responsibly with the challenge of **climate change**. Whenever the security of our country has been threatened, we have led the world to a better resolution. That is what is at stake here. And the scientists have come here to explain why.

As the Vice President said, the overwhelming balance of evidence and scientific opinion is that it is no longer a theory, but now a fact that global warming is for real. The world scientists believe that if we don't cut our emissions of greenhouse gases, we will disrupt the global **climate**. In fact, there is ample evidence that human activities are already disrupting the global **climate**,

and that if we stay on our current course, the average global temperatures may rise 2 to 6 degrees Fahrenheit during the next century.

To put that in some context, the difference in average temperature between the last Ice Age, which was 10,000 to 12,000 years ago -- 10,000 to 12,000 years ago -- and today, is about 9 degrees Fahrenheit. So we could have two-thirds of that **change** in 100 years unless we do something.

If we fail to act, scientists expect that our seas will rise one to three feet, and thousands of square miles here in the United States, in Florida, Louisiana and other coastal areas will be flooded. Infectious diseases will spread to new regions. Severe heat waves will claim lives. Agriculture will suffer. Severe droughts and floods will be more common. These are the things that are reasonably predictable.

In the face of this, the United States must confront a challenge that in some ways is the most difficult of all democracy's challenges to face. That is, we have evidence, we see the train coming, but most ordinary Americans in their day-to-day lives can't hear the whistle blowing. They have no -- unless they have lived in a place where they have experienced severe and unusual and completely atypical weather disruptions in the last five years or so, the degree of the challenge is inconsistent with the actual perceived experience of most ordinary Americans. And this is true, indeed, throughout the world. And that presents us our challenge.

A democracy is premised on the proposition that if the American people, or any people in any democracy, know what the facts are and believe them, way more than half the time they will do the right thing. And so what we are doing today is beginning a process in which we ask the American people to listen to the evidence, to measure it against their own experience, but not to discount the weight of scientific authority if their own experience does not yet confirm what the overwhelming percentage of scientists believe to be fact today. This is a great exercise and a great test for our democracy.

I do want to say that I am convinced that when the nations of world meet in Kyoto, Japan, in December on this issue, the United States has got to be committed to realistic and binding limits on our emissions of greenhouse gases. Between now and then, we have to work with the American people to get them to share that commitment. We have to emphasize flexible market-based approaches. We have to embrace research and development efforts in technology that will help us to improve the economy -- improve the environment while permitting our economy to grow. We have to ask all nations, both industrial and developing, to participate in this process.

But if we do this together, we can defuse this threat. And we can make the 21st century what it ought to be, not only for our children, but for all the children of the world. I believe the science demands that we face this challenge now. I'm positive that we owe it to our children. And I hope that we can find the wisdom and the skill to do democracy's work in the next few months, to build the consensus necessary to actually make action, as opposed to rhetoric, possible.

And for all of you for your commitment to that, I thank you.

And now I'd like to ask Dr. Rowland to be the first of our distinguished scientists to lead off. (Applause.)

* * * * *

THE PRESIDENT: I wish every American could hear what we've heard today. But thanks to our friends in the media, a good number of them will hear at least a portion of what we have heard today. And this is the beginning of a consistent long-term effort that we all have to make to involve the people of this country in this decision. And I thank you all for the points you've made because, in different ways each of them will resonate with citizens of this country in a way that I believe will give us the support we need to take the action that has to be taken.

In the weeks and months ahead, the Vice President, the Cabinet, other members of the administration and I will be out in the country discussing this. We'll be working with the American people; we'll be talking about solutions as well as problems. The truth is, it's like anything else -- the quicker you get -- another answer Dr. Holdren might have given is that the quicker you get after this the less extreme the remedy you have to embrace to have a measurable effect to avoid an undesirable outcome. And the longer you wait, the more disruptive the ultimate resolution will be. So that's another thing that I'd like to emphasize.

Before we close I hope you will permit me to make a brief statement. Just before I came in here to this meeting I learned that today, and not very long ago, retired Supreme Court Justice William Brennan passed away. He was a remarkable human being, one of the finest and most influential jurists in our nation's history. He served on the Supreme Court for 34 years. He was perhaps during that period the staunchest, most effective defender of individual freedom against government intrusion.

His devotion to the Bill of Rights inspired millions of Americans and countless young law students, including myself. And one of the great honors I have had as President was to be able to award him the Presidential Medal of Freedom in my first year in office.

He once said, the role of the Constitution is the protection of the dignity of every human being and the recognition that every individual has fundamental rights which government cannot deny. He spent a lifetime upholding those rights, and he authored some of the most enduring constitutional decisions of this century, including Baker v. Carr on one person, one vote; The New York Times v. Sullivan, which brought the free speech doctrine into the latter half of the 20th century. The force of his ideas, the strength of his leadership and his character have safeguarded freedom and widened the circle of quality for every single one of us.

We will miss him greatly. And I know you join me in sending our

best wishes and our prayers to his family and friends, and our gratitude for his life.

Thank you very much. (Applause.)

END 3:05 P.M. EDT

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White House Press Release

REMARKS BY THE PRESIDENT IN ADDRESS TO THE UNITED NATIONS SPECIAL SESSION ON ENVIRONMENT AND DEVELOPMENT

THE WHITE HOUSE

Office of the Press Secretary
(New York, New York)

For Immediate Release June 26, 1997

REMARKS BY THE PRESIDENT
IN ADDRESS TO THE UNITED NATIONS
SPECIAL SESSION ON ENVIRONMENT AND DEVELOPMENT

The United Nations
New York, New York

6:30 P.M. EDT

THE PRESIDENT: Thank you very much. Mr. President, Mr. Secretary General, ladies and gentlemen: Five years ago in Rio, the nations of the world joined together around a simple but revolutionary proposition, that today's progress must not come at tomorrow's expense.

In our era, the environment has moved to the top of the international agenda because how well a nation honors it will have an impact, for good or ill, not only on the people of that nation, but all across the globe. Preserving the resources we share is crucial not only for the quality of our individual environments and health, but also to maintain stability and peace within nations and among them. As the father of conservation in our nation, John Muir, said, "When we try to pick anything out by itself, we find it hitched to everything else in the universe."

In the years since Rio, there has been real progress in some areas. Nations have banned the dumping of radioactive wastes in the ocean and reduced marine pollution from sources on land. We're working to protect the precious coral reefs, to conserve threatened fish, to stop the advance of deserts. At the Cairo Conference on Population and Development, we reaffirmed the crucial importance of cooperative family planning efforts to long-term sustainable development.

Here in America, we have worked to clean up a record number of our toxic dumps and we intend to clean 500 more over the next four years. We passed new laws to better protect our water, created new

national parks and monuments, and worked to harmonize our efforts for environmental protection, economic growth and social improvement, aided by a distinguished Council on Sustainable Development.

Yesterday, I announced the most far-reaching efforts to improve air quality in our nation in 20 years, cutting smog levels dramatically, and, for the first time ever, setting standards to lower the levels of the fine particles in the atmosphere that form soot. In America, the incidence of childhood asthma has been increasing rapidly. It is now the single biggest reason our children are hospitalized. These measures will help to **change** that, to improve health of people of all ages, and to prevent as many as 15,000 premature deaths a year.

Still, we here have much more to do, especially in reducing America's contribution to global **climate change**.

The science is clear and compelling: We humans are **changing** the global **climate**. Concentrations of greenhouse gases in the atmosphere are at their highest levels in more than 200,000 years, and climbing sharply. If the trend is not **changed**, scientists expect the seas to rise two feet or more over the next century. In America, that means 9,000 square miles of Florida, Louisiana, and other coastal areas will be flooded. In Asia, 17 percent of Bangladesh, land on which 6 million people now live, will be lost. Island chains such as the Maldives will disappear from the map, unless we reverse the predictions.

Climate changes will disrupt agriculture, cause severe droughts and floods and the spread of infectious diseases, which will be a big enough problem for us under the best of circumstances in the 21st century. There could be 50 million or more cases of malaria a year. We can expect more deaths from heat stress. Just two years ago, here in the United States in the city of Chicago, we saw the tragedy of more than 400 of our citizens dying during a severe heat wave.

No nation can escape this danger. None can evade its responsibility to confront it. And we must all do our part -- industrial nations that emit the largest quantities of greenhouse gases today, and developing nations whose green house gas emissions are growing rapidly. I applaud the European Union for its strong focus on this issue, and the World Bank for setting environmental standards for projects it will finance in the developing world.

Here in the United States, we must do better. With 4 percent of the world's population, we already produce more than 20 percent of its greenhouse gases. Frankly, our record since Rio is not sufficient. We have been blessed with high rates of growth and millions of new jobs over the last few years, but that has led to an increase in greenhouse gas emissions in spite of the adoption of new conservation practices. So we must do better, and we will.

The air quality action I took yesterday is a positive first step, but more must follow. In order to reduce greenhouse gases and grow the economy, we must invest more in the technologies of the future. I am directing my Cabinet to work to development them. Government, universities, business and labor must work together. All these efforts must be sustained over years, indeed, over decades. As Vice President Gore said Monday, "Sustainable development requires sustained commitment." With that commitment, we can succeed.

We must create new technologies and development new strategies like emissions trading that will both curtail pollution and support continued economic growth. We owe that in the developed world to ourselves and, equally, to those in the developing nations.

Many of the technologies that will help us to meet the new air quality standards can also help us to address **climate change**. This is a challenge we must undertake immediately and one in which I personally plan to play a critical role.

In the United States, in order to do our part, we have to first convince the American people and the Congress that the **climate change** problem is real and imminent. I will convene a White House Conference on **Climate Change** later this year to lay the scientific facts before our people, to understand that we must act, and to lay the economic facts there so that they understand the benefits and the costs. With the best ideas and strategies and new technologies and increased productivity and energy efficiency, we can turn the challenge to our advantage.

We will work with our people and we will bring to the Kyoto conference a strong American commitment to realistic and binding limits that will significantly reduce our emissions of greenhouse gases.

I want to mention three other initiatives briefly that we are taking to deal with **climate change** and to advance sustainable development here and beyond our borders.

First, to help developing nations reduce greenhouse gas emissions, the United States will provide $1 billion in assistance over the next five years to support energy efficiency, develop alternative energy sources and improve resource management to promote growth that does not have an adverse effect on the **climate**.

Second, we will do more to encourage private investment to meet environmental standards. The Overseas Private Investment Corporation will now require that its projects adhere to new and strengthened environmental guidelines, just as our Export-Import Bank already does and as I hope our allies and friends soon will. Common guidelines for responsible investment clearly would lead to more sustainable growth in developing nations.

Third, we must increase our use of new technologies even as we move to develop more new technologies. Already, we are working with our auto industry to produce cars by early in the next century that are three times as fuel-efficient as today's vehicles. Now we will work with businesses and communities to use the sun's energy to reduce our reliance on fossil fuels by installing solar panels on 1 million more roofs around our nation by 2010. Capturing the sun's warmth can help us to turn down the Earth's temperature.

Distinguished leaders, in all of our cultures we have been taught from time immemorial that, as Scripture says, "One generation passes away and another comes, but the Earth abides forever." We must strengthen our stewardship of the environment to make that true and to ensure that when this generation passes, the young man who just spoke before me and all of those of his generation will inherit a rich and abundant Earth.

Thank you very much. Applause.)

END 6:42 P.M. EDT

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White House Press Release

Remarks by Vice President Al Gore at the United Nations General Assembly Special Session on the Environment and Development New York, NY

THE WHITE HOUSE

Office of the Vice President

FOR IMMEDIATE RELEASE Monday, June 23, 1997

Remarks by Vice President Al Gore
at the United Nations General Assembly Special Session
on the Environment and Development
New York, NY
June 23, 1997

Thank you. Thank you very much. Thank you, President Cardoso, thank you for the magnificent way in which your country hosted the Earth Summit in 1992 and thank you for your inspiring remarks. Thank you, President Razali, for your personal commitment to this process dating back to the very beginning. You presided over the first meeting of the Commission on Sustainable Development which I had the pleasure to attend, and I thank you very much for the courtesy of being able to address this gathering this morning. And thank you, Mr. Secretary-General. We are extremely grateful for your hard work and dedication to the future of the United Nations.

Esteemed colleagues, ministers, ladies and gentlemen, on behalf of President Clinton and the American people, welcome to New York and to this important session marking the fifth anniversary of the UN Conference on Environment and Development.

Five years ago, world leaders and concerned citizens from around the world gathered in Rio to chart a course called sustainable development. This week we measure our progress asking how successful we have been and how to do better.

In the past five years we have made much progress. We have negotiated international agreements to protect critical fish stocks, ban ocean dumping of nuclear waste and stem land based sources of marine pollution. We have forged a new global consensus on population and gender equality. We know that women's empowerment -- education, health care and economic opportunity -- is essential to building a healthy future. We have fostered democracy and increased stability around the world. We have witnessed a dramatic and inspiring rise in environmental

awareness around the globe. Non-governmental organizations are active and involved, invigorating their democracies while protecting the environment. Private capital flows are skyrocketing, bringing with them the promise of economic growth and better tomorrows. And increasingly, the private sector is becoming an active and welcome partner in sustainable development. We have new and better tools to promote sustainable development. From the Internet to satellite energy, technology is opening new vistas in our efforts to improve the lives of people around the world.

And yet, enormous challenges remain. Many of the goals of Rio remain to be achieved. Take, for example, the two critical issues of **climate change** and forests. Today greenhouse gas emissions continue to rise at record rates. Unless we **change** course, during the lives of our grandchildren, concentration of these gasses in the atmosphere will reach levels not seen on this planet for more than 50 million years. Scientists warn, as a result of sea-level rise, of more severe droughts and floods, loss of forest cover and the spread of infectious diseases.

Kyoto presents a critical opportunity for the world to forge an agreement with binding emissions limits, flexibility in meeting those targets and the participation of all nations. We must act. Forest loss is occurring at dramatic levels; only slightly below those witnessed during the 1980's. The consequences for human well-being, social stability, biodiversity, soil stability, water quality and **climate change** are extremely serious. We must reverse these trends. In the words of a president of my country early in this century, Theodore Roosevelt, "We must safeguard our forests as we keep a great and beautiful cathedral."

Today more than one billion of the Earth□,s citizens live in abject poverty and more than two billion lack access to sanitation. In too many places, poverty breeds environmental degradation, and environmental degradation, in turn, breeds poverty. We have learned that there are no easy answers or quick fixes. The road to sustainable development requires a sustained commitment and conviction. It needs imagination and ingenuity. It demands engagement and enterprise from us all.

Our task for the coming days must be to chart the course for the years to come. We must unite in our resolve to meet the challenge of **climate change**. We must work to protect the world's forests by creating a follow-up mechanism to the Intergovernmental Panel on Forests that produces on-the-ground results, not new negotiations. We must capitalize on the upcoming Year of the Ocean to protect the marine environment and we must establish a coordinated approach to addressing the problems plaguing freshwater resources around the globe.

In short, we must roll up our sleeves and go to work. These are no small tasks but we must make sustainable development a guiding principle of the 21st century. Thank you.

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White House Press Release

REMARKS BY THE PRESIDENT ON THE ENVIRONMENT

THE WHITE HOUSE

Office of the Press Secretary
(San Jose, Costa Rica)

For Immediate Release May 9, 1997

REMARKS BY THE PRESIDENT
ON THE ENVIRONMENT

Braulio Carrillo National Park
Costa Rica

11:07 A.M. (L)

PRESIDENT CLINTON: Thank you very much. Thank you, Mr. President, for delivering on the rainforest. (Laughter.) You know, in my part of the United States, the children are raised with an old proverb that has come true today. The proverb is, you must be careful what you ask for in life, because you might get it.

Well, Dr. Macaya, to Joaquin Viquez -- didn't that young man do a great job. You should be very proud of him; he was terrific. (Applause.) Thank you.

To all of those who have spoken before and who have come here, and let me thank the members of my Cabinet and administration who are here, and also the members of the National Park Service. Hillary and I have tried to make sure we're at at least one of our national parks every year, and I think it's fair to say that they are the most popular public servants in the United States, so it's nice to see them -- in the case of Mr. Findley -- someplace besides Yellowstone. I'm glad you're all here. Thank you all very much for what you do. (Applause.)

Most of what needs to be said has been said. I come here to emphasize the importance of the forest that surrounds us, the chain of life not only in Costa Rica and Central America but to all the world. We know that the rainforests of the world provide us with a good deal of our oxygen and enormous resources coming out of the plant and animal life they contain. We know that the forest helps us keep our **climate** stable to preserve our soils, to protect our river. It nurtures plants that provide food and clothing and furniture and medicine. And from the stunning quetzal bird to the stealthy jaguar, we know that the

marvelous animals must be preserved for all to see.

There is a new understanding today in the world between the bonds that connect human beings and their natural environment. We know we have to preserve them, and we know that in the end economic development itself cannot occur unless the environment is preserved. That is the lesson of the Rio Earth Summit five years ago, the driving force behind the CONCAUSA Alliance between the United States and Central America that President Figueres discussed, and also the driving notion behind the way we want to integrate this hemisphere -- not just in trade and economics but also in education and health -- and finally in common cause to sustaining the treasures we see around us here today.

Costa Rica is showing the way -- you heard President Figueres say that now more than one-quarter of its land is being protected. The unique natural resources are generating jobs and income. Just before I came up here, Secretary Babbitt gave me the figures on Costa Rica's tourism income because of the commitment the people of this country have made to preserving and protecting the natural environment. We now know we have to do this not only in our hemisphere but around the world.

You know, the examples that the President cited I thought were quite important. We are pursuing ways to reduce greenhouse gases. There is some doubt about exactly what increased greenhouse gas emissions are doing to the **climate**, but no one doubts that they're **changing** the **climate**, and no one doubts that the potential consequences can be very profound and severe.

Almost three years ago, the Vice President of the United States, Al Gore, and President Figueres signed an agreement that will help United States companies greenhouse gas emissions by investing in environmental projects in Costa Rica.

Today, there are more than a dozen of these joint projects all across Central America -- promoting solar energy in Honduras, geothermal energy in Nicaragua, forest management in Belize. Now the carbon certificates created by the government of Costa Rica and the United States companies will provide a new way to finance these investments. Proceeds will go to clean power plants, protecting or planting forests, launching other programs that pay environmental dividends. This is a long way from the philosophy which prevailed in this country, in our country, and indeed throughout the developed and the developing world just a few years ago.

From electric buses, which the President pointed out, to wind-driven power plants, Costa Rica's ambitious plans prove that we can have clean air and renewable energy in ways that create jobs here and in our country. That bus, I believe, was made in the Vice President's home state of Tennessee. And he asked me to say he appreciates it. (Laughter.)

Third, let me say a special word of appreciation for something the President mentioned, and that is the work that is being done with the rain forest and with the space program by Dr. Franklin Cheng Diaz, to deal with Chagas disease, which kills 20,000 people in Latin America every year. The idea of combining what we know about space and what we find in the rain forest to make people have better and healthier lives is another stunning reminder that we destroy these resources at our peril.

Last, let me say, we're finding new ways to preserve our

natural heritage. Once, our National Park Service worked with Costa Rica to help to set up your incredible network of parks. Now the Costa Rican Park Service is returning the favor by helping us to use your computer software in ways that will enable our park rangers at Yellowstone -- which is the shining diamond of our park system -- to catalog and preserve its natural wonders.

Soon after we complete this moment, Secretary Babbitt and Minister Castro will sign an agreement strengthening our cooperation for the next century. We're also working together to help other countries take better care of their wildlife, train professionals to manage fisheries in Argentina, run national parks in Paraguay, teach conservation in Guatemala. Now we have to work across national lines to protect the habitat of the songbirds, the sea turtles, the other creatures that migrate between our shores, and to stop the illegal and deadly trade in endangered species.

Yesterday in San Jose, President Figueres, our fellow leaders, and I pledged to make sustainable development a cornerstone of our relations. It will be part of the 1998 Summit of the Americas in Santiago and eventually the foundation of a larger global effort.

We must ban leaded gasoline everywhere, not just in Costa Rica, and control pesticides in our hemisphere, and reach a global agreement to phase out the most dangerous toxic chemicals. We have to protect our own forests and work with the United Nations to develop a strategy for the sustainable management of others around the world. And we must meet the challenge of **climate change** -- regionally and beyond our hemisphere.

Together, we can make this a very historic year, Mr. President. As you know, the United Nations is having a special session next month on the environment. I am pleased to be leading America's delegation to the U.N. I hope many other world leaders will be there. Together, we need to reaffirm the spirit of Rio and lay out the concrete steps we're going to take to move ahead to make the preservation of the global environment and sustainable development the policy of every nation on earth. (Applause.)

We are seeking to build a world where people live in the 21st century in harmony, not at war with each other; when they recognize that they have more in common than what divides them; when they no longer seek to elevate themselves by demeaning other people. That kind of world will only occur if we are also generous, wise and good to our natural environment, and where we do not expect today's growth to threaten tomorrow's survival. That is my commitment; that is Costa Rica's commitment -- let us make sure we realize it. Thank you and God bless you all.

Before the paper is too wet, we have to ask Secretary Pena, Secretary Babbitt, and Minister Castro to come sign our agreements on electric transport and parks on behalf of our two nations. And we hope that the pens still work. (Laughter and applause.)

END 11:16 A.M. (L)

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White House Press Release

REMARKS BY THE PRESIDENT AND VICE PRESIDENT UPON DEPARTURE

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release April 22, 1997

REMARKS BY THE PRESIDENT
AND VICE PRESIDENT
UPON DEPARTURE

The South Lawn

9:05 A.M. EDT

THE VICE PRESIDENT: Good morning, ladies and gentlemen. Of course, as you know, the President is about to depart for North Dakota and the surrounding area to bring some additional help and encouragement and solidarity to the victims of the 500 Year Flood in that area.

Prior to leaving, the President is going to make an important announcement concerning a major new step forward in our effort to empower the American people with information needed to protect their environment. This new step being taken by the President vastly expands the community's right to know about pollutants being released into their neighborhoods and into their communities.

One important aspect of this announcement is the reinventing feature that streamlines the collection of information by the businesses affected by this new announcement and protects the environment in new ways, while at the same time reducing the burden of information collection on businesses. This measure probably has more support across all lines in America than any other thing that we do; because when you give the American people they can use to protect themselves, then people at the grassroots level find very creative ways to convince those sources of pollution to reduce the emissions into the air and water in the communities where these individuals live.

It is only one example of the broad-based effort led by President Bill Clinton to greatly improve the protection of the environment. Everything from emissions in the smallest community to the global issues, such as **climate change**. And, incidentally, our research effort is continuing to pin down what many scientists have said is a link between extreme weather events -- not only in this country, but in other

nations as well -- that have long been predicted to become more common in a world where temperatures are rising even slightly.

I preceded the President to the north central area two weeks ago and talked with one mayor who said his community had had six hundred-year floods in the last 10 years. The scientific community cautions that no one can ever say that a particular event, even a 500 hundred year flood, is connected to global **climate change**. But they do say and have said for two decades that the probability that such events will occur increases along with **climate change**.

This announcement, again, on the community's right to know is a major advance, emblematic of this President's leadership on the environment. Therefore, on this Earth Day, it is a particular privilege and pleasure for me to present President Bill Clinton.

THE PRESIDENT: Thank you very much, Mr. Vice President. Good morning, ladies and gentlemen. As all of you know I am about to leave for North Dakota, where the people are quite literally in the fight of their lives. What they have endured is enormous. How they are enduring it is remarkable. I am going to view the flood damage to pledge our nation's support to see that we are doing everything we can do to help them.

You know, Americans have a habit of joining together at times like this and I think all Americans have been very deeply moved by the pictures we have seen of a town being flooded and burning at the same time, the people in North Dakota losing everything they have. I, personally, can't remember a time when a community that large was entirely evacuated. And we have to stay together.

I think it is appropriate, for the reasons the Vice President said, that coincidentally this trip is occurring on Earth Day, because since 1970, the first Earth Day, Americans have stood side by side against a rising tide of pollution and for the proposition that we have to find a way to live in harmony with and grow our economy in a way that is consistent with preserving our environment.

Earth Day started at the grassroots. Soon the force of neighbor joining with neighbor grew into a national movement to safeguard our air, our land and our water. The movement led national leaders of both parties to put in place the environmental safeguards that protect us today: the Clean Air Act, the Clean Water Act, the Environmental Protection Act. In 1995, an attempt to reverse this consensus and to radically weaken our environmental laws was strongly rebuffed here in Washington and, even more importantly, all across America. And in 1996, that consensus began to be restored again.

These environmental protections have done an awful lot of good. But one of the best things we can do in Washington to protect the environment is to give people in communities all across our country the power to protect themselves from pollution. That is the mission of the Community Right to Know law. This law tells citizens exactly what substances are being released into their neighborhoods. In the decade its been on the books, citizens have joined with government and industry to reduce the release of toxic chemicals by 43 percent. Under our administration we strengthened Right to Know, nearly doubling the number of chemicals that must be reported, making it easier for Americans to find out what toxics, if any, are being sent into the world around them.

In 1995, I directed EPA Administrator Carol Browner to find ways to expand Community Right to Know even further. Today, we are making good on that pledge. Today, we increased by 6,100 -- 30 percent -- the number of facilities that need to tell the public what they are releasing into our environment. Today, seven new industries -- including

mining, electric utilities and hazardous waste treatment centers that use substances like mercury, lead and arsenic -- will now be subject to the Community Right to Know law. Today, more information will be required from 700 companies already providing information under the law. It will be more accessible to Americans. And today we set in motion a process that will guarantee that all the stakeholders -- including citizens, community groups, environmental groups and businesses -- will have opportunities to work together from now on to continue to improve this law.

By expanding Community Right to Know we're giving Americans a powerful, very powerful early warning system to keep their children safe from toxic pollution. We're giving them the most powerful tool in a democracy: knowledge. We are truly living up to the promise of Earth Day.

I also want to say a special word of thanks to Katie McGinty for the work that she has done on this, and the White House. And I want to thank the Vice President for taking my place at the Earth Day celebration at Anacostia today, to talk about Community Right to Know and for all of his work on the environment.

And just let me say in closing, with regard to the comments he made about **climate change** and the possible impact it may have had on the enormous number of highly disruptive weather events that have occurred just since we've been here in the last four years and a few months, I think it is very important that we continue to intensify our government's research efforts in this regard and that we take the very best knowledge we have and bring it to bear on a lot of the decisions we'll be having to make together as a country over the next four years.

We do not know, as the Vice President said, for sure that the warming of the earth is responsible for what seems to be a substantial increase in highly disruptive weather events; but many people believe that it is and we have to keep looking into it. We have to find the best scientific evidence we have and we have to keep searching for the answers to this. I think every American has noticed a substantial increase in the last few years of the kind of thing we're going to see in North Dakota today. And if there is a larger cause which can be eased into the future, we ought to go after that solution as well. Thank you.

Q Is a Marshall Plan appropriate? Your Chief of Staff suggested yesterday it may take a Marshall Plan to help North Dakota.

THE PRESIDENT: You know, we've had -- I suppose because North Dakota is not highly populated we may -- we've had disasters which have affected more people. But I believe that probably this is the highest percentage of people in any state or community that I have seen affected by this. And, you know, if you look at Grand Forks you see a place that literally has to be completely rebuilt, or people have to reconstitute their lives elsewhere. So I do believe that we're going to have to be prepared to be very creative here.

The Congress has shown in the past, even when it was quite costly -- after the earthquake in California, for example -- that we can unite across party lines to do what has to be done. We need to take a hard look at this. This situation in North Dakota is virtually unprecedented in many, many ways and I want to go out there, make sure that I have read all the information available, talk to the people there, see for myself and then I'll come back and, along with the Congressional delegation with Senator Dorgan and Senator Conrad and Congressman Pomeroy, we'll put our heads together and see where we go from here.

Q Any idea, Mr. President, on how much money it might take and will it be there when you need it?

THE PRESIDENT: I think, as I said, my experience in dealing with the flood in the middle west and all the disasters in California, the Pacific northwest, the floods in the southeast, is that Congress finds a way. And I think everybody in America has been totally overwhelmed by what we have seen on television and seen in the news reports -- these pictures of buildings completely surrounded by water, burning down. You know, I think it's been an overwhelming experience. I think the American people are with the people of North Dakota and I think we'll do what we have to do.

Q Mr. President, are you making any tangible headway on the Chemical Weapons treaty, on getting the votes for the Chemical Weapons treaty?

THE PRESIDENT: Well, I hope so. We're working hard on it. We are working very, very hard on it -- I am, the Vice President is, everyone in our administration is. I worked over the weekend some on it. We're doing the best we can to put together a strong case. I think the fact that we have come up with a package of 28 clarifying amendments that respond to 90 percent of the objections, even of the strongest opponents of the treaty, I think shows the good faith in which we have proceeded. And we've worked very hard on this and I'm actually quite optimistic.

Q Have you talked to Senator Lott?

Q -- for Saddam Hussein and honoring the no-fly zone?

THE PRESIDENT: Well, my message is that we support people in exercising their religious liberties and in living out their religious convictions everywhere in the world. And we certainly support that in the Muslim world. But we don't want to see religion, in effect, used and distorted in a way to try to avoid the international obligations that are imposed. And we intend to continue to observe the no-fly zone and continue to support the embargo until he lives up to the conditions of the United Nations resolutions.

END 9:19 A.M. EDT

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White House Press Release

PREPARED REMARKS OF VICE PRESIDENT AL GORE

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release February 12, 1996

PREPARED REMARKS OF VICE PRESIDENT AL GORE

American Association for the Advancement of Science
Baltimore, MD

The Technology Challenge:
What is the Role of Science in American Society?

Over the next three days, I will be delivering three speeches on America's technology challenges. Tomorrow, in Virginia, I'll ask: How must we update our notions of self-government and bring them into harmony with the Information Age? On Wednesday, in Philadelphia, I'll celebrate the 50th anniversary of the ENIAC computer and ask: Are we providing the spark to ignite private innovation, new industries, and better jobs?

But today, before this extraordinary collection of minds, I'll ask the question that in many ways must precede the others: What is the role of science in American society? Why does science matter anyway?

These are complex questions. And no one person has all the answers. I certainly don't. In fact, before I proceed further this morning, I want to recalibrate your expectations. As you listen during the next half-hour, feel free to think our session as a biology class. But don't think of me as the professor. Think of me as the frog.

So let me begin by describing a deep -- but little noticed -- **change** in the pond of our public life. Not too long ago, the metaphors of science migrated easily to the realm of political and economic affairs. In previous generations, the logic and lingo of science -- from Newtonian physics to the industrial science of Frederick Taylor -- informed our public conversation. But not today -- or at least not

very often. When when I day that our current, chaotic political culture reminds me of Ilya Prigogine -- that because our system has more and more energy coming in, it will eventually reorganize itself into a complicated and unpredictable new system . . . nobody has a clue what I'm talking about.

As a result, the language we use to discuss public problems is less vivid and less robust than it ought to be. Chaos theory may offer clues for when government should intervene in the economy. Economic policy perhaps should focus less on "priming the pump" -- and more an "imprinting the DNA." Evolution could offer insight into our social structures. But at the moment, we lack the vocabulary to even begin such discussions.

We either avoid scientific metaphors altogether -- or we lean against the crutch of Industrial Age metaphors that are splintering with age. In particular, we continue to rely on the metaphor of the factory -- of mechanized mass production -- well after it has exhausted much of its supportive force.

So today, in the spirit of academic inquiry, let me propose an alternative metaphor . . . an updated metaphor . . . a metaphor more appropriate to the times and more muscular in its power to explain. It is the metaphor of distributed intelligence.

In the beginning of the mainframe computer era, computers relied almost totally on huge central processing units surrounded by large fields of memory. The design was much like a mass-production factory. The CPU would send out to the field of memory for raw information that needed to be processed, bring it back to the center, do the work, and then distribute the answer back into the field of memory. This technique performed certain tasks well -- especially those that benefited from a rigid hierarchy or that depended on the outer reaches only for rote tasks.

Then along came a new architecture called massive parallelism. This broke up the processing power into lots of tiny processors that were then distributed throughout the field of memory. When a problem was presented, all of the processors would begin working simultaneously, each performing its small part of the task, and sending its portion of the answer to be collated with the rest of the work that was going on. It turns out that for most problems, this approach is more effective.

But somehow this idea, revolutionary as it was in the computer world, never travelled to other regions of our life -- and didn't come anywhere near politics. And that's a shame. Because in the realm of politics or economics or public policy, the metaphor of distributed intelligence has enormous explanatory power. It offers an insight into why democracy has triumphed over governments that depended exclusively on a central authority. And it illuminates why private sector organizations are shedding their middle layers and pushing power, information, and influence to frontline workers. Taken a step further, it even helps explain phenomena as diverse as virtual communities on the Internet and television programs like "America's Funniest Home Videos."

All of which raises a question much like the one Lily Tomlin

asked me last week when the President signed into law landmark legislation reforming American telecommunications. As I tried to explain something to her during the bill-signing ceremony, Lily -- actually, her character, Ernestine the operator -- asked me: If you know so much, how come you're not signing the bill? In other words, if this is such a great metaphor, why hasn't it taken hold?

Here's one possible explanation: I've got it wrong. Perhaps the metaphor of distributed intelligence simply isn't as powerful as I've claimed.

Here's another possibility: the increasing segmentation of society -- in particular, the segmentation of scientific disciplines. At their best, the scientific community and the university community embody the ideal of distributed intelligence. The great power of science derives in part from specialization into disciplines. But much of the power also comes from open criticism and communication across disciplines. Indeed, some of the most significant discoveries have emerged from the productive friction that occurs when different perspectives rub against each other and produce the spark of new insight. But if the physicists don't talk to the chemists, and the chemists don't talk to the economists, and if the economists don't talk to the climatologists, then distributed intelligence is more aspiration than reality. So a second explanation for the absence of this metaphor is that it describes a phenomenon that itself disappearing.

Finally, here's a third possibility why the notion of distributed intelligence has not migrated to our public conversation: the growing disconnect between science and democracy. Walk through the halls of Congress, and you'll see the Gucci loafers of corporate lobbyists, but not the white lab coats of American scientists. Page through a directory of members of Congress, and you'll find well over 150 lawyers, but only six scientists, two engineers, and one science teacher among the 535 people in the House and the Senate.

As a result, scientific concepts sometimes elude the vast majority of our elected officials. That is inherently unfortunate, because we want well-rounded leaders.

But let me dwell a moment about some of the harder-edged consequences -- in the hopes that it will solidify my case for this new metaphor: Lack of scientific understanding undercuts support for the pursuit of further understanding, which fosters deeper ignorance, which in turn further erodes support for battling that ignorance. It's a vicious cycle.

And it's already underway. Listen to what some members of Congress have been saying recently.

Two weeks after the Nobel Prize in chemistry was awarded to scientists for their work on ozone depletion, Texas Congressman Tom Delay said -- and I'm quoting -- "The science underlying the CFC ban is debatable." The agreement to terminate the use of CFC's, he said, was "the result of a media scare."

Congressman Delay also said that DDT was -- and I'm quoting -- "not harmful."

And just a few weeks ago at a hearing on clean drinking water, Oklahoma Congressman Tom Coburn said -- and I'm quoting once again to assure you I'm not making this up -- "I want to touch on cryptosporidium for a minute. . . this disease can sometimes be very helpful, because it helps us identify those who in fact are immune compromised."

These comments ought to send shivers up our spines, because they suggest that the lack of scientific metaphors is merely the symptom of a deeper disregard for science itself and further proof of the vicious cycle I mentioned a few moments ago.

And that's precisely the opposite of how it should work in America. For much of this century, Americans have benefited from a virtuous circle -- a virtuous circle of science and success. As the nation generated wealth, a portion of that wealth was invested in research, science, and technology. Those investments helped answer what seemed answerable -- and eventually spawned still greater wealth, which was then invested in still more research. On and on it went. In this virtuous circle -- launched with bipartisan agreement -- prosperity generated investment, investment generated answers, and answers generated further prosperity.

But now -- because of the woeful lack of knowledge that you just heard -- that virtuous circle risks coming undone. At the very moment a new age demands continued investments in science and technology, there are some in Congress threatening to turn the clock backward with the largest cuts in 15 years.

In their most recent budget, according to AAAS's own study, the Congressional leadership proposed reducing federal funding for science and technology by one-third by the year 2002, adjusted for inflation. And get this: several years after the Cold War ended, defense R & D is going up, while civilian R&D is going down. More for Star Wars, less for environmental research. At the very moment **global** economic competition and **global** environmental degradation demand civilian research and the technologies it often produces, this Congress is proposing the sharpest cuts in nondefense research since America was fighting World War II.

This organization's study a few months ago laid out the numbers plain and simple. The only investment the Congress wants to increase was in health sciences. And that's great. But in almost every other realm, they're approaching science with all the wisdom of a potted plant.

Research on issues that will affect the health of our children, the condition of our planet, and the vibrancy of our economy -- risks being slashed to the bone. **Global** warming . . . down. Supercomputers . . . down. Nuclear nonproliferation . . . down. New materials . . . way down. Solar energy . . . way down. Environmental satellites . . . down. Water quality . . . down.

It's like they're living in a gravity-defying universe. Everything that ought to be up is down. Everything that ought to be open is closed. Their science policy is straight out of science

fiction. A few may talk like Johnny Mnemonic, but most support policies designed for Fred Flintstone. They promise to boldly go where no Congress has gone before, but their flight plan will take us into the ground.

President Clinton vetoed several of the bills containing these cuts -- but not before that other side shut down the government, and furloughed thousands of government scientists. And right now, several agencies -- in particular, the National Science Foundation -- are sputtering along with stopgap funding that makes it almost impossible to plan and difficult even to finance day to day activities.

But the saddest part is that it doesn't have to be this way. Last week, President Clinton proposed a budget outline that leads to the first balanced budget in seventeen years. And he gets there without compromising our values, without abandoning our commitments to education, the environment, and science and technology.

Of course we've got to balance the budget, but there's both a sensible path and a dangerous path that can take us there. Consider: federal investments in basic research now total 0.27 percent -- that's .0027 for any humanities majors in the crowd -- 0.27 percent of America's gross domestic product. That's considerably less than American households spend each year on pet food or breakfast cereal.

Only a few years ago, the United States -- public and private combined -- invested three percent of its GDP in research and development. Today, it's sunk to 2.6 percent. But if that weren't enough, consider the long-term consequences if these deep cuts are imposed: by the year 2000, for the first time in history, Japan will spend more on research and development than the United States, in real terms. Not more per capita, or more as a portion of their Gross Domestic Product. More. Period. Even though Japan's economy is considerably smaller than ours and its population is about half our size.

If our guiding metaphor is the factory, such proposals don't seem outlandish. After all, the goal of the factory is to crank out more and more of the same thing at a lower and lower cost. Shaving a little here and little there is smart business.

But if the guiding metaphor is distributed intelligence, such proposals are terribly misguided. Because distributed intelligence combined with this virtuous circle of riches and research is needed now more than ever, and has already made a difference in this country.

For instance, the discovery of the structure DNA led to new drugs for Lou Gehrig's disease. The Hubble Telescope, besides opening new vistas on our universe, helped produce to new treatments for breast cancer. A federally-supported agency, the National Academy of Sciences, sounded the first alarm that chloroflorocarbons were eroding the ozone layer. The MRI was a product of four separate discoveries in four separate fields of scientific inquiry. And the Human Genome Project is now determining the location and sequence of an estimated 100,000 human genes, and generating new strategies to battle illness and disease.

If we abandon our commitment to science, and fail to understand the power of distributed intelligence, this is what we risk losing -- the chaotic, convoluted, unpredictable breakthroughs that basic science produces.

But we also risk losing something even more significant, the effects of which could be even more tragic. We risk losing our children.

It would be tragic if the richest nation on the planet, through its inaction, told its own future that discovery doesn't matter. Anybody who has kids -- or remembers being one -- knows the ferocious curiosity that bubbles in our youngsters. Kids capture bugs and ask questions about clouds and wonder how cars work. Kids like you never stopped.

But if we extinguish that natural creativity with a fire hose of needless reductions -- if we broadcast an unending stream of signals that discovery doesn't matter, that science is for someone else -- then all of us will pay an emotional and financial price impossible to calculate. And if we fail to reform our schools -- away from the model of the factory and toward the model of distributed intelligence -- we will have only ourselves to blame.

Fortunately, President Clinton is trying to do better. On education, he's made real progress . . . launching direct student loans . . . opening the doors of college to more Americans . . . establishing education standards so every diploma means something . . . promoting education technology in the classroom . . . proposing a tax deduction for families' investments in higher education.

And on science and technology, he's also scored big -- in large part because he's fielded a scientific dream team. Jack Gibbons has become the most influential science advisor the White House has seen in a generation. Cabinet secretaries like Bruce Babbit, Ron Brown, Carol Browner, Hazel O'Leary, and Donna Shalala have fought for a cleaner environment, a strong technology base, national laboratories, and health care research. Dan Goldin has helped take NASA to the stars, while keeping the costs here on Earth. And every layer of the Administration is peopled with women and men dedicated to discovery.

And that team has delivered results. We've extended the R&D tax credit for three years . . . lowered capital gains taxes for investments in emerging companies . . . scaled back the anti-trust barriers to joint ventures in research . . . beefed up protection of intellectual property, giving inventors real protections for their patents . . . boosted funding for the nation's flagship research agencies . . . launched an education technology initiative . . . established the National Science and Technology Council . . . supported research into **global climate change** . . . and ensured our environmental regulations meet the tests of common sense and cutting-edge science.

But we cannot do it alone. That is not how democracies work. And this is where you come in. Democracies, too, depend on distributed intelligence. And this democracy needs the sound of your voices and the dedication of your hearts. You must take up the call for knowledge. You must enlist in the army of persuasion whose battle cry says knowledge is important for knowledge's sake. Because when you say

something is important -- and you say it with enough force -- others might pay attention. But if you view your own pursuit of knowledge as divorced from the nation's pursuit of progress, both endeavors will fall short of their goals.

In a sense, at the edge of a new century, we have a choice of two paths. One path retreats from understanding, flinches in the face of challenges, and disdains learning. It's a know-nothing society -- a society in which the storehouses of knowledge dwindle, the spigots of discovery are twisted and turned off, and missions of exploration are stalled on the ground. This know-nothing society bases regulations on suspicion instead of science, says that DDT isn't harmful, and claims that **global** warming is the empirical equivalent of the Easter Bunny.

That's the path we will be forced onto if these Congressional cuts become the law of the land, because scattered throughout their proposals are cuts in funding -- and outright prohibitions on research. The guiding principle is an old saying applied to a modern nation: what we don't know won't hurt us. Trouble is, that's the recipe for destruction in a distributed intelligence society.

But there's another path -- infinitely brighter, considerably more American. It's a path on which government continues funding basic science and applied technology. It's path that keeps the virtuous circle of progress and prosperity alive and functioning. It's a path whose signposts say "education is a matter of national security," "environmental protection is a matter of national security." It's a path dotted with investments that open the doors of education to all our people. It's a path that applies what we've learned from science to the rest of our lives.

And it's a trail that's within our power to blaze. We have in our hands and our minds and our souls the power to create this learning society. That's partly what this year's presidential elections will be all about.

Last year, another President -- Chuck Vest, President of MIT -- decided to present his annual report as a series of questions his faculty told him were the most urgent ones in their fields. What he told us in that report underscores the need to deliver on these crucial investments in science and technology.

He reminded us that we don't know "which aspects of **climate change** are predictable." And we need to know.

We don't know "how best to use our information infrastructure and new media to promote learning among children." And we need to know.

We don't know "how to produce materials with no waste by-products." And we need to know.

We don't know "how to extract all the energy from existing fuel sources." And we need to know.

We don't know "how and why cells die." And we need to know.

We don't know "how know old the universe is, what it is made of, or what its fate will be; we do not understand what mechanism generates mass in the building blocks of matter." And we need to know.

We need to know these things. We need to understand these things. We need to discover these things.

We need to create a learning society, a society that harnesses the power of distributed intelligence and uses it to lift our lives. And as the very embodiment of that ideal, you have an obligation to help make it happen.

As always in America, it's possible -- but it's up to us. As always in America, it's possible -- because it's up to us. Let's get to work.

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White House Press Release

STATEMENT BY THE PRESIDENT

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release October 1, 1996

STATEMENT BY THE PRESIDENT

Today I have signed into law H.R. 3816, the "Energy and Water Development Appropriations Act, 1997."

The Act provides $20 billion in discretionary budget authority for programs of the Department of Energy (DOE), portions of the Interior and Defense Departments, the Army Corps of Engineers (Corps), and several smaller agencies.

The Act provides $11.4 billion for atomic energy defense programs, $0.3 billion above my request. I am disappointed that the Congress has funded unrequested increases for nuclear weapons management and related programs, while curtailing investments in important civilian activities. Nevertheless, I am pleased that the Act will provide for a significantly enhanced Science-Based Stockpile Stewardship and Management program that will continue DOE's strong commitment to ensuring the safety and reliability of the nuclear weapons stockpile. This Act will also enable the Defense Environmental Restoration and Waste Management program to aggressively address the environmental legacy of previous weapons activities.

I am pleased that the Congress dropped a provision that would have made funding for the nuclear waste management program contingent upon congressional passage of a subsequent authorization bill. This language could have led to the immediate suspension of ongoing work at the Yucca Mountain site.

I am also pleased that the Congress provided $45 million to the International Nuclear Safety program, which assists nations of the former Soviet Union and Eastern Europe in improving the safety of Soviet-designed nuclear reactors.

I am disappointed that the Act cuts $93 million from my request for solar and renewable energy research programs. Investments in the development of advanced renewable energy technologies, which have a large potential export market, will create new jobs and reduce pollution, thereby addressing **climate change** and protecting human health and the environment. I am also concerned by the cuts in funding for DOE departmental

administration and program direction in civilian research and defense programs that may jeopardize the Department's ability to perform its missions and maintain its financial management responsibilities.

I am disappointed that the Act includes over $210 million in unrequested funds for Corps' construction, studies, and operation and maintenance programs. The Congress should have used these funds to restore reductions it made to other priority DOE and Corps programs, such as the Corps' wetlands regulatory program.

WILLIAM J. CLINTON

THE WHITE HOUSE,
September 30, 1996.

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White House Press Release

REMARKS BY THE VICE PRESIDENT George Washington University

THE WHITE HOUSE

Office of the Vice President

For Immediate Release March 20, 1995

REMARKS BY THE VICE PRESIDENT
March 17, 1995
George Washington University

THE VICE PRESIDENT: Thank you very much for your **warm** welcome. And, President Steve Trachtenberg*, thank you for your kind introduction and your friendship and your leadership of this great university. I want to also acknowledge Walter Boortz*, Vice President for Administration and Information Services, and my longtime friend and partner in the efforts to deal with this issue, Under Secretary of State for **Global** Affairs and Former Senator Tim Wirth, who is doing an outstanding job in addressing these issues. (Applause.)

I also want to acknowledge another partner who works with me, the head of the National Oceanic and Atmospheric Administration, Jim Baker, who is here from the administration, doing a great job. (Applause.) And there are many others I probably ought to acknowledge, and I hope you will forgive me for not doing so. I'm afraid I'd miss somebody.

I want to give a special word of thanks to the AmeriCorps students from G.W., who are volunteering to help with today's event, and I want to thank them, also, for their excellent community service work in the District's Shaw neighborhood. And also, I want to recognize this university for its many achievements in the sciences, some of which inform the debate of which this speech is a part today.

It is great to be back at G.W. again. And one reason is, this is the nation's first green university. The commitment you have made in a unique partnership with the Environmental Protection Agency has made you the first university in America to develop a truly comprehensive plan of environmental awareness in all of the university's activities. And I want to congratulate you for that.

I mentioned the AmeriCorps students earlier -- 15 of them are part of

the Green University Initiative, doing a great job, working to draft a model environmental audit plan that will establish practices that are both environmentally sound and cost-saving.

And, by the way, Happy St. Patrick's Day. This is one day out of the year you can't be accused of being too green. There couldn't be a better day to address the issue that I believe is the single most serious manifestation of the environmental crisis which now characterizes the radical change in the relationship between human civilization and the Earth's environment.

Two weeks from now, this issue of **global** climate change will be discussed by more than 120 different countries in Berlin as they begin the first conference of the parties for a framework convention on climate change. Since it's St. Patrick's Day, I thought I would begin a discussion of this issue by quoting an old Irish politician, Sir Boyle Roche*, who once asked in the last century, sarcastically, "Why should we put ourselves out of our way to do anything for posterity? For, what has posterity ever done for us?" That way of thinking would go over real well in this session of Congress. (Laughter and applause.)

Posterity is particularly relevant when talking about **global** climate change, because our actions today will have far-reaching implications for the environment that we leave to future generations. A commitment to posterity requires that we accept and understand this profound change in the nature of the relationship between human civilization and the ecological system of the Earth.

I mentioned a moment ago that in my view **global** climate change is a manifestation of that radical change in the fundamental relationship between civilization and the Earth. There are other manifestations - - the rapid destruction of forests, especially tropical rain forests; the unprecedented loss of living species at a rate that has not taken place on this planet since the disappearance of the dinosaurs so many tens of millions of years ago; the poisoning of air and water in many places on the Earth; and the degradation of important ecosystems, from the Aral Sea in Central Asia to the coral reef networks in shallow areas of the world's oceans.

All of these, including **global** climate change, are manifestations of this change in the relationship between human beings and the environment. This radical change has come about in the lifetimes of people gathered here in this auditorium because of a confluence of three factors. The first is the unprecedented explosion in the numbers of human beings around the world. We're adding the equivalent of one China's worth of people every 10 years. Still, we have begun to address a sensible plan of action to assist nations that wish to stabilize population growth. But the momentum built into the numbers themselves ensure -- ensures that the rapid growth will continue for quite sometime to come.

The second of these three factors is the acceleration of the scientific and technological revolution, which has vastly magnified the ability of the average human being to have an impact on the environment around him or her. To use an analogy, warfare is an ancient habit of human civilization. But the invention of nuclear weapons so completely transformed the consequences of all-out warfare as to require us to go back and think anew about that age-old habit. The Cold War was in part a result of that sobering reexamination of what all-out warfare would mean with these incredibly powerful new weapons.

But all of them taken together have transformed the consequences of all-out exploitation of the Earth, just as surely as nuclear weaponry transformed the consequences of all-out warfare. And so we must think anew about the way in which we go about exploiting the land and the sea and the air or the sustenance that we need to survive.

The third factor leading to this radical change is in some ways the most important. It is a philosophical shift in our way of thinking about the consequences of what we do to the environment, a change which has led too many people to assume that we need not take into account the future effects of our present actions.

All three of these factors together have created a change that we are attempting to come to grips with in sessions like the one in Cairo on population and sustainable development; sessions like the many which led to the Montreal Protocol to limit the introduction of ozone- depleting substances into the stratosphere; and conferences like the one in Berlin two weeks from now, which will address **global** climate change.

In order to deal with this issue, we have to begin with the facts. And any discussion of the facts must take into account categories upon which there is agreement and categories that are featured by disagreement. I would like to concentrate on the former rather than the latter, because there is widespread agreement about the central facts which characterize this problem.

The revisionist view not withstanding, there is a firm domestic and international consensus on the most salient issues. Number one: We know that greenhouse gases are building up rapidly in the atmosphere. Concentrations of carbon dioxide have increased about 25 percent since the Industrial Revolution; nitric oxide has gone up by 15 percent; methane has gone up by more than 100 percent.

Number two: Scientists also agree that continuing this buildup of greenhouse gases will cause the climate to change. The operative word in that sentence is not may, it is will. A continued buildup of this kind will cause the climate to change. About that there is no serious disagreement. The scientific community cannot tell us the pace of these changes or the precise pattern they will take, but they are telling us that change is coming.

There is an international consensus that **global** surface temperatures could increase from an average of 2 degrees fahrenheit to 8 degrees fahrenheit over the next century. That is the rate unseen on this planet for at least the last 10,000 years. That is, unseen during the entire history of human civilization. Since the first cities appeared on the Earth, no such change has been seen.

The United States and other areas in high latitudes are projected to **warm** even more, with increases of up to 10 degrees Fahrenheit. In just the last century, the Earth's temperature has risen by about one degree Fahrenheit. The nine warmest years in this century have all occurred since 1980, even though the eruption of Mt. Pinatubo, as predicted at the time, held down temperatures for about three years, until the heavy particulates blocking out a tiny fraction of the sun's radiation fell back out of the atmosphere to Earth.

Already, there is ominous evidence of significant change underway. Alpine glaciers in every part of the world are retreating rapidly. You may have seen the pictures not long ago of the prehistoric traveler whose body was found in a mountain pass in the Alps in Italy. They were walking along, and there he was. Why had no one noticed him there for the last 5,000 years? Because the ice covering him has not melted in

5,000 years. It is now -- it has now melted.

In other areas that have not seen the ice retreat in human experience, it is now retreating. There is a decrease in northern hemisphere snow cover; evidence of a decrease in Arctic sea ice. Average precipitation in the lower 48 States has increased in the last century by about five percent. Torrential rains have increased in the summer during agricultural growing seasons.

These are troubling, complex and challenging issues to confront, but we should not image that they occur according to a pattern of slow and gradual change. We know that natural systems are replete with thresholds beyond which change can occur suddenly and dramatically. A **warmer** Earth alters precipitation, soil moisture and sea level that can lead to changes in the ideal ranges for crops, forests and wetlands. Changes in precipitation patterns cause draught in some areas and more rainfall in others. It causes a change in the distribution of microbial populations and vulnerabilities to viruses and bacteria; a change in the distribution of pests; a change in the distribution of plant and animal life.

Combinations of changes can have dramatic effects --increased rainfall can lead to more floods, which together with higher sea levels, can threaten the existence of some low-lying coastal communities, threaten the existence even of some small island nations and low-lying coastal nations.

We have seen concern expressed by scientists in several parts of the world about the increased frequency of drastic weather events. In our own country, we have seen the effects of a shift in the pattern that we call El Nino, from a pattern that occurs every two to five years to a relatively new pattern during the last decade and a half in which it has a tendency to become almost constant.

Some members of the business community, whose lines of work make them especially sensitive to these kinds of changes, are also beginning to express concern. Recently, I met with a large number of representatives from the insurance industry and the reinsurance industry. Frank Nutter*, President of the Reinsurance Association of America, has warned about a serious risk of bankruptcy within the insurance industry, that can come from, in his words, "significant and perhaps, permanent changes in our climate in this country and in the world."

It's easy to see why insurance companies are concerned. In 1993, the Mississippi flooding caused an estimated $10 billion to $20 billion worth of damage. Hurricane Hugo cost the federal government alone about $1.6 billion. Hurricane Andrew topped $2 billion in federal disaster payments and cost property insurers at least $16 billion. The floods and mud slides in California have caused over $2 billion in damage already this year.

Does it make sense for us to assume that we need not take action to diminish the chance that an altered climate pattern will lead to an increase in the frequency of severe events of this sort? We ignore these changes at our peril. I mentioned that climate change can cause a shift in the distribution of microbial populations. The range of infectious diseases, such as malaria and dengue fever, can change significantly.

How should we respond to this kind of threat? The Clinton administration believes that we must guard against potentiallydevastating effects these issues through an aggressive research program. This approach is, in fact, analogous to an insurance policy and is not just an abstract notion.

Three years ago we joined the international community in signing the historic Framework Convention on Climate Change. It was the beginning of a process to design a kind of insurance policy. It was a treaty that called on all nations to work together in an unprecedented effort to protect the **global** environment. Specifically, the industrialized countries were urged to take the lead by stabilizing greenhouse gas emissions to 1990 levels by the year 2000.

Soon after taking office, President Clinton went beyond the vague, non-binding language of the treaty, declaring that the United States would meet the goal set out in the treaty. The President's commitment was made to complement his economic objectives. He promised to turn our economy around, and he has delivered. Inflation is down, growth is up, unemployment is down, jobs are up. All told, we are demonstrating that economic and environmental progress can go hand in hand.

No doubt, the powerful economic course set by President Clinton challenges several of the assumptions of the plan. Rather than shirking away from this good news, we embrace it. Today I want to reaffirm the President's pledge: The United States is committed to reaching 1990 levels of greenhouse gas emissions by the year 2000. We've developed an ambitious plan aimed at fulfilling the President's commitment. Forty out of forty-seven of these initiatives have received funding are now underway. Most of these initiatives share at least one common feature -- they will mean new, clean American jobs for our future.

For example, we have signed voluntary agreements with the bulk of our utility industry to keep greenhouse gas emissions down. Similar partnerships have been forged with U.S. industry on energy-efficient computers, buildings and lighting systems. We have pledged 430 million to the **global** environmental facility for its second phase -- the largest contribution of any nation in the world. We have created a new environmental technology initiative, totaling more than $1 billion to develop and disseminate environmentally superior technology. And, the U.S. has launched the world's first pilot program to assess the feasibility of joint investment projects with other countries aimed at reducing or sequestering emissions of greenhouse gases and promoting sustainable development.

In addition, we have launched a partnership for a new generation of vehicles, also know by some as the Clean Car Initiative. It is a real partnership. All three of the big three automakers are participating, along with the national laboratories; all of the relevant federal agencies; and many suppliers of parts, materials and equipment; also, engineering faculties and students across the country. Together we're tackling a technological challenge in some ways as tough as putting a man on the moon. We're going to develop a car with three times the efficiency of today's automobiles with no sacrifice in cost, comfort or safety.

In the process we hope to discover the best ways to apply new technologies which may, in fact, lead to even greater improvements in efficiency -- all in 10 years' time. Success will mean less dependence on foreign oil and lower emissions of greenhouse gases. And, of course, in addition to the benefits for the American consumer, the project also holds the promise of an extremely attractive and competitive automobile for world markets at the turn of the century and the thriving U.S. auto industry to produce them.

In our building and construction initiative, our goal is to improve the competitive performance of this $800 billion industry by developing much better construction technologies that lead to less emissions. With the full cooperation of the industry, we're determined to ensure that our buildings, like our industry, are the most productive, efficient, safe

and durable in the entire world. That means cutting delivery time in half with a 50 percent reduction in cost.

We want to see a 50 percent reduction in construction work injuries and illnesses also, while there's a 30 percent improvement in productivity and comfort. And we're developing detailed plans with the industry to reach these objectives. We want to see 50 percent less waste and pollution and 50 percent more durability and flexibility.

We recognize that our plan is ambitious. And we recognize that it requires support from leaders on Capitol Hill. Some of our previous requests were not fully funded, and Congress is now considering taking previously approved funding back. Just as this treaty requires international consensus, our domestic response to it requires a national consensus. We are committed to working with the Congress in a true partnership on behalf of our nation, the world and all of its people. But it is incumbent upon the new leadership on Capitol Hill to step up to the plate and recognize both the challenges and the opportunities presented by climate change and recognize, too, the need for U.S. leadership.

Fulfilling this responsibility in the future requires acknowledging that our plans and those of our industrialized partners are only the first step. In two weeks, in Berlin, nations will meet to determine what more the international community can do in response to the dramatic scientific evidence that now exists. Once again, this administration will be at the forefront of this **global** effort.

We have said for almost a year that we do not believe that the current agreement is adequate. It only contains an aim or goal for the year 2000, and this aim only applies to a limited number of countries. We are now in a situation in which the maximum response that is politically feasible throughout the world still falls short of what is really needed to address the problem. All the nations of the world will need to work together to develop guidance on what steps to take beyond the year 2000. So we must negotiate a new aim for the future.

In view of these limitations, and mindful of our responsibility to the future, we are working with other nations to develop a mandate that can be agreed upon in Berlin and can set the course for next steps under the treaty. This will require us all to carefully examine what we each can do to contribute to further reductions in greenhouse gas emissions. Our goal, in other words, in Berlin is to build a foundation and begin momentum.

Just as there are thresholds in the natural climate system there are also thresholds in the political system. When evidence accumulates to the point where enough people are no longer willing to listen to skeptics that have arguments that are not grounded in the facts, then beyond that threshold, the possibilities for significant action improve dramatically. That is why it is important to develop quality research. We've already begun that process here in the United States, and that will be a part of the process we will follow in the future.

But now is the time to re-launch negotiations and walk more concretely toward the treaty's objective. Now is the time to establish a new negotiating mandate that will allow us to fulfill our responsibilities to future generations -- a mandate that ensures we move forward from the important first steps outlined for the pre-2000 period.

We strongly believe that all nations must participate in this effort. Certainly, industrialized countries who have contributed most of the problem can and should take the lead. And we shall. But we simply

cannot ignore the fact that emissions are rising fastest in developing countries, which together now account for almost 50 percent of all greenhouse gas emissions in the world. We know that industrialized countries have special responsibilities, and we fully support the Convention's call for common but differentiated responsibilities. But we very much want the developing nations to join us at the negotiating table, so that together we can define these common but differentiated responsibilities in the post-2000 era. Not so that alone we can do less, but so that together we can do more -- through trade, technology cooperation, and a host of strategies that offer benefits for all nations.

We also must do a better job of ensuring that nations are matching rhetoric with reality; that we are accountable for what we say we will do. To date, only a handful of nations have put forward clear substantive proposals that move them toward the emission reductions they have enunciated. We must be clear: Good intentions and high- flying rhetoric will not come close to helping us meet the very significant challenges inherent in reducing emissions. What is needed and expected under the treaty is concrete action.

In the negotiations that will follow the Berlin meeting it is imperative that we establish a menu of measures from which to choose strategies for reaching any new aim set for the post-2000 period. Only an analytic phase as part of the negotiating process can provide us with realizable measures, and the realistic understanding of what our expectations and goals should be for the future. But the measures selected must truly achieve emissions reductions, and nations must be prepared to show actions and results.

Finally, we believe that the mandate for negotiations should be concluded as rapidly as possible. We believe that an aggressive, ambitious approach, looking at short-term and long-term goals -- that is for the years 2010 and 2020 -- can be concluded by 1997, when the third conference of the parties will be held. We think this date is a fair one, one that reflects our view of the importance and urgency of the climate change problem and also gives us the lead time to develop and begin to take advantage of new technologies.

On the one hand, we have nations that will be trying to appease strong constituencies in their countries by outbidding the rest of the national community in their pledges to reduce emissions by future actions. But what future generations need is aggressive, measurable and ambitious actions, and not political promises of future actions.

On the other hand, we have political extremists -- some of them in our own country -- who would have the United States evade and ignore tough issues like **global** climate change, ozone depletion, or any number of threats to human and environmental health. Far outside the mainstream of scientific consensus, they would deny the existence of the problem and seek to prevent the United States from even acknowledging its concern, even though the actions that we envision are good both for the environment and for the economy.

This is an intellectually, politically, and morally bankrupt position which must be resisted. It is similar to the position that was taken for so long by the tobacco industry in the face of mounting medical and scientific evidence about the connection between smoking and lung cancer. To this day, the precise causal relationship and all the details about exactly how smoking causes lung cancer cannot be established with precision. But the relationship is accepted. It is a medical fact. Yet, for so long, those -- some of those with an economic interest in delaying the recognition of that connection argued implausibly that the scientific evidence was questionable, ought to be

ignored, was insufficient upon which to base any conclusions.

They were wrong. And those who are now seeking to delay the time at which we recognize the connection between the accumulation of greenhouse gases and **global** climate change are also wrong. If you think back to the dramatic fires in Kuwait when the oil fields were set ablaze in 1991, all of that carbon pollution put together amounted to less than one percent of what we put into the Earth's environment every year. And that amount continues to increase every year.

We cannot forget that we are now witnessing the most extreme and concerted assault on the environment in history. The core of the socalled Contra nation's environmental laws and commitments. Buried in arcane rhetoric about regulatory reform is a deliberate attack, widely acknowledged in the popular press, that effectively revokes many of this nation's most important environmental laws from the Clean Air Act and the Clean Water Act to the Endangered Species Act. The President and I don't support this, and will not accept it. The health of our children, the safety of our workers, and the integrity of our environment cannot be so recklessly jeopardized.

Rather than attack environmental initiatives, we hope the Congress will work with us to craft policies that are as environmentally sound as they are economically beneficial.

Let me close by drawing an analogy to the response by the international community to another problem that was similar in some ways to **global** climate change. That is the problem of ozone depletion. Ten years ago, at about the same stage in the development of scientific knowledge, the nations of the world came together in Montreal to take prudent steps toward protecting the Earth's stratospheric ozone layer. These initial efforts were expanded in the aftermath of a stunning scientific discovery -- a hole in the ozone layer above Antarctica which was the size of the North American continent.

After that discovery was confirmed, the world's political system crossed a threshold beyond which it became much easier to secure agreement on the need to act. That led to the London Amendments in 1990, where the world agreed to phase out the most damaging ozone- depleting chemicals, and the subsequent Copenhagen Agreement which accelerated the process by five years. Every American can be proud that the United States helped to lead these efforts politically and scientifically.

As with the ozone issue, nations have agreed on the nature of the climate change threat, and we have taken the first tentative initial steps to thwart that threat. But this is just a beginning. I think we can answer the question that I quoted from Sir Roche* at the beginning of my speech about posterity, and answer it with another Irish sentiment written by the great poet, William Butler Yeats. He wrote, "I have spread my dreams under your feet. Tread softly because you tread on my dreams."

Unless we tread softly, our dreams for the future will be nothing but dreams. Let us make sure that our next steps are the right ones. Thank you very much. (Applause.)

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White House Press Release

REMARKS BY THE PRESIDENT AT WHITE HOUSE CONFERENCE ON CLIMATE CHANGE

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release October 19, 1993

REMARKS BY THE PRESIDENT
AT WHITE HOUSE CONFERENCE ON CLIMATE CHANGE

The South Lawn

12:27 P.M. EDT

THE PRESIDENT: Ladies and gentlemen, first let me thank you all for being here and thank the Vice President, the Cabinet, our Science Advisor, Katie McGinty and others who worked so hard on this policy. If I might begin by just observing -- I was looking at the clouds hoping we didn't have too much of a climate change this morning before the event could unfold.

This is an issue which has been of great concern to me for a long time. When I decided to seek this office back in 1991, I did it after having spent more than a decade as a governor, deeply frustrated by what seemed to me too often to be inevitable, persistent, aggravating conflicts between the impulse to promote economic opportunity for the people that I represented and the clear obligation -- the moral obligation -- on all of us to try to preserve this planet that we all share.

And anyone with eyes to see could look down the road and recognize that, even with imperfect scientific knowledge, at some point the impulse to give people something to do would have to be reconciled with the obligation to preserve the planet that we all share. And that if there were ways, through the use of technology, and partnerships and ingenuity to actually enhance economic opportunities while preserving the planet, how much better off we would all be.

That is what we have sought to do in this administration. The Vice President outlined the number of things

that we have tried to do to move the environmental agenda forward, and at the same time move our economy forward. I remember so well the sort of shocking, but bracing and reinforcing feeling I had the first time I began to go to New Hampshire, which is what you have to do in this country if you want to ultimately become president, to find that people just living their own lives in what was in a very economically depressed state also believed that we could find a way, and that we had to find a way to pursue our economic objectives and fulfill our moral responsibilities to have an aggressive and responsible program about the environment.

That cannot be done unless we change our attitude about what we put into our atmosphere and how we respect the air we breathe. That requires us to meet head-on the serious threat of **global warming**. I made a commitment to do that on Earth Day this year, to make a commitment to an approach that would draw on the most innovative people we could find in this country, whether they were in business, labor, government, or the environmental movement, to turn this challenge into an opportunity, and that's what this report seeks to do.

It seeks to give the American people the ability to compete and win in the **global** economy while meeting our most deep and profound environmental challenges. We have begun the task of linking our economy to the environment today in what I believe is a truly extraordinary fashion. And I think if all of you read the plan in its exquisite and sometimes mind-bending detail, you will see that it is a very aggressive and very specific first step. I would argue the most aggressive and the most specific first step that any nation on this planet has taken in the face of perhaps the biggest environmental threat to this planet.

The task is accomplished primarily by harnessing private market forces, by leveraging modest government expenditures to create a much larger set of private sector investments. And by establishing new public-private partnerships to bring our best research and our best technologies. This plan takes the environmental debate where it should have been years ago -- beyond the confrontation over ideology to a conversation about ideas. Beyond polemics to real progress.

On Earth Day I made a commitment to reduce our emissions of greenhouse gases to 1990 levels by the year 2000. And I asked for a blueprint on how to achieve this goal. In concert with all other nations, we simply must halt **global warming**. It is a threat to our health, to our ecology and to our economy.

I know that the precise magnitude and patterns of climate change cannot be fully predicted. But **global warming** clearly is a growing, long-term threat with profound consequences. And make no mistake about it, it will take decades to reverse. But the first step is before us today. And because most of our recommendations do not require legislation, something which will doubtless please the Congress with all the burdens they have already on their plate, we can take action on our plan beginning today. This plan is the result, as the Vice President has said, of genuine collaboration, based on solid scientific and economic analysis, including funding to back up each and every proposal it contains. Like the announcement of our clean car initiative last month, this approach to **global warming** encourages public-private cooperation across a spectrum of economical, technological and environmental questions.

There are 50 separate initiatives in this plan, touching every sector of our economy because the problem, frankly, affects every sector of the economy. There are measures to improve energy efficiencies in commercial buildings and to make better household

appliances. There are new agreements with public utilities to reduce greenhouse gasses and new public-private ventures to increase the efficiency of industrial motors.

The plan will make it possible for all Americans to purchase appliances unlike any we own today. When your furnace dies or your washer breaks, you'll be able to go to a local store and buy a new appliance much more efficient than any you can buy today, and one that will save money in its operation. The energy savings we achieve will lower the cost of doing business in America, and make us more competitive on the world market and more prosperous here at home. And the investments generated by this plan will create jobs in the sectors that make, install, and use energy efficient and pollution-cutting technologies.

Finally, to meet the challenge of **global warming**, as I have said, with regard to cutting the deficit and reforming health care and in so many other areas, we, frankly, must all take some more personally responsibility. We will all benefit environmentally and economically from the actions we are proposing today, and it will take all of us to make this plan work. So I say to all the American people, if your utility offers you help in conserving energy in your own home, seize it. If you own a business and the EPA offers you a chance to join the Green Lights program, do it. If you run a factory and the Department of Energy offers you a plan to help install an efficient motor system, use it. You will save money and you will help your country and your fellow citizens.

This plan isn't designed for an archive; it's designed for action. For rapid implementation, constant monitoring, and for adjustments as necessary to meet our goals. It's part of a longrange strategy th White House to identify and implement those policies which will continue the trend of reduced emissions.

The action plan reestablishes the United States as a world leader in protecting the **global** climate. I urge other industrial countries to move rapidly to produce plans as detailed, as realistic and as achievable as ours. This initiative gives us a chance, a very, very good chance to reduce greenhouse gases, grow our economy, and create a new high-skilled, high-wage job based in America.

We take pride here in this country in the love we have for our land, in our leadership among nations, in our ability to set new goals and solve new challenges. Today, we have given life to those values again. And through them, we will help to build a healthier environment and a stronger economy for decades to come.

We also will help to meet our moral obligation to ourselves, our neighbors around the world, and most important, to our children. Thank you very much. (Applause.)

END12:36 P.M. EDT

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White House Press Release

REMARKS BY THE PRESIDENT IN EARTH DAY SPEECH

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release April 21, 1993

REMARKS BY THE PRESIDENT
IN EARTH DAY SPEECH

U.S. Botanical Gardens
Washington, D.C.

11:50 A.M. EDT

THE PRESIDENT: Thank you very much, ladies and gentlemen, for being here in the wonderful Botanical Gardens. I must say there's a lot I have to learn about this town, as you can tell if you follow events from day to day. And I didn't know that the Botanical Gardens was a branch of the Congress until I showed up here. (Laughter.) Just one more thing I'm not responsible for --I'm glad to be here. (Laughter.)

I also think that we should introduce a guest from another country who is here with us -- the Environmental Minister from Australia, Roz Kelly. Would you stand up? We're glad to have you here. (Applause.)

Al Gore introduced Katie McGinty, and you were all good enough to clap. And I don't know if you could hear through the clapping that her parents are here. And what you may not know is that the real reason we appointed her is that she's one of 10 children and we'd like to carry Pennsylvania in 1996. (Laughter.) We think that there's a significant likelihood now because of that.

I want to say a special word of thanks to the Vice President for two things -- first of all, for the wonderful trip that he has just concluded, going to Poland to represent our country on the occasion of the 50th anniversary of the Warsaw Uprising, and the wonderful remarks he gave in New York on the eve of that departure and the way that he represented the United States in Poland. And secondly, notwithstanding what he said in the introduction, which was true -- (laughter) -- one of the reasons I did ask him to join the ticket is that he knew more about the subject of the environment than I did and I thought I had something to learn from him. And I have learned a great deal, and it has been an immensely rewarding

experience and one which I hope will benefit the United States in many ways over the course of the next four years.

That's worth clapping for -- I agree with that, don't you think? (Applause.)

It's a good thing to have this celebration in the springtime, a time when our spirits are renewed and we are reminded by nature of new beginnings and forgotten beauty. This has been an astonishingly beautiful spring in Washington, D.C., and something for which I will always be grateful -- my first springtime here that I see every morning as I go out and jog around in it and try to breath in it -- something that is a continuing challenge. (Laughter.)

A little more than a week ago, most Americans celebrated holy days of freedom and renewal. Today, we still nurture the faith that helps us to understand more clearly that we can do better. This is a time of new beginnings, a time when there is anguish and anxiety all around us, but we still must yearn once again to succeed in our common purposes to reach our deepest goals.

For all of our differences, I think there is an overwhelming determination to **change** our course, to offer more opportunity, to assume more responsibility, to restore the larger American community, and to achieve things that are larger than ourselves and more lasting than the present moment. We seek to set our course by the star of age-old values, not short-term expediencies; to waste less in the present and provide more for the future; to leave a legacy that keeps faith with those who left the Earth to us.

That is the American spirit. It moves us not only in great gatherings, but also when we stand silently all alone in the presence only of nature and our Creator.

If there is one commitment that defines our people, it is our devotion to the rich and expansive land we have inherited. From the first Americans to the present day, our people have lived in awe of the power, the majesty and the beauty of the forest, the rivers, and the streams of America. That love of the land, which flows like a mighty current through this land and through our character, bursts into service on the first Earth Day in 1970.

When I traveled the country last year, I saw and spoke of how much had been accomplished by the environmental movement since then and how much still remains to be done. For all that has been done to protect the air and the water, we haven't halted the destruction of wetlands at home and the rain forest abroad. For all that has been learned, we still struggle to comprehend such dangers to our planet's delicate environment as the shroud of greenhouse gases and the dangerous thinning of the ozone layer. We haven't done nearly enough to protect our forest communities from the hazards, such as lead poisoning, which is believed to cause mental retardation, learning disabilities, and impaired growth.

Unless we act, and act now, we face a future where our planet will be home to nine billion people within our lifetime, but its capacity to support and sustain our lives will be very much diminished. Unless we act, we face the extension of untold numbers of species that might support our livelihoods and provide medication to save our very lives. Unless we act now, we face a future in which the sun may scorch us, not warm us; where the **change** of season may take on a dreadful new meaning; and where our children's children will inherit a planet far less hospitable than the world in which we came of age. I have a faith that we will act, not from fear, but

from hope and through vision.

All across this country, there is a deep understanding rooted in our religious heritage and renewed in the spirit of this time that the bounty of nature is not ours to waste. It is a gift from God that we hold in trust for future generations. Preserving our heritage, enhancing it, and passing it along is a great purpose worthy of a great people. If we seize the opportunity and shoulder the responsibility, we can enrich the future and ennoble our own lives.

Just as we yearn to come together as a people, we yearn to move beyond the false choices that the last few years have imposed upon us. For too long we have been told that we have to choose between the economy and the environment; between our jobs; between our obligations to our own people and our responsibilities to the future and to the rest of the world; between public action and private economy.

I am here today in the hope that we can together take a different course of action, to offer a new set of challenges to our people. Our environmental program is based on three principles. First, we think you can't have a healthy economy without a healthy environment. We need not choose between breathing clean air and bringing home secure paychecks. The fact is, our environmental problems result not from robust growth, but from reckless growth. The fact is that only a prosperous society can have the confidence and the means to protect its environment. And the fact is healthy communities and environmentally sound products and services do best in today's economic competition.

That's why our policies must protect our environment, promote economic growth, and provide millions of new high-skill, high-wage jobs.

Second, we want to protect the environment at home and abroad. In an era of **global** economics, **global** epidemics and **global** environmental hazards, a central challenge of our time is to promote our national interest in the context of its connectedness with the rest of the world. We share our atmosphere, our planet, our destiny with all the peoples of this world. And the policies I outline today will protect all of us because that is the only way we can protect any of us.

And, third, we must move beyond the antagonisms among business, government and individual citizens. The policies I outlined today are part of our effort to reinvent government -- to make it your partner and not your overseer -- to lead by example and not by bureaucratic fiat.

In the face of great challenges, we need a government that not only guards against the worst in us, but helps to bring out the best in us. I know we can do this because our administration includes the best team of environmental policymakers who have ever served the United States: the Vice President, Interior Secretary Babbitt, EPA Administrator Browner -- and I hope that the EPA will, soon, by the grace of Congress, be a Cabinet-level department -- and Energy Secretary O'Leary, Commerce Secretary Brown, Transportation Secretary Pena, the Agriculture Secretary Mike Espy, our Environmental Policy Director Katie McGinty, and our Science and Technology Advisor Jack Gibbons. All of them share an unshakable commitment to a healthy environment, a growing economy and a responsive government.

Our economic plan will create new job opportunities and

new business opportunities, protecting our natural environment. The reductions in the interest rates which we have seen already will free up tens of billions of dollars for responsible investments in this year alone.

The jobs package I have asked the Congress to pass contains -- this is hardly been noticed, but it actually contains green jobs from waste water treatment to energy efficiency, to the restoration of our national parks, to investments in new technologies designed to create the means by which we can solve the problems of the future and create more jobs for Americans.

Our long-term strategy invests more in pollution prevention, energy efficiency, and solar energy, in renewable energy, and environmental restoration, and water treatment -- all of which can be found in the five-year budget that we have presented to the Congress.

These investments will create tens of thousands of new jobs, and they will save tens of thousands more. Because when we save energy and resources we will have more to invest in creating new jobs and providing better living standards. Today every other advanced nation is more energy efficient than we are. That is one of the reasons why over the last couple of years, for example, the average German factory worker has come to make over 20 percent more than his American counterpart; that German workers, while having higher wages, also have more secure and better health care. That's because that economy uses one-half the energy we do to produce the same amount of goods. We can do better and we will.

I believe we can develop the know-how to out-conserve and out-compete any one else on Earth. All over the world people are buying products that help them to protect their environment. There's a $200-billion market today for environmental technologies. And by the turn-of-the-decade in the century, it will be $300 billion.

Let me just share one example with you -- something we all know and use and something some of us are still trying to learn how replace: light bulbs. Long-lasting energy-saving light bulbs didn't even exist in 1985. Now American companies sell over $500 million worth of these products, with sales expected to reach $2 billion by 1995 and $10 billion by the year 2000, creating thousands of new jobs. American scientists have taken the lead in developing these technologies, and it's time to help our companies take the lead in bringing out products and services to market.

I've asked the Energy Department, the Commerce Department, and the EPA to assess current environmental technologies and create a strategic plan to give our companies the trade development, promotional efforts and technical assistance they need to turn these advances into jobs here in America, as well as to help promote a better environment. America can maintain our lead in the world economy by taking the lead to preserve the world environment.

Last year, the nations of the world came together at the Earth Summit in Rio to try to find a way to protect the miraculous diversity of plant and animal life all across the planet. The Biodiversity Treaty which resulted had some flaws, and we all knew that. But instead of fixing them, the United States walked away from the treaty. That left us out of a treaty that is critically important not only to our future, but to the future of the world. And not only because of what it will do to preserve species, but because of opportunities it offers for cutting-edge companies whose research creates new medicines, new products, and new jobs.

Again, just one recent example makes the point. A tree that was thought to have no value, the Pacific Yew, used to be bulldozed and burned. Now we know that that tree contains one of our most promising potential cures for ovarian cancer, breast cancer and other forms of cancer. We cannot walk away from challenges like those presented by the Biodiversity Treaty. We must step up to them.

Our administration has worked with business and environmental groups toward an agreement that protects both American interests and the world environment. And today, I am proud to announce the United States' intention to sign the Biodiversity Treaty. (Applause.)

This is an example of what you can do by bringing business and environmentalists together, instead of pitting them against each other. We can move forward to protect critical natural resources and critical technologies. I'm also directing the State Department to move ahead with our talks with other countries which have signed the convention so that the United States can move as quickly as possible toward ratification.

To learn more about where we stand in protecting all our biological resources here at home, I'm asking the Interior Department to create a national biological survey to help us protect endangered species and, just as importantly, to help the agricultural and biotechnical industries of our country identify new sources of food, fiber and medication. (Applause.)

We also must take the lead in addressing the challenge of **global** warming that could make our planet and its **climate** less hospitable and more hostile to human life. Today, I reaffirm my personal, and announce our nation's commitment, to reducing our emissions of greenhouse gases to their 1990 levels by the year 2000. (Applause.)

I am instructing my administration to produce a costeffective plan b emission. This must be a clarion call, not for more bureaucracy or regulation or unnecessary costs, but instead, for American ingenuity and creativity, to produce the best and most energy-efficient technology.

After the Cold War, we face the challenge of helping Russia achieve a healthy democracy, a healthy economy, and a healthy environment. Our Russian aid package includes $38 million to clean up pollution and promote better uses of energy. As with the full range of our investments in Russia, this is truly an investment not only in promoting our own values, but in protecting our national security. To protect the environment at home and abroad, I am committed to a government that leads by example, brings people together, and brings out the best in everyone. For too long our government did more to inflame environmental issues than to solve them. Different agencies pursued conflicting policies. National leaders polarized people. And problems wound up in the courts or in the streets instead of being solved.

We seek to bring a new spirit to these difficult issues. Three weeks ago in Portland, Oregon, we brought together business people, timber workers, and environmentalists from throughout the Northwest to discuss how best to preserve jobs and to protect the old-growth forests and the species which inhabit them. People sat down in a conference room, not a court room, and in the words of Archbishop Thomas Murphy of Seattle, we tried to find common ground for a common good. At the close of that forest conference, I asked my Cabinet and our entire administration to begin work immediately to craft a balanced, comprehensive long-term policy that is also comprehensible.

Before I ask our companies and our communities and our families to meet any challenge, it seems to me we have to set that standard for the government. The American people are entitled to know where the United States stands on this issue and many other issues. And it is time to bring and end to the time when issues like this wind up in court and there are five different positions from the United States government itself. We can never solve problems in that fashion. We can only undermine the security and stability of people's lives.

That's one reason I am proud that yesterday the United States Army announced its plan to clean up a large number of sites where we learned recently that chemical weapons materials may be buried, in some places from as long ago as World War I. Working with the EPA, the Army will clean up this problem safely and in an environmentally-sound manner.

This is a legacy of America's efforts to defend our people and the community of free nations. Now, we are taking steps to defend our people and our environment and the environment of the world. In that same spirit, I plan to sign an executive order requiring federal facilities that manufacture, process or use toxic chemicals, to comply with the federal right-to-know laws, and publicly report what they are doing. (Applause.)

I might add that it is time that the United States government begins to live under the laws it makes for other people. With this executive order, I ask all federal facilities to set a voluntary goal to reducing their release of toxic pollutants by 50 percent by 1999. This will reduce toxic releases, control costs associated with cleanups, and promote clean technologies. And it will help make our government what it should be -- a positive example for the rest of the country. (Applause.)

Poor neighborhoods in our cities suffer most often from toxic pollution. Cleaning up the toxic wastes will create new jobs in these neighborhoods for those people and make them safer places to live, to work, and to do business.

Today, I am also signing an executive order that directs federal agencies to make preliminary **changes** in their purchasing policies, to use fewer substances harmful to the ozone layer. Here, too, we must put our actions where are values are. Our government is a leading purchaser of goods and services. And it's time to stop not only the waster of taxpayers' money but the waste of our natural resources.

Today I am signing an executive order which commits the federal government to buy thousands more American made vehicles, using clean, domestic fuels such as natural gas, ethanol, methanol, and electric power. This will reduce our demand for foreign oil, reduce air pollution, promote promising technologies, promote American companies, create American jobs, and save American tax dollars. To demonstrate my commitment to this issue, Energy Secretary O'Leary is creating a task force led by the Land Commissioner of Texas, Gary Mauro, who is here in the audience today, who has headed a successful effort in his own state. I hope we can do as well in America as they have done in Texas. (Applause.)

In that same spirit, I plan to sign an executive order committing every agency of the national government to do more than ever to buy and use recycled products. This will provide a market for new technologies, make better use of recycled materials, and

encourage the creation of new products that can be offered to the government, to private companies, and to consumers. And again, it will create jobs through the recycling process.

We must keep finding new ways to be a force for positive change. For example, the federal government is the largest purchaser of computer equipment in the world, and computers are the fastest growing area of electricity use. That's why I am also signing an executive order today requiring the federal government to purchase energy-efficient computers. We're going to expand the market for a technology where America pioneered and still leads the world, and we'll save energy, saving the taxpayers $40 million a year, and set an example for our country and for the world.

For as long as I live and work in the White House, I want Americans to see it not only as a symbol of clean government, but also a clean environment. That's why I'm announcing an energy and environmental audit of the White House. We're going to identify what it takes to make the White House a model for efficiency and waste reduction. It might mean fewer memos and less paper. (Laughter.) And then we're going to get the job done. I want to make the White House a model for other federal agencies, for state and local governments, for business, and for families in their homes. Before I ask you to do the best you can in your house, I ought to make sure I'm doing the best I can in my house. (Applause.)

I ask that all of us today reaffirm our willingness to assume responsibility for our common environment, and to do it willingly, hopefully, and joyously. We are challenged here today not so much to sacrifice as to celebrate and create. I've challenged Americans who are young in years or young in spirit to offer their time and their talent to serve their communities and their country. I've asked them to help in teaching our children, healing the sick, policing our streets.

But equally important are efforts to protect our environment -- from our largest cities to our smallest towns to our suburbs. Our National Service Plan will ask thousands of American to do their part, from leading recycling drives to preventing lead poisoning.

The challenge to shoulder responsibility and seize opportunity extends to each of us in business, communities, and homes. In our own lives, in our own ways, each of us has something to offer to the work of cleaning up America's environment. And each of us surely has something very personal to gain.

On a colder day in the middle of winter, just three months ago, a poet asked us to celebrate, not only the marvelous diversity of our people, but the miraculous bounty of our land. "Here on the pulse of this new day," Maya Angelou challenged us to look at, "the rock, the river, the tree, your country." Now, it is a season of new hope and new beginnings. And as we look anew at our neighbors, our children and our own communities, as well as the world around us, we must seize the possibilities inherent in this exhilarating moment; to face our challenges, to exercise our responsibilities, and to rejoice in them.

Thank you very much. (Applause.)

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Divider Title: _____

Statement of

The Honorable Timothy E. Wirth

Under Secretary of State for Global Affairs

before the

Senate Foreign Relations Committee

Subcommittee on International Economic Policy, Export and Trade Promotion

October 9, 1997

Mr. Chairman and Members of the Subcommittee:

Today, in addition to providing an update on our progress in the climate change negotiations, I would like to address three issues: (1) the matter of the European Union "bubble", (2) issues related to developing country participation, and (3) the various mechanisms through which we can bring appropriate technologies to developing countries to assist them in combating climate change.

Let me start with an update, in particular focusing on developments since I last appeared before this committee in June 1997.

We are rapidly approaching the end of the negotiations leading up to the third session of the Conference of the Parties, to be held in Kyoto, Japan from December 1-10, 1997. As of today, there are only 64 days left – and only about 18 of those are set aside for formal negotiations. Progress has been made, on some of the important issues, and the beginnings of an agreement are emerging. If we are successful, the agreement is likely to include critical elements of our own proposal, including:

- an emissions budget, which allows for smoothing of fluctuations in weather and economic variables and some flexibility in the timing of emissions reductions;
- a multi-gas approach, in which not only carbon dioxide but all greenhouse gases are incorporated (although there is significant opposition to including "sinks");

- international emissions trading and joint implementation, both of which increase flexibility by allowing Parties to offset emissions at home with the purchase of emissions reductions elsewhere;
- mechanisms for monitoring and verification of reductions, which insures a level playing field for all Parties; and
- action by developing countries, in addition to a target and timetable from developed countries.

I do not mean to suggest that the final text will include each of these elements in the form that we originally set forth in our U.S. proposal this past January; the negotiating process does not allow for that. But the Administration has proposed, and much of the world has begun to accept, an overall paradigm for moving forward to address this serious problem: a solution which maximizes flexibility in implementation while insuring the integrity and environmental benefits of emissions targets.

The Administration is not yet at the point of finalizing its decision regarding a target for controlling emissions. We will keep you informed as to our progress on this front. We have clearly heard the concerns raised in this committee, as well as those raised in the Senate Resolution passed early this summer. I wish to restate here: our agreement will protect American competitiveness and will be in the best interest of the American people. The President again committed himself to these goals at the White House conference on Monday, and it is a goal to which we have consistently adhered during the course of our negotiations.

However, on many aspects of our proposal, we have been clear – and the domestic consensus supports our approach. The Administration has been aggressively promoting these elements of our proposals in an intense round of bilateral and multilateral sessions. The President has made climate change an issue in his meetings with other national leaders, including in sessions on the margins of the General Assembly session of the United Nations. The Vice President and the Secretary of State have raised climate change in their own meetings. I have had a series of sessions in Europe and

Saudi Arabia, as well as with key ministers from Japan, Australia, Canada, and New Zealand, and I will continue to raise this issue in meetings in China later this month. Senior officials have been in Latin America and in Asia discussing our positions. Our hard work is beginning to pay off in an opening of peoples' minds to our perspectives; we remain hopeful that our continued efforts will create a consensus around our approach as we move to Kyoto.

Our allies in the negotiations are found in all blocs of countries: among the developed countries, we have our most extensive areas of common ground with Australia, Canada, Japan and New Zealand – each of which supports our proposals for the flexibility elements so important to achieve a lasting, successful and economically feasible agreement in Kyoto. Many countries of the former Soviet Union and of Eastern Europe support our proposals as well. However, we have reached something of an impasse with our European colleagues.

The EU "Bubble"

As you are probably all aware, the EU has chosen what many analysts consider an unrealistic and unachievable target of a fifteen percent reduction by 2010 below 1990 levels. Further complicating the negotiation, European Union member states have also insisted that they be allowed to "bubble" their emissions. This means that while emissions as a whole may be limited to a set target, each individual country may not be required to meet that limit. In fact, a significant portion of the total EU emissions reductions are anticipated to stem from the re-unification of Germany, and the removal of coal subsidies in the UK and a switch to natural gas. While we certainly applaud the shutting down of inefficient and polluting factories and of the removal of subsidies in the energy sector, it is not clear that the benefit of such actions should eliminate the need for other countries within the EU to act. Yet, under the EU proposal, some countries will not be required to reduce emissions at all – and some will be allowed to grow. For example, Portugal will be entitled to emissions increases of 40 percent above 1990 levels by 2010, Spain will be able to increase emissions by 17 percent, and France will be required only to maintain emissions at 1990 levels

Congress has been quick to point out some of the problems inherent in this kind of "burden-sharing". I would like to share with you some of the questions we have asked on this issue:

- We have questioned how the EU proposal would relate to international emissions trading. If it is merely a proposal in which each country would be given a flat-rate, and then allowed to trade emissions on the market, we would support their approach.
- We have not been told how the EU intends to insure accountability: for example, if the European Union exceeds its target, what compliance mechanisms exist? Will each country within the EU have the same obligations as countries outside of the Union? Is each country responsible for its "share" only? How is that determined?
- What kind of examples is the EU setting for the developing world? If a 40 percent increase is allowed for some industrialized countries, than even less can be demanded from developing countries. Surely we must demand more of the industrialized country Parties in an effort to set an appropriate standard.
- How will new European Union member states be brought in? If the number of countries is enlarged through the addition of Eastern European members with low emissions, will the overall target be adjusted?

I hope this list of questions gives you an idea of the extent to which we are demanding answers in the international debate. Clarity on these questions is essential for eventual agreements in Kyoto.

Developing Countries

Let me turn to another issue of enormous concern to those on this committee and to others outside this room as well: the participation of developing countries. Let me be clear - developing countries must participate in this treaty. The rationale for developing countries to act is clear: while at present they are responsible for less than half of global emissions, over the next decades, their percentage of the total will grow, despite the fact that their per capita emissions will continue to remain far below our own. We must

address this trend of rising emissions if we are to truly make a dent in the long-term problem.

However, I believe it would be instructive to understand better another perspective on this issue – that of developing countries themselves. Let's look at some numbers.

- According to the Intergovernmental Panel on Climate Change (IPCC), approximately half a billion cases of malaria are already reported each year. However, experts believe outbreaks of malaria will increase as climate changes. Most of the deaths from malaria occur in children less than five years old – and almost all of these kids live in developing countries.
- According to the World Bank, two billion people live on less than $2 a day, and 1.3 billion live on less than $1 a day – and all of these are in developing countries.

It is this perspective, and these factors that developing countries consider when they call on the developed world to act first.

Many uninformed observers have suggested that there are no obligations for developing countries in the current agreement. This is not true. In fact, among other commitments, developing countries are called upon to inventory their emissions of greenhouse gases, to take policies and measures to mitigate and adapt to climate change, to cooperate in the development and transfer of technologies, and to promote and cooperate in climate change research, education and training.

Developing countries have taken action to address their FCCC commitments. Just as we are working to mitigate our emissions, developing countries have proceeded aggressively to develop programs which have reduced their own. Some of the developing country effort has been the result of successful programs mounted by AID, by the U.S. Country Studies Program, U.S. Initiative on Joint Implementation, and by bilateral and multilateral donations from other countries and international organizations. However, much of the resources and the impetus for action have come from within these

countries. As we move to another level of international commitment, it is important to understand what has been achieved to date.

A number of examples of developing country efforts are illustrative of this progress. According to the World Bank, between 1991 and 1996, fossil fuel subsidies in 14 developing countries that account for 25 percent of global carbon emissions from industrial sources declined about 45 percent – from $60 billion to $33 billion (for comparison, note that OECD subsidies declined by about 20.5 percent, from $12.5 billion to $9.9 billion). China, which accounts for approximately 12 percent of total world energy-related CO2 emissions, has been actively reforming energy pricing, and subsidies have fallen from 37 percent in 1984 to 29 percent in 1995, while petroleum subsidies have fallen from 5 percent in 1990 to 2 percent in 1995. Furthermore, Chinese efficiency gains have also been significant; without intervention, emissions would have been nearly 155 million metric tons higher in 1990 than they were with policy actions. And, by the end of 1993, 12 percent of China's installed electrical generation capacity was produced by co-generation. Many other developing countries are also actively promoting energy efficiency. For example, in Brazil an aggressive program to use ethanol from sugar cane has replaced nearly half of the gasoline that otherwise would have been used.

What does all this tell us? Clearly, it tells us that our expectations and theirs are predicated on different assumptions. We look at them and point to the cause of the problem in the future; they look at us and point to the cause of the problem now. We look at them and worry about competitiveness; they look at us, and point to our overwhelmingly better lifestyle and standard of living – which most of them are desperate to duplicate, but are being told is beyond their reach because of the environmental consequences. As President Clinton remarked at the White House conference on Monday, our problem with China is one of national security – it is that China might follow our emissions path, and in so doing would create a world unlivable for us all. We look to Kyoto and demand that all countries participate; developing

countries look to Kyoto and agree to take actions – but only after the industrialized world has moved first.

Historically, the bonds of the developing country alliances are difficult to break, notwithstanding the often great differences within the group. We can empathize with the needs for small island states, which face potential eradication through sea level rise, to insist on aggressive targets. We can conclude that grouping all developing countries together is a mistake – and we can suggest that poor countries which emit next to nothing should have different obligations than do the wealthier countries with a significant share of the global total.

We can accommodate the concerns of developing countries that differences between levels of development are real by providing flexibility in the obligations we insist they take on. Many developing countries accept that eventually they will have to assume greater responsibility for dealing with climate change – but suggest the appropriate time for such action would be once they have passed a certain threshold of economic development.

We can also address the concerns developing countries have set forth regarding the imbalance in our expectations – that they be called upon to set targets before we have demonstrated our own good faith. This is best accomplished by fully funding our own programs and by aggressively seeking to develop the technologies that will be needed for global reductions.

We can continue to promote active developed and developing country cooperation through our ongoing bilateral and multilateral assistance programs. Evidence of success in these efforts is beginning to emerge in many developing countries with the development of renewable energy technologies, the removal of subsidies, the improvements in efficiencies and the implementation of climate action plans. We can demonstrate with our own commitments that we value these environmental efforts, and that the United States will stand by countries which invest in the long term and the global well-being

Ultimately it is actions themselves that will determine international success in addressing the climate change problem – not the instrument which codifies the obligations, or the process through which the actions may be generated. Real emissions reductions, in all countries in the world, at the least possible costs are our goals. Others may also exist – and we need to take advantage of them all.

I am not proposing that we step back from our view; that both developed and developing countries must act to avoid continued and potentially calamitous global warming. Rather, I am saying we must determine what we ask of developing countries with a realistic and fair appreciation of how they see the world as well. The level and timing of each country's commitments must be commensurate with its national abilities and level of development. Balance and fairness must be maintained. And any package to which we agree in Kyoto will insure this is done.

Our developing country proposal has three parts:

(1) It calls for continuing to advance the implementation of commitments: essentially defining the specifics of what that means, and including calling on them to increase energy efficiency, to emphasize market oriented pricing, to increase the use of renewables, to improve their transport sector – and in general to take actions to address climate change that are justified economically in their own right.

(2) It creates a new category of countries (Annex B): in which developing countries would voluntarily take on legally binding emissions limitation or reductions commitments; and

(3) It proposes that the Parties ultimately agree on provisions so that all Parties (including developing countries) have quantitative greenhouse gas emissions obligations, and so that there is a mechanism for automatic application of progressive obligations to Parties based on agreed criteria.

While we may be willing to be flexible on the procedures through which each of these elements is made part of the Kyoto package, we remain absolutely convinced on the substance. Developing countries must be clearly and integrally a part of next steps in

order for the U.S. to consider becoming a Party. The United States will not assume binding obligations until developing countries make adequate commitments in terms of their own obligations.

Developing the Infrastructure

Let me turn finally to the broader question of how we intend to develop mechanisms to bring appropriate technologies to developing countries to assist them in combating climate change. We all recognize that unless remedial action is taken, developing country emissions are expected to rise as part of their economic development. In my view – and I believe in the view of most of the members of this committee – it will be critical to find ways to work with developing countries to reduce emissions. This must be a priority regardless of the approach we take through the Convention or any subsequent legal instrument.

What does this mean? It means we must build the next 100 gigawatts of power generating capacity to be cleaner and more efficient. It means we must fully fund the Global Environment Facility. It means we must seek to continue our efforts to develop initiatives to promote environmental export credits and initiatives. It means we must rationalize our lending through the multilateral development banks and our bilateral assistance programs to cover environmental concerns. And, it means we must endeavor to continue our efforts to develop and implement the new technologies of the future.

Let us briefly consider two of the largest developing country emitters: China and India. Even after more than a decade of extremely strong economic growth, China is still a seriously underdeveloped country. On a per capita basis, China's GDP is about $620. Over 100 million Chinese still have no electricity. Seeking to remedy its domestic energy scarcity, China's five year plan calls for the addition of 70 gigawatts of electricity generating capacity before the year 2001. That means China will have to add one 1,000 megawatt electric plant every month for the next four years. Under current policies, most of that will come from coal – which currently accounts for about 75% of China's electricity. Yet there is a substantial opportunity to help China make more use of gas and renewable energy with profitable opportunities for U.S. businesses.

India is in similar straits. CO2 emissions increased by 40 percent between 1986 and 1995, with domestic coal fueling industrialization. Currently, India is even lower in per capita emissions than China – nearly five times below the world average of four tons a person, and approximately 1/20th of the level in the United States. Like China, India is also installing enormous quantities of new energy generating capacity – plans call for the installation of 62 gigawatts by 2002. Inefficiencies and poor technology mar their current infrastructure; currently in India, up to 40 percent of the electricity generated is lost in transmission and distribution. Here too, there are profitable opportunities for U.S. businesses.

We must seek ways to encourage these countries to build a more climate-friendly energy infrastructure. Fortunately, opportunities to move in a more sustainable direction are available. For example, we can work with the international financial institutions (including the World Bank and the regional development banks) and require them to look more closely at the implications of power plant financing. This might require moving away from some of the current solutions which have been seen by the international financial institutions as least cost because damages from climate change may not have been factored into earlier cost calculations. We would welcome a more extensive dialogue with Congress on ways to improve energy lending strategies in these arenas.

Many of the actions we want developing countries to take will be good for the global environment, but will cost money up-front. We must increase the funding available for the Global Environment Facility, which seeks to provide part of the costs to meet the incremental global environmental benefits the planet so urgently requires.

We need to look at ways to bring our private sector into the dialogue as well. Commercial energy suppliers are seeking power generation opportunities in developing countries. To maximize these opportunities, we will need mechanisms that provide "emissions credits" for such investments by firms and/or developed countries. We need other export financing agencies to adopt standards like Ex-Im Bank's set of emission guidelines for the projects it supports, while offering financial incentives for U.S. exporters and foreign buyers who chose renewable energy and low emission technology

options to meet their power generation needs. These measures such as Ex-Im Bank's need to be complemented by a global recognition and acceptance of strong environmental criteria. Once our firms demonstrate that new, fuel-efficient technologies and renewable energy sources are commercially viable, we can expect that countries in the developing world will quickly adopt that technology. We should also look to ways to encourage research and development into energy-efficiency and renewable energy both by our private sector and through government funding and research. The development of long-term alternatives will be critical in the path to a sustainable future. Congress has been in the forefront of promoting private sector investment; we would welcome a continued dialogue on how to advance our environmental goals through such mechanisms.

It is clear that these actions must be taken. However, it is equally clear that none of these important steps can be taken by the Administration acting alone. Each will need congressional support. The Senate's attention to the climate issue has brought into focus the importance of the problem, and the need to involve all countries in the solution. In this light, we must now work together to find that solution. I look forward to doing just that.

I would be pleased to answer any questions from the committee. Thank you.

Under Secretary for Global Affairs Timothy E. Wirth
Statement before the Subcommittee on International Economic Policy, Export and Trade Promotion of the Senate Committee on Foreign Relations
Washington, DC, June 19, 1997

Good morning, Mr. Chairman. I am pleased to join you this morning to discuss the importance of climate change and to outline the United States negotiating position as we move toward December's multi-national conference in Kyoto.

Climate change is probably the most important environmental challenge facing the world. The ecological, human, economic and political consequences are of enormous importance for the mid-term and for the long-term - and each of us needs to understand them. We look forward to active and frequent consultations with this Committee and with the other members of Congress as we seek to reach an agreement and as we set up the needed long-term process.

The Science
I want to begin with the science - because scientists were the ones who drew our attention to climate change in the first place, and because we continue to base our policies on the best evidence and the most rigorous scientific analysis available.

Let me highlight some of the key scientific issues on which there is a global consensus:

- Human activities have significantly increased the atmospheric concentrations of greenhouse gases over the last century.
- Global average temperatures have already increased by about one half to one degree Fahrenheit.
- The balance of evidence suggests a discernible human influence on global climate.
- Projections of the future change, based on complex climate models and on our best understanding of the physics of the climate system, suggest an increase of another 2 to 6 ½ degrees Fahrenheit by 2100, with an average greater than any seen in the last 10,000 years.
- Sea levels are projected to rise an additional 1 ½ feet by 2100, from expansion of the oceans due to global warming, and from a melting of glaciers and ice sheets.
- Climate change is likely to have wide-ranging and mostly adverse effects on human health, with direct and indirect effects leading to increased mortality.
- Coastal populations and infrastructure are vulnerable: a 20 inch rise in sea levels would put about 100 million people at risk each year from storm surges, with significant costs.
- Natural and managed ecosystems are at risk as ideal ranges shift with the climate. The location of forest and agricultural zones will change significantly.
- Future unexpected changes in the climate are not included in the models. These surprises may have impacts of global magnitude such as fundamental changes in global ocean circulation or ecosystem behavior.

These are the conclusions of the Intergovernmental Panel on Climate Change -- an international body of more than 2500 scientists, expert in all aspects of climate change, including the physical sciences, the social sciences and the economics. U.S. government experts have endorsed their work, as have the academic communities in the United States and around the world.

An excellent summary of the science and the impacts that could occur as a result of global climatic disruption was presented yesterday on behalf of nearly 2500 leading American scientists and I would like to include their statement for the record.

We do not yet have all the answers with respect to the science. We cannot yet say with certainty what the local effects of climate change will be. But, with better scientific data, the picture is becoming clearer.

For instance, in the United States, twenty inches of sea level rise would inundate 9,000 square miles of U.S. coastal land, with great loss of property and infrastructure. Rising temperatures could double the number of heat-related deaths. We now know that the ten warmest years since records began all occurred since 1980. Some of the most recent data shows that four of the five hottest years have occurred since 1990. With CO2 concentrations doubled in the atmosphere, heat waves like the one that killed around 500 people in Chicago two summers ago would be four to six times as likely to occur.

While we acknowledge uncertainties about where, how fast and when climate change will occur, and while we continue to press for research that will help us to answer these important questions, the basic fact remains that we are having a discernible impact on our climate.

Our policy is based on the current scientific consensus and on the need to achieve the most cost-effective emissions reductions possible. Our policy has three simple and straightforward objectives which are outlined in detail in a framework proposal we submitted to the climate convention in January. The proposal was shared with this Committee and was distributed widely with the public. The three objectives are as follows:

1. We are seeking to establish a legally binding emissions target for developed countries which is verifiable, credible and realistic.
2. We are seeking an agreement in Kyoto that maximizes the flexibility for each country to meet this legally binding target, including through the use of market mechanisms.
3. Third, we recognize the importance of involving all countries in the agreement - and to this end we have incorporated extensive language into our proposal that calls for developing countries to act.

Let me go through each of these in greater detail.

The Target: It is clear that the Framework Convention on Climate Change has not proven adequate to the task of reducing global emissions. We anticipate that only two countries will meet the Convention's non-binding aim of lowering emissions to 1990 levels by the year 2000. We ourselves will miss the aim by about 10%.

We believe a binding legal obligation to act will result in the passage of domestic laws - in all countries - that compel action. In order to build in some flexibility, our proposal calls for the targets to be multi-year in nature. Without this sort of legal obligation, countries will continue to pay only lip-service to their efforts to solve this problem. The past shows this is not enough.

Flexibility: Solving the problem of climate change is a long-term proposition that will require enormous effort over a sustained period. It is therefore vital that we achieve emissions reductions as cost-effectively as possible. Our approach to climate change seeks to do this. We have recommended that each country be given the maximum flexibility to meet its legal obligation. And we have rejected common, harmonized policies and measures recommended by some countries. We have also learned from the successes of the past, and are, wherever possible focusing our efforts on the use of market mechanisms to reduce costs.

One of the most innovative of these is the introduction of "emissions trading" into the lexicon of international agreements. The concept has been successfully used to reduce costs (as much as tenfold) in meeting the standards set for power plant emissions of sulfur dioxide. A similar program has also been successfully implemented in the Montreal

Protocol on Substances that Deplete the Ozone Layer. In the climate context, we envision that Parties would be allowed to trade their emissions - seeking to reduce them where it is most cost-effective to do so. While we are still engaged in working through some of the details of how to implement this proposal, it is clear that such a program could significantly reduce the costs; some studies suggest by up to one-half.

Another piece of our strategy on flexibility is joint implementation. Through joint implementation, countries are allowed to undertake emissions reductions projects in developing countries and count these reductions against their own emissions. We believe that joint implementation holds enormous potential to reduce global greenhouse gas emissions in a cost-effective manner. Joint implementation would also produce other benefits such as encouraging technological innovation, promoting the use of cutting-edge U.S. energy technologies, and protecting forests and other critical habitat around the world.

The U.S. has extensive experience with successful joint implementation projects. Recently, our approach on joint implementation received a major boost when President Clinton received the endorsement of the Dominican Republic and the seven Central American nations to endorse our concept of joint implementation for credit. This is a good example of our commitment to pushing through flexible mechanisms to implement new commitments under the Climate Change Protocol.

Developing Countries: We recognize the importance of including developing countries in this agreement. Their participation is critical to achieving any kind of a lasting success in combating the threat of climate change. For that reason, the participation of developing countries has been a central piece of our own negotiating strategy. We must seek a level playing field in which all countries that contribute to the problem contribute to its solution.

Developed countries, including the former Soviet Union and the countries of Eastern Europe, contribute about 60% of global emissions today, and developing countries account for about 40%. What do these numbers tell us? First, that the developed countries have historically contributed the greatest amount to the current heightened concentrations; we have fouled the nest. But the developing countries are rapidly growing, as are their emissions. The United States, with 5% of the world's population, is the largest greenhouse gas emitter, with more than 20% of the world's emissions. But China is not far behind, and is expected to pass us sometime in the first quarter of the 21st Century, although on a per capita basis, its emissions are projected to be less than one fifth of our own even then.

There is a clear concern about the potential impacts on our international competitiveness. Let me assure you that developing countries are part of our negotiating strategy and they must join us in order to insure that no country suffers significant competitive disadvantage.

We are all in this together, with different histories but with the same future. We pull a heavier oar at the beginning; over time, we all must pull together. Our policy has to be calibrated to reflect this reality. We cannot expect to solve the global problem unless all countries -- developed and developing -- participate in the solution. To this end, we have proposed three separate elements for developing countries in our proposal for Kyoto:

1. We call on developing countries to continue to elaborate on their commitments in the Convention - including by providing information on emissions on an annual basis (the same as for developed countries), and by taking "no regrets measures" (actions which may be valuable in their own right, and which also mitigate climate change). We also call for a regular review of the actions developing countries are taking (again, using a review process similar to that established to assess our own actions).
2. We call on the newly developed countries (such as Mexico and Korea) to take on binding legal obligations to reduce emissions, recognizing that while the targets they adopt may not be the same as our own, such commitments will codify their new status, and differentiate them from the lesser developed countries. We are now working with potential members of this group to seek their agreement on such a step.

While by no means an easy task, we believe that in Kyoto, we can find some language to insure that countries in this category will take on commitments that correspond to their more developed status.

3. We call for the negotiation of a new legal instrument which will include legally binding obligations for all countries - including all developing countries - as a next step in the path toward the ultimate stabilization of greenhouse gas concentrations in the atmosphere at a level that is not dangerous. This step, too, faces significant difficulty in the negotiations leading toward Kyoto.

Finally, I want to take this opportunity to note that one of the most important potential incentives with regard to additional developing country participation-- the Global Environmental Facility -- would be seriously undermined if Congress does not fully fund the U.S. contribution to this program. I hope you will support our request of $100 million for the GEF for this year.

Let me close this morning by briefly reviewing for you the negotiating process between now and December 1 - when we meet in Kyoto for the third session of the Conference of the Parties to the Convention.

We have two more one-week officials-level negotiating sessions - the first in late July in Bonn, and the second in late October, also in Germany. During these two weeks we will be examining and negotiating the extensive text, which is a compilation of all the material submitted by all countries. This is an extremely divergent and broad document reflecting many interests around the world and it must be moved toward some consensus.

At one end of the spectrum, reflecting their strong commitment to making an aggressive statement, the European Union has proposed that developed countries reduce emissions by 15 % below 1990 levels by the year 2010. The Organization of Small Island States has proposed a 20% reduction by the year 2005.

At the other end, reflecting their concerns with the potential impacts of various emission reduction proposals (particularly on reductions in the consumption of fossil fuel), OPEC countries have introduced a proposal that they be compensated for any economic cost they might incur as a result of treaty requirements.

Other countries have introduced recommendations that they be allocated an individualized, different target. This commitment to so-called "differentiation" is not yet defined, but is used by many countries as a first step toward finding their own way of joining the negotiating process.

As we examine these proposals, and develop our own negotiation strategy, we will continue to be guided by our own principles of feasibility and economic opportunity. We are, as you know, doing extensive economic modeling, and we have not yet completed the process. We expect the modeling will soon be completed and available to all interested parties.

I think it is useful as we think about the economic impacts of reducing greenhouse gas emissions that we remember over 2,300 economists, including eight Nobel Laureates, have endorsed a statement which in part states:

> "... As economists, we believe that global climate change carries with it significant environmental, economic, social, and geopolitical risks, and that preventive steps are justified...For the United States in particular, sound economic analysis shows that there are policy options that would slow climate change without harming American living standards, and these measures may in fact improve U.S. productivity in the longer run."

I would ask that the economists' statement also be included in the record.

Finally, I should note that we understand that Kyoto is but one more step on the long road toward stabilizing the atmospheric concentrations of carbon and other greenhouse forcing gases. The long-term goal is stabilization of concentrations of greenhouse gases in the atmosphere at an acceptable level. This is a task that must begin now but which will require a sustained effort over the next decades.

Kyoto is a first step, but a very important one. The message that we send, by what we do, is enormously important. We believe we can succeed by:
-- developing new technologies, and thus improving the way we fuel our economy, transport ourselves, and process materials
-- using flexible economic instruments and market mechanisms
-- bringing in developing countries as full partners
-- fulfilling the obligations of our leadership role

And throughout this process, we can continue to promote economic development and improve the standard of living for the American people, while we protect the environment.

It is important, in Kyoto, that we set up a system that will work -- one that will allow us to reduce our emissions at the lowest possible cost so that we can achieve the maximum protection of the environment. And it is also important that we send a clear signal to governments and industries so they can make significant investments in the new technologies that will be required if we are to achieve our ultimate goal. And finally, although those of us in the developed world must take the lead, everyone must participate in moving toward the solution.

I look forward to working closely with you and your colleagues on this most challenging and complex of environmental issues.

Thank you very much and I will be happy to answer any questions you may have.

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Conference on Climate Change, Evolving Technologies, U.S. Business, and the World Economy in the 21st Century

Opening Remarks of the Honorable Timothy E. Wirth, Under Secretary of State for Global Affairs, Department of State, Washington, D.C., June 18, 1996

Good morning and thank you all for coming.

On behalf of Secretary Christopher, Undersecretary Spero and the rest of the Department, I want to welcome you here today for this important and exciting conference where we will explore the intersection of good economic and good environmental policy.

As all of you know, the Clinton Administration has placed economic issues, technology issues, trade liberalization and American competitiveness at the top of its strategic priorities. Simultaneously, we have attempted to integrate the environment our economic and social policy, both domestic and foreign. This kind of integration is symbolic of the ideas put forward by the World Business Council for Sustainable Development -- the idea of eco-efficiency. Eco-efficiency is about integration -- linking economics, environment and equity. And it is a promising platform from which to build.

In this country and around the world, there are countless examples which demonstrate that the public and private sectors can work together to achieve simultaneous economic and environmental progress. Tremendous strides have been made in developing more efficient means of generating power and transporting people. Ingenious new systems of productio Pollyanna, or to suggest that the hard work is done and that we can now relax.

I cite them because these successes are important, very important:

- they prove that partnerships between the public and private sectors, between science and government, can work;
- they prove that public dollars, wisely invested, can bring a significant return;
- they demonstrate that there is a great deal of money to be made from technological innovation and the need for a clean environment;
- and they form the foundation for the resolve and determination that must be summoned to face today's challenges.

Among the foremost of these challenges is how to take sensible steps to guard against potentially costly impacts associated with global climate change. This is an issue that has been with us for some time, first postulated more than 100 years ago and taken up through serious scientific investigation about 25 years back.

An enormous amount of research has been done and the workings of the global climate system are now broadly understood. Late last year the international body of scientists assembled to investigate this issue, the Intergovernmental Panel on Climate Change, issued its second assessment report and more strongly than ever before underscored the seriousness with which the world's leading experts view the issue of global climate change and humankind's role in it.

In the weeks and months ahead, we will be engaging in important negotiations that will help guide public and private actions to control greenhouse gas emissions in the post-2000 period. These negotiations will no doubt be the subject of intense discussion and debate. Today, however, we want to explore and try to define broad common ground. This conference is aimed at identifying opportunities for developing, demonstrating and deploying goods and services that serve our economic and environmental interests. We want to help highlight the notion and the reality that far-sighted, creative and aggressive businesses can do well while doing right.

This is a major theme emerging in the State Department. Secretary Christopher is preparing the Department to take on the challenges of the post-Cold War -- economic and environmental alike.

Undersecretary Spero will be talking about the Department's America Desk and our efforts to work with the private sector to strengthen America's economy at home, by enhancing opportunities abroad. Similarly, in his extraordinary speech on

American diplomatic leadership in international environmental affairs this April, Secretary Christopher made the critical linkage we are exploring here today.

"We are committed," he said at that time, "to helping U.S. companies expand their already commanding share of a $400 billion market for environmental technologies."

That is what today's meeting is all about. It is not about revisiting stale arguments or engaging in debates about the science of global climate change. It is not even about the critical negotiations that will continue next month over what the international community will do together to address this challenge. Rather, recognizing that this is a problem that must be addressed, and can be addressed, we want to explore that territory where there is complete consensus: where opportunities exist for reducing emissions and enhancing efficiencies, American industry should be at the forefront.

We look forward to working with you on this important challenge. We need your input and ideas and we welcome your suggestions about how we can do a better job of working with you to capitalize on the market opportunities that are opening up all over the world.

Thank you again for coming.

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Timothy E. Wirth, Under Secretary for Global Affairs
Testimony before the Energy and Natural Resources Committee
U.S. Senate, September 17, 1996
Washington, DC

Good morning, Mr. Chairman. I am pleased to rejoin your company this morning to describe the Clinton Administration's efforts to address the far-reaching challenge of global climate change. As you know, the parties to the Framework Convention on Climate Change, agreed upon and ratified by the Senate in 1992, recently held the second major meeting -- or Conference of the Parties -- in Geneva. As requested in your letter of invitation, I would like to discuss the rationale for the position articulated by the United States in Geneva and to answer any questions that members of the Committee have.

The United States had four primary objectives for the Geneva meeting: 1) we wanted to put our shoulder behind the outstanding and unparalleled science that has been developed by the world's best scientists through the Intergovernmental Panel on Climate Change; 2) we wanted to shift the negotiations toward strategies that will achieve environmental results in an economically sensible manner -- so we rejected unrealistic proposals by some countries, and proposed that future commitments be realistic, verifiable and binding; 3) we wanted to ensure that national and international flexibility were preserved, allowing for the use of the most innovative and cost-effective mechanisms here and abroad, such as joint implementation and international emissions trading; and 4) we wanted to make sure that all nations, including developing nations, are involved in these negotiations and next steps that will be reached through them.

I want to begin, Mr. Chairman, with the issue of science -- for it is scientific research, and broad consensus among the world's leading experts, that form the foundation for our concern and proposed strategies on this issue. As you know, this Committee has a long history of engagement with scientific experts involved in this issue -- and I remember well a long series of hearings between 1987 and 1992 that I had the privilege of working on from your side of the dais during my term in the Senate, under the leadership of then Chairman Johnston.

One of the most memorable of those hearings occurred right here in this room in June of 1988. You will recall that that was the day that a brave and pioneering NASA scientist named Jim Hansen -- a leading authority on climate change -- told this Committee and the world that he believed that the scientific evidence was ever more apparent that global climatic changes were occurring outside the range of natural variability and that he believed global warming was underway. That was a bold assertion at that time and there were few scientists at that time who were willing to go as far as Dr. Hansen.

Almost a decade later, Mr. Chairman, a great deal of scientific progress has been made. At the behest of the Bush Administration, the international community set about to establish an inclusive international scientific body to answer questions about global climate change. Accordingly, the Intergovernmental Panel on Climate Change (IPCC) was established as a partnership of the World Meteorological Organization and the United Nations Environment Program. Over the past five years, the IPCC has emerged as the world's preeminent scientific and technical body concerned with the threat of global climate change. The IPCC involves more than 2000 scientists from more than 100 countries and uses recognized standards of peer-review in its scientific method.

In December of last year, the IPCC finalized its Second Assessment Report -- representing the most recent, authoritative and comprehensive scientific analysis we have available to us on this issue. The second assessment was the result of years of effort, extensive peer review and exhaustive analysis and consultation. The most important of the IPCC's scientific findings are as follows:

- The chemical composition of the atmosphere is being altered by anthropogenic emissions of greenhouse gases.
- The continued buildup of these gases will enhance the natural greenhouse effect and cause the

global climate to change.
Based on these facts and additional underlying science, the second assessment reported that "the balance of evidence suggests that there is a discernible human influence on global climate."

This last finding represents the first time that a consensus has emerged among leading climate scientists that the world's changing climatic conditions are more than the natural variability of weather. In short, the IPCC's results have further underscored the compelling nature of scientific understanding of this issue.

Nonetheless, uncertainty remains. The scientific community cannot yet tell us precisely how much, when or at what rate the Earth's climate will respond to greenhouse gas buildup. However, making the best possible estimate based on what is known about the complex climate system, the scientific community believes that current emissions trends (resulting over the next several decades in the effective doubling from pre-industrial concentrations of carbon dioxide in the atmosphere) will lead to global temperatures which, on average, are 2 to 6.5 degrees Fahrenheit warmer than today, increasing at a rate greater than any known for the past 10,000 years.

Based on these estimates, the best scientific evidence indicates that human-induced climate change, if allowed to continue unabated, could have profound consequences for the economy and the quality of life of future generations:

Human health is at risk from projected increases in the spread of diseases like malaria, yellow fever and cholera;

Food security is threatened in certain regions of the world;

Water resources are expected to be increasingly stressed, with substantial economic, social and environmental costs in regions that are already water-limited, and perhaps even political costs where there is already conflict over limited resources.

Coastal areas -- where a large percentage of the global population lives -- are at risk from sea level rise.

In our opinion, the IPCC has clearly demonstrated to policymakers that further action must be taken to address this challenge. We are not swayed by and strongly object to recent allegations about the integrity of the IPCC's conclusions. These allegations were raised not by the scientists involved in the IPCC, not by participating governments, but rather by naysayers and special interests bent on belittling, attacking and obfuscating climate change science. It is our strong belief that the IPCC's finding meet the highest standards of scientific integrity. This is the best science we have and it is the responsibility of policy makers to consider the panel's findings and respond with corresponding thoughtfulness.

Unhappily, while the established international scientific process is working well, the international policy process has not been as successful. While an important first step, there a number of shortcomings in the Framework Convention on Climate Change (FCCC). Perhaps most important, the current Convention structure has not achieved its primary aims; few nations in either the developed or developing world have been fully successful in meeting their objective of reducing greenhouse gas emissions. We have to do better.

Last year, at the first Conference of the Parties in Berlin, treaty participants agreed to launch a new round of negotiations aimed at defining steps that would be taken after the year 2000. The so-called "Berlin Mandate" defined the broad terms by which next steps under the Convention would be negotiated. The Berlin Mandate directed the negotiations toward 1) defining emissions limitations objectives for Annex I nations in the post-2000 period; and 2) advancing implementation of commitments by developing nations.

In Berlin, as today, it was our belief that the final consensus reflects our belief that this is a global problem requiring global solutions: all countries must work together to do more to guard against harmful climate changes. While the Berlin agreement specifies that there will be no new commitments for developing country Parties, it calls for advancing the implementation of the existing treaty commitments

agreed to by developing countries and allows for negotiations on new commitments to begin as soon as work under the Berlin agreement is complete. Under the existing treaty, developing countries are required to adopt policies and measures to reduce greenhouse gas emissions. We are working now to develop specific proposals for advancing implementation of these existing commitments by the developing countries.

Over the past year, the United States has been engaged at home and abroad in serious analysis of the successes and failures of the current Convention structure in preparation for the negotiations that have been underway since Berlin. Based on these extensive efforts, the United States articulated in Geneva a proposed structure for next steps that we think should form the basis for negotiations over the next 16 months. We call this a "framework"; it has yet to be fleshed out with specific numbers and we have work to do to further develop several issues associated with this approach. In the months ahead, our ongoing analysis and assessment will allow us to more precisely articulate the specific contents that the United States could support.

Now, before discussing the elements of our proposal, let me touch on the underlying rationale for the approach we recommended in Geneva. The new U.S. approach is based most fundamentally on a desire to ensure that the negotiations focus on outcomes that are real and achievable. We believe that sound policies pursued in the near term will allow us to avoid the prospect of truly draconian and economically disruptive policies in the future. The old adage, so appropriate to much of public policy applies here: an ounce of prevention is worth a pound of cure -- the cost of action in the medium-term is less than the cost of inaction in the long-term.

Second, our approach was formulated on the premise that prospective solutions must be flexible and cost-effective. We do not view favorably a cookie cutter approach to the actions nations might take, and we certainly will not accept proposals that are offered for competitive advantage, not environmental progress.

And third, our approach is based on the belief that the agreement being negotiated should lay the foundation for continuing progress by all nations in the future. The United States is immovable in its belief that international cooperation on this challenge remains critical to any effective response and that all nations -- developed and developing -- will have to become more ambitious in contributing to the solution to this challenge as we move forward.

Based on these principles -- environmental protection, economic prosperity, flexibility, fairness and comprehensiveness -- the United States recommended in Geneva that future negotiations focus on an agreement that sets a realistic, verifiable and binding medium-term emissions target. We believe that the medium-term target must be met through maximum flexibility in the selection of implementation measures, including the use of measures such as reliable joint implementation and trading mechanisms.

The proposal we made in Geneva represents a departure from the treaty's current approach, which has relied on non-binding "aims" for emissions reductions in the year 2000. Unfortunately, this approach is not working -- few nations in either the developed or developing world have been fully successful in meeting their commitments under articles 4.1 and 4.2 of the Convention. In our view, continued use of non-binding targets that are not met would make a mockery of the treaty process. It leaves the impression that rhetoric is what counts rather than real emission reductions -- an outcome that is both unacceptable and counterproductive.

Similarly, we think that the current treaty needs to be strengthened through consideration of certain long-term objectives. Our view is that it will be necessary to continue working toward a longer-term concentration goal (e.g. for the next 50-100 years), as set out in the Convention's objective, recognizing that scientific understanding and technology will improve over time. Working toward such a goal would better establish the long-term, global nature of the problem.

Taken together, we believe that the U.S. recommendations related to binding medium-term targets and a longer-term concentration goal will help ensure that the international community focuses on more sensible emissions reduction goals (knowing that the goal must be met), and on the need for all nations to contribute to the solution over the long-term. In addition, these two ideas are critical prerequisites to

enabling important and cost-effective joint implementation and international emissions trading opportunities, which we believe are essential. Finally, in response to consultations with key stakeholders, these efforts are intended to make it clear over the long-term where we are going and therefore to help guide corporate planning and investments.

Having defined in broad terms the basic components or "framework" of an agreement we could support, as outlined in Geneva, I want to mention what we did not say and what we will not support.

First and foremost, we have not come to any conclusions about a specific target or set timetable for emissions reductions. We have established a comprehensive interagency process, led by the Department of Commerce, to undertake the necessary economic analysis that will be required to determine an approach that the United States believes is realistic and achievable. We believe strongly that this analysis and assessment is a necessary prerequisite to identifying a target that is realistic, achievable and consistent with the national interest and national prosperity.

Second, we did not in any way repudiate the growing number of successful voluntary programs that U.S. industry has launched to reduce emissions. Unfortunately, there has been some misunderstanding regarding the distinction between non-binding emissions reduction targets and voluntary programs. Our belief that the non-binding emissions reduction aim has not worked internationally in no way diminishes our enthusiasm for the outstanding voluntary programs that U.S. industry, state and local governments, schools and churches has embarked upon nationally to reduce emissions. Voluntary programs have played a central role in the Administration's Climate Change Action Plan, have helped us to reduce emissions significantly -- simultaneously saving millions of dollars in avoided energy costs -- and we expect them to continue to play an important role far into the future.

At Geneva, we rejected certain proposals for targets that have been proposed by other countries or groups of countries. Our preliminary analysis before Geneva made clear that many of these proposals were neither realistic nor achievable -- either because they would compromise other important principles, such as the need for flexibility in time and place of implementation (in the case of proposals for binding policies and measures), or because they involve timeframes and objectives that are not consistent with national and international prosperity (for example, in the case of the proposal by the Alliance of Small Island States calling for a 20 percent reduction in the year 2005).

We also rejected in Geneva proposals by some nations that the negotiations move toward consideration of some ambitious mandatory, internationally coordinated policies and measures. We believe that the significant differences in national circumstances suggest that few, if any individual measures are likely to be applicable to all countries.

The framework proposed by the United States won remarkable support in Geneva. Based on our presentation, we were able to obtain broad acceptance for the U.S. framework in the Ministerial Declaration that was issued at the meeting's end -- a testament not only to the soundness of our proposals, but also to the expectations the international community has for U.S. leadership in the most important and difficult tasks facing the world. Our job in the months ahead is to search for agreement on next steps that will produce results that are consistent with our environmental and economic aspirations.

This, leads me to the final area I want to touch upon -- the ambitious calendar that exists for the next year and a half, and the need for extensive public discussion and consultation on these matters in the months ahead.

The Administration's plans for engaging the public, industry and non-governmental experts included a major workshop on analysis and assessment where presentations were made by more than 50 experts from inside and outside of government about technical issues associated with our emissions trends and capability to reduce emissions in the next century. We have also engaged in a broad series of roundtable discussions with industry and non-governmental organizations to scope out common ground and identify key issues. In June, the State Department hosted a major conference on the market opportunities that are emerging as nations begin to tackle the challenge of reducing greenhouse gas emissions. There are a range of technologies and business interests that American firms are superbly positioned to take advantage of as nations all over the world seek to enhance efficiency and deploy new technology in

service of economic and environmental goals.

To advance our preliminary work and follow-up on the framework outlined in Geneva, the Administration has established an unprecedented and comprehensive interagency process, under the direction of the Department of Commerce and including DOE, EPA, CEA, and all other appropriate agencies and Administration representatives. When the process is completed, this team will have created an analytic "toolbox" capable of assessing the economic effects of a broad range of climate change policies, in terms of growth, employment, sectoral and industry effectives, competitiveness and other issues. In addition, as preparation for the negotiations ahead, we are considering approaches to a number of the elements of the framework we proposed in Geneva, such as options for advancing the commitments of developing countries and similar issues that will discussed in the months ahead.

As always, we will work closely with the Congress, industry and the public at large. We have already begun some of this work, through these hearings and in a wide variety of meetings over the past several months. Together, I believe we can ensure that United States plays a lead role in fashioning an agreement next year that is comprehensive, flexible, fair and certain. In this way, we hope to outline an agreement that will help prepare our country and the world -- environmentally and economically -- for the 21st century.

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WASHINGTON, D.C. 20500

THE CHAIRMAN

Statement before the House Commerce Subcommittee on Energy and Power

Dr. Janet Yellen

Chair, Council of Economic Advisers

Tuesday, July 15, 1997

Good afternoon, Mr. Chairman and members of the Subcommittee. I appreciate the opportunity to discuss with you today the economics of global climate change.

Introduction

In his speech to the United Nations Special Session on Environment and Development in June, President Clinton emphasized that the risks posed by global climate change are real and that sensible preventive steps are justified. This assessment accords with the views of the more than 2300 economists, including 8 Nobel laureates, who signed a statement supporting measures to reduce the threat of climate change. The economists endorsed the conclusions from last year's report by the Intergovernmental Panel on Climate Change (IPCC), which said that governments should take steps to reduce the threat of damage from global warming, and went on to argue that market-based policies can slow climate change without harming the American economy.

At this time the Administration has not settled on a particular set of new policies to reduce greenhouse gas emissions. Instead, the President indicated in his U.N. speech that he intends to engage in a discussion with all interested parties about the problems posed by

greenhouse gas accumulations and the costs and benefits of corrective action. To this end, the President will hold a White House conference on climate change later this year, and Members of his Cabinet and other senior Administration officials will meet with Members of Congress, scientific and economic experts, environmentalists, local government officials, and business and labor leaders on a regular basis over the next several months to discuss issues related to climate change. This process is intended to inform the Administration's decision-making process, which will culminate in a U.S. policy position in the international negotiations in Kyoto in December of this year.

An important step in this -- and any -- policy process is determining the impact it will have on the American economy. President Clinton's top priority, since his first days in office, has been revitalizing the U.S. economy, creating jobs and investing in people and technology to enhance long-term growth. And, we have made tremendous progress. The President is not going to jeopardize that progress. Any policy he ultimately endorses on climate change will be informed by his commitment to sustaining a healthy and robust economy.

In my testimony today, I would like to describe some of the principal lessons that emerge from the voluminous literature, much of it relatively recent, on the economic impacts of policies to address global climate change.

Underlying Uncertainties

Before I begin my discussion of the economic literature, I would like first to acknowledge the uncertainties associated with estimating both the costs and benefits of reducing greenhouse gas emissions. To provide some perspective: as you all know, it is difficult to gauge exactly what impact the balanced budget agreement will have on the U.S. economy's growth rate, levels of employment, interest rates and consumption over the next five years. But with global climate change, it is orders of magnitude more difficult to gauge the effects on the economy: we are concerned with not just the next five years and not just the American economy, but, rather, we are dealing with economic and physical processes that operate globally and over decades, if not centuries.

Although a great many scientists believe that global climate change is already underway, the more serious potential damages associated with increasing concentrations of greenhouse gases are not predicted to occur for decades. This means that the benefits of climate protection are very difficult to quantify. And, while the potential costs of reducing greenhouse gas emissions may be more immediate, they too, as I will discuss below, are difficult to predict with any certainty. Many unanswered questions exist about the biophysical systems, potential thresholds, and economic impacts. In short, if anybody tells you that he or she has the definitive answer as to the costs and benefits of particular climate change policies, I would suggest that you raise your collective eyebrows.

Lessons from the Economic Literature

Let me now turn to the economic literature and try to summarize what I think we know so far about this difficult topic. Most economists have not addressed the benefits of climate protection, but rather have focused on the costs associated with alternative paths for reducing greenhouse gas emissions. The economic literature includes estimates using many different models to evaluate numerous alternative emission reduction strategies. In fact, because there are so many different models, economists initially faced difficulties in comparing results: they could not sort out the extent to which differences in results stemmed from differences in models and assumptions versus differences in baseline emission paths and policies. To solve this problem, thereby enabling meaningful comparisons, many economists have calibrated the various models by performing a standardized simulation. Specifically, they have assessed the consequences of stabilizing greenhouse gas emissions at 1990 levels by 2010 or 2020.

Within the Administration, a staff level working group -- the Interagency Analysis Team (IAT) -- has attempted to estimate some of the economic implications of climate change policies. They took the emissions scenario most often used in academic literature -- that is, stabilizing emissions at 1990 levels by 2010 -- as the starting point for their own analysis. I would emphasize that this scenario is not Administration policy; instead, it was picked to make comparisons with other models easier. The staff group employed 3 different models -- the DRI model, the Second Generation Model (SGM) and Markal-Macro model, all commonly available in the public sphere. In running these models, the staff adopted a common baseline and, to the maximum extent possible, similar economic assumptions. This modeling effort produced some

useful lessons, but as we found from the peer reviewers' comments, it also suffered from some serious shortcomings. Both the lessons and the shortcomings point to one clear conclusion: the effort to develop a model or set of models that can give us a definitive answer as to the economic impacts of a given climate change policy is futile. Rather, we are left with a set of parameters and relationships that influence estimates of the impacts. In my view, it is more productive to employ a broad set of economic tools to analyze policy options than to seek to develop a single definitive model.

I understand that a draft of the staff analysis was given to the Subcommittee this morning, along with the reviewers' comments. I would be happy to answer any questions you may have about this modeling effort.

The Lessons. Modeling efforts both inside and outside the Administration clearly indicate that economic analysis can do no more than estimate a range of potential impacts from particular policies and highlight how outcomes depend on underlying assumptions about how the economy works and the ways in which policy is implemented. However, the economics literature on climate change does point to several important lessons:

How the economy works. First, the magnitude of the costs of reducing greenhouse gas emissions in the various models depends crucially on a number of key assumptions about how the economy works. For instance:

- If firms in the economy can shift from high-carbon to low-carbon energy sources quickly, the costs of climate protection will be lower.
- If the economy has significant opportunities, even now, to employ energy-saving technology at low costs, the costs of climate protection will be lower.
- If technological change occurs at a rapid rate, or is highly responsive to increases in the price of carbon emissions, the costs of climate protection will be reduced.
- If the Federal Reserve pursues a monetary policy oriented toward keeping the economy at full employment, transitional output costs will be lower.

In short, the greater the substitution possibilities and the faster the economy can adapt, the lower the costs.

How the plan is implemented. Second, costs depend critically on how emission reduction policies are implemented. It boils down to this: if we do it dumb, it could cost a lot, but if we do it smart, it will cost much less and indeed could produce net benefits in the long run. The over 2300 signatories of the economists' statement argued that any global climate change policy should be rely on market-based mechanisms. Such mechanisms allow for flexibility in both the timing and location of emission reductions, thereby minimizing the costs to the U.S. economy. The economists concluded that "there are policy options that would slow climate change without harming American living standards, and these measures may in fact improve U.S. productivity in the longer run."

- The speed at which emissions reductions are required can have large effects on the estimated costs. It is important to allow sufficient lead-time for orderly investment in new equipment and technology. Alternatively, if emission reduction requirements are too far off in the future, the incentives to adopt energy efficient technologies are weakened because people may not view the policy as credible.
- A "cap and trade" system in which emission permits are issued and then traded among firms can substantially reduce the cost of meeting an emissions target by creating incentives for emissions to be reduced by those firms and in those activities where costs are lowest.
- International emission permit trading substantially lowers costs by applying the same cost-minimizing principle globally.
- So-called "banking" and "borrowing" of permits increases flexibility and lowers costs by allowing firms to change the timing of their emission reductions.
- Joint implementation, whereby US firms would receive credit for undertaking emission reductions in countries with low abatement costs, would also lower the domestic burden.

An additional aspect of implementation that profoundly affects the costs of reducing emissions concerns "revenue recycling." In many model simulations, emissions are reduced by using various market mechanisms. For many of these scenarios, the Federal government realizes an increase in revenues. Economic growth can receive a

long-term boost if these revenues are used to reduce distortionary taxes that diminish the incentives to invest, save or work, or if the revenues are channeled into deficit reduction, thereby lowering interest rates and boosting investment. In fact, in some models and scenarios, emissions reduction generates a net economic benefit when the revenues are recycled in a growth-promoting fashion.

Which countries participate. The third lesson that emerges from a study of the economics of climate protection is that developing, as well as developed, countries must be part of the process. While developed countries are responsible for most of the greenhouse gas currently in the atmosphere, developing countries are starting to catch up. By 2040, the largest fraction of emissions is estimated to come from developing countries. Thus, any comprehensive plan to deal with this global problem must include a mechanism to bring developing countries into the process.

The timetable for the inclusion of developing countries is also important. The sooner that developing countries face incentives to move away from carbon intensive energy sources, the less likely it is that they will become dependent on those types of fuels to spur their economic growth. In short, global problems require global solutions. We must find the technologies and solutions to lead the way.

Conclusion

Let me conclude. Policies to promote economic growth, create jobs, and improve the living standards and opportunities of all Americans have been and always will remain the top priority of the President and his Administration. In his remarks to the Business Roundtable on global climate change, the President said "[l]et's find a way to preserve the environment, to meet our international responsibilities, to meet our responsibilities to our children, and grow the economy at the same time."

Some of the key economic lessons we have learned that will help us achieve the President's goal include:

- Inherent uncertainty dictates that models should be expected to generate only a range of economic impacts, not definitive answers.
- Key assumptions about how the economy works directly influence the estimated costs of climate protection.
- Implementation of any policy needs to be market-based and flexible over time and space to achieve the lowest cost reductions.
- All nations, both developed and developing, need to participate.

Thank you. I would be happy to answer any questions you may have.

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Testimony of Eileen Claussen

Administration Statement

before the

Subcommittee on Energy and Power

of the Committee on Commerce

U.S. House of Representatives

September 26, 1996

Thank you Mr. Chairman and Members of the Subcommittee.

It is a pleasure for us to be here today to share with you the results of the recently held Second Conference of the Parties (COP-2) to the United Nations Framework Convention on Climate Change. We would also like to discuss the process -- through which we reached the U.S. position, and where we expect to go from here.

Most importantly, the U.S. position at COP-2 reflects our increased concern about climate change as reflected in the latest international assessment report of the Intergovernmental Panel on Climate Change. Prepared by over 2,500 of the world's

leading experts, this report concluded that the balance of evidence suggests that human actions are influencing the climate system and that many of the possible impacts will be adverse to human health and to our environment.

The U.S. delegation to COP-2 was led by Undersecretary for State for Global Affairs, Timothy E. Wirth, for the Ministerial portion of COP-2. In his July 17 statement to the Parties to the Convention, the United States called for next steps under the Climate Convention for the post-2000 period to include realistic and achievable, legally binding targets that would be implemented through flexible national programs and produce real environmental benefits. The U.S. position also underscored the need for all nations, including developing nations, to take actions to limit greenhouse gas emissions. Finally, we called for work on a longer-term goal (e.g. 50-100 years) so that we have a clearer pather for the future that allows the private sector to expand sensibly as it plans and makes investment decisions.

We arrived at this basic framework for a number of reasons. It was clear that the Convention's existing framework of a non-binding "aim" was not working. Most developed countries, including the United States, will not achieve the goal of stabilization in 2000 at 1990 levels. A binding commitment will create a stronger incentive for nations to be realistic in deciding on a target to make the effort required and ensure a level playing field. In addition, from the

analyses completed to date, we determined that more flexible approaches offer significant cost-saving opportunities that should be brought into the Convention's basic framework.

Equally important, the U.S. statement at COP-2 specifically rejected existing proposals by other countries because they called for inflexible, one-size-fits-all, policies and measures that would harm U.S. competitiveness; because they contained unrealistic short-term cuts in emissions; or because they failed to provide for cost-effective, flexible implementation.

Finally, the U.S. position fully recognized the need for global climate change to be addressed on a global basis. As a result, we called for a continued commitment by developing nations to enact policies and measures aimed at reducing their emissions of greenhouse gases. While recognizing that developed countries must show leadership in addressing this problem, we also made it very clear that all nations must be part of the solution.

Ultimately, the U.S. statement helped energize Ministers and other heads of delegation to issue a Ministerial declaration, now called the "Geneva Declaration." Ministers from nearly all Parties to the Convention endorsed this statement. The only countries that opposed this Declaration in its entirety were the OPEC countries; limited issues were raised by Russia, Australia and New Zealand.

The Geneva Declaration endorses an approach to next steps that includes a legally binding target for developed countries, in conjunction with advancement and implementation of commitments of developing countries. It affirms the Ministers' intent to complete negotiations on an agreement in time for adoption by the Third Conference of the Parties (COP-3). COP-3 will take place in Kyoto, Japan in December 1997.

Let us briefly review what is contained in the Geneva Declaration, and perhaps equally importantly, what is not.

The Geneva Declaration:

-- endorses the Second Assessment Report of the Intergovernmental Panel on Climate Change, stating that the Report provides the scientific basis for urgently strengthening action at the global, regional and national levels;

-- adopted the U.S. call for legally binding medium-term targets by instructing negotiators to pursue legally-binding targets and timetables in the final agreed instrument;

-- calls for continuing to advance the implementation of existing commitments for all Parties, including developing country Parties;

-- directs negotiators to include in the agreement a mechanism for reviewing and, where necessary, strengthening whatever commitments are set; and

-- calls for commitments to speed up the development, application, diffusion and transfer of climate friendly technologies.

Unfortunately, there has been some confusion in the popular and trade press about the Declaration. Let us clarify some of this confusion by explicitly telling you what is not included in the Geneva Declaration:

-- it does not set either the level or the timetable for greenhouse gas reductions that are to be negotiated over the next 16 months;

-- it does not support any proposed target or timeframe tabled in the negotiations by others;

-- it did not adopt the call by some Parties for "harmonized" policies and measures, so Parties are able to use flexible and cost-effective measures to achieve whatever target is agreed to;

-- it does not reject voluntary programs;

-- it does not in any way close the door on emissions trading or joint implementation; and

-- it calls for advancing the implementation of existing obligations to reduce greenhouse gas emissions for all countries, including developing countries.

While the Administration believes the declaration language is clear on the role of emissions trading and joint implementation, the U.S. delegation wanted to leave no doubt. In a clarifying statement, we noted that meeting a target must allow for maximum national flexibility, including the use of joint implementation and international emissions trading.

With the core elements of the U.S. framework included in the Geneva Declaration, we believe that we have successfully shifted the negotiating process away from rhetorical positions to more meaningful and realistic objectives about what can and needs to be accomplished. Within this framework, the United States will be in a far better position to discuss the environmental challenges and economic consequences of possible actions leading up to COP-3.

The U.S. proposed framework, based on a flexibly implemented, binding target and timetable was arrived at following an extensive and careful consultation process with the private sector, nongovernmental organizations, and

Congress. Since the last meeting of the Ad-Hoc Group on the Berlin Mandate in March, the Administration has been outlining the broad themes of what we would like to see come out of the Berlin Mandate process. These themes were explicitly stated in our testimony before the Committee last June. They included: a realistic goal leading to real and achievable reductions; flexibility in implementation (i.e., a rejection of the notion that a single policy option or set of measures can be harmonized to apply uniformly to all Parties); and an agreement that lays the foundation for continuing progress by all nations in the future. While no formal position had yet been cleared at the time of the June hearing, the above principles presented at the hearing served as the basis for that position.

In preparation of our position in Geneva, the Administration held a number of roundtables and briefings to consult with interested parties -- on this issue, on the array of other questions surrounding the implementation of the Convention, and on the course of negotiations on next steps.

For example, Assistant Secretary of State for Oceans, International Environmental and Scientific Affairs Eileen Claussen, hosted three roundtables designed to bring together high level industry and environmental NGO representatives to discuss the international negotiating process and to explore possible U.S. positions. Senior representatives from approximately 30 leading corporations representing the gas, oil, coal, chemical, automotive, insurance and electric utility

industries attended two of those gatherings, while more than a dozen top officials from environmental organizations attended the third.

The individuals invited were asked to consider five topics and to come to the roundtable prepared to discuss them. The topics were 1) targets and timetables; 2) policies and measures; 3) developing country commitments; 4) further actions under the Convention after 1997; and 5) the value of multilateral agreement under the Convention and under separate bilateral or regional efforts.

The roundtables were useful and informative. Some participants expressed a number of concerns about the negative impact which mandatory, sector-specific, policies and measures could have on the competitiveness of industry. Other business participants acknowledged global warming as a problem and sent a message loud and clear: create a system that gives a consistent, long-term signal to industry to allow for cost-effective implementation; preserve industrial competitiveness; and don't hurt the economy through ill-considered actions calling for substantial near-term reductions by the 1990 baseline.

Many in this latter group also endorsed the value of continuing the voluntary programs that have already been implemented under the President's Climate Change Action Plan to

begin to address greenhouse gas emissions. The Administration remains committed to working with all our partners in the private sector to continue and enhance voluntary approaches.

In addition to these roundtables, a number of additional briefings with industry and environmental organizations took place before and during the COP-2 meetings. Congressional staff were also briefed, formally and informally, prior to, throughout, and following the COP-2 meetings. Staff from key agencies involved in the climate change issue have been holding regular meetings with interested parties to learn about their objectives and concerns.

These meetings and the analyses presented to date have shaped key elements of the proposed U.S. framework. For example, preliminary analyses demonstrated the high costs and impacts on competitiveness of significant short-term reductions while also demonstrating the substantial cost-savings from flexible implementation approaches such as emissions trading and joint implementation. Stakeholder meetings underscored the need to avoid sector-specific harmonized policies and measures and the desirability of working toward a long-term concentration goal to help guide corporate planning and investments.

The Administration continues to develop a reasoned and transparent economic analysis to support our approach in the

international climate change negotiations. We intend to understand better the effects on economic growth before formally presenting specific proposals in future negotiations.

It is to this end that the Administration is building a strong analytic capability. A number of departments and agencies, principly among them the Department of Energy and the Environmental Protection Agency, have been involved in an Interagency Analysis Team charged with developing the capability to analyze climate change proposals. Sound analysis requires common approaches to models, underlying assumptions, and the like.

To that end, Under Secretary of Commerce for Economic Affairs Everett Ehrlich has agreed to lead this interagency team and bring the process to closure. In this role, Mr. Ehrlich is meeting regularly with DOE, EPA, Treasury, Commerce, and other agency representatives to discuss analytic approaches and to set in motion a process that leads to conclusions. When the process is concluded, we will have constructed an analytic "toolbox" capable of better assessing the economic effects of a broad range of climate change policies, in terms of growth, employment, sectoral and industry effects, and other issues. Two of the witnesses here today testified at the Subcommittee's June hearing regarding the analytical workshop in June where over 50 papers were presented. Our current efforts are an extension of that process; we commit to involving stakeholders extensively in the review of additional analyses prior to decisions on specific policies.

The United States has not yet proposed a specific target and timetable, nor have we yet defined a structure for such a binding target. We have rejected the proposals tabled to date, including the proposal supported by several small island countries for a 20 percent reduction in CO2 emissions by Annex I Parties by 2005. We are considering a variety of alternative structures for targets and timetables to maximize flexibility and minimize costs (for example, using a multiyear rolling average). We are working, through our analysis and assessment process, to determine the appropriate target from an economic and environmental perspective. We seek a range of options that can meet our environmental goals while safeguarding economic growth and U.S. competitiveness.

Undersecretary Wirth's July statement specifically called for negotiations to focus on a medium-term target and to continue working toward a longer-term concentration goal. We rejected any target which called for an unrealistic near term goal. We have heard repeatedly from many in industry that the government should send a consistent and long-term signal that allows industry to implement whatever policy is chosen prudently and cost-effectively. We heard that message and incorporated that goal in our decision to call for a binding target. This will give a decade or more of planning lead time to those who may be affected to internalize the target into their decisionmaking, and to begin working now to plan the most

effective way to get there, and speed the development and deployment of the technologies that are needed in a longer-term response to climate change.

We are still in the process of resolving some of the critical issues related to future actions to reduce greenhouse gas emissions. We are continuing to work on the following areas: the type of medium-term target; an emissions trading/joint implementation scheme; questions of compliance and enforcement; and options for advancing the commitments of developing countries. By early next year, we will develop more specific proposals on each of these areas.

We would like to reiterate that the Administration believes that any future commitment must be predicated on ensuring that the U.S. economy remains robust and internationally competitive. We also want to recognize and build on the successes of our partners in the private sector whose early efforts have significantly reduced greenhouse gas emissions and saved consumers and businesses millions of dollars in energy costs through actions taken under the Climate Change Action Plan. We will ensure that partners making voluntary reductions get proper credit for their efforts in any future regime.

We look forward to working with you here in Congress, and with other interested parties, to frame an arrangement that is legitimate, credible, consistent with U.S. economic objectives, and environmentally appropriate.

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THE CHALLENGE OF GLOBAL WARMING
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PROCEEDINGS

MODERATOR: Good morning. Welcome to Georgetown University and the White House Conference on Climate Change. Before we start our program this morning, we ask that you please note the nearest emergency exit. In addition to the third and fourth floor main entrances, there are also two emergency exits at the rear of the stage behind the large screen TVs. Also, please exercise extreme care around the lighting equipment upstairs, and be mindful of cables.

Now, please welcome Georgetown University's Women's A Capella Group, The Grace Notes.

[Applause, followed by vocal selections.]

["Hail To The Chief played."]

MODERATOR: Ladies and gentlemen, the President and Vice President of the United States, accompanied by Georgetown University President Father Leo J. O'Donovan.

[Applause. "Hail To The Chief" played.]

MODERATOR: Ladies and gentlemen, please

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remain standing for the singing of our national anthem.

[Anthem not on audio.]

FATHER O'DONOVAN: Mr. President, Mr. Vice President, members of the Cabinet. It's a little bit like welcoming an ocean wave as you all sit down. Mr. President, Mr. Vice President, members of the Cabinet, members of Congress, distinguished guests, faculty and students of Georgetown University, good morning and welcome.

Since half the United States Government, or more, is here this morning, I want you to know that I have asked several Jesuits to stay in the chapel to play [sic] for your welfare.

Georgetown is deeply honored to host the White House Conference on Global Warming.

Throughout this day, our President, Vice President, First Lady, Cabinet secretaries, will engage us in their ongoing national dialogue about one of the most significant challenges before us today. We will consider, too, the opportunities inherent in addressing that challenge.

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As the President and Vice President have noted since the earliest days of their administration, attention to global warming is imperative. We now know that for the first time in the history of our species, we are changing the environment that supports us more quickly than we are acting to adapt to those changes.

This knowledge brings with it profound implications. If we continue on this course, we face the prospect of a world that does not foster and sustain life but perhaps threatens it.

At the United Nations special session on environment and development this summer, the President exhorted us, Government, universities, business, labor, citizens, to work together to address this problem. He challenged us to direct the same ingenuity and determination that has made the United States the world's leading nation toward developing the technologies that will conserve energy, renew resources, and dramatically reduce the greenhouse emissions that induce global warming.

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He has suggested that such efforts can bring both the long-term benefit of preserving our environment and the immediate benefits of creating new jobs, and positioning us as the world's leader in an emerging technological enterprise.

Georgetown has had firsthand experience with this possibility. We are very proud of our ongoing work with the Department of Transportation's Fuel Cell Bus Project, which has resulted in the development of quieter, cleaner, more efficient vehicles.

And we look forward to continuing to contribute to the dialogue on global warming and other pressing environmental issues through the Georgetown Center for the Environment.

To spur further common work toward the goals the President has outlined, he has brought together here industry leaders, scientists and scholars, economists, environmental policy makers, and authorities on international affairs to exchange ideas and to explore solutions.

In anticipation of the international

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conference on the reduction of greenhouse gases to be held in Kyoto in December, we will consider not only our potential and obligations as a nation, but also the ways in which we can–and must–join forces with all the nations of the world to find a global solution to this global problem.

Around the world, we must define ourselves more broadly than we may be accustomed to doing–thinking of ourselves not just as individual nations, but truly as part of the human community. And we must accept our collective responsibility as custodians of the earth.

As a Jesuit university, Georgetown has a special interest in today's dialogue. Since the days of Ignatius, Jesuits have "sought God in all things"–in our fellow human beings and the elements of our existence, in the plants giving us life and the creatures of our fields and forests. As Jesuit poet Gerard Manley Hopkins put it, for us "the world is charged with the grandeur of God."

When the Society of Jesus came together at our 34th Congregation in 1995 we, of course,

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renewed our commitment to the promotion of justice as a fundamental part of our mission.

In doing so, we thought about some of justice's "new dimensions," such as a concern for the environment arising from a commitment to "preserving the integrity of creation" for the generations to come.

And so, Mr. President, Mr. Vice President, we are deeply grateful to you for your remarkable leadership and vision on this issue. And we are delighted that this extraordinary group gathers in this hall today, named after Georgetown's first student, bringing remarkable specialized knowledge and abilities to our shared interest in the well-being of humankind.

Welcome, again, and it's a very great pleasure, ladies and gentlemen, to introduce to you the Vice President of the United States.

[Applause.]

VICE PRESIDENT GORE: Thank you very much, thank you, thank you.

Thank you very much.

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Thank you very much, ladies and gentlemen, thank you.

And, Leo, thank you, for your kind words, we are very grateful for the hospitality and for your leadership on so many important matters. And on behalf of the President, who I will present to you in just a moment, I want to acknowledge some of the distinguished guests who are here and, please, forgive me in advance for overlooking some because I look around here and I see that this is an audience filled with distinguished individuals.

But I want to start by noting that practically the whole Cabinet is here, with the Secretary of State, Madeleine Albright and the Secretary of the Interior, Bruce Babbitt. Secretary of Agriculture Dan Glickman the Secretary of Energy Federico Pena, the Secretary of Transportation Rodney Slater, the Administrator of the Environmental Protection Agency Carol Browner, the Director of FEMA James Lee Witt, our UN Ambassador Bill Richardson.

Also, we are joined by the Chair of the

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Council on Environmental Quality Katie McGinty, the head of USAID Brian Atwood, the President of OPIC George Munoz, the head of USIA Joe Duffy and others and some members of Congress, who are here, including Senator Pat Leahy, and Congressman George Miller and Congressman Sam Farr and there may well be others. Again, I apologize for overlooking anyone.

Also, the Chair of the Council for Economic Advisors Janet Yellen; Jack Gibbons, the President's Science Advisor, Tim Wirth at the State Department, a lot of other individuals who are here including leaders of environmental organizations and business groups, and many others.

Well, it is an honor to open this White House Conference on Climate Change and to welcome such a large and diverse and distinguished group to address the challenge of global climate disruption.

I want to begin by thanking President Bill Clinton for conceiving of and hosting this conference, and for his outstanding leadership in shining the public spotlight on the risks of global

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warming, and for helping focus national and international attention on this growing problem.

I am not the only one who has come to expect this kind of leadership from a person who, in the last five years, has earned the right to be called the Environmental President. He has led landmark initiatives to protect the quality of our land, and our air and our water and preserve our natural resources. Doing it while, at the same time, launching an American economic renaissance.

No future leader of this country will ever again be able to say to America, we have to choose between building the economy and preserving the environment because this President has proved that you can do both and that both reinforce each other.

And we thank you, Mr. President, for that leadership.

[Applause.]

VICE PRESIDENT GORE: Global climate disruption represents one of the single greatest threats to our future. This view, which I have just expressed, is based on a mounting body of data

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which establishes beyond any reasonable scientific doubt that emissions of greenhouse gases are changing our climate.

This morning you will hear evidence from some of the world's leading scientific experts on the global climate. You will hear also from experts on other important aspects of climate change who will tell us how technology can help us reduce emissions, how we need to take a global approach and how various policy options have the potential to affect our economy.

My role in these few minutes of welcome is not to summarize or foreshadow their findings but to set this issue in its appropriate historical context. Those who have dealt with the issue of global climate disruption over the years have had to battle the first obstacle which is a feeling on the part of many that since the earth is so large and we are so small, how could we possibly alter the fundamental composition of the global atmosphere?

But, as the facts come rolling in, it is

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abundantly obvious that there are new realities we face. We are adding a billion new people every ten years now, a China's worth every decade. That is something fundamentally new in human history. And the powerful new technologies that have come out of the still accelerating scientific and technological revolution have vastly magnified the average ability of each one of those new billions of people to have an impact on the environment.

Those technologies have brought us many blessings, but they have also brought some unintended consequences that we didn't think about very much in advance. If the growth in population had not been accompanied by the advances in technology it might not have changed the fundamental relationship between human kind and the earth but these two factors together, coupled with our approach to them, have now really altered the effect that human kind can have on the earth's environment.

And, of course, the atmosphere is the most vulnerable part of the earth's environment because

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it is so thin, relatively speaking, and we are now able to alter its composition.

We cannot turn back; we must look ahead. And in looking ahead we must take steps that can soften our impact on the earth's environment and quicken our progress toward a more prosperous world. And, yet, we must be realistic: Solving this problem will take time. It has been created over a period of time. We are now, of course, accelerating the process by which climate change is being created, but we have to begin to reverse the trends that created and problem and, in doing so, recognize that it will take some time.

If we ignore the scientific warnings and continue stubbornly on our current course we had better begin to prepare what we would like to say to our children and grandchildren. Because if they encounter the terrible consequences the scientific community is saying now come as a result of global climate disruption, and then look back at the evidence that was clearly laid out for us and our generation they might fairly ask, if you knew all

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that why didn't you do something about it?

Well, I don't want to hear that question years from now and we can prevent this by taking the right steps now.

Because solving global climate disruption is not only an environmental imperative, it is also an economic imperative. We understand that if we approach the global climate change problem in the wrong way we could hinder economic growth. We will not do that. We want sustainable growth and the kind of progress that can result from approaching the problem in the right way. That means taking concrete steps that reduce emissions without jolting the economy.

We will hear today about some different options and ideas and I am confident that working together we can find a sensible approach. One of the answers will involve new technologies. Already we are developing and accelerating the use of clean energy. We have a Partnership for a New Generation of Vehicles, for example, that will triple the efficiency of today's cars while preserving their

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current performance, comfort and safety.

We are working to produce low-cost transportation fuels using new energy crops. We are working with the building industry to build structures that are 50 percent more energy efficient. And, of course, an important part of the longer term answer lies in the more rapid development of low-carbon energy sources such as solar, wind, biomass, hydrogen and fusion.

While these new fuels may, in some instances, sound like they are far-off, some are nearly cost-effective today and all offer tremendous promise for tomorrow.

To make these new technologies a reality for our children requires that we make the right kinds of investments today.

Welcome, then, to the White House Conference on Climate Change. Our purpose is clear: We are facing a global threat that demands a global response. And while no one country can solve the problem on its own, no coalition of countries can solve the problem without the active

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participation and leadership of this country.

So, let us launch the great resources of a great country on behalf of the children of our nation and the world. Let us summon America's scientific genius, economic might, commercial ingenuity and history of leading large coalitions against threats to our common future.

Now is the time to cut back emissions, design 21st Century solutions, and begin the steps necessary to return our planet to the stable climate balance that has been enjoyed by our ancestors throughout the entire history of civilization, to preserve the future of life as we know it and as we would like our children to know it.

To all of you, thank you for your participation, and welcome and, please, participate actively throughout the day.

Now, it is my great pleasure and honor to introduce a friend, someone who stands up and provides leadership when it is most needed; a person whose own optimism, inventiveness and

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exuberance has helped to give us an expansive and accurate view of America's options and possibilities; a man committed to a surging economy, a stable climate and a healthy environment and a bright future for all of our people, President William Jefferson Clinton.

[Applause.]

PRESIDENT CLINTON Thank you. Thank you very much.

Thank you, Mr. Vice President, for your remarks and your remarkable leadership to help us keep our earth in the balance.

Thank you, Father O'Donovan, for letting me come home to Georgetown one more time to discuss a matter of immense importance to America and its future.

I thank the members of Congress and the members of Cabinet and the administration who are here, all those who have agreed to serve on the panels, and all of you who have come to be a part of this important day.

Six years ago last Friday–I can hardly

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believe it, but it was six years ago last Friday that I announced my intention to run for President, challenging America to embrace and to vigorously pursue a vision of our country for the 21st century to make the American dream alive for every person responsible enough to work for it, to keep our country, the world's strongest force, for peace and freedom and prosperity, to bring our people together across all the lines that divide us into one America.

Shortly afterward, I came here to Georgetown to this great hall to outline specific strategies and new policies, to achieve that vision, rooted in our values of opportunity and responsibility, faith and family and community, designed to help Americans seize the opportunities and solve the problems of this new age.

It was clear to me that our new direction had to be rooted in some basic guidepost, that we had to be oriented toward the future, not the past, toward change, not the status quo, toward partnership, not division, toward giving all a

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chance, not just a few, and finally toward making sure America leads, not follows.

We tried to develop a new approach to Government where we didn't claim to do everything and we wouldn't tolerate doing nothing, but instead, we focused on giving people the tools to make the most of their own lives and creating the conditions that would allow them to succeed, and we had new policies, economic policies and trade policies, education policy, crime and welfare, policies toward the working poor, policies to bolster families and help them balance work and child-rearing, policies in health care and foreign policy, and, yes, policies in the environment.

In the last four years and eight months, I think it is fair to say that together we have made real progress toward that vision of the 21st century. We stand at the threshold of that century stronger than most people thought was possible back in 1991, With our economy thriving, our social fabric mending, our leadership in the world strong, we have a solid foundation of achievement on which

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to stand as we take on the remaining challenges to build that bridge to the 21st century.

We are back here at Georgetown today because global climate change clearly is one of the most important of those challenges, and also one of the most complex, crossing the disciplines of environmental science, economics, technology, business, politics, international development, and global diplomacy, affecting how we and all others on this planet will live, support our families, grow our food, produce our energy and realize our dreams in the new century. That is why we put together this White House Conference on Climate Change, bringing together experts and leaders with a wide range of knowledge and a wide range of views.

People of goodwill bring to this conference many honest disagreements about the nature of the threat we face and how we should respond. That is healthy in a democracy like ours. My hope is that we will take advantage of this forum to actually talk with each other, rather than

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past each other, for it is our responsibility to work together to achieve two vital and compatible goals, ensuring the continued vitality of our planet and expanding economic growth and opportunity for our people.

Despite the complexities of these challenges, we have good reason to be optimistic, beginning with our 220-year record of making all manner of difficult problems solvable, and importantly, a very good record in the last generation of environmental progress. In the last generation alone, we came together to heed Rachel Carson's warnings, and ban DDT and other poisons. We cleaned up rivers so filthy, they were catching on fire, phased out lead in gasoline and chemicals that were eating a hole in the ozone layer. We have worked with citizens to conserve the Headwaters Forest of Northern California, restore the Florida Everglades, protect Yellowstone National Park from the assaults of mining, in each case proving that environmental stewardship does not have to hamstring economic growth.

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Indeed, in tackling the difficult task of cutting sulfur dioxide emissions with an innovative system of permit trading, the United States is well ahead of the schedule we set for ourselves and well below the projected cost in cleaning the environment. I believe we can find that same common ground as we address the challenge of climate change.

Before we begin our discussion today, I think it is important for me to explain the four principles that will guide my approach to this issue.

First, I am convinced that the science of climate change is real. We will hear more about this today from our first panel, but for me, the bottom line is that although we do not know everything, what we do know is more than enough to warrant responsible action.

A great majority of the world's climate scientists have concluded if we don't cut our emission of greenhouse gases, temperatures will rise and will disrupt the global climate. In fact,

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most scientists say this process has already begun. I might add that I had nothing to do with scheduling this conference on the day which is predicted to be the hottest October the 6th that we have ever had in Washington, D.C.

[Laughter.]

PRESIDENT CLINTON: I know not everyone agrees on how to interpret the scientific conclusions. I know not everyone shares my assessment of the risks, but I think we all have to agree that the potential for serious climate disruption is real. It would clearly be a grave mistake to bury our heads in the sand and pretend the issue will go away.

The second principle is that when the nations of the world meet in December in Kyoto, Japan, we must be prepared to commit to realistic and binding goals on our emissions of greenhouse gases. With 4 percent of the world's population, we enjoy more than 20 percent of the world's wealth, which helps to explain why we also produce more than 20 percent of the world's greenhouse

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gases. If we expect other nations to act on the problem, we must show leadership.

The third principle is that we must embrace solutions that will allow us to continue to grow our economy as we honor our global responsibilities and our responsibilities to our children. We have worked far too hard to revitalize the American dream to jeopardize our progress now. Therefore, we must emphasize flexible market-based approaches. We must work with business and industry to find the right ways to reduce greenhouse gas emissions. We must promote technologies that make energy production and consumption more efficient.

There are many people here today from companies that are addressing the climate change in innovative ways, taking steps that will save money for American families even as we reduce the threat of global warming.

For example, a number of leading electric utilities, including AEP, Southern Company, Niagara Mohawk, and Norther States Power, are working with

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homeowners to promote a new technology called geo-exchange, using geothermal pumps to heat and cool homes far more cheaply than traditional systems, while reducing greenhouse gas emissions by 40 percent or more.

Ballard Power and United Technologies are leading pioneers in developing fuel cells that are so clean, their only exhaust is distilled water.

Right now Ballard is working with Chrysler, Mercedes-Benz and Toyota to introduce fuel cells into new cars. Both of these technologies represent the kind of creative solutions that will make our job much easier.

The fourth principle is that we must expect all nations, both industrialized and developing, to participate in this process in a way that is fair to all. It is encouraging that so many nations in so many parts of the world are developing so rapidly. That is good news for their people, and it is good for America's economic future, but as we have seen right here at home, rising energy demands that accompany economic

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development traditionally have meant large increases in greenhouse gas emissions.

In fact, if current trends continue, emissions from the developing world will likely eclipse those from the developed world in the next few decades, but they have an opportunity to pursue a different future without sacrificing economic growth.

The industrialized world alone cannot assume responsibility for reducing emissions. Otherwise, we will wind up with no reduction in emissions within a matter of a few decades. In Kyoto, therefore, we will ask for meaningful, but equitable commitments from all nations.

Second, we must explore new ways for American businesses to help these rapidly growing countries to meet their developmental needs with cleaner and more efficient energy technologies.

Today, I hope we can take a step forward in putting all four of these principles into effect. We have studied this issue long enough to know that there are sensible options for action.

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It is our job now to pull them together into a coherent plan.

Nearly three decades ago when the Apollo astronauts first went to the moon, we gained an entirely new perspective on the global challenge we face today. For looking down on earth from the vantage point that revealed no political boundaries or divisions, the astronauts had the same chilling sensation. They were simply awestruck by how tiny and fragile our planet is, protected from the harsh void of space by an atmosphere that looked as thin and delicate as the skin of an onion.

Every astronaut since has experienced the same insight, and they have even given it a name, "the overview effect." It is instilled in each new astronaut a passion to convince people we must work together on earth's behalf.

Rusty Swikert has said, "You realize that on that little blue-and-white thing, there is everything that means anything to you, all history and music and poetry and art and death and birth and love, all of it on that little spot out there

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you can cover with your thumb."

To the best of my knowledge, only one person here has actually experienced the overview effect firsthand, Dr. Mae Jemison, a former Shuttle astronaut and current international development expert who will participate in our third panel discussion this afternoon. Nonetheless, I challenge everyone in this room to rise to a vantage point high enough to experience the overview effect. It will enable us to reach common ground.

Let me say when the Vice President was talking and Father O'Donovan was talking, I was looking around this old hall that I have loved for so long, and I found it utterly amazing that I first came here 33 years ago.

I was reading this morning up at Camp David the list of people who were going to be here today, and I found it utterly amazing that a few of you, I first talked to as long as 20 years ago about the need to build an alternative energy future for America. And I found it completely

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amazing that five-eighths of my Presidency is behind me.

I make these points for this reason. If you think about the benchmarks in your own life, it does not take long to live your life, and what seems at the beginning of your life a very long time, seems to have passed in the flash of an eye once you have experienced it.

These great developments, such as the one we are here to talk about today, occur over many life spans, and popular democracies are far more well organized to take advantage of opportunities or deal with immediate crises than they are to do the responsible thing which is to take a moderate, but disciplined approach far enough in advance of a train coming down the track to avoid leaving our children and our grandchildren with a catastrophe.

So I ask you to think about that. We do not want the young people who sat on these steps today, for whom 33 years will also pass in the flash of an eye, to have to be burdened or to burden their children with our failure to act.

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Thank you.

[Applause.]

VICE PRESIDENT GORE: Mr. President, while they're removing the podium, I'm going to go ahead and begin the introduction of this panel. It gives me great pleasure to introduce some very distinguished individuals who are members of our first panel.

Dr. John Holdren, a professor of Environmental Science and Public Policy at Harvard University, is also a member of the President's Committee of Advisors on Science and Technology, and chair of the Task Force on U.S. Energy Research and Development Needs in the 21st Century.

Tom Karl is a senior scientist at the National Oceanographic and Atmospheric Administration and has recently done some path-breaking work that he will present here.

Dr. Diana Liverman is a professor at the University of Arizona and the chair of the National Academy of Sciences Committee on the Human Dimensions of Climate Change.

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Dr. Don Wilhite, the director of the National Drought Mitigation Center, is a climatologist at the University of Nebraska, in Lincoln.

And Dr. Robert Watson, the director of Environment for The World Bank, is also head of the Intergovernmental Panel on Climate Change.

I think that we're going to start with Dr. John Holdren, and then move from there.

DR. HOLDREN: Thank you very much. Mr. President, Mr. Vice President, as you know, there is a growing scientific consensus on three critical points about global climate change. The first point is that the climate is changing in ways that are not explainable by natural causes.

The second point is that emissions of greenhouse gases from human activities, above all, from fossil fuel burning and from deforestation are the main causes of those changes.

And the third point is that the consequences of those changes in climate in the next century are likely to include significant

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disruption of human health and well-being over substantial parts of this planet.

In talking about the key elements of this scientific consensus this morning, I'm going to rely rather heavily on the findings of the Intergovernmental Panel on Climate Change which has been mentioned a couple times, here, this morning. It's the international body that has drawn on the expertise of some 2,000 of the world's leading analysts of these matters to develop authoritative assessments to serve as the basis for decision making by policy makers and governments about how to react to this problem.

Dr. Bob Watson, who, as the Vice President just mentioned, is the head of the IPCC, will say a little more about it later this morning.

The problem we're dealing with, of course, is the problem that is popularly called global warming because it does entail raising the average temperature of the Earth's surface.

It also entails a lot more than that, as we're going to talk about, but the place to start

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in discussing it is with why the Earth's temperature is what it is.

It turns out that just a few gases, which are naturally present in the Earth's atmosphere in quite small concentrations are responsible for keeping the surface of the Earth about 60 degrees Fahrenheit warmer than it would otherwise be. They're called greenhouse gases because they work in a way analogous to one of the functions of glass in a greenhouse; namely, they let incoming sunlight through but they trap some of the outgoing heat and send it back toward the ground.

The largest contributors to that natural greenhouse effect are water vapor, carbon dioxide, methane, and nitrous oxide. And without those trace greenhouse gases in the atmosphere, the Earth would in fact be too cold for life as we know it.

The problem we're talking about here is that for hundreds of years human activities have been adding greenhouse gases to the atmosphere, mainly, at first, carbon dioxide from deforestation. Later, carbon dioxide from fossil

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fuel burning, methane, and nitrous oxide from land use changes, and finally, chlorofluorocarbons and their relatives from a variety of industrial processes, all of them greenhouse gases.

And in the last century, in particular, the huge growth of fossil fuel use as a result of industrialization has been the main factor, the main driver in lifting the carbon dioxide content of the atmosphere to about 30 percent above its pre-industrial value.

The concentrations of the other greenhouse gases have also been growing in this period. On the other hand, the atmospheric concentrations of particles put there by human activities have also been increasing.

Those extra particles in the atmosphere screen out some sunlight. They help form clouds that screen out even more, and so they've partly offset the warming effect of the greenhouse gas additions. But all in all, the net manmade addition to the greenhouse effect, from all of the greenhouse gases combined, minus the effect of the

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particles, is about what it would be from the carbon dioxide additions alone.
And that's enough to cause changes in climate that have started to become measurable, and that threaten to grow in the future to levels that are highly disruptive of human well-being.
Now, up until now, the industrialized countries have accounted for most of the human additions of greenhouse gases to the atmosphere. The United States, with about 4 percent of the world's population, has been responsible for more than 25 percent of the emissions of greenhouse gases into the atmosphere over the last 45 years.
The less developed countries altogether, with about 80 percent of the population, have been responsible for less than 25 percent, that is less than the United States alone, of the greenhouse gas emissions into the atmosphere over that period.
Their per capita emissions are typically 1/10th or less the per capita emissions of carbon dioxide in the industrialized nations like the United States.

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But 90 percent of the world's population growth over the next several decades is expected to occur in the less developed countries, and much of the economic growth over that period is expected to grow there, too, and that means that their greenhouse gas emissions, along with the fossil fuel use that they plan to use to drive much of that economic growth are going to go up.
In fact over the next century, under business as usual, we would expect the emissions from the less developed countries to pass those of the industrial nations around 2030 or 2035, as this particular graphic shows. Although it is important to note that their per capita emissions at the time they pass us will still be only about 1/6th of ours, and that it will take a considerable time thereafter before their cumulative contributions to the atmospheric build-up of these gases equal ours.
Now, over the last 100 years, while atmosphere carbon dioxide has been increasing, so has the Earth's temperature. The mean global air surface temperature on the planet has increased by

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about one degree Fahrenheit over this period.
The surface temperature, this century, is as warm or warmer than in any century since 1400, and the last two decades of this century have been the warmest ones in the century. Eleven of the hottest years in the last 100 years have occurred since 1980, and 1995 was the hottest single year on record.
Those temperature changes have been greater at high latitudes than near the equator. Ocean surface temperatures have increased along with air temperatures over land. Day/night temperature differences have shrunk, and the way temperature varies with height in the atmosphere has also changed in this period.
And the point about all of this is that all of these observed changes are consistent with what basic climate science predicts will result from increasing greenhouse gas concentrations, and they are consistent also with the numerical results of the best computer models of global climate, when those are run with the observed increase in

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greenhouse gas concentrations, with the increases in atmospheric particulate matter, and with the estimated variations in the output of the sun.
Now to help think about where this situation is headed in the future, the IPCC has developed a set of scenarios for emissions of greenhouse gases for atmospheric concentrations and for the likely associated temperature changes extending over the next century, out to the year 2100. These are shown on the current graphic.
The carbon dioxide concentrations on the top, the temperatures likely to be associated with that on the bottom, and the lines through the middle of that are the so-called business as usual energy future, where we're headed if we don't change very much from what we're doing now.
Where that is, where that business as usual is taking us is toward atmospheric concentrations of carbon dioxide near 700 parts per million of carbon dioxide by the year 2100. That's about two and a half times the pre-industrial concentration of carbon dioxide.

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The accompanying further temperature changes beyond what has already occurred are estimated to be between 2 and 6 degrees Fahrenheit, associated with that carbon dioxide change. And as I mentioned before, those temperature increases would not be uniform because higher latitudes will warm more than the equatorial regions. The United States would face a warming in 2100, and after, of 5 to 10 degrees Fahrenheit, on the average.
Now, let me put this in perspective by showing one of the Vice President's favorite graphics, which shows carbon dioxide and temperature changes over the last 160,000 years, based on analysis of air bubbles trapped in ice cores in the Antarctic ice.
What you see when you look at this picture is that today's atmospheric carbon dioxide concentrations are already well outside the range of natural variations that occurred over the preceding 160,000 years, and by 2100, under business as usual, we'll reach carbon dioxide concentrations that haven't been seen on this

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planet in the last 50 million years.
We'll be heading in the business as usual scenario toward a tripling of the pre-industrial concentrations of carbon dioxide, and we will have achieved that in the geological blink of an eye, exposing, as we do it, natural systems to a rate of temperature change faster than at any time in the last 10,000 years.
But of course it's not just the change in temperature that we're worried about. That temperature change is, in a way, just an indicator of a whole array of changes in the conditions that make up the climate. The patterns of hot and cold, of wet and dry, of winds and ocean currents, which, in turn, affect ecological systems and human well-being in a hundred different ways.
Particularly important in that is that global warming causes the planet's cycle of evaporation and precipitation, the so-called hydrologic cycle, to speed up. More heat means more evaporation, which means more water going into the atmosphere, and therefore, more water coming

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out as rain and snow.
But the greater evaporation, an earlier snow melt that go with warming, can also mean, almost paradoxically, reduced soil moisture and less water availability in the growing season in regions where that's already a problem.
Warming will also cause sea level to rise, mostly from the thermal expansion of ocean water, but some from melting of the Antarctic and Greenland ice sheets, and from mountain glaciers, and that melting process, by the way, is expected to continue for centuries, even after the atmospheric concentration of carbon dioxide stabilizes.
Now sea level has increased from 4 to 10 inches in the last 100 years. It's expected to increase by another 6 to 40 inches in the next 100 years. The uncertainty in that amount is large. But it should be clear that near the upper end of the range, the damage would be immense.
The map that's on the screen shows that a sea level rise of one meter, 39 inches, would

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inundate the whole southern tip of Florida, with it all of the Everglades. Of course a number of low lying island nations would disappear altogether under these circumstances.
It's just clear that these kinds of changes in climate could in fact damage human well-being in a very wide variety of ways. Increased deaths from heat stress on hot summer days and nights could be expected, along with even bigger impacts on human health from expanded geographic range of vector borne diseases like malaria and yellow fever.
Many regions would experience more frequent and more damaging floods and drought. With large efforts to adapt agriculture, world food production might be maintained overall, but reductions in parts of the tropics and subtropics, where food production is already inadequate, are likely.
The impacts are also likely to include increased damage to coastal property by storms as a result of the increase in sea level, as well as the

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inundation of low lying wetlands like the Everglades.
And shifts in the ecological life zones, that determine at what latitudes and altitudes different kinds of plants can flourish are going to affect forestry and tourism in a great many different places.
You'll hear more about all of these impacts, shortly, from Drs. Karl, Liverman, and Wilhite.
Now it's important to point out that most of the studies of these potential impacts of global warming are focused for purposes of comparability on the consequences just of doubling the pre-industrial concentrations of carbon dioxide.
But as we've already seen, anything like business as usual and we're not going to stop at a doubling. Quite possibly the concentration will go to triple or even quadruple the pre-industrial levels. To help decide whether to take action to get off of that business as usual emissions path, scientists need to look more carefully, and

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citizens and policy makers need to think more about the impacts that would be likely at those higher concentrations.
In this spirit, I want to close by showing you two computer model projections of the evolution of temperature over the next few centuries under twofold and fourfold increases in the pre-industrial carbon dioxide concentration.
The first one that's being shown now is for a doubled carbon dioxide concentration. The greenish colors denote increases of less than 5 degrees Fahrenheit. The yellow colors from 5 to 10 degrees Fahrenheit. The oranges and reds from 10 to 20 degrees Fahrenheit.
You can see in the picture how the warming is greatest at the high latitudes, but the whole United States is in the 5 to 10 degree increase range in this doubling scenario.
Now the next clip, which is showing now, is of a world with four times the pre-industrial carbon dioxide level. Now the whole globe is getting yellow and orange, with increases of more

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than 15 degrees Fahrenheit over most of the United States, and a new brown color that denotes increases of more than 25 degrees Fahrenheit showing up over the Arctic.
Soil moisture deficits in the growing season would be in the range of 30 to 50 percent for this fourfold CO2 increase, compared to 10 to 30 percent in the doubled CO2 case.
Now Mr. President, Mr. Vice President, I submit that avoiding climate changes of this magnitude is clearly in our national interest.
[Applause.]
VICE PRESIDENT GORE: Before calling on Tom Karl, let me just ask one brief question.
You talked about the figure of 700 parts per million in CO2 concentrations. A doubling of the pre-industrial level would be 550. Correct?
DR. HOLDREN: That would be 550, and we're going to talk more about that as the morning goes on.
VICE PRESIDENT GORE: Well, somebody said that under the current projections it will reach

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550 between 2040 and 2060. Is that correct?
DR. HOLDREN: We'll show all those curves.
VICE PRESIDENT GORE: Okay; all right. all right.
DR. HOLDREN: That's the ball park, where we're headed under business as usual. Absolutely.
VICE PRESIDENT GORE: All right.
Well, the reason I asked that is, you know, I've got a different category of things, for things that happen in what I hope will be my lifetime, and–in any event–
[Laughter.]
VICE PRESIDENT GORE: Tom Karl. Tom Karl is senior scientist with NOAA and has studied precipitation patterns worldwide. What evidence is there that changes are taking place, Dr. Karl?
DR. KARL: Thank you, Mr. Vice President.
We've prepared a number of charts to help guide us in our explanation of these changes . On the first chart we see what's happened to precipitation over the course of the 20th Century across much of the globe, and in this particular

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chart you see a number of different colored dots.
The blue dots represent increases of precipitation and the yellow dots or orange dots reflect decreases of precipitation. And what you'll notice is a pattern of change where the mid and high latitudes have increased their precipitation, and the subtropics and tropics have actually decreased their precipitation.
Now the size of these changes are up to and exceeding 50 percent, that is, 50 percent more precipitation now falls in the mid and high latitudes than did earlier in the century.
Seasonally, we're finding more precipitation occurring in mid and high latitudes in the cold part of the year.
Now, what does this mean? Actually, in terms of snow, we actually find that snow in the high latitudes, where it's already cold enough to snow, is also increasing, despite the fact that temperatures have warmed.
Now, all these changes are consistent with model projections that we anticipate to occur with

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increased global temperatures.
Now, the changes that we've already seen have already produced a number of important impacts, and I'll just highlight a few for you.
For example, in 1996, China experienced some devastating floods. 20 million people were affected. 2 million people were homeless. Costs were estimated to exceed $20 billion. Just in the past five years, in Europe, we've had a number of catastrophic floods. Five catastrophic floods in the last five years.
And of course, here, in North America, few of us can forget the Mississippi–I'm sorry–the floods in the Northern Plains, the Ohio River Valley floods, the flood we experienced in the Pacific Northwest.
Now, worldwide, in the last two decades we've had ten times the number of catastrophic floods than we had the previous two decades. So clearly, these changes we're seeing are having an impact, and if we bring it a little closer to home, we have another chart similar to this DOT chart for

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the globe, showing changes of precipitation that have occurred in the U.S.
And on average, we've had a 5 to 10 percent increase in precipitation over the course of the 20th Century. But this is significantly greater in some areas because the increase has not been uniform. Actually, there are some areas that have a small decrease.
Now, this 5 to 10 percent increase in precipitation may not seem like much, but that's equivalent to about the annual discharge of water out of the mouth of the Mississippi River every year. That's a lot of water.
And again, these have had important impacts. In the 1980's, we had record levels along the Great Lakes. The Great Salt Lake exceeded its bank in the 1980's. The 1990's, in addition to the events just mentioned a minute ago, we had the Mississippi River Valley floods. In October of '94, Texas was inundated by flood waters. California, in the winter of '95, again a tremendous number of flooding had taken place.

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But this is really only half the story.
On the next viewgraph we try and articulate our understanding of what happens when we have this excess energy at the surface of the Earth because of the greenhouse effect.
That excess energy can do two things.
One, it can go to raise the temperature, but in fact only about 20 percent of that additional energy goes into raising the surface temperature. The other 80 percent goes into evaporating water from the surface.
This then provides more water vapor into the atmosphere and this water vapor is what storms feed on. That's where we end up getting these very heavy and intense precipitation events, and in fact storms actually become more intense when there's ample water available to release the heat to provide the fuel for them.
Now, we've prepared another viewgraph to show you what's happening to intense precipitation events in the U.S.
This particular graph shows that that 5 to

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10 percent increase in precipitation we talked about has been disproportionate in a sense that most of that increase is coming from the very heavy and extreme precipitation events, those events that give us these inundating rains in 24 hours.
If we look at the more moderate and light events, we see little or no change. Those are the types of events that we often think of as being fairly beneficial.
Now, actually, storms, when we look at the intensity of storms in the North Pacific and North Atlantic in the last two decades, we do see an increase in storm intensity as well, consistent with that viewgraph we showed you previously.
So, by and large, there's ample evidence for significant climate changes just in the past century, and particularly the last couple of decades.
[Applause.]
PRESIDENT CLINTON: Dr. Liverman, I wonder if you would like to say a little more about how climate change is now, or is likely to affect

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average Americans.
DR. LIVERMAN: Well, it's still quite difficult to say exactly what's going to happen at the regional level, because particularly the patterns of how rainfall will change are still a little uncertain. But we know from some of the information that John Holdren and Tom Karl have given us, that temperatures are increasing and are likely to increase.
So what I'd like to do is to talk particularly about how that temperature change might affect ecosystems and human health, and then I think Don Wilhite will talk more about agriculture and water resources.
Now, as most of us know the distribution of plants and animals is largely controlled by climate. In Alaska, For example, the cold, dry climate gives the tundra upon which the large caribou herds graze.
In Florida, the warm, wet climate gives us tropical trees and tropical birds.
In Arizona, where I live, the warm, dry

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climate gives us the saguaros that we love to visit.

The increasing temperatures that we're likely to see with climate change are going to cause species in the United States to move northwards and to move upwards in elevation.

Let's take the example of the sugar maples, and I have a couple of graphics here to illustrate it. The sugar maples give us those beautiful fall colors that bring millions of tourists to New England, and of course that breakfast pleasure, maple syrup.

Now, some of the studies that have been done on how sugar maple distributions may change, based on historical pollen analysis, suggests that the sugar maples, as a result of climate change, could move north totally out of New England, where they're so important to tourism and to the regional economy.

In fact, the sugar maples aren't unique. About a third of the world's forests could change as a result of global warming. In the Western

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U.S., our models show that gambol [ph] oak, pinyon pine, Douglas fir, and the saguaros could disappear from large regions of the Southwest.

Now, those trees could move somewhere else, but the problem is that we've got a lot of human development out there, we can't tell people, "Oh, sorry, Saguaro National Park has moved. We need to move it up into your area." It's very difficult to do that.

[Laughter.]

I think the Vice President used the term, and I would like to appropriate it: I don't want to live next to the park formerly known as Saguaro National Park.

Another concern of course is that climate changes much faster than most tree species can move. Climate changes, if you're going to have a 3 degree temperature increase, that's going to move many of these boundaries about 300 miles north. Tree species usually only migrate at about 3 to a 100 miles per century. So it's going to be hard for them to keep up with this climate change.

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The second thing I'd like to talk a bit about is human health, that's a concern to all of us, and John Holdren mentioned the problem of heat stress. I'd like to give you one example. In July 1995, 465 people died in Chicago when a heat wave caused 98 degree Fahrenheit temperatures, both day and night.

Now, today, that happens about once every 150 years. As we can see in some of these graphics, this map here that shows how heat stress would change, under a doubled carbon dioxide world, that could be six times more frequent.

Now, with the urban temperature increases you've also got problems with increased air conditioning costs, and I'm sure that most of you don't want to pay the sort of air conditioning bills that we pay in Tucson right now.

Now, there is a flip side to that. We could reach these energy costs in the northern part of the United States. But there are many people in the southern part of the United States who can't afford the air conditioning, particularly–and

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there are other populations who are very vulnerable, like the elderly and children, who would be particularly affected by this type of stress.

Now, the other thing about increased temperatures is that it's going to exacerbate air quality problems.

You're going to get higher levels of smog, and there are certain diseases, respiratory diseases, asthma, allergies, that could also increase with higher temperatures.

Here, again, children and the elderly would be particularly vulnerable.

And then, finally, those of us in the Southwest are particularly concerned about the changes in some of these vector borne and water borne tropical type diseases that John Holdren talked about.

Now, we've already made ourselves vulnerable through our irrigation systems that create breeding sites for mosquitoes. But one of the things we're particularly concerned about in

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Tucson, and along the border, are possible increases in diseases like dengue fever, cholera, and malaria, as shown on this map, which shows the change in the area that would be subject, or vulnerable to malaria in a warmer world.

PRESIDENT CLINTON: Isn't there some evidence already that malaria, in nations, in areas where it presently exists, is becoming more prevalent and moving to higher climates?

DR. LIVERMAN: Yeah, there is some evidence that, For example, there is more malaria at higher elevations in some developing countries, and certainly, there's some more anecdotal evidence of malaria moving into the United States. That's partly climate, but it's also because we have a much more mobile population today than we had in the past.

PRESIDENT CLINTON: Let me ask you one other question. Let me go back to what I said in the beginning. This is one of the most difficult problems of democracy because if we get a 100 percent of the people to agree that it exists, and

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only 10 percent of the people have experienced it, and another 10 percent of the people can imagine it and therefore are willing to deal with it, you still have to have 51 percent in order to develop any kind of political consensus for doing anything, I think, commensurate with the need.

So would you say–I had, and I know this happens to a lot of people–but I had a number of people, I had a young congressman in to see me the other day who's a member of the Republican Party. He said that, "You know, in my state we've had 300 year floods in 10 years."

I met a man over my vacation who said that he was moving away from the place he had lived for a decade because it was a completely different place than it had been just 10 years ago. It was hotter. There were more mosquitoes. It was a very different and difficult place.

Do you believe that these anecdotal experiences are likely related to climate change, or are they just basically people's imagination?

DR. LIVERMAN: No, I actually think

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there's a scientific basis for these perceptions of climate change. That's actually an area I do some research in, and you can do–we've done very carefully structured scientific surveys of farmers and of city dwellers, that show that many people do believe that the climate is changing, whether it's a farmer in Mexico or a resident of Los Angeles.

We have a lot of studies where people do believe it's changing, and in many cases it correlates with the type of observed temperature changes that Tom Karl talks about.

So my feeling, from my own work, interviewing people, is that many people in this country do think that the climate is changing and are concerned about it.

PRESIDENT CLINTON: Dr. Karl, you want to say something?

DR. KARL: Yeah. Actually, I think the anecdotal evidence is consistent with the notion that although no single event is the basis for saying global warming's taking place, if you look at many of them–in fact I have a number of

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statistics you might find of some interest here.

Just during 1996, we had six states that set their all-time annual precipitation amount. Not to belabor it, but totals like 16 feet of rainfall in Oregon during the year 1996. Over 8 feet of precipitation at Mount Mansfield in Vermont. And there's a number of other records like this. These are the types of things that certainly have an impact, and I think people remember.

VICE PRESIDENT GORE: If I could add a word to this, I noted earlier, James Lee Witt, who's the head of FEMA, is here. He and I have gone out, as he and the President have gone out, frequently, to the sites of these disasters, and the budget for the consequences of the flooding events and the other disaster events as well–it now reaches an average of a billion dollars a week in the United States.

And you mentioned, Doctor, about malaria. One scientist was telling us, recently, about a case of malaria that showed up in Detroit during a

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month when the average temperature was a full 6 degrees warmer than the 30 year average, and while of course you can't, again, say that's the cause and that's the effect, the odds of diseases of that kind, as Secretary Donna Shalala, who's here, has told us, increase quite dramatically.

The other thing I wanted to ask, just briefly, is in terms of the effects on human beings.

The weather forecasters who were at the White House last week talked about the heat index, the combination of temperatures and humidity, and your presentation followed right on Dr. Tom Karl's, and somebody was saying that the heat index, here, in Washington, D.C., by the middle of the next century is predicted to go from–do you know the numbers, Dr. Karl?

DR. KARL: I think it's up to 105 or 110. I don't know the exact numbers but significant–

DR. LIVERMAN: It's under a 100 now, and it's going to go to about 105, on average, they think, during the summer months.

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VICE PRESIDENT GORE: Well, we'll get some more on that.

PRESIDENT CLINTON: We certainly will.

One reason I believe this is occurring is that James Lee Witt is the only member of my Cabinet who is actually disappointed when his budget goes up, and he's had a lot of disappointment these last five years.

I'd like to now call on Donald Wilhite to talk about the relationship–because we've heard about, increased precipitation–now I'd like to ask him to talk about drought, and the apparent paradox in drought patterns and increased precipitation patterns, and what implications this might have for American agriculture, which is a terribly important part of our economy, and we have all been counting on it being a very important part of our expert economy for the indefinite future.

DR. WILHITE: Thank you, Mr. President, Mr. Vice President. I was asked to talk a little bit about the–give the "dry talk" I guess in this presentation.

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[Laughter.]

Each drought event I think is a vivid reminder of our nation's continuing vulnerability to climatic variations. If one can remember the severe droughts of the late 1980's and the early 1990's, those resulted in severe economic and environmental consequences in many parts of the country.

In 1988, For example, nearly 50 percent of this nation was affected by severe drought, and resulted in excesses of $15 billion in agricultural losses in this country, a very dramatic number.

In 1996, we had a reoccurrence of drought in the southwestern United States, and this also resulted in severe economic and environmental losses, a higher incidence of forest fires, and so forth. This also is of concern.

In the State of Texas, alone, impacts were in excess of $5 billion.

Now American agriculture, while technologically advanced, is still subject to the sensitivity of weather conditions, or the vagaries

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of weather.

The slide that's up on the screen now shows a dramatic upward trend in corn yields since 1950 in the United States, but note the deviations on that trend. Those deviations are largely the result of variations in climate, or extreme weather conditions. Most of those are the result of drought events. Some of those are the result of excessively wet events which delayed or hampered spring planting.

Drought also is of high incidence and a normal part of the climate in virtually all portions of the country.

This next diagram shows the incidence of drought in the United States over the last 10 years. So while it's true, we've had maybe an increase in precipitation, I think it's interesting to note from this slide which shows the number of years experiencing moderate, severe, or extreme drought in the last ten, that while you have a rather surprisingly large area in the western United States that shows a high incidence of

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drought, we are also demonstrating the high incidence of drought in the Great Plain States, in the Southwest, in the Midwest, and also along the Eastern coast states.

So drought is clearly a phenomena that affects all portions of the nation, not just the western United States.

So that projected increases in temperature, and a possible accelerated water cycle that we've been hearing about this morning, may lead to changes in both the amount and the seasonable distribution of precipitation which may alter, then, the incidence of drought events and also flood events in this country.

So while we don't know precisely what the regional impacts of climate change may be, as Dr. Liverman was speaking about a few moments ago, we do know the impacts associated with these extreme weather events.

And we also know where our vulnerabilities are as a result of this, and I think it's prudent that we sort of assess what our vulnerabilities

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are, and use these as a way to reduce the impacts of drought events and flood events today that will help us in the future.

PRESIDENT CLINTON: I want to ask a question and try to make sure that we are all as clear as we can be based on what is known, about two apparently contradictory things.

That is, that the total volume of precipitation has increased virtually everywhere, and the number and severity of droughts has increased across the country.

Now, Dr. Karl said earlier that part of the explanation is that the precipitation we're getting is coming in bigger bursts. But what I would like to do is to have somebody offer basically a line of explanation that everyone in the audience and hopefully those who will be following these proceedings can understand.

Why did it happen at the same time that we had more droughts and more floods? How could we have more droughts when the aggregate amount of precipitation on an annual basis was increased?

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And I think it's important that people kind of get why that happened.

DR. WILHITE: Well, I'll take a first shot at that. First of all, the increased precipitation amount that Tom Karl was referencing earlier, a lot of this increased precipitation is coming in the form of short-term intense precipitation events, which leads to a very high run-off. So there's not a lot of moisture that goes into the soil.

Secondly, increasing temperatures tends to increase evaporation and therefore ,the resulting impact of that is soil drying.

So you have a combination of these things going on that help to explain this paradox.

PRESIDENT CLINTON: And I think that's important. When the temperature is warm, they dry the soil and create the conditions for the floods, simultaneously?

DR. WILHITE: That's correct.

PRESIDENT CLINTON: And because these floods don't wash away the soil, rather than sink down into the soil, you get very little benefit out

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of them, and farmers lose a lot of top soil.

DR. WILHITE: Exactly.

VICE PRESIDENT GORE: Well, thank you very much, and now we'll move to Dr. Robert Watson who is the chair of the leading international scientific body on the science of climate change. Dr. Watson, how do you respond to those who say this is not a real problem?

DR. WATSON: Mr. Vice President, Mr. President, let me assure you that the large majority of scientists do believe that global warming is a serious environmental issue. Over 2,500 scientists participated in the second assessment report of the IPCC.

These scientists came from government, industry, environmental organizations, and universities, from nearly a 100 countries around the world.

And indeed, at the second conference of parties, literally all ministers, except from the oil-producing countries, argued that the IPCC was and is the most single comprehensive report on the

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state of knowledge, the science, the technology and the economics, and it should be used as the basis for international negotiations in Kyoto this year.

But let me be clear. There are uncertainties in our science. We don't know all the real facts. But these skeptics are in a clear minority. The vast majority of scientists do believe, in spite of the uncertainties, that we need to take heed of our current scientific knowledge.

There are three or four lines of arguments they use to try and undermine the science. First, they argue, are we sure that the increases in atmospheric carbon dioxide are really due to human activities, not changes in nature?

There's three lines of evidence that convinced me, and nearly everybody else, that it's human activities causing these increases. First, the natural variability in carbon dioxide is only a few parts per million. Since the pre-industrial revolution we've seen an increase of 80 parts per million, way outside any natural variability.

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Secondly, the atmospheric concentrations have gone up absolutely at the same time that we started to emit these large amounts of carbon dioxide from deforestation and from the burning of fossil fuels–coal, oil, and gas.

And thirdly, when you burn fossil fuels, they have a special fingerprint called the isotopic ratio. We've actually looked at this fingerprint in the atmosphere and we can show quite definitively, that the increase in carbon dioxide is not due to a change in natural variability but due to burning fossil fuels.

Then the skeptics say, "Are we really sure the temperature's increased?" "Isn't our data record contaminated by the so-called urban heat island, in effect?" The answer is no. We've measured temperature three ways. The air above the land, the air above the ocean, and the surface water of the ocean. All three data sets show exactly the same trend.

There's no way all three data sets could be equally contaminated.

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The skeptics then argue that in the last 18 years we've got a satellite data record, clearly the best thing around, but it doesn't show a significant increase. What we've got to recognize is the satellite data measures the temperature of the atmosphere from 5,000 feet to 30,000 feet above the Earth's surface. It doesn't measure it where we live, on the Earth's surface.

And the atmospheric temperature is very sensitive to ozone depletion, which is caused by human activities, and natural phenomena such as volcanic activity and changes such as El Nino.

When you allow for the ozone depletion and the natural variability, even the satellite record shows an increase with temperature. It's a little bit less than the ground-based record and it's a little bit less than theory, but it is not really inconsistent.

Secondly, the temperature of record is only 18 years, from the satellite, and it's natural variability in climate which means any short record is very, very difficult to use for a long-term

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trend.

Third, the question is, Are we really sure it's due to greenhouse gases, or could it be changes in the sunlight? There's absolutely no question, changes in solar output do affect climate.

But we have very, very few measurements that directly measure the output of the sun. We have satellite records from 1979. They show a very, very small variation in solar output, correspondingly, a very small variation in climate.

The indirect measurements over the last 100 years, or so, are indirect. In IPCC, we try to allow for the change in solar output and how it affected the Earth's climate.

We do believe the Earth's climate has been affected by change in solar output, but only a few percent of the observed change can be attributed to solar output. The large majority must be effectively attributed to greenhouse gases.

And in fact if it's the warming effect of the sun, that affects the Earth's climate,

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greenhouse gases have exactly the same fate. They warm the Earth by a small change in the heat content. Hence, if the sun can warm the atmosphere, so can effectively greenhouse gases.

Lastly, Mr. President, Mr. Vice President, many people say our general circulation models are not very accurate, and they're not very reliable. They are right; we have uncertainties.

Let me make absolutely clear–we do not know everything. But at the same time, these models simulate most of the large-scale effects that we see.

In fact when we look at the observational record for the last 100 years, and we look at what theory shows, when you take into account both the increases in the greenhouse gases and the increases in the aerosols, there's a very good correspondence between the observed temperatures and the predicted temperatures.

The changes in rainfall that Tom Karl said, are also consistent between theory and observation. The other way of saying it is we

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cannot explain the observed changes on natural–

I believe that while the skeptics are right in saying there are uncertainties, there is a lot we do know, and the large majority of scientists do believe this is a very serious environmental issue.

PRESIDENT CLINTON: Let me ask you a follow-up question, and perhaps someone else would like to answer, but I think it's important. Again, I–and forgive–for those of you in the audience who know a lot more about this than I do, you will have to forgive me, but I am also trying to imagine how this is going to be absorbed by our Nation and by people who will be following this.

It appears that we are headed into a powerful El Nino, and I wonder if one of you would just simply, very briefly, explain what that is and whether you believe there is a link between the power of the El Nino and the climate change.

DR. WATSON: Yes. Every two to seven years, we have a phenomenon called the El Nino phenomenon. The ocean temperatures of South

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America, in the Pacific, warm up, and they effectively have a large-scale effect on temperature patterns and precipitation patterns throughout the world.

You get heavy rainfall in Peru, a draught in northeast Brazil, a drought in Zimbabwe, and major effects in countries such as Australia.

One of the questions we have to ask ourselves is: Are these El Nino events changing? What we have observed in the last 20 years is we have now had the largest, the most intense El Nino in 1982, and it is looking like the one we have now may well be the most intense of the last 200 years.

The question is: Are we changing the frequency and the magnitude of these so-called El Nino events because of global warming? We don't know, but, just like there are more floods at the moment and more droughts throughout the world, it is interesting to note that as the greenhouse gas concentrations are increasing, it does appear that the frequency and magnitude of these El Nino events also seems to be changing, and they have profound

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effects, as I said earlier, both on temperature and precipitation, truly around the globe.

VICE PRESIDENT GORE: I would just like to comment on your remarks concerning the skeptics. I personally believe we have had experience with a form of skepticism that I think is similar to this before.

In 1964, the scientific community, through the Surgeon General's report, said that smoking cigarettes causes lung cancer, and for the last 33 years, up until this summer, the CEOs of the tobacco companies said with a straight face and seemingly no embarrassment, there is no link between smoking cigarettes and lung cancer.

Some scientists say, even today, the exact causal relationship is very difficult to pin down because science can't answer all of the questions, but it is abundantly obvious that it does, and the President has been leading our country's fight on that issue, and thank goodness, eventually, the weight of opinion got to be such that most everybody, except this very, very tiny band, became

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embarrassed to parrot that line anymore. And I think that the weight of evidence here is in the same category.

PRESIDENT CLINTON: We have got to wrap up the first panel and get on to the next one, but I'd like to ask–I think I'd like to ask, John, for you to respond to this. If anyone else wishes to, you're welcome to.

I think there's a more sophisticated question to be asked, although the Vice President is right, there still are some people who claim that this scientific case, that I have been completely persuaded by, has not been made.

I think the more difficult argument, John, goes something like this. Look, you put all this stuff in the atmosphere, and it says there for a hundred years at least, and maybe longer. So what's the hurry? And in a democracy, it's very hard to artificially impose things on people they can't tangibly feel, and so why shouldn't we just keep on rocking along with the kind of technological progress we're making now until there

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really is both better scientific information and completely painless technological fixes that are apparent to all? Why shouldn't we just wait until all doubt has been resolved and, hopefully, we have even better technology? Because, after all, the full impact of whatever we do, if we start tomorrow, won't be felt for decades, and maybe even for a century.

Number one, is that true? How quickly could we lower the temperature of the planet below what it otherwise would be? And number two, what about the argument on the merits?

DR. HOLDREN: Mr. President, let me take a try at addressing that.

It is clear that the task that you and other policy-makers face in this situation is a tough one. Business as usual is what most people are comfortable with.

The difficulty is that our health and our economic well-being are more dependent on climate than most people think. Human disruption of climate by greenhouse gas emissions is almost

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certainly further along than most people think, and directly addressing the point you were just making, reducing greenhouse gas emissions enough to avert much larger disruption than experienced so far is going to be more difficult than most people think.

And the longer we wait, the more we coast up that business-as-usual trajectory, the more old-style technologies are going to be in place in this country and around the world, and the harder it is going to be to get off of that track.

The goal of the Framework Convention on Climate Change, to which the United States is a party–it was ratified by the United States Senate in 1992–is to stabilize greenhouse gas concentrations at a level that prevents dangerous human interference in the climate system.

Now, there is no formal agreement yet about what constitutes dangerous interference, but I know very few analysts who have looked seriously at the impacts side of this question, who think that going beyond twice the pre-industrial carbon dioxide concentration is anything other than very

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dangerous. That would be about 550 parts per million, compared to 365 parts per million today, 280 pre-industrial, and you saw earlier a simulation of the considerable temperature changes that that would entail.

Now, the problem is that stopping even at that 550-part-per-million level, twice pre-industrial, it is not going to be easy. The curves that are on the screen now show future world emissions of carbon dioxide under business as usual, which is the reddish line at the top, and then under three trajectories that would stabilize the concentration, at levels ranging from 350 parts per million on the bottom, a little less than today's, to 750 on the top of the line, the highest of the lines that bend over, another orange one, the green one in the middle is the 550-parts-per-million trajectory, the trajectory that stabilizes at twice pre-industrial CO2.

Now, that lowest trajectory might be the most desirable from the standpoint of giving us the greatest assurance of avoiding climatic changes

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that we really won't like, but it is virtually not practical to get to that. We are already past the point where we can get to that trajectory.

In fact, if you could see the scale more clearly, you would see that that one requires the emissions to go negative early in the next century, which is particularly difficult to manage.

Now, the green trajectory that stabilizes at a doubling of pre-industrial carbon dioxide concentrations require that global emissions–global emissions, not U.S., but worldwide, including the developing countries–start to decline already in about the year 2030, and they do that from a peak in which average-per-capita emissions worldwide would be only one-fifth of U.S. per-capita emissions today.

That is going to be very hard to do, and if we are going to do it, we need to start working on it today.

The problem, basically, is that the world energy economic system is a lot like a super-tanker under full power. It's got huge momentum in the

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direction it's heading. It's very hard to steer. It's got very bad brakes.

The science that has been summarized here this morning is telling us that the super-tanker is headed for a reef. We can tell the water is getting shallower under the hull, even if we can't say exactly how far we can go before the reef rips the bottom out of that tanker.

Now, in that situation, full speed ahead is clearly the wrong course. We need to start slowing and steering away from the reef of unmanageable degrees of climate change now, and since we are all in the same super-tanker, industrialized and less-developed countries together, we had better find ways to slow and to steer cooperatively, rather than bickering over who is holding the wheel.

We have got a lot of tools available to help us with that steering effort. There are advanced technologies already on the shelf that can help us dramatically increase the efficiency of energy end use and can reduce sharply the emissions

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of carbon dioxide from energy supply. We need only some sensible attention to reducing the barriers to the more rapid and widespread diffusion of those advanced technologies already on the shelf, and there are new technologies that could be brought to the point of applicability, with expanded research and development, that would make increased energy efficiency and reduced carbon emissions even more cost effective, but now I am basically getting into parts of the story that other panels are going to deal with later today, and I'll leave that to them.

PRESIDENT CLINTON: But I do want to make the following points. Number one, we can't get to the green line unless there is a global agreement that involves both the developing and the developed countries.

Number two, however, that is not an excuse for us to do nothing because, if we do something, it will be better than it would have been otherwise because we are still the biggest contributor and will be until sometime well into the next century.

And, number three, based on everything we

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know, it will be easier in some ways, particularly if they get the financial help they need, for developing countries to choose a different energy future in the first place than it will be for the developed countries to make the adjustments, which is not to say we don't have to make the adjustments, but to say that I have read a lot of the press coverage and people saying, "Oh, well, we are just using this for an excuse," or "We're not being fair to them," or "We don't want them to have a chance to grow." That is not true.

The United States cannot maintain and enhance its own standard of living unless the developing nations grow, and grow rapidly. We support that, but they can choose a different energy future. And that has to be a part of this, but it is not an excuse for us to do nothing because whatever we do, we are going to make it better for ourselves and for the rest of the world than it otherwise would have been.

I think it is important to point out what John showed us there on the green line. The green

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line--it requires--to reach the green line. We have to have a worldwide action plan.

VICE PRESIDENT GORE: And, Mr. President, if you will allow me to offer a footnote to that, another lesson that I heard from Dr. Holdren's presentation is that not only does the agreement have to include the developing countries in some way, along with the developed nations, but, also, if we wait--if we wait before we start, then we will lose the opportunity to hit that green line for another century or more, and so time is of the essence.

Mr. President, they have asked me to announce that that is the close of Panel I. We are going to stay here while the second panel members come here, but ladies and gentlemen, if you would, please join the President and me in expressing thanks to the members of this great panel.

[Applause.]

MODERATOR: Ladies and gentlemen, please remain seated during the panel change.

[Pause.]

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VICE PRESIDENT GORE: Ladies and gentlemen, could you please take your seats? We're going to start the second panel, and on behalf of the President, I'd like to call first on Secretary of Energy Federico Pena, and Mr. Secretary, if you could introduce your colleagues on this panel and kick it off, we'd appreciate it.

SECRETARY PENA: I will, Mr. Vice President. Thank you very much, Mr. President.

This panel will, I hope, make the point that technologies that exist today, or will soon be available, will allow us to have a smooth transition to a new economy where we will see greater energy efficiency help us reduce greenhouse gas emissions. That is the message I hope we can provide in this panel.

Before I introduce the panelists, Mr. Vice President and Mr. President, let me make a few comments which I hope will put the technology discussion in broader perspective.

Mr. President, a couple a weeks ago, your science advisors, the PCAST Council, issued a

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report to you, making it very clear that we need to invest more in research and development in the area of energy, and it was interesting that Dr. Holdren, who was on the first panel, chaired that committee for you.

Secondly, there were a group of scientists who come from our five national laboratories, who also issued a report demonstrating that we can apply technologies and reduce greenhouse gas emissions without having a very significant impact on our economy, or the cost to our economy. And that has been one of the big debates raging in this discussion.

Let me put this discussion in context by first referencing Chart No. 1, which is now on the screen. There. If you look at the sources of greenhouse gas emissions, this chart demonstrates that about one-third of the carbon dioxide emissions come from buildings, and by "buildings" i mean commercial buildings, homes, apartment complexes. About one-third comes from transportation, and I'll talk about that,

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momentarily. And about one-third comes from industry.

If you consider, as the Vice President said in his opening remarks, that it is fossil fuels which produce energy which are largely the reason for greenhouse gas emissions, we can understand why it is that power plants that produce electricity account for so much of greenhouse gas emissions, particularly when coal or natural gas, in some cases, is being used.

What I think most Americans don't appreciate is the fact that when power plants produce electricity for our homes, it takes three units of energy to produce one unit of energy for electricity.

Let me put that in a different way. If you had three lumps of coal being used to burn in a power plant, the electricity generated from that power plant would represent only one-third of the energy in those three lumps of coal and two-thirds of it is lost, either in hot water or steam, or other sources. So our challenge is to find a way

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to make those power plants more efficient with new technologies to reduce greenhouse gas emissions.
Now as respects the three categories that were on the screen, and are still on the screen, let me break that down a little further so we can better understand how technologies will help us address this problem.
If you look at the buildings sector, For example, electricity and natural gas supply most of the energy used in the building sector. Heating and cooling are responsible for more than half of the emissions for buildings.
Appliances, whether they're computers or faxes or other appliances, are responsible for 20 percent, and lighting accounts for 14 percent. So what can we do about that? I brought with me, Mr. President, a technology. This is a solar shingle. These are available. Over time, we think they'll be more available in terms of cost.
But by putting these in your home, or a building, you can substantially reduce the use of electricity and use the sun to bring power into

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your home, or your building, and I hope that perhaps we'll have further discussion from our panelists about that.
Secondly, to my far right is a lamp, Mr. President, which I think you may have trouble seeing. It's a torchiere lamp; it's a little dark. But I want to point that out, because, right now, we use halogen lamps, and you can find them in our homes all the time.
But they burn very brightly and they're very hot, and so they use a lot of energy. These new torchiere lamps use fluorescence and are 80 percent more efficient.
And I want to point out that Stanford University is going to be using these in the dorms because the halogen lamps are not only dangerous, because they create fires–
[Laughter.]
–he's paying attention now–and they are more energy efficient.
[Laughter and applause.]
PRESIDENT CLINTON: It was in the parent's

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instruction manual.
[Laughter.]
SECRETARY PENA: The message is these technologies can make a big difference. If you look at transportation. We know that oil supplies virtually all of the energy used in the transportation sector. In transportation, 35 percent of the emissions come from automobiles, 23 from light trucks, including vans, minivans, and sport utility vehicles, about 13 percent from airplanes, et cetera. What can we do about that?
And I hope Mary Good will address this subject in a second. As you know, we have this Partnership for New Generation Vehicle. This is a lithium ion battery, which can be used in a dual fuel vehicle with electric and natural gas use. We can, with these batteries, take the energy that is lost when you break your vehicle, capture that energy and use it to accelerate your car.
And so with this new technology we can make our automobiles more efficient. It exists. The last sector is the industrial sector, and

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there, 80 percent of the emissions come from petroleum refinery, chemicals, paper, forest products, metal production, and you, in your comments, Mr. President, alluded to the fact that a number of industries have voluntarily started to reduce their energy use.
And we're very pleased, For example, that the metal casting industry has set a goal of a 20 percent reduction in energy use over a certain time frame.
So technologies, we believe, can make a significant difference in reducing greenhouse gas emissions, they are good for our economy, good for U.S. companies, and good for our environment.
In closing, Mr. President, when you made your address before the United Nations, you challenged all of the laboratories of the Federal Government to come together and put together a strategic plan on how we can support, working very closely with the private sector, new technologies to reduce greenhouse gas emissions.
And we are already working with our

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scientists, they are quickly putting that report together, and we'll present it to you very shortly.
To help us have I think a very good discussion on technology, we have an outstanding group of panelists today.
First, let me introduce Mr. Tom Casten, who is CEO of Trigen Energy Corporation, who understands, very well, how business can more effectively make use of energy that currently is wasted.
Also with us today is Kurt Yeager, to my left, who is the president of the Electric Power Research Institute, an expert on electric utilities, and the potential in that industry for increased efficiencies in generation and transmission.
Over here is Mary Good, former Under Secretary of Commerce for Technology and now Managing Member of the Venture Capital Investors, who will discuss the new supercar of the new century.
Also with us today is Michael Bonsignore,

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chairman and CEO of Honeywell, who will discuss how business can adopt cost-effective energy saving technologies in the building and industry sectors.
Also with us is Mason Willrich, CEO of EnergyWorks, an expert in renewable energy sources, who will discuss the potential that renewables such as wind and solar and biomass can be used in reducing greenhouse gas emissions, and then Mr. Larry Papay, a member of your PCAST task force on R&D, who knows a lot about the potential for technologies that are still on the drawing board, but which I think are very exciting for the future.
So Mr. President, Mr. Vice President, these are our panel members, and I think at this point I'll turn it back over to you and the Vice President.
PRESIDENT CLINTON: Thank you.
I'd like to start with Mr. Casten and ask him to describe his company's work in recapturing waste energy to heat houses and buildings, and discuss the potential market for the technology in the country.

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MR. CASTEN: Thank you, Mr. President.
The Secretary's given my speech already. I'd like to focus on where 70 percent of the emissions of CO2 come from, which is in the production of heat and power, and my message is simple.
At present we make heat in one plant and electricity in another plant, and as a result U.S. power plants waste a lot of fuel.
Regulation protects this waste from market forces. Now to reduce CO2 emissions we could leave the monopolies intact, and force the country to deploy some exotic and expensive technologies and maybe force them to switch from coal to natural gas and this would disrupt the economy.
People who think this is the plan respond to your call for climate change mitigation as if they were told they've got a terminal illness. They want a second opinion. They want to quibble about the science.
But using one power plant to produce electricity and another one to produce heat is just

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not efficient. As the Secretary said today, when we burn three units of fossil fuel–coal, oil or natural gas–only one ends up as electricity. Two end up as waste up the chimney or out in the harbor. Gone.
That heat could be used for buildings in industry. We have two fires when one would do. The heat that we waste in U.S. electric production alone is equal to the total energy use in Japan. Unfortunately, our outmoded laws forbid competition, thus discourage innovation and efficiency. The result is waste of fuel.
Let me illustrate this with a local example. Two miles south of here, there is a coal-fired electric generating plant. Like hundreds of others, it produces 400 megawatts of electricity and dumps 800 megawatts of heat into the Potomac River. At the same time, Georgetown, the Pentagon, National Airport, Howard University, and GSA all burn more fuel in order to make the heat that was just thrown away. The electric plants' waste heat could replace all of these boilers, and this would

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of course reduce CO2 emissions, dramatically, improve Washington, D.C. air quality, and I think save a lot of money.
Using electric plant waste heat is not just theory. Trigen Energy Corporation heats 6,000 buildings and numerous industrial plants in 14 cities with combined heat and power.
We recover normally wasted heat from electric generation to feed our steam and chilled water systems. Customers save money, pollutants drop by 90 percent, and we have the CO2 emissions, and we save money.
Here's three examples of where we're doing that. In Philadelphia, our steam system heats downtown buildings and the University of Pennsylvania.
With partners PECO and NRG [ph], we are installing a gas turbine that will make 150 megawatts of electricity and 250 megawatts of heat.
In Chicago, we heat and cool the McCormick Place Convention Center with combined heat and power.

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In Golden, Colorado, in partnership with Tucson Electric, we burn coal to make electricity and then sell the left-over heat to Coors to make beer, and also to heat the Colorado School of Mines.
The potential for CO2 reduction is huge. Increasing the average U.S. electric generation efficiency to just what we're achieving today would reduce U.S. CO2 emissions by 23 percent, and save money.
Mr. President, doubling U.S. power plant efficiency is feasible, and in my view, essential. America's entrepreneurs will eliminate energy waste if they're given a chance to compete. Then they will sell their efficiency all over the world.
When you go to Kyoto, I hope you'll play to our strength. Tell the other nations that we will open our electric markets to competition, that we will unleash our entrepreneurial strength to improve power plants worldwide. Thank you.
[Applause.]
PRESIDENT CLINTON: Mr. Casten, for the

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benefit of–if there's anybody here that doesn't understand the intricacies of the electric utility regulation–and there will doubtless be people out in the country that don't, even people who pay big electric bills–why don't you, just very briefly explain, so we can follow this chain of thought all the way through, the people who are reporting on this, what the present state of the law is, and what the proposals are, and specifically what you think ought to be done by whom.
Just don't assume that everybody knows this. Keep in mind, we're doing this for the general public, too. So just very briefly, say that.
MR. CASTEN: Mr. President, we began in about 1930 to make electric a monopoly, and we set up state laws in every state that said you get a territory and you get to sell electricity to everybody in that territory, and nobody else can sell it.
We later on added Federal laws that prevented the electric utilities from buying each

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other or becoming more efficient.
We then wove a tapestry of regulations that–just full of little black threads that stop efficiency. Every place you turn, somebody has, based on this paradigm of electric only, and put a regulation in place that stops it. Our environmental regulations don't really focus on efficiency and reward it.
What needs to happen–it's about the only industry that's left as a protected monopoly–is that we need to end the monopoly, work through a transition. Remember that billions of dollars were invested by our utilities relying on those rules, so we've got to find a way to move through and give them some incentive to move to a more efficient and a modern world, and I think we can do it.
VICE PRESIDENT GORE: Very good. I think that we're going to Kurt Yeager next, right?
SECRETARY PENA: That's correct, Mr. Vice President.
VICE PRESIDENT GORE: Do you want to–well, Kurt Yeager is president of the Electric

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Power Research Institute, which is formed by, funded by electric utilities, and Mr. Yeager, how can we reduce greenhouse gas emissions in facilities like power plants that use so many fossil fuels?

MR. YEAGER: Well, thank you, Mr. President, Mr. Vice President, Mr. Secretary. It's important to begin by recognizing that these plants today produce about two-thirds of the nation's electric power, and the paradox in that is that the electricity that they produce eliminates far more carbon in our economy than the plants themselves emit.

Now within the context of that paradox there are a number of things that we can do, and I would begin by reporting that technological innovation is steadily reducing, not only the U.S. but the world's carbon diet, by substituting less carbon-intensive energy sources and by steadily promoting the more efficient use of all our energy forms.

This progress is very important because on

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a worldwide basis, 90 percent of all the energy that the world uses contains carbon.

The challenge we face is continuing that progress by wisely deploying the technology opportunities that are becoming available on a global scale. And a key enabling factor in this sustainability of decarbonization is electricity, and its growing role in our global energy system.

First–and I just underscore three observations in that regard–first, it enables the use of carbon-free energy sources, such as renewable energy, nuclear power.

Second, it enhances the efficiency with which we use energy throughout our economy.

And I'd say third, and most importantly, it is the engine of innovation. It is the basis on which technological progress has evolved in this last century. Witness the computer revolution today, and the efficiency of productivity that it brings to every part of our economy. And as a result we can realistically envision, as we look forward into the future, creating an energy economy

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on a global scale that depends on electricity and hydrogen, based on efficiency and free of carbon.

The essential factor in promoting this progress, which is shown in the figure on the board, rather than limiting this global de-carbonization is providing flexibility, and that is the ability to take best advantage of technology progress and knowledge.

And to avoid counterproductive costs which could both prejudice our economic vitality and the very jobs on which sustainable progress also depends.

And in this regard, U.S. technology, I believe, is uniquely positioned for two-pronged leadership in emerging innovations. First, by accelerating global electrification as the essential foundation for de-carbonization, and for eliminating the poverty and hopelessness that now plagues some 2 billion people on this planet who are now without electricity. And second, by developing and deploying a portfolio of cleaner energy alternatives, using that electricity

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platform.

And I believe the result would be both environmental progress as well as increased global security and new markets for U.S. goods and services.

And this portfolio would include four primary dimensions. First, clean coal and biomass technologies that we have spent a great deal of effort through the national economy in developing, and to reduce the world's dependence on those fuels. Particularly important is the gassification of those, to move them from high carbon fuels to lower carbon, and also more efficient fuels.

Second, to bring forward solar-based renewable energy, particularly in the developing parts of the world that have low energy requirements today. To expand the use of safe carbon-free nuclear power, led by U.S. leadership in this area. And finally, new transportation systems which both move away from carbon and imported oil.

In conclusion, I must also stress,

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however, that this progress will depend on re-energizing what has been our lagging U.S. investment structure, both public and private, domestic and international.

And this urgent investment includes both the R&D engine in which technical progress and innovation depend, and for commercializing and deploying the results on a global scale.

With the end of the Cold War, we're on the brink of a period of great technological opportunity in service to mankind. We must, however, invest wisely and persistently if we're to achieve a truly sustainable energy foundation for the world. This foundation must support both the environmental and economic aspirations of our rapidly growing and increasingly interdependent global society. Thank you.

[Applause.]

PRESIDENT CLINTON: Let me just say before we go on to the transportation sector, these presentations have been quite important. I remember, 20 years ago, more or less–maybe a

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little less than that, I can't remember exactly when–that the Congress voted, or the Federal Government at least required–it might have been a regulatory action–that the new power plants not use natural gas anymore, and that we phase out of them because we grossly underestimated how much natural gas we had, and we thought we could go to clean coal because we didn't want to build nuclear plants, for all the reasons that were clear.

And one of the biggest problems we face, now, in trying to make a reasoned judgment about how quickly we can reduce greenhouse gas emissions, and by how much, is the need not to be unfair to electric utilities that have billions of dollars invested in government approved power plants that they have not yet fully amortized.

So that it's–now, there are–therefore, in so far–and this applies both to buildings and to the utilities themselves, about which these two speakers have spoken. You can either conserve more in the production of electricity, or you can have the people who consume it conserve more, or you

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could change the basis on which the plants work, which is the most expensive way to do it.

Therefore, in so far as we can do more in terms of how much electricity people use, or how much waste heat you recover, either one of those things is a far preferable, far preferable alternative than to change the basis on which plants that have already been built are being amortized, and will generate huge amounts of savings at lower cost, if we can do it.

At the end of this session, we'll get around to the, sort of the skeptical economist take on the technological fix. We'll get around to that later. But I just think it's important that we focus on this specific issue, because if our goal is to minimize economic dislocation, then having conservation by the end-users, the people who have the buildings, For example, whether they're manufacturers or residential buildings, are other business buildings, and having recovery of waste heat, are clearly, I think, the preferable alternatives, and clearly, the less expensive

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alternative.

I'd like to call on Mary Good, now, who was the Under Secretary of Commerce for Technology in our administration for four years, and now is the Managing Member of Venture Capital Investors.

I want her to talk a little bit about the potential for technological advances to reduce emissions in the transportation sector, and to focus particularly on the Partnership for New Generation Vehicle that we've been working on with the auto companies and the UAW since this administration took office, and Mary had a lot to do with it.

There is also a huge debate here about how much we can do, how quickly, and we have to make the best judgment about this in determining what to say about it when we are in Kyoto, because transportation, as Secretary Pena said, occupies such a large part of this whole equation. So Mary, have at it.

DR. GOOD: Thank you very much, Mr. President.

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PRESIDENT CLINTON: Tell me what I should say in Japan about this.

DR. GOOD: Well, thank you very much, Mr. President, and Mr. Vice President. You have sort of set the stage for transportation because the infrastructure problem is very big and very real in transportation.

The issue about the use of transportation, of a third of the energy, is real. That means it's a big piece of the whole issue. It is also, at the same time, absolutely vital to have efficient low-cost transportation because the economy depends on it as well.

And then you're saddled with an infrastructure that we poured trillions of dollars into over the last 100 years, in roads and waterways, and railroads, and what have you, which are there, and we have them.

And so the issue–and not only that. But we've built a whole transportation system based on the use of petroleum products. So you have all of the problems that you put on the table, sort of in one bundle, in a sense, in transportation.

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So if you look at that, the short-term fixes have to be focused on efficiency. We've got to get better efficiency out of the systems, and programs like the Partnership for a New Generation Vehicle are clearly the way to go.

Not only that, but it's the way to go for lots of reasons. The goal here was to reduce the ability of the fleet of automobiles to use a third of the fuel they presently use. That's a huge reduction.

But it was a partnership between the government and between the private industry and it required a lot of trust on both sides, still does, and one of the biggest issues of trying to get it done is to keep that trust going on both sides, to really move it and to do it well.

But this was an example of where you've involved not only the Big Three auto companies, but we've also involved a lot of people out of the universities and the technology there. We've involved over 300 other industry partners, which

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people really don't understand.

These are all of the suppliers to the automobile industry. The people who make the low weight materials, the people who make flywheels, that will hopefully make some of these hybrid cars possible.

So you've involved a lot of people on a very focused program to get it in a relatively short time frame, because we asked them to have a manufacturable prototype in ten years. That is really asking a lot in an industry which makes incremental improvements over fairly large periods of time.

I think they've made a lot of progress. It remains to be seen whether they're actually meet that goal, but that model for getting the industry to work on these efficiencies, I think, clearly, has to happen, and has to happen in a much more focused way, and much more rapidly than we've done in the past.

For example, let me just talk about a couple of other things in my couple of minutes. We

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need also to begin to look at some new technologies in the rail industry as well. The railroads today, if you want to understand the problem, if you looked at the news last week on this problem with the railroad right now, where they are so confused they can't get products to where they need to be, this really has a huge negative impact on the economy.

And you look at what we have done in research on new efforts in railroads, and I look at what the Japanese announced last week. They just announced, last week, a new demonstration of their levitated train that runs 295 miles an hour with the kind of energy efficiency you wouldn't believe. We have no research program, even, anymore, in levitation.

So those are the kinds of things, on the longer range, we need to look at as well.

And one last piece. With respect to the fuel issue, to change from petroleum based, the only other source we have is biomass, frankly, when you really look at all the other options.

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And the problem is we've been talking about biomass, using up useable farmland, and in today's world, across the world, that's not very feasible, frankly. To grow enough biomass to phase out petroleum for transportation is just not very feasible. We need that for something else.

But we've learned a lot about plant biology in the last 20 years. We've put a lot of money in basic research.

We know now how to actually translate plants that can be much more CO2 absorption efficient. One of these turns out to be algae, and there's some technology right now that's ready for demonstration, which is ocean-grown algae, where you actually farm the ocean, grow these things most people don't want because they grow fast, and they use up so much CO2. You could harvest those, process them on the ocean, make methanol and tank it like we do all other liquid fuels.

So there's really major opportunities. The short term is efficiency. The longer term has to be willing to look at some really new ways of

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looking at how to get fuel. Thank you; appreciate it very much.

PRESIDENT CLINTON: I just might add that–yeah, give her a hand.

[Applause.]

PRESIDENT CLINTON: I just want to make two brief points. The leaders of the Big Three auto companies and the UAW came in to see us last week, and they said they're going to meet their Partnership for the Next Generation Vehicle goal.

The real problem is once they develop a prototype, how quickly can it be mass produced and how will people buy it? And will they buy it at present fuel prices?

We'll come back to that in the end, but, you know, one related question to that is given Americans' buying habits and consumer preferences, don't we have to include these light trucks, and even heavy trucks in this Partnership for the Next Generation Vehicle? Don't we have to achieve significant fuel efficiencies there as well, if we have any hope of succeeding here?

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The only other point I want to make, Mary, is, you know, I'm big on all kinds of fast rail research, but I hope tomorrow's headline isn't "Clinton Advocates More Research On Levitation."

[Laughter.]

PRESIDENT CLINTON: Oh, yeah. I don't need that!

DR. GOOD: We'll have to explain it to them better.

PRESIDENT CLINTON: I'd like to call on Michael Bonsignore, now, to talk about the energy savings available through the use of more high-efficiency products and systems, and also the potential for environmental technology exports.

What he has to say about how applicable and expandable you believe it is, has a lot to do with whether this transition we're going through will be an economic plus, a drag, or a wash. I personally have always believed it would be a plus, if we did it right. But I'd like to ask Michael to talk about that.

MR. BONSIGNORE: Thank you, Mr. President,

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Mr. Vice President, Mr. Secretary. It's an honor for Honeywell to be a part of this discussion on global warming and the application of technology to mitigate it.

We do see a very healthy climate, worldwide, for the export of these energy efficiency technologies.

Honeywell's point of relevance here, and point of reference is we've been in the energy efficiency business for 112 years. We operate in 95 countries around the world and about 40 percent of our sales come from outside the United States.

So we see this energy efficiency issue up close in the developed and the developing world, really, across the globe.

The first point I would like to stress is that there are many existing technologies that could be deployed immediately to reduce energy use and the related emissions that come along with it.

There's no question that the United States leads in environmental technology and this is really a time in the world when the demand for that

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technology is growing every day.

There's a great social awareness in the developing world for the quality of life, for the quality of the atmosphere, for what the industrial infrastructure increase is going to do, ultimately, to the quality of life in these developing countries.

I would also like to say that energy efficiency is currently the cheapest and the fastest to deploy and that provides us with a tremendous export opportunity as a function of the technology leadership that we demonstrate in so many different areas.

You talked about some of the automotive innovation in your comments this morning, and the low wattage lighting we talk about, lighting controls. Simple things like insulation, that can make a tremendous difference in terms of energy loss. Air quality control. Programmable thermostats that can make a big difference in terms of reducing energy consumption over a 24 hour period. Energy recovery systems that allow

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ventilation to occur without the waste of the energy that's been applied to either heat the air or cool the air, before the air is exchanged in the building.

Real time pricing controls that allow large hotels, For example, to schedule their energy consumption at a time when it is the least expensive as a function of the power generation available. Doing the laundry at 2:00 in the morning as opposed to doing it at 6:00 o'clock in the evening when there's high demand.

There is software available now for us to be able to manage the consumption of the energy on a demand profile which makes it most cost-efficient.

The boiler controls we talked about earlier. Process controls to allow us to produce gasoline, pulp and paper, chemicals, steel and aluminum products with less energy. I think all examples of technology that can be exported.

The second point I'd like to stress is that the developing world is a major element in

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this overall global warming equation and it must be included in whatever policy gets made, ultimately.

We're talking about two-thirds of the world's population here, and soon, 50 percent of the emissions that will be produced in the world will be produced from the developing countries.

They have the most to gain from the technical assistance and the related financial support that the developed countries can provide, and I'd like to use one very vivid example that I followed personally, since it came to pass. This was in the city of Cracow, in Poland, where the city was quite concerned about the cost of energy, the inefficiency of the energy use, and the impact of that inefficiency on the atmospheric conditions in the city.

Without the assistance of the Department of Energy to put together a seed demonstration project, this project would probably never have occurred because the city of Cracow was clearly unqualified for any kind of standard commercial financial terms.

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And by getting this seed money available from the Department of Energy, we were able to get the Cracow city modernized. It was very significant, a 23 percent reduction in the energy requirements, the emissions in the city, significant reductions in CO2, and other related emissions.

And I think it was a really good example of the need to look for clever and creative ways to bring financing support into the developed world as well as the energy efficiency technology themselves.

I'd like to make just two other points before I close. One is that I think we should do everything possible to develop some kind of a system of credits that encourages people to make these energy efficiency investments early rather than late.

When one looks at these curves, and sees these curves constantly getting higher and higher in terms of the demand, there may be a resistance to invest now because the future would just require

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even more investment.

And I think there needs to be a system of credit for these people who are willing to take early initiative to reduce emissions.

And the second point, and last point I'd like to make is the Federal Government really needs to "walk the talk" and take the leadership here. It's the largest consumer of energy in the United States. I think the Alliance To Save Energy demonstrated that the Federal Government wastes one-quarter of the energy it purchases.

That relates to about a billion dollars in annual savings to the Treasury, and millions of tons of CO2 emissions avoided, and I think in the spirit o this whole debate, it's really an opportunity for the Federal Government to step up and take a real position of leadership in this whole area of energy efficiency.

[Applause.]

VICE PRESIDENT GORE: Let me ask a brief question, if I could, Mr. Bonsignore.

What you've said makes it clear that when

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there's waste in the form of pollution and waste in the form of CO2, that that almost always represents economic waste as well. If you're burning raw materials to produce your product, plus a waste stream, if you can figure out a way to reduce the waste stream, whether it's CO2 or some other form of pollution, and put a higher percentage of your raw materials into the production of your product, that's going to benefit you, economically, at the same time it benefits the environment. Correct?

MR. BONSIGNORE: Correct.

VICE PRESIDENT GORE: Now a lot of economics analysts will say, you know, if it's as easy as you say, then since this information about this opportunity is available to people, why haven't they done it already? You've been in the business of trying to turn on the light bulb for potential customers and tell them this. Why hasn't it happened more quickly already?

We heard earlier from Mr. Casten about the role monopolies have played in holding it back, but what are some of the other obstacles?

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MR. BONSIGNORE: Well, I think, my sense is in the United States that we still have not been able to raise the level of awareness for the consumer of the real cost of energy–the real cost of energy in its total dimension.

One only has to go into a gas pump in Belgium–and I lived in Europe for five years–and pay $4 a gallon for gasoline, to really understand the real cost of energy.

So I think there's a public awareness issue in the United States that needs to be dealt with and my feeling is that this whole debate about global warming, regardless of where it goes, ultimately, may serve to heighten the awareness in the American public of what the real cost of energy in its total dimension is.

But I would also say that we're quite encouraged by the degree to which this energy efficiency technology is being embraced now.

A very poignant example in Beijing, where, as the quality of life in Beijing comes up as the Chinese economy accelerates, the Chinese people

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living in Beijing don't want to breathe dirty air, and they apply a tremendous amount of pressure on their officials and on the government to do something about the quality of air in Beijing. And so there's a real social motivation, far beyond the economic motivation, to really do something with some of these technologies.

And I think at the end of the day, those are the incremental steps that will help us embrace these opportunities.

VICE PRESIDENT GORE: Thank you very much. I think next on our program is Mason Willrich. Have I pronounced your name correctly?

MR. WILLRICH: That's right.

VICE PRESIDENT GORE: And he is the CEO of EnergyWorks, which is a joint venture involving Bechtel, the famous international engineering firm, and Pacific Corp., a major electric utility of course. And EnergyWorks develops alternative energy projects, domestically, and internationally.

What do you see as the potential for these new alternative energy sources?

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MR. WILLRICH: Mr. Vice President, Mr. President, it's a pleasure for me to be here, and to talk to you a bit about renewable energy sources.

Let me start with just reminding ourselves that fossil fuels do, today, account for 85 percent of world energy consumption, and unless we change dramatically, as the amount of energy consumed overall in the world goes up, we are going to have that same fraction for the indefinite future.

I think a major alternative is to expand our use of renewable energy from a few percent today to a large fraction of the world's energy consumption in the 21st century. Let me give some examples of expansion.

Take wind, where there are now an array of modern turbines available, we have large wind farms in California. One of the best resources in the United States for wind energy on a large scale is in the Middle West. Outside the United States, there are excellent wind regimes in Europe, in Spain, off of Germany and the North Sea, also in

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China and Argentina. So we needed to expand wind.

We need to expand the use of solar energy. Solar photovoltaic panels, Mr. President, these convert sunlight directly into electricity. They are now used for telecommunications from remote areas, also telecommunications from our freeways. We need to expand, wherever cost effective, the use of solar photovoltaics, not just 1 million roofs in the United States, but, rather, throughout the world, and I believe that this would enable us for the first time to play a major role in bringing electricity to the 2 billion people out there that do not have access to electricity, and in a form that would not contribute to greenhouse gas emissions, and this is in the continents of Asia, Latin America, and, of course, Africa.

Thirdly, biomass. We are using, increasingly, the waste products from agricultural for our forest products industry, sugar cane, walnut shells, wood chips. We need to move through the adoption of gassification technologies into a more efficient use of our biomass resources, and we

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can at that point establish energy plantations on the marginal agricultural lands in the U.S. and also bring in biomass in several developing countries such as South China, India, and Brazil.

To begin a transition, I would suggest a goal of 10 percent annual additions to electricity generation coming from renewable energy technologies, aside from large hydro projects, and I suggest we reach that goal within the next 10 years. We should do it by providing our consumers in the United States, electricity consumers, with a choice of who they wish to buy their electricity from in a more competitive industry. I believe that that will create a circumstance where our consumers will pay premiums prices for energy derived from so-called green energy resources, and it will provide a market-driven renewable energy industry.

In the developing countries, I suggest that we need to continue to support the restructuring of the electricity industries in those countries. That will provide an opportunity

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to lay the basis for the kind of leapfrog in the developing countries where they can put in the infrastructure in the first instance in an efficient way and in a way in which it will have small modular electric generation and ultimately the basis for moving heavily into the renewable energy area.

Finally, Mr. President, I am not running for office. I have no intention of running for office. However, I believe that we should reform energy prices through charges on carbon emissions. The use of various forms of fossil energy now imposes large health and environmental costs on all societies, and these are not reflected in the prices that consumers currently pay. So we are underpricing fossil energy, and that is perhaps the largest barrier to a transition to these alternatives that we all want to achieve.

I think that these that are initially low should be part of the proposal that we carry with us as a leader in the Kyoto conference.

Thank you, Mr. Chairman.

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[Applause.]

PRESIDENT CLINTON: I want to respond to that, but, first, I want Larry Papay to talk about some of the long-range technologies that are on the drawing board now and what he thinks the Government's role should be, what else should we do, how much more should we spend on R&D, how should we spend it, how should we target it, and what are the likely returns going to be, and what contribution can they make to any-to fulfilling any commitment we might make in Kyoto.

MR. PAPAY: Thank you, Mr. Vice President and Mr. President.

Back in January when you asked your Council of Advisors on Science and Technology to look at energy R&D, specifically looking to the 21st century, a panel was formed, and as was mentioned, John Holdren chaired that, 21 people on the panel, people from industry, people from the national labs and other parts of Government, people from academia, people on sort of the hard side of technology and the soft side.

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There are several energy challenges in the slide that is up that lists these, and, of course, we are here today speaking about global warming, but it should be pointed out that in solving one problem, you can solve several.

Take energy security, for example. In an unconstrained oil economy, going from about 8-1/2 million barrels per day of imports probably to about 16 million barrels per day in 2030, if you were to introduce the technologies which also reduce carbon emissions, as well as reduce the importation of oil, you could probably cut that by more than half. And one of the projections in the PCAST report talks about reducing it by more than 10 million barrels of oil.

There is a point up there on U.S. science and technology leadership, which is also extremely important. About 7 or 8 percent of the gross economy, not only in this country, but around the world, deals with energy, and as mentioned by prior speakers, there is an awful lot of growth occurring because energy drives the economic engine in these

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countries.
Over several hundred billions of dollars annually are spent for the introduction of energy technologies in countries around the world, and there is no reason why the United States can't have a leadership position in that. And it also will go to help stabilize these economies.
The next slide speaks about-a little bit about the technologies that we examined in the PCAST panel review. We looked at efficiency renewables, fossil and nuclear. We talked about a PNGV-2, to push the limits there even further. We talked about heavy trucks. We talked about light trucks. We have got programs in there for photovoltaics and wind, and zero-net-energy houses.
On the fossil side, we have got a Vision 21, which the Department has come up with for coal, because coal is a resource that is going to be used around the world simply because it is a resource that exists around the world, and the point there is, make it as efficient as possible and use it in a cogeneration application, as Michael has

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mentioned earlier.
And in nuclear, both on the fission and the fusion side, we talk about aggressive programs. Fusion has got a longer time frame, but, even with fission, we need to look about-we need to look at advanced systems, systems which are proliferation-resistant because, let's face it, fission reactors are zero carbon emitters.
There is one last point about how you complement the program, and the program that is in the PCAST report talks about an increase of about a billion dollars annually in the R&D budget, small potatoes from an insurance policy point of view, but there is a complement to that, and that is the commercialization aspect.
Most R&D programs have a little triangle in the lower right which says it has now been proven, now just go out and commercialize. There is still a small hill to climb there, whether it is by Federal buy-down, cap and trade systems, auctions, renewable portfolio standards, things of these sorts, which will help buy down that initial

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high-priced energy technology and bring it into the commercial marketplace.
The last slide talks about what some of the impacts could be in the mid to long term for selected energy technologies that we examined in the PCAST report.
I apologize to all of you. You need to get a copy of the PCAST report, which will help reduce budget deficits, and you can look at in detail what we are talking about.
What we have here on the bottom are what the costs would be on a net-present-value basis for selected technologies. The wedge is going up. Look at the potential impact, and it is a rather simplistic approach, but the potential impact in savings that could be realized by the introduction of those technologies, it is simplistic because it doesn't look at cross-competition from one technology to another. But it does show you that there can be significant reductions in CO2 emissions by the introduction of these advanced technologies.

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It is an exciting time. Energy technology is an exciting area, and for the students in the audience, look forward to it as a career.
Thank you.
[Applause.]
PRESIDENT CLINTON: Let me-we need to wrap up. We are running a little bit late, but I wanted to just give everyone an opportunity to comment on this.
Mason was the only person who I think explicitly said that, in order to make this transition, we need to raise the price of carbon-based products.
One of the difficulties we are having within the administration in reaching a proper judgment about what position to stake out in Kyoto relates to how various people are responding, frankly, to the recommendations and the findings of the people coming out of the energy labs because they say, hey, look, what we know already shows you that we have readily available technologies and courses of action, which would take a huge hunk out

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of-right now, with no great increased cost-a huge hunk out of any attempt to, let's say, flatten our greenhouse gas emissions at 1990 levels.
We just heard about it today. Look at what you can do. The powerplants, you can recapture the waste, two-thirds of that. You can make buildings and manufacturing facilities and residences much more energy efficient. You can make transportation much more energy efficient. Besides that, we have got all of these alternative sources of fuel for electricity and transportation. I mean, it is all out there. This is what we know now. Then, sooner or later, we are going to have the Partnership for a Next Generation Vehicle.
So the question is always, though, who will buy this stuff. I mean, right now you can buy light bulbs. Every one of us could have every light bulb in our home right now, every single one of them. We would have to pay 60-percent more for the light bulb, but it would have three times the useful life. Therefore, you just work it out. It would literally-we'd pay more up front. We'd save

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more money in the long run, and we'd use a whole lot less carbon.
And why don't we do it? Why do we have any other kind of light bulbs in our homes? And that is the simplest example of the nature of the debate we are now having. That is, in order to get from here to where we want to go, do we have to either raise the price of the product-there are only three or four things you can do. You can raise the price of the product to the consumers. You can lower the price of the alternative thing you wish to be bought by the consumers. You can create some new business opportunity through some market-permit-trading, other market option, or otherwise change the business environment, the way we do electric deregulation, for example, or you can somehow increase the awareness of consumers of what their options are and the consequences of that and hope that they will behave in a different way.
I think those are the four categories of possibilities, and if you choose an ambitious target, then if the requirement is almost-to reach

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the target, it is almost exclusively on the front end, that is, you have to raise the price to the consumer or to the business involved–the businesses may be a consumer–if it happens too quickly, you're going to do economic damage on the one hand, and on the other hand, there's no way in the world this Senate will ratify our participation in Kyoto. So it will be out there to create it. It will be a grand gesture, but it won't happen.

Therefore, we have got to know how much we can do through a combination of price. You might be able to get some price changes, particularly going back–Mike said this, too, on the real price of energy–particularly if it was not a net tax increase. You wouldn't have to have a net. There are a lot of other ways to do this, but we have to be able to get something out of either lowering the cost to the alternative, creating new business markets, or increasing consumer awareness of what is right there for them now and what the consequences are.

We can't do it all on the front end and

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expect realistically–if all we do on the consumer price index, raising the price of coal, raising the price of oil to the real consumer, and that is all we do, we are not going to get what we want to do in the time allotted to get it because it either won't pass the Senate or it won't pass muster with the American people.

So we have to be able to access what the Energy Department tells us is there for all to see in other ways, and I don't know if any of you want to comment on that, but this is not a question of whether you are brave or not. It is really a question of what we can get done and what realistically is going to happen in America, but I am plagued by the example of the light bulb I have in my living room at the White House that I read under at night, and I ask myself why isn't every light bulb in the White House like this.

I use this one. I am pleased. I get so tickled. I go in and turn it on, and I measure how much longer it takes to really light up, but I know it's going to be there long gone, you know.

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[Laughter.]

PRESIDENT CLINTON: All of a sudden, it's a great thing, and I say why am I so irresponsible that I have not put this in every light bulb. Why are we not all doing this?

So, when you get right down to it, now, this is where the rubber meets the road. We have to make a decision, a commitment. It has to be meaningful. I am convinced that the Energy Department and lab people are absolutely right, but the skeptics on my economic team said there will not be perfect substitution. They are not going to do it.

So, if you want to say anything about that, you can, but, when you get right down to it, that's where all of these decisions are going to be made, based on our best judgment about what kind of markets we can create for the private sectors, what kind of substitution there is, and whether we can–how quickly we can move to alternative energy sources that people will actually access.

So you commented, and, Michael, you did.

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Does anybody else want to say anything else about this?

MR. CASTEN: Yes sir, Mr. President, I think we have a model that has worked. We decided no more sulfur, we set caps, and if you wanted to burn any more sulfur you had to buy permits. The market dropped the price of those permits from 1500 down to 100 dollars and it created a whole market to figure out how to do it.

I think we can come up with a way to say no more carbon and it's going to ratchet down. Then just let the market figure out ways to trade permits to get there. The model worked with sulfur. I think it can work here.

PRESIDENT CLINTON: It worked superbly with sulfur.

What do you say to the people who–we had a great debate. We argued this for an hour and a half in the Oval Office the other day. I probably shouldn't admit that. We did.

[Laughter.]

PRESIDENT CLINTON: Anyway, you should

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feel good that we argue these things in good faith. That should give you confidence. You should feel good about this.

[Applause.]

PRESIDENT CLINTON: What is your answer to the attack on that or, at least, the counter that, sulfur was this big a problem and carbon was this big a problem and you're talking about a huge section of the economy and it will be much more difficult to construct and administer and see it work, a marketing system, a permeating system with carbon than it was with sulfur?

MR. CASTEN: As an entrepreneur, Mr. President, I'm delighted because it's such a much bigger sector, that there's many more opportunities to find ways to block it.

[Applause and laughter.]

PRESIDENT CLINTON: That's what I said. I wish you had been there with us.

[Laughter.]

PRESIDENT CLINTON: Anybody else want to comment on this?

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DR. PAPAY: No, I tend to agree with what Tom said. It does not have to be that large. I think the fear is that, you need hundreds and hundreds of dollars per ton of carbon. Actually, in fact, if you introduce it, you begin to send a signal and the fact is, the market will, although imperfect, will begin to work. You begin to see these advance technologies begin to come in behind.

If there is no signal given, the market will be indifferent to it.

VICE PRESIDENT GORE: If I could just add a brief point.

We have all been struck by what has happened in the information industries with the introduction of microprocessors and the better understanding of how systems operate with the cost of microchips being cut in half and the power of microchips doubling every 18 months. And, of course, there was an announcement a few weeks ago where they now say, well, they think maybe it will go faster than that.

There are lots of companies where large

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groups of people who were organized just for the purpose of moving information around have been greatly affected by the fact that, now, with microprocessors, we can use information so much more efficiently that everything is different.

Why isn't the same thing going to happen with energy that has happened with information? With the better understanding of systems, with the use of microprocessors in the flows of fuel and the flows of electricity–yes, sir?

DR. PAPAY: The problem–and John mentioned it in the first panel. There is such an infrastructure built out there, buildings and industries and power plants and et cetera, even automobiles, what is the lifetime? We change out the information infrastructure in a three to five-year period. The energy infrastructure tends to work on a much longer time frame. So, if you don't affect it today, the ability to affect it in the future will be impeded simply because it becomes much more massive with time. It takes time to do it. So, if you don't start now, if you delay, you

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delay and you're dealing with a larger problem because the rest of the world will continue to build using existing technologies.

DR. YEAGER: If I might just add that, I think in what has been noted as an increasingly competitive environment, we need incentives or the prompt turnover of this capital stock rather than to necessarily let it run on indefinitely. Right now, the incentives are to run it indefinitely rather than to turn it over.

Secondly, I think he have to remember that this problem needs to be done in a global context. We are really trying to solve what I call the trilemma of population, poverty and pollution on a global scale. It is a joint implementation, the ability to invest what are always going to be limited resources where we get the biggest bang for the buck, make the biggest difference in terms of improving quality of life create markets on a global scale. In short, to do well by doing good seems to me to be an important principle that we ought to be carrying to the world.

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PRESIDENT CLINTON: I strongly agree with that and we're pushing that. Again, I say that does not let us off the hook to do things here at home. It just makes good sense. It's easier for these other–we should give these other countries a chance to choose an alternative path.

I never will forget. A couple of years ago–and I know we have to wrap up. I had a fascinating conversation with the President of China a couple of years ago and we were discussing what our future would be and whether we wished to contain China. I said, I don't wish to contain China. I said, the biggest security threat that China presents to the United States is that you will insist on getting rich the same way we did.

[Laughter.]

PRESIDENT CLINTON: He looked at me and I could tell that he had never thought of that. I said, you have to choose a different future and we have to help. We have to support you. That does not in any way let us off the hook, but it just means that we have to do this together.

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Well, this has been fascinating. You guys have been great and I thank you a lot.

[Applause.]

MODERATOR: Ladies and gentlemen, the breakout sessions will begin immediately in the Leary Center. Ushers will be downstairs and outside to direct you to the center. Your individual breakout groups are listed in your program. We will resume the afternoon session here, in Gaston Hall, at 2:10 p.m.

[Recess.]

MODERATOR: Ladies and gentlemen, please take your seats at this time.

Ladies and gentlemen, the First Lady of the United States, accompanied by Ambassador Robert Gallucci, Dean of Georgetown's School of Foreign Service.

[Applause.]

MR. GALLUCCI: Mrs. Clinton, distinguished guests, distinguished panelists, ladies and gentlemen, good afternoon. I'm Bob Gallucci, Dean of the Edmond A. Walsh School of Foreign Service at

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Georgetown University. On behalf of the faculty and the staff and the students, I'd like to welcome you this afternoon to Georgetown for the second session of the White House Conference on Global Climate Change.

It is fitting, I think, that this conference would take place at Georgetown. An issue of this importance demands research, education, dialogue and that is what this university is all about. The school of Foreign Service is particularly about interdisciplinary study and the application of theory to practical problems, to the world of policy.

Our Science and Technology in International Affairs Program seeks to prepare our students for the challenges and opportunities that await the next generation of leaders in the global community. Some of those students are here today and some of them, no doubt, will be called upon to confront the issues we are here today to discuss.

If this morning's first panelist, John Holdren, is right, then the world community faces a

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monumental challenge. Ultimately, what we are discussing here today is the issue of global security. Global security, when we used that term in the past, we could identify the enemy clearly. It was the other super power. Now, we fear that we may be dealing with a far less coherent threat.

The immortal words of Pogo about an unpopular war in a far off land a long time ago have a haunting sound. "We have met the enemy," he said, "and they are us."

I understand there has been a shift in the balcony and many of you were not here for the two panels this morning. I can assure you that, aside from remarks by President Clinton and Vice President Gore and presentations by some of the leading experts in the world on the subjects, you didn't miss much.

[Laughter.]

MR. GALLUCCI: The panels this morning were excellent and I think they have added much to the discussion about what may be one of the most important issues facing humankind today, global

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warming. This afternoon's program is just as impressive. We will start with a presentation by one of America's most astute analysts and most effective advocates of social policy, the First Lady of the United States.

After almost five years in the White House and 12 years as First Lady of Arkansas, Hillary Rodham Clinton has proven herself to be a tireless advocate for the less fortunate in society. She has fought for better treatment and cared for children with AIDS. She has helped developed pioneering in-home instruction programs for preschool youth. She has worked for better health coverage for all Americans. In these and many other initiatives, the First Lady has assumed a leading role in the struggle to improve the standards of living and the futures of children in the United States and throughout the world. That is why it is so important that she is here today as part of this forum.

History teaches us that in times of pain and want, children usually suffer first and suffer

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greatest.

Once again, the First Lady is taking a leading role in protecting the interests of children by participating in the discussion of global climate change. We must study and understand this issue, work together and make decisions to preserve a healthy world for the generations that will inhabit this planet long after we are gone. The First Lady, through her courage, tenacity and grace, serves as a model for us all.

Ladies and gentlemen, it is my pleasure and my privilege to introduce the First Lady of the United States, Hillary Rodham Clinton.

[Applause.]

MRS. CLINTON: Thank you, thank you very much. Thank you, Bob. Thank you, Father O'Donovan for once again welcoming all of us to Georgetown, which just happens to be my husband's alma mater.

[Applause.]

MRS. CLINTON: I particularly want to thank all who are gathered here as participants and

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observers of this important conference. I am delighted that there are so many students and young people, because certainly there is no member in the audience with more at stake than those who are just beginning to look into their own futures and chart their own courses.

I can think of no more fitting day for us to come together to discuss climate change than today, which has been designated as Children's Health Day in the United States since 1928. For all of those years, we have met every year, as I did again this morning at the White House, with people charged with the responsibility for looking after our children's health. Every year, we have evaluated how well we have done in dealing with those issues that most affect the well-being of our children.

Our grade as a country went up this year from a C minus to a C. That's not much to brag about, but we are making progress and, at least, the trend line is in the right direction.

But, certainly, to meet today, on

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Children's Health Day, in the context of this conference is to put an even brighter spotlight on what is happening and could happen to our children if we refuse or fail to act appropriately, for how we act in response to global warming will have a profound impact on the safety and well-being of children not only here in our country, but the world over.

One of the biggest threats children face is disease, particularly disease rooted in environmental causes. Millions of children under the age of five die every year from preventable, easily treated conditions like pneumonia, diarrhea, malaria and malnutrition. Thousands more are made sick from air pollution.

In recent years, I have seen the individual faces behind these statistics, a boy feverish with malaria in Africa, a girl perilously malnourished in Asia, an infant dehydrated from cholera dying in South America, children in our own cities, suffering from asthma, struggling to breathe. There is no escaping the fact that

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growing bodies are more susceptible to disease, pollution and environmental changes than the rest of us.

And so, in a real way, it is for these children and millions more like them and those to come that bring us to this conference today because, as we have heard this morning from some of the world's leading scientists, the health problems that fall disproportionately on children are only going to get worse if we do not do something about climate change. So, I want to talk to you briefly this afternoon, not as a scientist or as someone prepared to recommend any specific policies, targets or timetables, but as a mother and a citizen with a longstanding concern for the health and safety of children.

While uncertainties about the particulars of climate change remain, while we do not know exactly, for instance, how much and how fast temperatures will rise, this much is clear. Global warming has the power to put more children at risk. Let me focus on three health flashpoints, air

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quality, the spread of disease and food security.

One reason we should be increasingly concerned about global warming has to do with respiratory illnesses. Already as many as 40 percent of children seen in health clinics around the world are suffering from acute respiratory infections. It is likely that an increase in global temperatures will deepen this problem.

High pollution levels in many urban areas result in high levels of ozone and fine particulate matter. Studies tell us that, when these pollutants increase, the number of respiratory illnesses tend to rise, too. These pollutants can aggravate conditions like asthma. Over the last decade, the number of cases in asthma in the United States has jumped by 29 percent. Hospitalization rates have increased by six percent. The largest increases have been among children and young adults.

Today, asthma affects nearly five million American children. Last year, it led to more than 300 deaths. Children in urban areas are hit

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hardest. In New York City, for example, children are hospitalized at four times the national rate. Within the city itself, rates are three to five times higher for African-Americans and Latinos. A rise in temperature, it is thought, will likely hasten this trend.

Children in disadvantaged neighborhoods, those least likely to seek quality medical care, will be affected the most, but not child will be entirely safe. I notice the increase in asthma as I travel from children's hospital to children's hospital and meet with long time pediatricians who tell me with concern about the numbers of children they now see and how difficult it is often to monitor their illness.

Another reason we should be concerned with climate change has to do with the spread of infectious diseases. In 1995, infectious diseases, like malaria, cholera, dengue and yellow fever, killed more than 17 million people worldwide. Nine million of these deaths were children.

Increases in temperature hasten the spread

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of infectious diseases for two reasons. First, they shorten incubation periods. That means that the viruses, bacteria and parasites that cause these diseases can reproduce and spread a lot faster. Second, cool temperatures protect parts of the world from certain diseases. They serve as an important line of defense. Diseases that can survive in hot, humid Calcutta just aren't going to make it in Cleveland unless temperatures rise.

Take a disease like malaria, which is spread primarily by mosquitoes. There are a half billion cases of malaria every year. IN 1995, 2.1 million of these resulted in death, most of them of children under the age of five. Moreover, the threat of malaria is increasing with the emergence of strains are resistant to drugs. In Africa, for example, the spread of Chloroquine-resistant malaria has contributed to an estimated two to threefold increase in malaria-related deaths since 1984.

Those of you in business or government who travel to Africa and Asia regularly, have been

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told, I am sure as I have by my doctor, that now taking malaria medication is absolutely a necessity, but whether or not it is good enough to withstand whatever strain is out there is an open question.

For this reason, higher temperature should be a matter of real concern. Areas that were previously free of malaria mosquitoes, such as mountainous regions in Rwanda and Kenya, are now reporting an influx of the insects. In Costa Rica and Colombia, mosquitoes that were never seen above one thousand meters have been spotted at twice that altitude.

The United States is not immune, as you saw from Diana Liverman's maps this morning. In fact, according to research by the United States Agency for International development, as a consequence of climate change, the percentage of the world's population at risk to malaria could increase from 45 percent to 60 percent, increasing the annual number of malaria cases by 50 to 80 million people per year.

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The spread of water-borne disease could also be hastened by climate change. Warmer water temperatures breed and sustain infectious bacteria. Flooding that results from rising sea levels could put water supplies at risk. This could make a bad problem worse. 1.3 billion people already lack access to safe water; 1.9 billion lack access to sanitation. Again, children are most imperiled.

Unsafe water is the prime cause of the approximately three million childhood deaths annually, worldwide from diarrheal disease and the four million childhood deaths annually from pneumonia. In the developing world, diarrheal disease is the number one killer of children. Yet, I have visited some of the diarrheal clinics, most notably in Dakar and met American doctors there studying how low tech, cost-effective means could be used to treat diarrhea because they have seen it beginning to spread in places like Louisiana.

Third and finally, climate change can put food security at risk. Scientists predict that, as carbon dioxide levels rise in the atmosphere, one

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of the consequences will be a shift in the zones of agricultural productivity. That could result in changes in crop, livestock and fish farming productivity, reduced availability of water for irrigation and loss of arable land.

These disruptions would likely cause local shortages of food supplies and the result would be hunger and malnutrition which would harm, in turn, children and pregnant women especially. To complicate matters, the countries most vulnerable to droughts and pest outbreaks and other factors, restricting food production are among the poorest in the world, places where widespread famine already takes a terrible human toll.

In short, climate change, as you are discussing today, has the potential to deepen problems we already face, problems that fall disproportionately on our youngest citizens. For this reason, we should address climate change, not just as a scientific or economic issue, but also as a health and safety one that should concern all of us.

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I know that, as parents, we think about our children. I believe that part of our obligation is to think not only about our children and grandchildren, but about all children. That certainly is how my husband sees it and part of his efforts to respond to global warming grow out of his overall agenda to build a strong foundation for the well-being of children.

We have made real progress toward that end, with a balanced budget that will help extend heath insurance to five million children, with a Medicaid program and active legislation like the Family and Medical Leave and the Kennedy and Kassebaum Acts, raising immunization rates, trying to shield our children from tobacco and drugs.

The President has acted to see to it that our air, water and food are safe, by putting new standards on meats, seafood and poultry and signing a law to keep harmful pesticides off our fruits and vegetables. This summer, he put in place tough new air quality safeguards which will protect millions of American children from the health effects caused

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by ozone and small particulates. Today's conference is part of the ongoing effort, not only of the President, but of all of us to safeguard the future of our youngest citizens.

The Bible asks if your child asks for bread, would you give him a stone? If he asks for fish, would you give him a serpent? If he asks for an egg, would you give him a scorpion? These are the oldest questions in the world and they remind us of the duties faced by every generation to see to it that, when our children, even before they're able to ask for themselves, are really asking us to make sure they have as healthy and safe an upbringing as possible by enabling them to inherit a world at least as good if not better than the one they came into.

Those questions also need to be on the agenda in discussing climate change, because the people who will be most affected are not here. They will not be in any of the rooms or any of the breakout sessions. They won't be able to follow the very detailed discussions led by our panelists.

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They have a lot at stake and we should be sure that the questions they ask us are ones that we will be proud to answer in the future.

Thank you very much.

[Applause.]

MODERATOR: We will now have a very short hold while the Vice President comes back into the building.

[Pause.]

[Applause.]

VICE PRESIDENT GORE: Thank you very much. Thank you so much.

I hope everyone had a good lunch and I want to thank the First Lady for her comments. I want to move right into the third panel.

It is my great honor to introduce for the first comments, my colleague in the President's cabinet who, in my opinion, is a real superstar around the world and in our country. It is a great joy to work with our Secretary of State. On this issue, it has been particularly enjoyable to have someone with her commitment and understanding

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involved in this, as she has been.

We will introduce the other members of this panel after the Secretary of State makes her comments.

Madam Secretary, thank you very much and please proceed.

SECRETARY ALBRIGHT: Thank you very much, Mr. Vice President and it is a real pleasure to be here with you on this occasion, on a subject that you have been talking about for a very long time and that we are all more and more aware of as the hours progress.

Let me just say, when I was a professor here in the '80s, which I dearly loved and sat in this room–

[Applause.]

SECRETARY ALBRIGHT: Maybe you all will have me back.

Let me say that, the students that I had used to listen to me on a regular basis make the following kind of statement, which was that as we were looking at what national security threats were

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and would be, I used to say, when the last time I looked, the United States was still behind two oceans, safely protected from missiles and various armed attacks, but there were other threats that we were less aware of and less capable of dealing with.

We had the most porous borders to the north and south and also porous borders from top and bottom and that we really did have to be concerned about what were threats to American national security from climate. It was kind of weird thing to say in the 1980s and a lot of students wondered what I was talking about.

We did begin to think about how the curriculum here could be changed so that students would become more aware of how to deal with these kinds of threats and how to study about them and how to work with them and to protect the United States. So, it seems particularly appropriate to be here with this very illustrious group talking about climate change and disruptions and how it affects the United States and the entire world.

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We do know from your various speakers this morning what is going on. I won't repeat that in my non-scientific way, but clearly the impact of what is happening is global and it must be addressed on a global basis and we must act and so must others. But to do so effectively, we need to develop a consensus on what to do, how and when to do it and by whom it should be done.

Our efforts begin with the United Nations' Framework Convention on Climate Change open for signature at the 1992 Rio Summit, a convention that the United States was the fourth country and first developed nation to ratify. Two years ago in Berlin, the parties to that convention recognized that we were not doing enough under the Framework Convention to meet its goal of stabilizing the emission of greenhouse gases.

In Berlin, we adopted a mandate for talks that would lead to tangible steps taken by developed countries and continued consideration by developing countries. A year later, in Geneva, the United States led an achieving agreement that such

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commitments be binding. The talks will reach their conclusion in Kyoto, Japan this December.

Although this process has generated momentum toward concerted international action and created a greater level of public awareness, the job of building a consensus is far from complete. The consensus we need must be domestic. It must extend to others in the industrialized world and it must become the basis for a common approach between developed and developing nations. The consensus at home must be founded on a recognition of strong scientific evidence that global climate change is occurring and will have harmful effects. It must rest on confidence that our leadership is high technology and industrial innovation will allow us to adjust to emission limits without losing our competitive edge, and it is dependent on an assurance that other countries, including those in the developing world will do their fair share in meeting the challenge.

The consensus among the industrialized nations must grow from the understanding that this

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is a serious issue, requiring a serious response. Solutions will come through a long term process, not a popularity contest. It does no good to pay lip service to unreachable targets. At the end of the day, we will be judged not by the targets we set, but by the standards we reach.

The consensus between developed and developing nations will be the most difficult to achieve. We're not there yet. We must begin with the understanding that responsibilities are mutual even if not identical. The United States, as we have now heard many times, has four percent of the world's population and we do emit 20 percent of the greenhouse gases. Clearly, we and other major emitters must take the first step. But if the major emerging economies of the developing world do not accept their responsibility to follow, we will not achieve consensus and we will never solve our shared problem.

To move toward this triple consensus, we need proposals that are unifying, not divisive, both within the United States and in the community

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of nations. The administration's approach is based on the view that all countries have the same interests because we're all in the same boat in minimizing the harmful impact of global climate change. Every nation contributes to the problem. Every nation will benefit from a strong response.

Accordingly, an agreement should bind each to terms that are effective, appropriate and fair. We have already proposed and will work to put in place measures that support innovation such as trading or selling emission rights, measures that encourage technological development and measures that reward a country for the assistance it provides to another.

Finally, we're looking for a time frame that is not so short as to be unachievable and not so long as to dilute effectiveness. We want the flexibility to develop strategies for implementation that will allow us to take advantage of technological advances and new insights into the science of global climate change.

So, in response to some of the television

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commercials that have aired recently let me say that the United States is interested in a proposal that will be global and that will work. This afternoon, we have brought together seven distinguished panelists to spur new exchanges and creative thinking on three aspects of the challenge we face in building U. S. leadership for an effective response to climate change.

How do we insure meaningful and equitable and participation from a range of countries in the face of growing energy needs and expanding technological possibilities? What challenges will developing countries face in attempting to limit greenhouse gas emissions and how we can work with them to meet those challenges and what steps can we take to build the kind of consensus that I have discussed between developed and developing countries regarding the need for addressing this problem on the basis of mutual interests and mutual responsibilities?

And now let me introduce our panelists. Jessica Mathews, President of the Carnegie

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Endowment for International Peace; Richard Schmalensee, Director of MIT's Center for Energy and Environmental Policy Research and former member of the Council of Economic Advisors; James Wolfensohn, President of the World Bank; Daniel Yergin, President of the Cambridge Energy Research Associates and Pulitzer Prize winning author; Mae Jemison, head of the Jemison Institute of Advancing Technology in Developing Countries and a former astronaut; E. Linn Draper, Chairman and CEO of American Electric Power and Fred Krupp, Executive Director of the Environmental Defense Fund.

Now, let me turn to a fellow panelist, who is a person, as I have said earlier, who is the driving force of those of us that have cared about climate change and someone who is the embodiment of what needs to be done as we move into the 21st century, my very good friend, the Vice President of the United States.

VICE PRESIDENT GORE: Thank you very much. Good job, Madam Secretary.

[Applause.]

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VICE PRESIDENT GORE: Thank you, Madam Secretary, thank you very much for that very concise overview of where we stand now on the eve of this international negotiation.

I'm going to turn right now to Jim Wolfensohn, President of the World Bank.

As we heard this morning and as was clear from the Secretary of State's comments, one of the central questions the world has to deal with in grappling with this issue is the relationship between the developed countries and the developing countries.

In your comments, Jim, if you could touch on what the developing countries have at stake in solving this or not solving it and what it means to them to have it done in a way that does not threaten the economic vitality of the developed countries.

MR. WOLFENSOHN: Thank you very much, Mr. Vice President and Madam Secretary.

I think I have three minutes to represent 4.7 billion people.

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[Laughter.]

MR. WOLFENSOHN: That doesn't give me a lot of time per person.

Let me say, first of all, that I think everybody agrees in the developing world on the science, that there is a problem and it needs to be solved and the developing world is the place it gets hit most. Climate change affects the poor the most. As the First Lady said earlier, vector-borne diseases affect the poor. Water affects the poor. I won't chronicle those issues which affect those in marginal areas, but let me say that it affects very much our thinking on development.

The issue of development is an issue which is of importance to the developing world, but let me respond, Mr. Vice President and say, it's an issue for all of us. It represents 40 percent of our exports. In just a few years, the five major countries in this world, India, Indonesia, Brazil and China, will represent not eight percent but 18 percent of the world's GDP and that is integral to our own activities.

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It is not something which is separate, so when I talk about the developing world, let us not think this is something we can decide on separate from our own thinking. It is a problem that is integral to ourselves. We breathe the same air. We have the same problems. We have the same immigration issues. We have the same trade issues. What happens in the developing world is an issue for us. It is not just an issue for the developing world.

Looking at the developing world, what we see is a world that has not created this problem. It is a problem that has been created by the developed world. And so, from the point of view of our clients, they look at this issue and say, yes, it's a real problem, but why is it a problem that we have to solve. Well, the answer that they come up with and that they have come up with repeatedly in all the international arrangement is that, they are happy to have common but differentiated responsibilities. That is the phrase that has been used in all the treaties.

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So, the developing world is not seeking to exclude itself from responsibilities. It is a question, as the President said this morning, of when and how. That is an issue of equity. That is an issue which we need to face in terms of development, because we're already facing up to the problem of how can we assist the developing world reach a level where it can be an economic force and where we can have both peace and stability.

I remind you that, there are two billion people that live under two dollars a day. There are a billion, three hundred million people that live under a dollar a day. There are two billion people who don't have access to electric power and, therefore, burn fossil fuels which themselves affect the atmosphere. This is not a trivial issue. Ninety million people are being added to that number every year.

So, it is an issue which is of importance, somewhere where there are already inadequate resources to bring that group into a level of equity in the world. Without a level of equity,

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you cannot have peace and stability. And you cannot have trade and you cannot have a world that for your children is going to be viable and stable.

Now, let me respond to one other aspect. We talk about the cost, the cost we are looking at in terms of the morning advertisements, in terms of generally accepted accounting principles.

But what is not included in the cost is the cost in terms of future costs, the cost in terms of the erosion of our environment, the cost to our children. What use is it to have a profit today if our children and our grandchildren will not have an environment in which they can live?

And so, the decision for us as leaders is a decision of how it is in both the developed and developing world that we can confront the issue of carbon emissions and a global environment. That is not something that can be dealt with by simple current accounting principles. It is a question which the President and the Vice President are focusing on. It's a question of leadership.

What the developing world is looking for

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is an issue of leadership by the developed world to take the steps that will allow the developing world to certainly conform as they go down the line, to participate as they go down the line, but be given the necessary breathing space in which they can get their house in order and where they can reach a certain minimum level of viability. That is an issue that the World Bank is assisting in, and which the United States is assisting in and other donor governments are working.

This is an issue of development. It's an issue of poverty. It's an issue of equity. It's an issue of morality. I believe that, by having this conference, we are focusing on an issue that is not just of importance to those 4.7 or three billion or 1.2 billion people. It is a problem that is of importance to every one of us.

VICE PRESIDENT GORE: Thank you very much.

[Applause.]

VICE PRESIDENT GORE: Thank you very much, Jim. Really good comments. I am hoping that at the end of this panel, we will have time to come

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back and explore some further questions.

Yet, I want to turn right now to Professor Richard Schmalensee, Professor of Economics at MIT, former member of the Council of Economic Advisors.

On this question of developing country participation, what are your views?

PROFESSOR SCHMALENSEE: Mr. Vice President and Madam Secretary, I think the developing countries have a critical role to play, particularly if you think about this problem in its long run aspect. A couple of slides that John Holdren used this morning, I think, illustrate that point nicely and one of them will appear, I'm sure.

[Laughter.]

PROFESSOR SCHMALENSEE: Maybe not. If you recall the slide contrasting business as usual emissions with the global emissions, with global emission levels necessary to stabilize atmospheric concentrations, the one before that, actually, stabilizing atmospheric concentrations called for a dramatic reduction in global CO2 emissions, the green path versus the

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ascending path.

The ascending path has in it improvements in energy efficiency at sort of historic rates. The green path calls for a dramatic transformation. That will require new technology. That will require, I believe experience makes clear, sharp increases in the price of energy.

The second slide that John used this morning, makes clear that developing countries will have to participate and play a central role in any such transformation, simply because they are the locus–there is the slide–of emissions growth. Even cutting developed country emissions to zero will not suffice to follow that green path, unless the developing world also acts.

The third factor is, it is unrealistic, I believe, to expect developing countries to devote significant resources of their own to this issue, given all of the immediate problems they face. We need to think about separating what is done where from who pays for it.

Now, with this sort of long run

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perspective, obviously investment in technology has a critical role to play, but so, I believe does strategic choice and investments in institutions.

As I look at, at least, some of the rhetoric in the current negotiations, it envisions a sequence where the developed world makes sharp reductions in emissions and the developing world then follows, a deep then broad architecture, if you will. The problem with that–there are two problems. First, it doesn't attend to the problem of resource transfer, the problems of institutional development necessary to include the developing world fully. It postpones those difficult issues.

Secondly and, perhaps more importantly, reducing emissions in the developed world, particularly by raising the price of energy in the wealthy countries, will induce migration of energy-intensive industry to the developing world. It will tend to lower world energy prices faced by developing countries. It will, therefore, tend to make it more difficult later for those countries to join in any global effort if, indeed, we need to

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make significant transformations of the global economy.

Therefore, I applaud all the discussion today of including the developing world initially and I think it's strategically critical that the developing world be on the train as it leaves the station; that we worry more about that than about how fast the train departs the station.

Thank you.

VICE PRESIDENT GORE: Thank you very much. [Applause.]

SECRETARY ALBRIGHT: Yes, let me now carry on from the question of how the developing world grows. We have heard an awful lot about how developing countries have to take our commitments.

Dr. Yergin, I wanted to address this to you, to find out how we can allow the developing world to grow and what are their energy needs. Of the energy options open to them, which are the most likely to help them reduce greenhouse gases? Because if they are going to grow, they clearly will in some way have to be able to fuel their

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growth.

DR. YERGIN: Madam Secretary, Mr. Vice President, ladies and gentlemen, thank you. Thank you for the question.

Listening to the superb and very thoughtful discussion this morning, I really come away with the sense that the essential challenge is, how do you integrate these global climate change questions with rapidly growing energy consumption. And it is going to grow fast. By the year 2010, 13 years away, we're looking at consumption that may be 35 percent higher than it is today, most of that growth coming from the developing countries, Asia and Latin America.

As the President said, it is the result of good things, higher economic growth, higher standards of living, free markets, freer trade. That then puts a question for the developing countries. I think that there is no question that they are environmental conscious. They can't avoid it. It's brought home to them.

You know, the devastating impact of the

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haze in Southeast Asia really makes it clear. The media calls it a haze, but it's really like being next door to a burning house. It's terrible.

But the developing countries do see the–

DR. YERGIN: [In progress] environmental policies is markets. Markets work, market-oriented systems bring things faster in surprising ways, more innovation, solutions, they deliver results. And I think there has been a recurrent tendency to underestimate the possibilities of technological change.

We can look at what is happening in the energy field and we see it's happening: Highly efficient natural gas use, dispersed power, more efficient combustion of coal and, of course, lots of things in terms of efficiency.

But the challenge, of course, is how to bring about cost-effective development and dispersion in a sensible way but I think we can say there that the developing countries certainly want to have 21st century technology rather than 20th century technology if the can afford it.

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The other thing that can make a big impact soon is here today. That is natural gas which has a lot of, does much better in terms of carbon emission than other fuels. The trends are very favorable.

You have a big resource base that is growing, you have a global gas business, technology is having a big impact but we have to think differently. We have to see the potential and the potential is very large in terms of the growth of electric power in Asia and Latin America.

When we look at it we see that the potential is much greater than people think but it involves large cross-border projects. So, you need to strive to overcome the obstacles, build confidence, conviction and mutual dependence. And here is where you can have an impact at the very heart of growing world energy demand.

You know, when you get to Kyoto, you are going to hear from the Europeans who will be speaking from a very high moral ground about what they are achieving. How have they done it?

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They've done it by creating this great natural gas system that takes gas from Siberia, from the North Sea and North Africa and moves it into Europe.

Well, if we want to see an impact in the region of fastest growing energy consumption we have to envision another system that takes the Caspian, Central Asia, South Asia, India, Southeast Asia up into China, Korea, Japan, Siberia, a new natural gas system. And in terms of global climate change, the type of things we've been looking at on those screens, the sooner we do that, the better. There will be many benefits from an integrated energy Asian natural gas system that will respond to your question from tying economies together, building cooperation, affording a platform for growth, helping to assure electricity for hospitals, schools and factories and addressing directly and in a very positive way the issue of global climate change.

SECRETARY ALBRIGHT: Thank you.

[Applause.]

VICE PRESIDENT GORE: Could I just, before

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you call on the next speaker, I just wanted to make a brief comment. When you talked about the Europeans speaking from a high moral platform and you referred to the Siberian gas and North Sea gas, it's also the fact, is it not, that the common reference to the 1990 base year means that countries such as Germany anticipate being measured against the last year when the most inefficient, most highly-polluting industrial plants in the entire world were spewing out CO2 and other pollutants from East Germany. And when they were shut down and newer technologies were adopted instead, it's very easy for them to meet that base.

I mean they've also done some things that we haven't been willing to do and it's not all attributable to that. But it is kind of a freebie for them in some respects.

DR. YERGIN: Yes, it's a big bonus.

VICE PRESIDENT GORE: And similarly, the base year for Great Britain includes the period just before the great upheaval that former Prime Minster Thatcher brought about in the British coal

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industry and just before the big substitution of natural gas for coal. So, to some extent, it's a freebie for them, too, isn't that right?

DR. YERGIN: Absolutely. And they moved in gas to fill the void of coal.

VICE PRESIDENT GORE: And, again, they've done some things, in addition to that, that we have not been willing to do, so, they deserve credit for what they have done. But the degree of difficulty for them is different. If this were an Olympic diving event, they would not have a high degree of difficulty assigned to their performance.

[Laughter.]

VICE PRESIDENT GORE: But, anyway, excuse me.

[Laughter.]

SECRETARY ALBRIGHT: We've all watched those.

Dr. Jemison, you have done a lot of work on getting sustainable technologies to developing countries. Can these economies grow sustainably and how can sustainable energy programs help the

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world's poorest inhabitants?

DR. JEMISON: Thank you, Secretary Albright and Vice President Gore. That's a great question for me because the first thing I want to say is, yes, the economies can grow and in a sustainable way. But to put that in a framework, I think the first thing I need to do is just say that sustainable development is improving the quality of human life now in such a way that the ability of future generations to grow and develop are not compromised. So, that's what we are looking at.

And let me put a face also on development in several different countries. We first go to Thailand where a photovoltaics plant has been providing energy to a rural area but, yet, next to it is a growing stack of car batteries, lead-acetate car batteries because that's the only way energy is stored.

We go to South Africa where a grandmother is preparing a meal inside her house in a shanty-town; yet, there's a cooker, an electric cooker that has recently been connected next to it where

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her granddaughter is coughing.

And then if we go to Houston, Texas, where I am from, we see Jed fueling up his new super-duper, four-wheel drive vehicle with 23-gallons of gasoline that costs $1.32. The commonalities here are striking because we are looking at unsustainable development and innovative or new technologies, the technologies that individuals have acquired, and they acquired this technology because it was their aspiration. They were fulfilling their own individual needs and desires.

So, what we have to understand is when we talk about sustainable development we have to take into account and address not just public policy and national policy but what individuals want to do because that's going to be the driving force for development.

We have already heard this morning quite a bit about emission standards for developing countries versus developed countries. But let me add a little additional context. More than 3 billion people worldwide live in the rural areas of

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developing countries and 75 percent of the energy use in these areas come from noncommercial sources of fuel, which means firewood, animal manure and agricultural byproducts.

These are not counted in the market place, yet, this is what is providing the energy source for around 70 percent of the world's population.

And, so, yes, providing sustainable energy could have a very strong effect on their lives as well as ours here in the United States and around the world. How can sustainable energy development help? It can help, first of all, by increasing agricultural production, through water pumps and irrigation. It can help by enhancing telecommunications because now you can get information back and forth, whether it is information on when to take goods to the market place or if it's information on distance learning. We can improve transportation in getting goods to markets. We can improve clean water and, thereby, limit the number of diarrheal diseases and other water-borne diseases. We can bring support

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services into the area by health clinics, education and we can slow rural to urban migration.

And the way that this happens and what we can do to help this is by changing the paradigm in which we are trying to supply power, not looking at centralized power production but rather looking at decentralized power production and alternative types of energy.

So, if you can take a solar photovoltaics panel into rural areas then you can use that and if you can also use mini-hydro power. There are a number of ways to do it but the most important thing is to decentralize power production because it allows rural areas to grow and develop.

The last thing I want to add is we have been talking about why we should be doing sustainable development, sustainable energy production, and most of the time we have talked about economies and whether it is good for health and safety but the one area I think we have left out is our human responsibility to each other and to our future. That's the reason to do it, as

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well.
[Applause.]
VICE PRESIDENT GORE: Thank you, Dr. Jemison, very, very impressive presentation.
I would like to call now on two panelists back-to-back, Dr. E. Linn Draper, who is President of American Electric Power, one of the largest U.S. power utilities and also, Fred Krupp, who is President of the Environmental Defense Fund.
And I would like both of you, if you would, to discuss flexibility measures, including some of the ones that have been touched upon already like emissions trading rights nationally and internationally, and the subject of joint implementation where countries enter into partnerships and reductions in one place are the result of combined work by companies and others in different countries.
We often talk about getting an agreement at Kyoto that includes flexible market-based mechanisms such as joint implementation and trading. So, maybe we ought to spend a little time

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talking about how they work.
If you could go first, Mr. Draper, and then you, Fred Krupp.
DR. DRAPER: Thank you, Mr. Vice President, and you, Madam Secretary. We heard a lot this morning about the potential consequences of global climate change and we heard some about the technologies that could be used to reduce those effects. It seems to me that what we really need to talk about is what actions can be taken to ensure that these techniques are deployed.
It seems to me there are two relatively simple things at least in concept that need to be done. One is to devise a system that encourages early action and the second, recognizing that this is a global problem, encourages action to be taken where it can be done most cost effectively, whether it is in the country in which the business normally resides or whether it can be done somewhere else.
It is quite clear that the cost of implementation and deployment of these various technologies is not the same around the globe and

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if we can deploy the technologies in other countries more cheaply than we can in the United States then it seems to me that it is in everyone's best interest to do that. It is good for the globe, it is good for the country to which the technology is transferred and it is good for the United States whose technology is being used elsewhere, it will provide employment both here and abroad.
We have at the moment some 26 projects that are approved joint implementation projects. Joint implementation, as the Vice President said, is a project that is deployed in another country for which credit will ultimately be given. These 26 projects are of a variety of types. They include renewable energy, fuel switching, energy efficiency, land use projects and the like, and it's clear that they are effective.
One of things that people are concerned about is that early actions before the rules are established will not be given credit and if things are done abroad, adequate will not be given. If we

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can devise a system that will give assurance that credit will be given for these early actions, wherever they occur in the world, then I can assure you that more than 26 projects will soon exist.
These 26 projects have been quite successful. They will sequester 180 million metric tons of carbon dioxide at a cost of $515 million. That is very cost effective compared to what could be done in the United States.
My company and a number of others are involved in one in Bolivia. It is the largest joint implementation project in the world and, Mr. Vice President, you will recall about a year ago you were in Bolivia to participate in that signing ceremony. It is called the Noel Kemoff Mercado Climate Action Project.
It is a program to sequester carbon dioxide in the forests of Bolivia. The money was used to expand a national park. The expansion, alone, is bigger than the Yellowstone National Park. It is a huge geographic area. Over its lifetime of 30 years it will sequester 53 million

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metric tons of carbon dioxide at a cost of 37 cents a ton. It is incredibly cost effective.
If we could duplicate projects like that around the globe we would take a long step toward solving the problem that we are discussing, but it requires a system to be constructed that will give credit for early action and credit regardless of where that action is taken.
Many of these projects, such as the one that I described that my company participates in, has other benefits as well. This particular area is one of unusual flora and fauna. It will preserve the natural habitat for exotic species, both of plants and animals. So, you not only get the benefit of reduction of carbon in the atmosphere but there are clearly ancillary benefits such as eco-tourism, preservation of wildlife and the like.
And it seems to me that if we are smart enough to devise the right scheme to allow early credit to be taken and credit taken wherever we take the action in the globe, you will see an

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enormous outpouring of voluntary activity.
VICE PRESIDENT GORE: Great. Thank you very much.
[Applause.]
MR. KRUPP: Well, Mr. Vice President, I couldn't agree more with Linn Draper on the importance of early action. It is refreshing to have the head of an environmental group and the head of a major utility agreeing on that point. It's critically important for the environment and also important for the economy.
You know, Madam Secretary, you said at the outset that we have to make sure that we have targets that are not just lip-service and they have to be combined with a workable plan. And the plan that the United States has come up with provides for a very effective way to cut greenhouse gases because what it does is it incorporates a lot of things that we heard this morning.
For one it is a plan that allows us to save money. It's a plan that will spur new technology and the third thing it will do, that we

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have all agreed is important, is it is a way to draw in developing countries.

Let me explain. The Administration's proposal would achieve these goals by creating a market for greenhouse gas cleanup. It would provide incentives, therefore, for cost reductions, for new technologies, and for the developing countries to participate.

It would do this by setting up a budget for each nation. Each nation could emit a certain amount of pollution over a certain budget period, let's say, ten years. Any country that emits less would earn a savings that it could then sell to other countries who could emit more.

Overall, though, the total greenhouse gas emissions would be limited to the budget amounts. And what this would do would be to give countries and individuals the financial reasons to reduce emissions so that they would be earning credits.

During a budget period, companies that invest in pollution control opportunities in another nation where the costs, as Linn said, of

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control are lower, would be earning credits that they could sell to other companies or other countries or else apply them to their own future emissions control obligations. That is what we mean by the, joint cooperative approach or joint implementation.

What it would do is it would create new export markets for U.S. greenhouse-friendly technologies and it would be important in the international context, as Mr. Wolfensohn has said, because it would allow a transfer of technologies to the developing nations and a transfer of capacity that they will need to protect critical resources like rain forests which are important absorbers of carbon in the atmosphere.

Lastly, I would say that as the President mentioned, under the acid rain system we are well-ahead of schedule in reducing sulphur emissions at well below the projected costs.

VICE PRESIDENT GORE: One-tenth of the costs.

MR. KRUPP: One-tenth of the costs that

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many in industry estimated and that's why I so agree with the point that Linn has just made and the point that was made this morning that we need to find a way to give companies and countries incentives to reduce early because we will see, then, early reductions.

The costs of delay to the environment will be very real. And those are not only environmental costs but, I think, economically the best thing we can do to assure a soft economic landing, if you will, is to make sure that the steepness of the curve of reduction does not end up having to be so dramatic. And, so, to avoid the dramatic and draconian reductions later, I would urge that we begin on a path of reductions as soon as eight years from now, in other words, by 2005. I think we can do better than 1990 levels.

[Applause.]

VICE PRESIDENT GORE: Thank you very much. Thank you very much, Fred, and thank you for your great work on this issue.

I just wanted to briefly say, on behalf of

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the President and myself, this concept of credit for early voluntary actions is one that we support. Now, working it through the system and working it in Kyoto and all of that, that's another matter. But I would hope that the final result definitely does include credit for early voluntary actions.

I know there is opposition to it and maybe there are some disadvantages to it, but the advantages far outweigh the disadvantages in my opinion.

Madam Secretary.

SECRETARY ALBRIGHT: Let me address a question to Dr. Mathews. I can just say, Jessica and I worked together in the Carter Administration and it was really thanks to her that I was smart enough to even talk about climate change when I taught here.

So, Jessica, you have studied this a long time from the perspective of both science and foreign policy considerations. Could you elaborate for us what you see are the broader national security interests that the United States has in

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seeking this kind of a global agreement?

DR. MATHEWS: Madam Secretary, it is a big question to get at. I see that we are facing basically in these negotiations three questions: How, who and when, as you have suggested in your opening remarks.

The most important issue, I think, to understand about the how question is that this is, in my view, the most difficult issue that has ever been negotiated internationally, period. In terms of the breadth of involvement of these gases in the entire economy, the breadth and variety of impacts, the persistent uncertainties, the long time scales, no negotiation that I know of approaches it in complexity and difficulty.

Moreover, all the mechanisms that are going to be needed are going to have to be invented. Even the sulphur model that is employed domestically is a pale shadow of what is going to be needed internationally.

The design, the accounting, the monitoring, the enforcement, all of these things

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have to be done for the first time and we know when we do things for the first time you always make mistakes. So, it puts an added difficulty on this regime that it be extraordinarily adjustable.

On the who question, as much as this is the most difficult negotiation that has ever been attempted, I think it is also, it is potentially as divisive a one as has ever been attempted.

In terms of the difference between past and future contributions, in terms of the differential impacts between countries and regions, and the interconnectedness of every country, the word adaptation has virtually not been mentioned today. I think I have not missed it.

One thing we do know for sure is that the climate, while we are negotiating all of this and implementing, is going to be changing. And there is going to be a lot of very expensive adaptation that is going to have to be done willy-nilly and the developing countries are perfectly well aware that they are the most vulnerable to this change that will have to be adapted to. That in terms of

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money and technology and human capital, they are the least equipped to do it. They are not blind to that reality.

On the question of when, this one is in some ways the toughest I think. It is ironic that after 25 years of very hard work on the science we are now 66 days from Kyoto and if you think that our understanding of the physical science, despite all the uncertainties, is somewhere up here and our understanding of the natural science is somewhere down here, our understanding of the social science is way down to the floor.

And the policy–

VICE PRESIDENT GORE: Where is the political science on that?

[Laughter.]

DR. MATHEWS: Well, I'm including the political science down there with the social science. We do have to, we don't really have as good a grasp–and I don't mean we, Americans, I mean anybody–on all these mechanisms.

Whether we should be measuring

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concentrations, emissions, whether we should be using taxes or tradable permits or in what combination, how joint implementation would work, if it would work, all these things, our readiness to act on this is nowhere near the level of our understanding of the science.

I would say that probably the only thing we know for absolute certain on this is what has been proved in the five years since the Rio Summit which is that voluntary actions won't work and that is progress. It was probably a stage that we had to go through.

So, what to expect out of Kyoto? First of all, don't expect instant regime. It generally takes more than a decade to negotiate and implement a global regime. The record is the nuclear nonproliferation treaty took seven years under the threat of nuclear holocaust. This one began in about 1990, so, we're doing not so bad.

And Kyoto, this round of negotiations is the beginning of a very long process. So, that's the first thing.

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A key point then is to ask ourselves what defines success and failure in Kyoto. For my money, success in Kyoto–I think I have a pretty low threshold here–would be a commitment on the part of the developed countries to go first with some specificity as to how fast and when–not necessarily the full answer on target, some timetables–and a promise by the developing countries to go second.

If we could come home from Kyoto with that, that in my book anyway, would be success.

Finally, the President had mentioned this morning, made a passing reference to something that is terribly important and that is that we have got to ratify whatever we ultimately come home with. The only international agreements that have ever been attempted that have required congressional approval that are as broadly, have as broad an impact on our economy as this one will, are the multilateral trade agreements and for Congress to deal with those we have needed fast track.

We have needed an admittedly undemocratic,

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not very transparent process. And the reason we've needed it is because it is so hard to negotiate and then ratify something with this many economic impacts.

So, the how question on the back-end, what we can swallow once we have bitten it off politically, is just as important as what we can go to negotiate.

What I think–those are some of the parameters to answer the question of the national interest here. I would simply say that the engagement of our national security interests in this issue measure up to the complexity that I have just described.

[Applause.]

SECRETARY ALBRIGHT: Jessica, if I could just ask you, as you raised the political dimension of this, one of the problems that one deals with as there are critics of this whole concept is, are we giving up American sovereignty when we sign on to a climate change treaty.

How do you deal with that question when

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you are talking to the American public on this?

DR. MATHEWS: Every international agreement you give up a little piece of sovereignty in order to get something more back, well-being and security. This issue was raised with the ratification of the GATT treaties, as well.

I think the reality is that in the world that we live in ceding tiny bits of sovereignty bite after bite is the name of the game.

VICE PRESIDENT GORE: Let me just mention one thing about your comments concerning the multilateral trade agreements. I agree that this is so pervasive in its relationship to the U.S. economy, there is really nothing else like it in the environmental field.

But I think that in some respects we can learn from what happened in the Montreal Protocol, the international treaty by which the world community began to address these emissions into the atmosphere that were found by the scientists to destroy the stratospheric ozone layer.

And many years after the scientists,

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Sherwood Roland [ph] and Marion Malina [ph] leading the way, for many years after they laid out the scientific evidence, finally the nations of the world got their act together enough to enter into this agreement that had sort of broad goals and started moving us in the right direction and that was in 1987.

We just had the tenth anniversary of it. But then, after those broad goals and mechanisms were put into place, the evidence became ever clearer and the support among peoples around the world for taking stronger action began to grow significantly.

And the fact that we were beginning to make progress and move in the right direction elevated the confidence level that we could solve the problem and then all of a sudden there were follow-on treaties that had the world speed up dramatically and it ended up like the case was with the sulphur emissions trading, it ended up being only a tiny fraction of the cost projected by some of the economic studies, and we are now well on our

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way toward solving that problem.
We have got a long way to go, we have got some tough problems to handle, still, but we are way down the road toward solving that problem. I think that is an analogy also. Because I think that if we can get the right kind of agreement in Kyoto then as the evidence builds to make a broader, stronger consensus possible, we will be able to move much faster in the years ahead.
DR. MATHEWS: I think, Mr. Vice President, that that's exactly right. And one hears the argument made about chlorofluorocarbons, the same one that is made about sulphur, well, that is a much tinier bit of the economy.
VICE PRESIDENT GORE: Smaller, much smaller.
DR. MATHEWS: But I think it is also true that Mr. Casten's answer this morning was exactly right, which was that where somebody else saw difficulty, he saw opportunity.
VICE PRESIDENT GORE: Right.
DR. MATHEWS: It is true that what

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happened with the CFCs was that it looked impossible, there was even a very famous study that concluded that the cost of CFC substitution was infinite because there were some uses for which there was no conceivable substitutes.
Well, it turned out that there were plenty but there had never been a reason to try, right? These were cheap, they were useful, they were benign, down here on the earth. And, so, who knew? There was never a reason to look. So, it looked like there were no substitutes.
In the energy field we know that there are a whole closet-full of technologies sitting out there, many of which cannot get in the market place because energy is just too cheap. And, so, we know there are, I think you said it and pointed the way before, the political science of this is tougher than either the economics or the energy side.
VICE PRESIDENT GORE: Well, thank you very much.
And before we close this panel and invite the members of the fourth panel to come out, I want

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to ask the Secretary of State, Madeleine Albright, if you have any concluding comments?
SECRETARY ALBRIGHT: Yes, thank you very much, Mr. Vice President.
Thank you to all the panelists. Let me say that I have looked at this from the perspective of the State Department as a brand new and interesting challenge in the following way. As we have begun to study it, it is evident to me more than any other subject that I have ever dealt with that it includes everybody in the United States Government.
And when Jessica says it is the most complicated negotiation ever internationally, if you consider that it has so many internal dimensions in the United States, it obviously has those same dimensions in other countries. And, therefore, it is a tick-tack-toe game of all kinds of dimensions that we have to work with that is a huge challenge to all of us as we look at the domestic and international aspects of this.
And we have found that in the government

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by engaging the interagency process in this we are learning a great deal more about our own economy, about climate, about the way we work with developing countries, how we relate to developed countries so that it is a massive project which I think ought to be seen as a challenge in the way that we are going to do foreign policy in the 21st century.
So, I find it a very important and challenging goal for all of us to work this out and I am very grateful that we have had this particular day. Because I think it is a way that we are going to be looking at lots of problems in the future.
And I thank you all very much.
[Applause.]
VICE PRESIDENT GORE: Thank you.
You know, as President of the Senate, I often have the responsibility of presiding over the Senate and one of the common phrases used by the presiding officer there is, will those please engaged in conversations in the aisles, please, take their seats and cease all audible

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conversation. I never thought I would use that anywhere outside the Senate Chamber.
I want to thank all of you for joining us for this fourth and final panel today. I am very pleased to be joined by my colleague, the Deputy Secretary of the Treasury, Larry Summers. I am going to call on Secretary Summers for the first presentation and I am going to ask him to introduce our colleagues on the panel here and then he and I will share the moderating responsibilities. But, Secretary Summers, please, lead off.
DEPUTY SECRETARY SUMMERS: Thank you very much, Mr. Vice President.
As a member of the President's Economic Team I am glad to be here to discuss this critical issue. I think it's very clear that the global warming threat is real. There is now a consensus that if we fail to limit global emissions of greenhouse gases there are likely to be real effects in the form of higher temperatures, a disruptive climate and potentially very important disruptions in the functioning of the global

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economy.
Anyone who doubts that climate has important economic implications need only look at the impact of El Nino. Droughts and other El Nino effects have already prompted several governments to declare a state of emergency and have put a severe dent in the production of many of the world's most important foodstuffs.
The world's commodity traders now monitor El Nino almost as closely as they monitor the Fed. And the catastrophic insurance industry has been paying very close attention indeed, because of its concern with the effects of hurricanes, to the threat of global warming.
The question is not whether we can respond effectively to that threat. We can and I believe we must. More than 2,000 economists, including eight Nobel Laureates, several members of this panel, have concluded that there are policy options that would slow climate change without harming American living standards and that these measures

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may, in fact, improve productivity in the long run.
Economists can contribute to the effort to combat global warming by helping us to answer two central questions. First, they can help us decide on the goals that we should set for ourselves, on what path can we best achieve our environmental objective and our economic objective, as well.
Second, and perhaps more important, certainly as important economic analysis can inform our search for the best way forward to meet our given goals of choosing the best way forward, which I think several of our panelists will suggest is based on a flexible market-based approach. It is important for the economy and it is important for the environment as well, because if we act in as inexpensive a way as possible we will be able to act to the maximum extent.
We have with us to discuss these issues a distinguished panel of experts including Robert Repetto, from the World Resources Institute; Rob Stavins, from the Kennedy School of Government; John Sweeney, Chairman of the AFL-CIO, perhaps an

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honorary economist for this occasion; William Nordhaus, from Yale University; and Richard Sandor, the Vice Chairman of the Chicago Board of Trade.
VICE PRESIDENT GORE: Well, thank you very much, Mr. Secretary, and I will now turn to Bob Repetto for the next comments.
And in your comments, Bob, please, address this question: What is the optimal approach in your view that would allow us to act aggressively to reduce emissions without damaging the economy in the process and how would a policy along these lines be structured?
MR. REPETTO: Mr. Vice President, thank you.
You know, there has been a great deal of analysis on this issue. There have been hundreds of simulations with dozens of economic models and as I read it, five essential elements come out of this.
First, as others have said and as Larry Summers just said, using market-friendly economic instruments such as selling carbon permits that

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firms can trade in the market place or phasing in carbon taxes will be much more efficient than command and control regulatory systems.
Second, using revenues from these policies to reduce business tax rates can stimulate employment and investment without increasing the budget deficit. Offsetting the effects of higher energy prices with tax cuts can substantially improve economic outcomes.
Thirdly, as many people have said, creating an international system of joint implementation or carbon permit trading that involves Eastern Europe, the Former Soviet Union and important developing countries can lower the cost substantially and provide important economic gains for all parties.
Fourth, an active technology policy program to accelerate the development and diffusion of renewable energy and energy saving technologies, if supported by appropriate market price signals, can substantially reduce the long-run costs.
And fifth and finally, providing clear,

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credible, consistent policy signals as early as possible to reduce uncertainty in the economy and allow business and the public enough time to make appropriate plans and investment decisions will reduce short-run dislocations.
If this approach is taken, carbon emissions can be reduced without damaging the economy. Well over a dozen economic modeling studies have analyzed the issue. Even the most pessimistic find that emissions can be stabilized at 1990 levels by the year 2010 while the economy continues to grow at almost its long-run trend rate.
Under the worst case assumptions, the growth the United States economy is likely to expand over the next 20 years, about a 50 percent rise in real GDP, would instead take 21 years to achieve. That is essentially the worst-case scenario.
However, if these elements are adopted in an optimal approach, these analyses find that-adopting these policies would allow American living

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standards to rise more rapidly over the next 25 years than if we do nothing.
Mr. Vice President, in closing, I would like to mention the impact of these policies on the competitive position of U.S. industry abroad. Of course, our main trading and investment partners in the OECD countries have already indicated their willingness to do as much as the United States will in reducing greenhouse gas emissions and, so, competitive impacts within the OECD will be negligible.
It is also important to recognize that the largest industrializing countries, including Russia, China, India, Brazil, Poland and others, since 1990 have taken significant steps to reduce energy subsidies. A World Bank report indicates that they have gone down by 50 percent, they have raised energy prices already relative to prices in the United States and have opened up and reformed their energy sectors to make them more efficient. They have done so not to protect the climate but to restructure their faltering economies, but in the

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process, have already contributed to the solution of the climate problem.
If they go second, these energy sector reforms are likely to continue because their motivation is economic self-interest and sustainable development in their own economies. For these and other reasons, I believe that U.S. emissions can be reduced without a flight of factories and jobs to other countries.
Thank you.
[Applause.]
VICE PRESIDENT GORE: Thank you very much, Bob. I hope we will have time to come back and explore some of this.
DEPUTY SECRETARY SUMMERS: Bill Nordhaus, you have done some of the most widely cited analyses of the economic implications of policies to impact on global warming. What are your thoughts about the best way forward to go in terms of reducing emissions?
PROFESSOR NORDHAUS: Well, I guess at the end of a day talking about the future it is time to

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call out the economists and ask, how much is it all going to cost?

As I listen to this and have read this, I am concerned that we are greatly underestimating the size and complexity of the undertaking and my message is that we must move cautiously so that we protect our economy as well as our environment.

Let me start with costs. What people are urging is to reduce emissions in the United States to 1990 levels by the year 2010. Just to be clear, this according to most studies, this involves reducing emissions by about 30 percent relative to business as usual.

Now, from an economic point of view, that is a very large cut. I looked at the studies, including the Government Interagency Task Force, and I was struck by the close similarity of the projected economic impacts there to the energy price shocks of the 1970s.

If you look at the studies, most of them find that these targets will involve raising energy prices sharply, approximately a doubling of

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wholesale energy prices and approximately a 300 percent increase in the price of coal. And this is actually larger than the price increase during either of the oil price shocks of the 1970s.

And, so, I think the thing we have to be concerned about is to make sure that we don't bring an energy price shock upon ourselves because this was, after all, the worst economic period in the United States since the Great Depression.

Now, you might ask, will technology bail us out? And I have no doubt and I think there has been a lot of evidence for this for many years, that there's great potential for technological savings, from the light bulbs we talked about this morning, to the fuel cells and on to advanced power systems.

But I think the evidence of the last quarter century, as well, is that we are not going to introduce these wondrous technological miracles unless people face higher energy prices. As we heard in the last session, energy is too cheap, too cheap to get us out of our utility vans, too cheap

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to make us look at all our systems.

When will we change the light bulbs? When it is economically imperative to do so.

Now, I want to say a word about risks and damages because there's been a great deal of economic work on this. Most economists who have looked at this believe there are major long-run environmental, economic and political risks involved in global warming and there have been dozens of studies on the impacts on such sectors as agricultural, sea-level rise, health and energy.

And, so, economic studies have tried to ask, what is a sensible balancing of the economic costs and the costs of adaptation, on the one hand, with the climate risks on the other? The answer is, we should move ahead, we should strive for slowing the growth in emissions, we should move to increase the prices of fossil fuels.

I think a very attractive model that comes out of these studies that would be something that marries the U.S. proposal of tradeable permits that we heard about in the last session with a target

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price of carbon in the order of $10 a ton for carbon, plus or minus whatever sensible margin seems necessary.

And this would compare with numbers of about $100 a ton of carbon which are the ones that would be involved in current proposals.

So, in summary, we do need to slow the greenhouse express. If we do nothing there is a risk that we are going to crash into the reefs.

But at the same time if we step on the brakes too quickly we may crash through the windshield. So, what we need is a kind of middle ground which raises energy prices gradually to give the proper signals to consumers, producers and technologists and to put us on a more sustainable and sensible path.

Thank you very much.

[Applause.]

VICE PRESIDENT GORE: Well, thank you very much. In other words, avoid shocks to the economy. In 1973 and then again in 1978 and 1979, the increases were immediate, dramatic and sudden. In

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this case, whether prices are involved or not, whether it is trading regimes, joint implementation or whatever it should be over a long enough period of time and in a gradual enough process to allow the forces of the market place to help us accomplish our goals as efficiently as possible.

PROFESSOR NORDHAUS: I would emphasize that point. It's very important, as people look out and they ask how are we going to build these new buildings, what kind of power plants are we going to build, what are we going to equip them with, what kind of cars are we going to buy, that people look out and expect that things are going to get a little tighter and we ought to move a little away from the fossil fuels that we are using.

And, of course, the way, as unhappy as it is, as unpleasant as it is, the real way people see that signal is when they see they see the prices rising or they expect them to rise. But the message is, gradual is much less costly.

VICE PRESIDENT GORE: Thank you very much. I want to turn now to Robert Stavins, who

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is Professor of Public Policy and Chair of Environment and Natural Resources of that Program at the John F. Kennedy School at Harvard.

Professor Stavins, what are your thoughts on this?

PROFESSOR STAVINS: Well, Mr. Vice President, and Mr. Secretary, I think we can safely say that no one in this room is interested in just paying lip service to what is obviously a very important global problem. So, the first thing I would like to state is to note that voluntary initiatives or wishful thinking are simply not going to be able to do the job of meeting the kind of CO_2 emission targets that have been discussed in the United States and other countries.

If the targets are, themselves, serious, if they are aggressive then either very serious command and control standards or very serious and meaningful price signals are going to be required. At this point, we have 30 years of experience that has taught us something. It has taught us that market-based instruments, in this case essentially,

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energy taxes or tradable carbon permits can transmit those price signals and they can bring about the changes that are needed. Changes in fuel use, in the short-term movements from coal to natural gas in established facilities; changes in technology, by which I mean commercialization and diffusion throughout the economy of those technologies that the Department of Energy study has identified as being technically feasible; and also energy conversation to lower overall energy demand.

Price signals can do that and the studies that have been carried out by Bill Nordhaus and by others, indicate that they can do it at a savings of 90 percent or more of the overall cost of abatement compared to a conventional or let's call it old-fashioned way of doing the job.

Now, both Bob Repetto and Bill spoke of taxes so I'm going to turn instead and focus on that other market-based instrument tradeable permits. Because something else we have learned is that tradable permit systems can be designed well

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or they can be designed poorly.

And in the United States we have the experience of doing both. So, I want to make a few suggestions. The first one is if there is a model for carbon trading and I hesitate to say that there is, it is not necessarily the highly successful sulphur dioxide allowance trading program but it just might be EPA's phenomenally successful phase-out of the lead in gasoline in the 1980s which was also accomplished by a tradeable permit system among refineries.

My point is that we should not be captured by the notion of thinking of CO2 emission permits but by thinking of upstream carbon content permits traded among primary producers of fossil fuels and among importers.

Secondly, if these permits are auctioned and there are arguments economically of why they ought to be, those revenues ought to be fully rebated to the economy through cuts in taxes, on labor and taxes on capital.

Third, despite, again, the great success

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of the tradeable permit program for sulphur dioxide, and I think it is a success that anyone who has cared about these instruments applauds, we shouldn't misread the evidence. Careful analysis of the fact that the prices have come down as much as they have tells us there is nothing there, unfortunately, to suggest that carbon trading is going to be miraculously cheap.

Fourth, I want to emphasize something the Vice President said that is exceptionally important and that is that time matters. It is not just the flexibility of allowing the control to take place in appropriate locations but allowing it to be spread out over time as with the case of banking of permits.

Finally, the cost with any domestic instrument is going to be much lower if it is combined with broad-based, international allowance trading. Not simply what is currently described as joint implementation.

So, in conclusion, if we are not interested in simply paying lip service to global

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climate change, and again I'm assuming that no one in this room is, then I think the only option that is really credible is for the United States to use market-based instruments.

Thank you.

[Applause.]

VICE PRESIDENT GORE: Very good, thank you so much.

I wanted to ask a brief follow-up question. You were quoted last week in the New York Times as supporting a kind of economic safety valve mechanism whereby we would cap the cost of a given policy so that if there were some kind of miscalculation then there would be a safety valve. Can you explain this idea?

PROFESSOR STAVINS: Certainly, Mr. Vice President.

This approach addresses a fundamental dilemma. The dilemma is, on the one hand, some people, including many in the business community but many others as well, fear that meeting specified targets is going to be exceptionally

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costly. They might be right, I don't know.

On the other hand, many others, including many in this room and many in the environmental community, predict that it is going to be very cheap and, indeed, some early panels would say, costless, to achieve these targets. And, again, I don't know. I will be agnostic on that and I don't think any of us really knows.

A compromise that would address the interests then of both of these groups of their concerns would be a system that essentially links an emission target with a safety valve for the case of unexpectedly high costs. Now, this approach has been proposed by a number of researchers, the University of Texas, the World Bank, and Resources for the Future.

And it would work essentially like this. The government will allocate permits, enough permits in order to meet the precise targets that the government chooses and, at the same time, the government will state up-front that it will offer for sale additional permits at a given price, for

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example, $10 per ton of carbon content of fossil fuels.

If the optimists on this–I will call them the environmental advocates–are right, if it turns out to be exceptionally cheap to reach that emission target, we will reach the target, we will do it at low cost and we will all be exceptionally happy.

On the other hand, if it turns out that the pessimists on this issue, the cost pessimists, are correct and it costs more than that to reach the targets then, in fact, we will be capping the permit price at $10 per ton, we will be capping marginal abatement costs, we will be capping the costs to private industry at $10 a ton as well.

So, this kind of hybrid policy instrument which combines features of what is normally thought of as a tax but works completely through a tradable permit system works because what it does is make the target, itself, sensitive to the costs. And I think this is the kind of instrument that could really set us on the path to taking what the

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President described earlier this morning as moderate but disciplined first steps. In other words, a good beginning.

VICE PRESIDENT GORE: Great, thank you very much.

I want to call now on my friend John Sweeney. And, John, I know that organized labor has serious concerns about how a policy to deal with climate change might affect working men and women in this country and, particularly, how it might affect the number of jobs and the nature of the job market.

However, I know from my discussions with the folks who are working on this in the AFL-CIO, that there is widespread recognition that this is a real issue that must be dealt with. So, what kind of policy would you recommend to address the environmental problem we face while protecting our economy and our workers?

MR. SWEENEY: Well, first of all, I want to thank you and the President for your leadership on this and for this conference today and I am

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happy to be with Secretary Larry Summers, as well. We, in the labor movement, feel that regardless of which study you examine the economic stakes for the United States are enormous. And we really feel that it is essential that we do whatever we do carefully.

Our share of global carbon emissions is so large that even modest reduction measures, if not done carefully and with enough time to manage difficult adjustment questions, could have catastrophic economic effects. In any event, the magic of the market is not a sufficient tool. We must plan and plan carefully. We must begin to make the investment in new technology and new carbon suppression measures now.

The keys to doing this and doing it the right way are taking enough time and being clear as to our ultimate objectives. There is nothing magic about 2010 or any other target date and there's nothing magic about 1990 emissions levels.

Rather the decision about a target date should really be based on taking enough time to

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manage the economic transition and the emissions target must follow not precede a discussion about the global concentration level that the entire world community seeks to achieve.

None of this is to say that we should not act. We should. But we must act thoughtfully and with a clear intent. With a clear intent of protecting our economy, and the women and the men who have made that economy successful, the most productive in the world.

We think the American people will understand and appreciate the sacrifices that are asked of them if we speak to them rationally about sensible solutions to carbon reduction. Loose talk about more jobs sometime in the future is not an adequate response to those who face job loss now and those who will see entire industries, entire communities disrupted if we do not get this right.

We ought to be guided by some core principles. Whatever we do, we must assure global environmental repair. If it does not, we cannot and should not ask American workers to pay a known

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price for an uncertain outcome.

Every nation must participate on an equitable basis. We must not create incentives for job and investment to move elsewhere. We must put in place and assure adequate funding for a just transition regime that forces us to plan ahead and create the sort of environment and economy that we all can have.

Thank you.

VICE PRESIDENT GORE: Thank you very much.

[Applause.]

MR. SUMMERS: Richard, you are a man who operates in markets where there is trading every minute of the day, 365 days a year. We've heard a lot about the concept of trading emissions as well as pork bellies.

Maybe you could give us a feel for your experience with the acid rain trading program and discuss the lessons of your experiences in trading for policy in this area.

MR. SANDOR: Thank you, Mr. Vice President and Mr. Secretary, and I, too, would like to

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commend the White House and all of you for giving us the opportunity to hear this private sector viewpoint.

I will take a contrary opinion. I'm very excited about the possibility of market-based solutions for the environment. While I do see a difference between the SO2 market and the carbon market and I do recognize the very intelligent viewpoint of Dr. Nordhaus and Stavins and my other colleagues, here at the panel, I think there are more similarities than there are differences.

I think in the early days of debate and the policy opinions, the questions that were asked at that particular time people said, let's set fines at $2,000, let's have auctions at $1,500, the best minds said $600. The auctions started five years ago, prices went from $300 to $250 to $200 to $150 to $100 down to $70 a ton. We went slowly, we learned, we implemented.

There was a big debate at that time. Some of it was it was too large and too comprehensive and the other was there were too few sources to

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make a difference. In fact, we did cut a middle ground.

People worried about quasi-property rights, how would they fit in the securities markets. Would we accept quasi-property rights and liens and things of that nature. Could we adapt arcane swap documentation which is used to hedge interest rates to trade sulphur dioxide? And the answer to all of those questions was a very simple and a very dramatic, yes.

The question now going forward is what are the steps that we should take to mitigate carbon emissions? I am concerned about the problem, I think the problem is one that we all have to be concerned about and I'm particularly concerned about its irreversibility.

Right now the market is already taking some actions as we speak. It is an inchoate market right now. Arizona and New England trades are occurring between sulphur dioxide and carbon. In May, the company that I represent and who I am speaking on behalf of, Centre Financial, did a very

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small trade in Costa Rica, monetizing 1.1 million acres or the first of it.

We have a mandate from the government of Costa Rica to create 1.1 million acres, 4 million tons of rain forest protection credits which have been certified by the Department of Energy as CTOs.

We have something and I believe social scientists call it the demonstration effect. I think in Washington you call it flying a balloon and seeing what's happening.

DEPUTY SECRETARY SUMMERS: Trial balloon, yeah.

DR. SANDOR: Trial balloons. Well, the demonstration effect is throw up a price and see what happens. We threw up a price of $20 and people came to us and said, we can basically take landfills, co-generate power and reduce methane. Other people came to us and said, we can, in effect, take solar power which is being used in Arizona and if you can monetize, just give us a small amount of credit for dollar reductions, that makes it viable.

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Top soil, if you could plant vegetation and get paid for the carbon created. That is not only good for the farmers but it also might have some monetization value.

All of these are signals and the $20 a ton which is the highest cost, unlike Mr. Draper's of $1 or $2, that turns out to be at today's price, and it is the only price I know and Mr. Secretary the one only a trader can act under, is a penny and a half per gallon of gasoline. That is the market price right now to get some carbon emissions from now for the next 20 years on land that goes in perpetuity in Costa Rica.

Price signals are very important. And I never underestimate inventive activity or the role of entrepreneurs who take on bold tasks whether it is in chips or communication or in markets, or the ability to trade not only pork bellies, but mortgage-backed securities, other devices which make us the envy of all capital markets.

In conclusion, I would like to say we think a limited voluntary program, voluntary in the

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sense that nations opt-in to participate, voluntary in that sectors, in the second sense, may opt-in to help generate price transparency would give us a better idea to slowly move toward this goal.

I think Dr. Mathews is right, we need a framework, we need a slow framework and if we can move into that and if the policy makers can give us the infrastructure for markets, let some of us practitioners try to bring that price down so there are no effects on the economy.

[Applause.]

VICE PRESIDENT GORE: Thank you very much, Richard, that is very intriguing.

Is there a separate trading pit for sulphur dioxide?

DR. SANDOR: Unfortunately, we are at the point where we conduct the auctions outside of a pit environment but we are and have had approved by the Commodities Futures Trading Commission both a future for SO2 and options on SO2. So, we may, in effect, have them pit-traded.

Now, they are just traded by an auction

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market.

VICE PRESIDENT GORE: Well, we were speculating what, how long it would be before we had carbon derivatives and you've already got sulphur dioxide derivatives.

DR. SANDOR: Yes. And they are in effect with these trades I mentioned now carbon derivatives. Environmental derivatives is what we like to call them, Mr. Vice President.

VICE PRESIDENT GORE: Excuse me, I'm sorry, environmental derivatives.

You said that these sulphur dioxide instruments are now selling for $70 roughly?

DR. SANDOR: They bottomed at $70 and are now trading at roughly $90.

VICE PRESIDENT GORE: $70 to $90 is the current range?

DR. SANDOR: Yes.

VICE PRESIDENT GORE: And at the beginning the predictions were that they would be at how many hundreds of dollars?

DR. SANDOR: In 1990, the predicted levels

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ranged from 4 to 800 tons. The EPA was pretty aggressive at $600 and some private sources were as high as $1,000 a ton.

VICE PRESIDENT GORE: Why do you think they were so wrong?

DR. SANDOR: For several reasons. There were some unintended consequences. Part of it was due–and we have to look at it realistically and candidly–was reduction in rail rates that came about, deregulation. So, that Western low-sulphur coal was substituted.

The second part was scrubbers and technology by the GEs and the Sea Brown Brevares. [ph], the others were fuel switching and the flexibility.

I think what all of us will believe is the flexibility that a market-based system made compliance basically be able to be implemented in a cost-effective way and over a longer period of time.

VICE PRESIDENT GORE: I'm going to offer an additional hypothesis as to why the projections

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were so high. And I do so as a non-economist and with apologies and appropriate humility and I will ask for comments if anybody thinks I'm way off base here.

I have long felt that just as in any profession there are certain conventions in the economics profession that are necessary and highly valuable in order to make the profession operate the way it does. But one of those conventions that I think sometimes causes problems is the assumption of perfect information.

The idea that all other things being equal, the information about what choices are available and what the best courses of action might be are readily apparent or will shortly be readily apparent to anybody who looks for them and, therefore, the economy is operating at or near the optimum allocation of the resources that are available. You understand the point I'm getting at?

DR. SANDOR: Yes.

VICE PRESIDENT GORE: And that's a

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necessary assumption but it is not always accurate. The classic joke is about the economist who walks down the street and a $20 bill is laying there and he does not stoop over to pick it up because it wouldn't be there, it is obviously not there because if it was somebody would have already stooped over to pick it up.

[Laughter.]

VICE PRESIDENT GORE: And I think that some of the options for squeezing sulphur dioxide out of the environment at much lower levels of cost than turned out to be possible were assumed not to be there because if they were there they would have already been picked up.

And similarly, I think that sometimes when we are on the verge of a new set of assumptions about how things are going to operate we, for the purposes of common sense, we say, well, we need to calculate these costs on the assumption that the low-hanging fruit or the easy choices if they were actually that profitable they would already be showing up somehow.

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But just as a pump needs to be primed, the perception of and selection of the most cost-effective options needs to be lubricated by the liquidity of trading in the new ideas that have not even been looked at previously because they haven't been examined. There is a, I don't know, stickiness is a word that economists use. There's a certain stickiness that people have that keeps them stuck in the old way of looking at what is available and what is not available.

And, therefore, when we start priming this particular pump and moving into a carbon emissions trading, I think that it is much more reasonable to assume that we don't have perfect information at all. We have no idea how many opportunities are out there to have very large savings at much lower costs because we haven't really felt the need to break out of our old way of looking at it and look in a new way.

Now, if you would like to comment or Professor Stavins?

DR. STAVINS: Far be it from me to take on

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defending the 22,000 members of the American Economic Association. So, I will focus a little more on what I think is an important point you are raising, Mr. Vice President. And certainly I should not be interpreted and I think most economists should not be interpreted as slamming the SO2 tradable permits program. I worked very hard with Secretary Wirth at the time to coax the Bush Administration into developing and proposing that program to the Congress which enacted it.

But I think it is very important that we learn correctly from the lesson so that we design better and better systems for global climate change. And the reality is that although it is true that very, very early on in the history there were numerical estimates of $1,000 a ton trading, that if you look at the final estimates for the final legislation that was enacted that included something like a $3.5 million bonus allowances given out to utilities that, in fact, the predictions were about $170 to $200 a ton.

You combine that with what Dr.–

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VICE PRESIDENT GORE: They were only off by a factor of 300 percent.

DR. STAVINS: No, but I haven't–

VICE PRESIDENT GORE: Okay, I'm sorry.

DR. STAVINS: I'm going in the direction.

VICE PRESIDENT GORE: All right.

DR. STAVINS: You're right. So, so far, so where you are left then with this gap of $70 to $100. And Dr. Sandor has correctly pointed out that the deregulation of railroads which brought down freight costs for Powder River Basin low-sulphur coal to move it to the east, played an enormous part of that. And in addition to that, there are several other factors that suggest that it could be that the abatement costs are actually higher than what the permits are reflecting.

Public Utilities Commissions are possibly restraining the trade in these permits as economists and I think most people would desire that that permit trading is free. There is the property rights issue because the Congress said this is not a property right.

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So, my suggestion is that we learn from those lessons, the property rights and all the other ones, to design a better tradable permit system, a credible one for global climate change.

DR. SANDOR: And I would agree with that hypothesis. I do question or having been involved in making some of the first trades in the SO2 market, and having debated bid and offer prices, looking at that inefficient market, I found a much higher estimate just on one person's experience.

I do think the Vice President is 100 percent spot on that this is an il-liquid, inefficient market.

And right now somebody will make an argument that it is a $100 ton and as a market practitioner I would like to ask them, could I sell that to you at that and the answer is often, no, I would like to buy at $4 or $5.

So, now, we have a market, $5 bid, $100 offered and somewhere in between–

[Laughter.]

DR. SANDOR: –somewhere in between it

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trades, Mr. Vice President and I think that is far lower than what people think.

VICE PRESIDENT GORE: And it is more fun when there is a pit, isn't there?

DR. SANDOR: Yes.

VICE PRESIDENT GORE: If we do carbon, there is going to be a pit for carbon.

DR. SANDOR: We like the hand waving and open outcry.

VICE PRESIDENT GORE: There's got to be a pit for carbon.

Bill, did you want to comment?

PROFESSOR NORDHAUS: Yes. I just wanted to say I think there are a couple of lessons here. The first is if the best minds in this area, and these are not just economists, these are utility executives, these are people who do estimates in the environmental community, are off by a significant amount, whether it is 100 percent or 500 percent, then I think the lesson there is there are really great uncertainties.

And I think we ought to carry that over

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here and say there really are large uncertainties. Whether it is a $1 a ton or five cents a ton or $100 a ton, I don't think I want to stake my reputation on one particular number.

I think we need to design our policies with the idea that there are large uncertainties here.

VICE PRESIDENT GORE: I think that's another argument in favor of the kind of safety valve approach that Mr. Stavins mentioned before. We have run out of time but if any of the panelists here want to make any other comments, I will certainly–

Well, if not, let me just mention briefly that two members of our Administration's economic team who were not recognized earlier due to an oversight, include the Chairman of the National Economic Council Gene Sperling [ph], who has been integral to this entire process and who has been a Co-Chair of the President's process, along with Katie McGinty and Dan Tarullo, also with the National Economic Council.

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And earlier, when Secretary Albright was here, I wanted to acknowledged the members of her team, my long-time colleague, Tim Wirth, who is here, also, Stew Eizenstat and others.

And I want to thank everybody who has been a part of today's panels. It has been a very, interesting experience for those of us who have been able to participate in it. Many of you will be attending the reception a little bit later at the White House and I will look forward to seeing you there.

Just in closing, let me express the hope that by listening to the evidence brought forward by the experts and the practical perspectives of non-experts we have all learned about the risks of global warming, as well as some of the approaches that will help us reverse it.

As you take these thoughts home with you, please, continue to consider how you might manage the problem from your own perspective.

President Clinton and I strongly believe that we must build our economy and protect our

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environment all at the same time and that we can do that best by tapping the inventive ideas that arise in the minds of the American people.

On behalf of the President, I want to thank Todd Stern and the team of people who have helped him in coordinating this. I think they have done an outstanding job. I want to thank all of you for coming and in closing would like to ask all of you to join me in thanking the members of our final panel.

[Applause.]

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Climate Change Action Plan

For public consultation and review

October 1997

USAID

U.S. Agency for International Development

Foreword

Climate change, to those interested in sustainable development, is not an environmental issue, nor is it an economic or a social justice issue; it is, simultaneously, all three.

Every challenge to sustainable development will be made more severe by climate change. Over the next 50 years human-induced changes in climate have the potential to affect where we live, what and how much we eat, the diseases we will suffer, what we do for a living, and myriad details of our everyday lives.

We are convinced that the scientific evidence mandates a policy response. We fail to serve the national interest of the United States if we do not act.

The President has determined the direction of our response and committed us to partnership with other countries in this endeavor. This consultation draft is intended to expand the debate beyond development professionals in USAID and engage the broadest cross-section of interests in crafting the details of our response.

Our premise in this effort is that the future remains in our control, and that there are some decisions about how we will engage in the future that are much wiser than others. As we make those choices, the more open, transparent and broad-based the process, the more likely we are to find the wisest course.

USAID would like to use this draft version of the Climate Action Plan as the basis for an informed discussion of the ways the Agency can best decrease the threat of climate change.

David Hales, Director
Global Environment Center
U.S. Agency for International Development

To receive a copy of the draft, or to submit comments please contact:

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Acronyms

AC/SI	Activity Code/Special Interest
AEC	Ahmedabad Electric Company
AMC	Ahmedabad Municipal Corporation
ANE	Asia and Near East
ASEI	Asia Sustainable Energy Initiative
BNC	Binational Commission
CAR	Central Asian Republics
CARPE	Central Africa Regional Program for the Environment
CEFDHAC	Conference on the Ecosystems of Dense, Humid Forests in Central Africa
CGIAR	Consultative Group on International Agricultural Research
CFC	Chlorofluorocarbon
CIFOR	Center for International Forestry
CONCAUSA	Declaracion Conjunta Centroamerica-USA
CONAE	Mexican Natural Commission for Energy Savings
CSP	U.S. Country Studies Program
CTI	Climate Technology Initiative
DAC	Development Assistance Committee
DSM	Demand-Side Management
DOE	United States Department of Energy
EBRD	European Bank for Reconstruction and Development
EPA	United States Environmental Protection Agency
ENI	Europe and New Independent States
ESCO	Energy Service Company
EU	European Union
FAO	United Nations Food and Agriculture Organization
FCCC	United Nations Framework Convention on Climate Change
G-7	Group of Seven
GDP	Gross Domestic Product
G\ENV	Global Bureau Center for Environment
GEF	Global Environment Facility
GEP	Greenhouse Gas Pollution Prevention Project
GIS	Geographic Information System
GOI	Government of Indonesia
GOM	Government of Mexico
GOP	Government of the Philippines
GOU	Government of Ukraine
HVAC	Heating, Ventilation, and Air-Conditioning Systems
ICM	Integrated Coastal Management
ICRAF	International Center for Research in Agroforestry
ICCP	Interagency Climate Change Program
IEA	International Energy Agency
IFC	International Finance Corporation
IGAD	Intergovernmental Authority on Development
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
JI	Joint Implementation
Km	Kilometer

LAC	Latin America and Caribbean
LGPP	Local Government Partnership Program
MDBs	Multilateral Development Banks
MEPNS	Minister of Environmental Protection and Nuclear Safety
NOAA	National Oceanic and Atmospheric Administration
OECD	Organization for Economic Cooperation and Development
OPIC	Overseas Private Investment Corporation
PDOE	Philippines Department of Energy
PPC	Program and Policy Coordination
PPG-7	G-7 Pilot Program to Conserve the Brazilian Amazon
RIH	Reduced-impact Harvesting
SADC	Southern Africa Development Cooperation
SCI	Sustainable Cities Initiative
TFF	Tropical Forestry Foundation
U.N.	United Nations
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
USEA	United States Energy Association
USIJI	United States Initiative on Joint Implementation
U.S.	United States
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WEC	World Energy Council
WRI	World Resources Institute
WWF	World Wildlife Fund

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Introduction

Global climate change poses profound threats to international economic development and ecological balance. If greenhouse gas emissions continue to grow unabated, all sectors of the global economy, all realms of the natural environment and all countries of the world will be affected. The greatest costs, however, will be felt by developing and transition countries, the countries least able to cope with crisis and adapt to change. As the foreign assistance arm of the U.S. Government, the U.S. Agency for International Development (USAID) advances U.S. national interests by promoting sustainable development and providing transition assistance and humanitarian relief. Helping developing and transition countries balance economic growth with environmentally sustainable development protects the global environment and serves the United States' national interest.

For many years USAID has implemented environmental programs that, though targeted on other goals (eg. energy efficiency, forestry and biodiversity conservation), have had a direct impact on greenhouse gas emissions. USAID also has supported efforts that implicitly help decrease the threat climate change poses by promoting economic development, and improving and promoting human health and nutrition.

In 1990 when the Agency published its report, "Greenhouse Gas Emissions in Developing Countries: The USAID Response," USAID began explicitly to address the threat of climate change. Since then, the Agency has actively managed a portfolio of climate change-related programs focused on decreasing emissions from the energy sector and increasing carbon sequestration in forests. USAID progress in this regard was documented in a report to Congress in 1994, "Global Climate Change: The USAID Response," which outlined the portfolio of climate change-related programs and reviewed the Agency strategy.

Speaking at the United Nations in June of this year, President Clinton announced that the U.S. would provide more than $1 billion dollars over the next five years to help developing nations and countries in transition reduce the threat of climate change. That announcement signaled a renewed U.S. Government commitment to facilitate technology transfer and assist developing and transition countries to meet the spirit and obligations of the Framework Convention on Climate Change (FCCC). The Initiative includes three components: a minimum $750 million in grant assistance over the next five years, up to $250 million in "climate-friendly" investment stimulated through the use of credit instruments, and a $25 million inter-agency climate change program. This Action Plan outlines a strategy for the first two components.

USAID has been given the lead on behalf of the Federal Government in implementing the President's Initiative. This draft Action Plan focuses on how USAID will make the President's commitment a reality and presents a framework and guidelines for fulfilling the first two components of the President's Initiative totalling $1 billion. The first section summarizes the state of knowledge regarding climate change and its likely impact on developing and transition countries. The second section discusses the relationships between global climate change and sustainable development, and outlines the major issues posed by these relationships. This is followed by a description of the Agency's strategy to combat the threat of climate change and the approach USAID will use in implementing the President's commitment.

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Executive Summary

Global climate change poses profound threats to international economic development and ecological balance. The greatest costs will be borne by poor nations least able to cope with crisis and adapt to change.

Speaking at the United Nations (U.N.) General Assembly Special Session on Environment on June 27, 1997, President Clinton announced that the U.S. would provide $1 billion over the next five years to help developing nations and countries in transition reduce the threat of climate change. That announcement signaled the United States' renewed commitment to facilitate technology transfer and help developing and transition countries to meet the spirit and obligations of the United Nations Framework Convention on Climate Change (FCCC). The Initiative announced by President Clinton includes three components: a minimum $750 million in grant assistance over the next five years, up to $250 million in "climate-friendly" investment stimulated through the use of credit instruments, and a $25 million inter-agency climate change program. This draft Action Plan focuses on how USAID will work to make the President's commitment a reality.

Climate Change and Developing Nations

Annual emissions from developed nations still represent well over half of global greenhouse gas emissions. The growth in emissions from developing nations is, however, accelerating. If current growth trends continue, developing nations and transition countries will account for almost half of annual emissions from industrial sources in 2010.

Changes in the climate will affect all sectors of the global economy and all realms of the natural environment. The impact will vary from country to country and region to region: different sections of nations will be affected differently and at different times. It is expected that the impacts of climate change will, however, be greatest for developing nations and transition countries, because of their limited capacity to adapt and cope.

Strategies for addressing climate change must strive to reconcile social and economic aspirations with the need to address local and global environmental threats. At the same time, efforts to promote development need to incorporate programs to help nations decrease vulnerability to the threats climate change poses.

Climate change will almost certainly increase the need for humanitarian relief around the world. The challenge will be to ensure that efforts to mitigate and adapt to climate change are not overwhelmed by the demands for emergency relief. As more and more resources are expended to deal with the human costs of climate change, the ability of societies and the international community to address root causes of emissions and foster long-term adaptation will be compromised.

An Overview of the Draft Action Plan

USAID will concentrate resources and attention on a set of key climate change countries and regions selected because of their contribution (and predicted future contribution) to net global greenhouse gas emissions and their governments' receptivity to taking concrete action. Nine key countries and three regions will receive priority: Brazil, Central Africa (Cameroon, the Central African Republic, the Congo, the Republic of Congo, Equatorial Guinea and Gabon), Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama), Central Asia (Kazakstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), India, Indonesia, Mexico, Philippines, Poland, Russia, South Africa and Ukraine. Although China is another large emitter of greenhouse gases, USAID does not operate in China.

All of the USAID key countries and regions will maintain a significant portfolio of climate change-related activities for the duration of the Initiative.

The draft Action Plan specifies three areas of emphasis:

- Decreasing the rate of growth in net greenhouse gas emissions by decreasing greenhouse gas sources and maintaining or increasing greenhouse gas sinks
- Increasing developing and transition country success in achieving the goals of the United Nations' Framework Convention on Climate Change (FCCC)
- Decreasing developing and transitional country vulnerability to the threats posed by climate change

1. Decreasing the rate of growth in net emissions

In the energy sector, USAID will focus on activities that result in the following improvements in the energy sector:

- Substitution of less carbon emitting fuel sources
- Use of non-fossil renewable energy sources
- Increased efficiency in power generation, transmission and distribution
- Increased end-use energy efficiency
- Decreased use, increased efficiency or substitution of less carbon-emitting fuels in transportation systems
- Introduction of market forces and regulatory incentives for less carbon-intense energy use

In the land use sector, USAID will pursue activities that either increase the storage of carbon in ecosystems or land use systems (act as carbon "sinks"), or decrease the release of carbon stored in biomass due to human activities, including the following:

- The preservation, re-establishment or more sustainable management and use of forests, trees and denuded lands
- The maintenance and preservation of wetlands and mangroves
- Decreased burning of savannas, forests and brushland
- Reduced slash-and-burn (shifting) cultivation
- Increased soil organic matter and decreased soil erosion
- Increased use of biofuels

2. Increasing developing and transition country success in achieving the goals of the FCCC

Participation in the negotiation and implementation of the terms and spirit of the FCCC will be fundamental to finding a global solution to climate change. The U.S. Country Studies Program and the U.S. Initiative on Joint Implementation have been important vehicles for collaborating with developing nations. USAID programs will seek to enhance further developing country capacity to achieve the goals of the FCCC through the following:

- Assistance with the development of national emissions inventories and budgets, national action plans, and national communications
- Stimulation of joint implementation projects
- Building local capacity to participate in emissions trading
- Acceptance of greater developing country commitments under the FCCC
- Enhanced capacity to track and monitor greenhouse gas emissions and vulnerability to climate change

3. Decreasing developing country vulnerability to the threats posed by climate change

Given its broad experience in development, USAID is uniquely positioned to help increase the capacity of developing countries and countries in transition to adapt to change and cope with the predicted impact of climate change. Programs that have the following results will be an integral part of the Agency's Climate Action Plan:

- Increased preparedness for natural disasters
- Increased adaptability and efficiency of agricultural systems, municipal management, water resources management and public health systems

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- Improved domestic and international capacities for conflict-resolution regarding shared resources, such as water

To achieve the results outlined above: USAID will use a range of tools and approaches, including policy reform, institutional capacity building, education and outreach, and information collection and dissemination. The draft Action Plan also will place particular emphasis on four additional tools USAID believes will be particularly critical: technology cooperation; partnerships with the private sector; collaboration and coordination with other bilateral and multilateral donors; and the use of loans and loan guarantees to foster private trade and investment in "climate-friendly" technologies and projects.

USAID will have a wide range of public, private and non-government partners in implementing the Action Plan. Collaborators will include other agencies and departments of the Federal Government, multilateral development banks, other multilateral and bilateral donors, as well as public, private and non governmental organizations from throughout the world.

Through the Action Plan, several areas of emphasis including the following will be highlighted:

- USAID will quantify the health and productivity costs associated with the local air pollution that fossil fuel combustion generates in an effort to expand the definition of "win-win" efforts to decrease greenhouse gas emissions.

- USAID will undertake an analysis of the specific regional and local vulnerabilities climate change poses. That study will be used to identify "hot spots," areas of particular vulnerability that USAID needs to address.

- USAID will facilitate private sector transfer of clean energy technology to key countries and regions; a first step in this direction is the promulgation of "Global Climate Change Technology Cooperation Agreements" with key countries.

- USAID will focus on the urban-climate nexus and address opportunities to meet local air quality concerns while decreasing net greenhouse gas emissions.

- USAID will enhance environmental education and outreach to involve non governmental organizations, the private sector and governments in efforts to promote development while reducing the rate of growth in net greenhouse gas emissions.

- USAID will work with the donor community to more effectively promote development that minimizes the growth in greenhouse gas emissions.

The private sector will be a key strategic partner in the Agency's Action Plan. While the commitment of $1 billion over five years is significant for the U.S. government, it will not be sufficient to make an appreciable difference on climate issues in developing and transition countries. It will be critical to engage the far greater resources—human, technological and financial—of the business community.

USAID activities related to global climate change already involve collaboration and close partnership with a variety of actors, including multilateral and bilateral donors, international organizations, and other agencies and departments of the U.S. Government. The high profile attention, however, given to climate change in preparation for the Third Conference of the Parties to the United Nations Framework Convention on Climate Change that will be held in December 1997 in Kyoto, Japan provides an opportunity to deepen these relationships, in particular with official donors. USAID will have dual goals in intensifying coordination on climate change issues: multiplying the impact of its programs by joining forces with other U.S. government agencies, donor nations and the private sector, and increasing the pace and durability of policy reforms in partner nations.

USAID Management

USAID climate change programs will combine an emphasis on meeting local needs with a greater focus on global goals and objectives. Climate

change activities will be developed based upon local priorities, while effectively combating the growth in net emissions of greenhouse gases.

USAID will form a Climate Change Committee to make decisions over issues of policy related to implementation of the USAID Climate Change Action Plan. The Committee will include representatives from each bureau within USAID. An Agency-wide Climate Change Team will continue to serve as the locus for information sharing on programming, current events, results reporting and USAID collaboration with other Agencies and development partners.

Consistent with its role as Agency technical representative on climate change, the USAID Global Bureau Center for Environment will continue to facilitate the Climate Change Team, and serve as USAID representative to all inter-agency climate change programs. The USAID Policy and Program Coordination Bureau will continue to oversee the consistent application of USAID policy on climate change Agency-wide, will ensure that climate change receives a high level of attention on the Agency's development partnering agenda, and will facilitate the involvement of other USAID actors in this area. The USAID Management Bureau will ensure that obligations are commensurate with fulfilling the President's commitment.

Budget

The obligation of resources under the USAID Climate Change Action Plan will be focused on mitigating net greenhouse gas emissions, and fostering developing and transition country participation in the FCCC. USAID obligations as part of the Initiative will include at least $750 million in grant assistance over the next five years, and the use of credit tools to leverage at least $250 million in additional climate change-related trade and investment. A floor of $150 million in Agency-wide climate change-related obligations will be created for the next five years. Of the total $750 million in climate change-related grant assistance, at least forty percent will be obligated to programs in the Agency's key climate change countries and regions. A significant additional percentage will be obligated to the Agency's program in Egypt. Assuming Congressional approval for the use of credit, at least two thirds of the investment USAID stimulates through the use of credit instruments will also be focused on USAID key climate change countries and regions.

Monitoring and Measuring Results

Monitoring and measuring the results achieved will be among the Agency's highest priorities. Under the Action Plan a concerted effort will be made to measure the impact of programs, assess the most effective strategies for combating the threat of climate change, and hone and focus the Agency's approach. An Agency Special Objective for climate is being established, and will be used to track programs and obligations. USAID currently is developing series of indicators that will measure the impact of programs.

Organization of the Report

The first section of this Action Plan summarizes the state of knowledge regarding climate change, its underlying causes and likely impact on developing and transition countries. It identifies population growth, economic development, urbanization and technology as underlying contributors to growing net greenhouse gas emissions, and reviews the predicted impact of a warmer world on human health, freshwater resources, biodiversity, coastal zones, infrastructure and political systems. The second section discusses the relationships between global climate change and development assistance. The third section describes the Agency's strategy to combat the threat of climate change and the approach USAID will take in implementing the President's commitment. The final chapter outlines USAID's proposed management plan for the Action Plan.

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What We Know About Climate Change

The Science

Global warming, the primary result of climate change, is caused by an increase in the concentration of greenhouse gases in the atmosphere. As emissions of greenhouse gases rise, so do the concentrations in the atmosphere; it is this increase in the concentration of greenhouse gases that can lead to increased climate variability. The primary greenhouse gases are carbon dioxide, methane, nitrous oxide, ozone and chlorofluorocarbons.

Over the last century, atmospheric concentrations of carbon dioxide have risen dramatically. Over the same period, the average global temperature has risen by one degree centigrade. In 1995, the Intergovernmental Panel on Climate Change (IPCC) found that the "pattern of global warming is unlikely to be entirely natural in origin," and "the balance of evidence suggests a discernible human influence on global climate."

With a doubling of carbon dioxide concentrations in the atmosphere— perhaps the most optimistic of the realistic scenarios for the next century— average global temperature will rise by 1.5 to 4 degrees centigrade, exceeding the estimated natural climatic variation over the past 15,000 years. In general, the increase will be greater in areas closer to the earth's poles and lesser toward the equator, but considerable regional variation in temperature will even impact areas at the same latitude. These changes will affect not only ambient temperatures for people, plants and animals, but also such factors as degree and timing of climatic extremes, the length of growing seasons, and soil moisture.

Along with the increase in temperature, the earth's precipitation regimes also will be affected. In general, it is expected that the additional energy in the atmosphere will accelerate the hydrologic cycle, increasing average precipitation and the proportion of precipitation that occurs in high-intensity climatic events. This will, in turn, increase the danger of floods and high winds. Changes are expected to occur in the seasonal pattern and variability of precipitation as well. Increased total precipitation may not always mean a wetter environment; in many regions, the net result will be drying because evaporation will more than compensate for increased precipitation. Again, regional differences in impacts will be considerable; some regions may be much warmer and dryer, while others may be wetter and cooler. In drier regions, and even in regions with no change in annual rainfall level but with changes in distribution and variation of precipitation, food production may be reduced, and the risk of fire and atmospheric pollution such as smoke, may increase.

Extreme climatic events— such as tropical cyclones, tornadoes and El Niño effects— may become more frequent and more severe because of the additional energy in the atmosphere. Changes may occur in storm tracks, exposing different areas to the impacts and risks associated with severe storms. It is expected that regional climate will become more variable and less predictable.

As a result of global warming, the earth's sea level is expected to rise by about 50 centimeters by the year 2100. Combined with storm surges and tides, especially if storms are more frequent or more severe, this could mean episodic incursions of seawater of at least .6 to 2 meters into coastal and freshwater areas.

The Causes of Emissions Growth

Greenhouse gas emissions—like any other form of pollution— are the result of four factors: population, economic activity, urbanization and technology.

Population Growth. Population growth is one of the most profound drivers in the rapid expansion of greenhouse gas emissions. The United Nations projects that in the next half century, world population — currently at 5.9 billion people — will increase by between 1.8 and 4.7 billion people. Over 95 percent of that growth will take place in the developing world. By the end of the next century, population growth could account for almost one—half of the growth in carbon dioxide emissions from developing countries as the demand for energy and other services grows. The increase in population will place further pressure on natural resources (which are critical to the carbon cycle), and divert scarce investment capacity from other sectors. A recent study found that stabilizing world population sooner would significantly reduce the growth in emissions.

Economic Growth. Economic growth is another underlying cause of increased emissions of greenhouse gases. Economic growth and development fuel industrialization; provide the financial resources to deliver services, such as energy; and provide the private sector and citizens with the income to increase the demand for energy and other resources. If current economic growth rates in developing and transition countries continue without a significant change in technology or approach to development, by 2010 nearly half of all emissions will come from developing countries. The World Energy Council's analysis linking economic growth to greenhouse gas emissions predicted that robust economic growth in developing and transition countries could result in a 93 percent increase in greenhouse gas emissions by 2020.

While economic growth fuels emissions growth, it also is critical in building the adaptive capacity of nations and ultimately helps curb population growth. With economic development comes increased human and institutional skills, an ability to absorb and manage crises, and a larger pool of financial resources to devote to longer-term challenges and needs. Economic growth also brings with it a decrease in birth rates. The key is to promote less carbon-intensive economic growth and development that minimizes the associated emissions while equipping nations to manage change.

Urbanization. The accelerating growth in carbon emissions corresponds, in large part, to rapid urbanization. According to USAID projections, 60 percent of the world's total population of seven billion people in the year 2025 will be concentrated in urban areas. The trend toward urbanization will contribute to the threat of global climate change by increasing emissions of greenhouse gases and fueling the destruction of land-based carbon sinks, such as forests and wetlands. It is estimated that 150,000 people are added to urban populations in developing and transition countries every day. Given the size of current urban populations in these countries, high rates of urbanization mean exponential increases in emissions from major urban sources— transportation, buildings, industry and landfills. In most cities the transport sector is the single largest source of urban carbon dioxide emissions.

Urbanization also is a driving force behind the destruction of land-based carbon sinks. This effect is both direct, when forests and agricultural lands are cleared and wetlands drained to make way for urban sprawl, and indirect, when markets are created for timber and other products. Furthermore, urban areas are concentrated sources of other pollutants that facilitate the destruction of carbon sinks in urban and non-urban areas. Sulfur dioxide emissions, for example, contribute to acid rain, which stresses forest ecosystems, reducing rates of carbon sequestration.

Technology. Energy technologies are the major source of greenhouse gas emissions. The growth in atmospheric concentrations of carbon dioxide is tied directly to the emergence in the 1800s of a carbon-based industrial economy. The use of coal, oil and gas for power generation and transportation has fueled dramatically increased standards of living over the last two hundred years. But continued reliance on high carbon-emitting technologies in a rapidly expanding global economy will almost certainly contribute to a more than doubling of atmospheric carbon dioxide concentrations in the

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next century. The application of new energy technologies and practices offers the prospect for continued economic growth without the associated climate penalty. These include a range of already proven commercial renewable energy technologies (eg. solar, wind, geothermal, mini and micro hydro, and biomass); less carbon-intensive fossil fuels such as natural gas; more energy efficient end-use applications (eg. appliances and building materials); and new energy technologies, such as fuel cells.

Greenhouse Gas Sources and Sinks

In 1992, total human-induced global carbon dioxide emissions totaled 26.4 billion metric tons. Emissions from industrial activity comprised 84 percent of the total (WRI, 1996). Over the past twenty years emissions from industrial activity have increased by 38 percent. Approximately 80 percent of annual carbon dioxide emissions result from the burning of fossil fuels (deforestation and cement manufacturing generate the remainder). It is estimated that fossil fuels will provide three-fourths of the world's commercial energy in the year 2010. The predicted consequence of higher fossil fuel consumption will be a 30 to 40 percent increase in carbon dioxide emissions (IEA, 1995).

Annual emissions from developed nations still represent well over half of global greenhouse gas emissions. The growth in emissions from developing nations is accelerating. While it is expected that greenhouse gas emissions in 2010 will be 24 percent higher than they were in 1990 in developed nations, it is estimated that emissions from developing nations will be more than twice their 1990 levels. If current growth trends continue, developing nations and transition countries will account for almost half of annual emissions from industrial sources in 2010; China and India, both coal-rich developing economies, will be responsible for a large share of the growth in carbon dioxide emissions over the next twenty years.

Energy. Combustion of fossil fuels account for 76 percent of the world's energy use and over three-fourths of the annual anthropogenic emissions of carbon dioxide. Hydro, nuclear and biomass power account for the remaining 24 percent of energy supplies and to varying extents, their use can have negative impacts on sensitive ecosystems as well.

According to World Energy Council estimates, developing countries will require additional power generation over the next 20 years of more than 2

Top Emitters of Carbon Dioxide from fossil fuel combustion and cement manufacture
(1995 emissions in millions of metric tons of carbon)

Rank	Country	Emissions
1	USA	1498
2	China	879
3	**Russia**	**497**
4	Japan	309
5	**India**	**250**
6	Germany	227
7	UK	149
8	**Ukraine**	**120**
9	Canada	119
10	Italy	112
11	South Korea	102
12	**Mexico**	**98**
13	France	93
14	**Poland**	**93**
15	**South Africa**	**84**
16	**Indonesia**	**81**
17	Australia	79
18	Iran	72
19	North Korea	70
20	Saudi Arabia	69
21	**Brazil**	**68**
22	Spain	63
23	**Kazakstan**	**61**
45	**Philippines**	**17**
	Central America	**7**
	Central Africa	**3**

Note: **Bold** indicates USAID key climate change countries and regions
Source: Oakridge National Laboratory, U.S. Department of Energy

times the current installed capacity in the U.S. Much of this capacity will come in the form of coal-fired power which has grown dramatically as a result of economic growth. Between 1980 and 1992, coal combustion more than doubled, and this figure is expected to double yet again by the year 2000.

Inefficiencies in the generation, transmission and use of energy, especially electricity, add to developing and transition countries' emissions of greenhouse gases without any economic payback. Developing country economies currently require 40 percent more energy than developed nations to produce the same value of goods and services. For example, in developing nations the production of steel and ammonia fertilizer often requires twice as much energy per unit of output; pulp and paper production often requires three times as much. Similarly, power plants in the developing world, use an average of 15 to 30 percent more fuel per unit of electricity than efficiently operated plants in developed countries, and an estimated 20 percent of electric generation is often lost during transmission as a result of antiquated equipment and theft (Sanghvi, 1991; Schramm, 1993) Compounding the problem, state-owned utility monopolies and subsidized energy prices create little incentive to replace inefficient equipment and thus discourage conservation.

Providing energy services to those who currently lack sufficient access to energy will increase greenhouse gas emissions. Lack of access to energy remains a critical development problem. An estimated 1.5 to 2 billion people currently lack access to electricity and 2 billion still cook using fuelwood and animal wastes. Some experts have estimated that the economic losses associated with power shortages in developing and transition countries are as high as 1 to 2 percent of their income (UNDP, 1997). In addition, the absence of reliable energy supplies has negative implications for health, the environment, job creation, food availability and clean water.

Forestry. Forests serve as a major store of carbon and thus play an important role in the planet's carbon cycle. As they grow, forests withdraw carbon dioxide from the atmosphere and store it in trees and soil, acting as large "sinks" for carbon. Forests cover about 28 percent of the earth's land area, and other wooded land, such as forest fallow and shrubland, cover another approximate 13 percent (WRI, 1992). Forests contain 80 percent of all the carbon stored in vegetation and 40 percent of the carbon in soils (WWF, 1996). Scientists estimate that between 1.6 and 3.2 billion tons of carbon are released into the atmosphere every year from deforestation and land use changes, which represents up to 20 percent of the net annual increase in atmospheric carbon dioxide, making deforestation a direct source of carbon second only to fossil fuels. Conversion of tropical forests to agricultural land is a major source of these emissions. Rising demand for fuelwood in many countries also has led to deforestation in areas adjacent to cities. Once gone, forested land often converts to slums or marginal agricultural production, and the carbon sequestration value of the forests is lost.

Since 1950, the great majority of emissions due to deforestation have been from tropical countries, where forests are rapidly being cleared and degraded. When forests are destroyed, carbon stored in trees and soils is oxidized and released into the atmosphere—either slowly through the decay of organic matter or very quickly through fires. Recent studies confirm that the greatest contribution to emissions is the clearing and burning of up to 10 million hectares of forest per year by 200 to 500 million slash-and-burn farmers. Exacerbating the problem are often fiscal and trade policies and related market factors (i.e. high interest rates and trade barriers) which can create incentives to clear forests unsustainably. Unclear or conflicting land tenure, land use and environmental policies also foster unsustainable exploitation and settlement as well as conflicts between local users and larger industrial interests.

The immediate threat to tropical forests from deforestation and direct human impacts is considered far higher than global warming's potential impacts on forests. Nevertheless, scientists predict that climate change will alter at least one third of the vegetation, structure and

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function of the world's forests; degradation of watersheds and other indirect forces may then amplify such changes. Particularly vulnerable are northern boreal forests in Siberia, Canada and Europe. If the atmospheric carbon dioxide level doubled, models predict these forests could suffer a 30 to 50 percent increase in fires, with an additional 7 to 12 million hectares burning annually in Siberia alone.

Agriculture and Animal Husbandry. The agriculture sector (i.e., crops, fertilizer, irrigation and livestock) accounts for approximately one-fifth of all human-induced greenhouse gas emissions, producing 50 percent of total methane and 70 percent of overall nitrous oxide emissions. In addition, agricultural activities, other than forest conversion, account for almost 5 percent of anthropogenic carbon dioxide emissions. The IPCC estimates that emission reductions from the agricultural sector could make a significant contribution to overall reductions— as much as 32 percent from carbon dioxide emission, 42 percent from carbon offsets as a result of biofuels production on land already under cultivation, 16 percent from reduced methane emissions through improvements in livestock productivity and rice cultivation, and 10 percent from reduced emissions of nitrous oxides from better use of fertilizers.

Reductions in agricultural-related emissions could be achieved through the promotion of no-till farming and more efficient use of fertilizers. Improved farm management and better use of nitrogen fertilizers and other inputs would reduce greenhouse gas emissions and improve yields. The U.S. Environmental Protection Agency estimates that programs to address this problem, such as improved livestock nutrition through supplementation or range management, could reduce livestock methane emissions by 25 to 75 percent per unit of product, which would translate into a 12 percent reduction in global methane emissions from ruminant livestock.

The Impact of Climate Change

Changes in the climate will affect all sectors of the global economy and all realms of the natural environment. The impact will vary from country to country and region to region; different sections of nations will be affected differently and at different times. The economic damage associated with an increase of 2.5 degrees centigrade would, according to some analyses, reduce developed nations' gross domestic product (GDP) by 1 to 1.5 percent per year and reduce developing and transition countries GDP by 2 to 9 percent. The estimated costs for island states would be higher (Cline, 1992; IPCC, 1995). While these estimates are somewhat uncertain, the impacts of climate change are expected to be greatest for developing nations and transition countries, because of their limited capacity to adapt and cope. Some of the sectoral impacts associated with climate change are reviewed below.

Agriculture. The potential agricultural consequences of climate change will include increased food insecurity and corresponding increases in poverty, land degradation, dislocation and migration, nutritional and health emergencies, and levels of violent civil conflict. Today's conventional wisdom is that yields will go down (at least for grains) as much as 16 percent in developing and transition countries, and these countries may not adapt easily due to inefficient institutional structures to drive the adaptation process and a lack of resources.

The risk for the poorer, more arid parts of the developing world may arise more from changes in precipitation than from temperature changes. Increased variability from year to year as well as seasonal distribution can significantly increase the risk of starvation and stagnant economic growth, especially for the poorest members of society, especially women and children. For example, poor farmers in water-scarce regions, such as the Sahel, would be highly vulnerable because of high population growth, low adaptive capacity and scarce economic alternatives. These impacts will compound the difficulties countries face in keeping pace with population growth. Under the worst-case scenarios, the numbers of food insecure people would increase by 60 percent over the number forecasted without climate change.

The threats climate change poses to agriculture are significant. Traditionally, the development

trajectory of countries has been shaped by their ability to modernize their agricultural sectors (thereby triggering demographic transition), which provides the platform for broad-based economic growth. Where there are significant barriers to agricultural development, critical social and economic problems often are manifest (eg. poverty, food insecurity, and violent civil conflict). Over the next twenty years, food production levels will need to rise enough to feed an additional 90 million people per year. Much of that new food will come from yield increases thereby putting an emphasis on developing and disseminating new varieties and methods. Agricultural productivity will have to rise to compensate for the dwindling stock of arable land result from competition or degradation (mostly from salinization, nutrient depletion and erosion). Over the past 50 years approximately 2 of the 8.7 billion hectares of agricultural land have been degraded. As the threat of climate change is fueled by agriculture sector development, the global potential for agriculture to drive broad-based economic growth will be diminished.

Freshwater Resources. Increased floods and droughts are among the predicted effects of global warming in the coming century, both of which will impact the availability of fresh water resources. Lakes, streams and groundwater would all be affected, potentially compromising the ability of these resources to provide adequate water for domestic needs, industry, navigation, hydropower, agriculture and biological communities.

Global climate change will intensify the hydrological cycle: it will rain more in some areas because of greater evaporation from warmer surface waters and greater transpiration, and less in other regions. Greater flooding may result from increased convective precipitation, increased snow melt and more intensive tropical storms. Increasingly large or frequent flooding will likely exceed safety parameters designed into dams and levees. A shift from snow, in which water is typically stored for weeks or months, to rain, which runs off immediately, will shift periods of high flow from spring to winter, away from the growing season.

Other potential disruptions could include impoundments of river systems, groundwater depletion, and increased flooding as a result of land-use changes, such as deforestation and over-grazing. Stream hydrology will change with climate, but enormous uncertainties discourage quantification. More frequent or more severe droughts would disrupt transportation, decrease municipal and industrial water supplies, and threaten aquatic biodiversity. Rivers in arid regions, such as the Nile, will be very sensitive to climate change, while those in the humid tropics, such as the Mekong, will be relatively insensitive.

Freshwater wetlands, such as flood plains, are extraordinarily valuable ecosystems because of their role in flood control, water storage, water purification and natural habitat. Wetlands will generally shrink in a warmer climate because of increased evapotranspiration. Loss of wetland habitats would risk the extinction of diverse plants and animals around the world, and would threaten pastoral societies, such as those in the Sahel, which depend on marshes during summer droughts. The loss of large peatlands in Indonesia, Russia and Canada may release large amounts of stored carbon to the atmosphere.

Biodiversity. Climate change will almost certainly decrease biological diversity over the next century. Many species will have to migrate or shift their ranges in response to changes in climate. Species will shift either toward the poles or to higher elevations to avoid increasing temperatures. If the entire range occupied by a species becomes unsuitable due to climate change, species will have to either colonize a new, more suitable habitat or become extinct locally. To survive these changes and avoid local extinction, the species will need to be able to shift ranges quickly enough to keep pace with the changes limiting their survival and find suitable areas to colonize. Even if there are corridors of natural habitat available for migration, species will migrate at different rates, fundamentally changing the structure of natural communities.

Ultimately, many species may not be able to keep pace. Current models suggest that

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terrestrial ecosystems are likely to experience a warming-induced poleward shift of roughly 250 km over the next century. While animal and insect species may migrate, they depend upon healthy communities of specific plants and trees for their survival. For tree species, migration will be more difficult. While light-seeded tree species may be able to colonize new territory at the rate of up to two kilometers per year, heavy-seeded species may disperse only 100 meters per year. Under current climate change models, even the most "mobile" trees will have trouble keeping up with forecasted rates of change. High latitude ecosystems, such as Siberian forests, will be particularly at risk, since temperatures at high latitudes are expected to experience greater temperature increases.

Climate change may also lead to an increase in new diseases and expansion of old ones. The last few years alone have seen outbreaks of disease in wild bird populations. Increasing concentrations of waterfowl, due to decreased wetlands availability and/or changed climatic conditions will facilitate disease transmission.

Finally, certain groups of species and ecosystems will face special risks from climate changes. Migrating species, such as Neotropical-Neartic migrant birds (eg. warblers and thrushes) or African ungulate species (eg. zebra and wildebeest), depend upon environmental cues to signal their migration and seasonal resources to survive migration. If cues are no longer synchronized due to climate change, these species may face population declines. Dramatic declines in North American shorebird populations already have been documented, perhaps in response to climate changes. Similarly, species in high montaine ecosystems, such as the paramo of Ecuador, will be particularly vulnerable; species in the highest elevations will have nowhere to retreat to avoid rising temperatures. And at the other end of the spectrum, coral reefs and their associated high biodiversity, will face risks as severe storms increase and the corals suffer from bleaching due to pigment loss as ocean temperatures rise.

Successful efforts to conserve biodiversity will help mitigate climate change. The destruction of the world's forests is a significant source of atmospheric carbon, annually releasing nearly one-third of the amount emitted through fossil fuel consumption. The forests, grasslands and coastal ecosystems in which biodiversity resides are a significant sink for carbon. By preserving habitats and natural corridors carbon sinks are protected and rejuvenated as the adaptive capacity of the natural environment is increased.

Coastal Zones. Coastal zones are among the most economically valuable ecosystems on earth. Sixty percent of the world's population lives within 80 miles of an ocean or seashore. Two-thirds of the world's cities with populations of 2.5 million or more are near tidal estuaries. Many of the world's poor are crowded into low-lying coastal areas in countries such as Egypt and Bangladesh. Climate change could severely affect coastal ecosystems and societies.

Flooding and storm damage of coastal regions would be one of the most direct and graphic consequences of global climate change and higher sea level. Gradual inundation, salinization of soils and water supplies, and rapid erosion would result from encroaching seas, and catastrophic death and damage are expected as storms reach further inland and over-run protective barriers. Millions of displaced people, billions of dollars in lost and damaged infrastructure, and humanitarian crises could be expected.

Sea level is rising at a rate that is two to five times greater than recent averages and is predicted to rise about one-half meter in the next century. Ecosystems that have generally migrated landward, such as mangrove forests, salt marshes and barrier islands may now be caught between rising seas and extensive infrastructure. Further sea level rise would severely impact fisheries, human health, tourism industries, biological communities, freshwater supplies and financial industries around the world. If sea level were 50 cm higher today, the number of people flooded by storm surges in a typical year would increase from 40 million to 80 million.

Impact will vary from regions to region. Higher sea levels will directly affect or actually displace every citizen of island states such as the

Marshall Islands and Kiribati. Bangladesh is predicted to lose 18 percent of its land area, directly affecting 60 percent of its population, unless one billion dollars worth of protective measures are undertaken for threatened developed areas. Food scarcity could result from the loss of current farming practices. Six million people in Egypt, the primary recipient of U.S. development assistance, would be directly affected by rising sea levels. It is projected that the U.S. would lose a relatively small portion of the nation's land area, 12,500 square miles, but protection of developed areas would cost more than $156 billion dollars. It is estimated that the cost of programs to protect and develop soundly all coastal areas would be $6 billion annually.

Health and Nutrition. While there is much uncertainty about the impacts of climate change on health, it is clear that the potential for large direct and indirect effects exists. Direct effects will include increased heat-related mortality and increases in deaths related to extreme weather events (with the greatest consequences for vulnerable coastal populations). The potential indirect effects on health and nutrition are of even greater concern. These could include changes in the range of vectors and associated vector-borne diseases (eg. malaria); changes in the prevalence of non-vector borne infectious diseases (eg. cholera, especially in the absence of adequate sanitation); changes in food production and consequently nutritional health; and changes in water quantity and quality. For example, the Intergovernmental Panel on Climate Change has estimated that malaria cases could increase by 50 to 80 million per year from a current annual level of 500 million globally. The negative impact on child health and survival could have significant repercussions for efforts to reduce population growth; uncertainty over children's survival can lead couples to have more children as "risk insurance". Furthermore, the demonstrated links between child survival and fertility suggests that these health and nutrition impacts also would have repercussions for efforts to reduce population growth.

In developing countries, food security, access to potable water and adequate sanitation are among the cornerstones of public health. Currently, 1.3 billion people lack access to safe water, 1.9 billion lack access to sanitation, and about 800 million people are chronically malnourished. As already discussed, the probable effects of global climate change would be to make food and water supplies more tenuous, increasing the risks for these vulnerable populations. Large-scale migration may occur in response to these changes, and to flooding, drought and other natural disasters. Limited access to water, sanitation and food for those involved may severely compromise their nutritional and health status. In addition, urban air pollution, a by-product of fossil fuel use, could increase as a result of warmer temperatures, causing respiratory illnesses.

Development efforts in the health and nutrition areas are not typically designed to address climate change issues directly. Rather, these efforts focus on enabling people and societies to adapt and respond to epidemiologic and demographic changes. Climate change may considerably stress the systems and institutions through which health and nutrition programs are implemented, such as through the emergence or reemergence of health and nutrition problems in regions or countries where they were not previously issues. Thus, climate change could make current efforts in health and nutrition less effective simply by stretching limited resources across a broader set of more numerous health problems. The combination of worsened food security, decreased access to potable water, increased migration, range expansion and possible intensification of infectious diseases, and more frequent natural disasters could stress populations, as well as the capacity of the health systems and institutions that support them. The health and nutrition interventions that are already the cornerstones of development assistance in these sectors — such as improved capacity for surveillance, improved access to and quality of health services, micronutrient interventions, promotion of breast feeding and improved child feeding, health policy reform, and environmental health improvements — also strengthen the systems that are the front line defense for the well-being of vulnerable populations facing these threats.

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Governance. Climate change will challenge political systems and governance structures to reduce the root causes of the problem while seeking to meet the demands of the problem with a diminished pool of resources. This need to respond to the causes and the effects of climate change will create unique problems for effective governance.

Developing countries are periodically taxed by refugees of drought and rural economic stagnation, but the effects of climate change will expand the numbers of dislocated persons and magnify institutional demands and sociological pressures. A new and potentially enormous "environmental refugee" population may arise from agricultural areas suffering from prolonged drought and desertification and from coastal areas where fish stocks decline, and agricultural lands are being lost to rising seas.

Governance systems will be challenged first by the increasing numbers of urban immigrants. Feeding, housing, educating, providing health care and otherwise integrating these new urban residents will pressure existing infrastructure, and the political system will be expected to respond. Democratically elected leaders will need to adjust to the demands of new constituents with potentially divergent demands and political views, and these new residents may find themselves politically and physically dispossessed. The problem will be compounded as urban residents feel the effects of economic shifts and assume a dependent rather than a productive role, and as the impacts of climate change directly threaten urban areas.

As resources become more scarce, particularly where depletion is rapid, political and sociological conflict will inevitably result. History is replete with examples of political and armed conflict over natural resource scarcity. In countries where land tenure is unclear, resource allocation lacks legal definition and judicial systems need financing and capacity-building; conflicts over resource allocation will be difficult to resolve. In regions where water is scarce, decreased precipitation and sea water incursion may heighten tensions. Climate change will exacerbate these trends and make coping solutions increasingly difficult to implement.

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Climate Change and Development

The threat environmental degradation poses for sustained long-term growth and development is well-accepted. Until now, however, the international development community has focused predominantly on local environmental issues — concerns that have a visible and immediate affect on human health, agricultural productivity, national income or other local priorities. There is a natural predisposition to focus on compelling local problems, especially in communities where basic human needs are often unmet. While climate change may be one of the most profound threats to sustainable development, it is rarely seen as a local priority. Changes in climate are not immediately visible, and the greatest impacts are not felt in the short-term.

Strategies for addressing climate change, therefore, must strive to reconcile social and economic aspirations with the need to address local and global environmental threats. At the same time, efforts to promote development need to incorporate programs to help nations decrease vulnerability to the threats climate change poses.

The nature and extent of developing country vulnerability to climate change will ultimately depend not only on physical environmental changes, but also on the capacity of nations, regions and localities to adapt to those changes. Adaptability will partly be a function of the rate of change. Gradual changes will be easier to cope with than rapid ones. It will also be a function of human resources, investment resources and institutional structures. Skilled and well-managed nations, regions and communities will cope better than others, not only because of their internal capacity to solve problems, but also because of their ability to attract investment by offering a lower risk of failure.

This chapter explores the links between climate change and the development agenda. It discusses how climate change will affect efforts to foster sustainable development and how programs to promote development could impact greenhouse gas emissions.

Implications for development assistance

USAID's efforts already explicitly or implicitly strive to achieve climate-related goals. Working with local partners, business and non governmental organizations, USAID has been combating the threat of climate change since 1990. USAID's strategy has focused particularly on decreasing net emissions of greenhouse gases through interventions in the energy and land use sectors. As a result of that long-term emphasis, land use and energy sector programs are actively promoting more "climate-friendly" economic development. At the same time, coastal zone and freshwater resource management efforts, health and nutrition programs, and governance programs are decreasing developing country vulnerability and increasing the capacity to adapt to change.

The predicted impacts of climate change will almost certainly increase the need for humanitarian relief around the world. Not only will more severe weather events create sudden crises, the impact on political stability and governance could increase the number and frequency of "man-made" humanitarian crises resulting from natural causes. Humanitarian relief efforts today focus in part on trying to predict and prepare for severe events. For example, USAID is supporting monitoring of the current El Niño event and preparing for potential drought in southern Africa, as well as increased flooding in Asia and Latin America. Climate change will undoubtedly increase relief costs due to severe events, vulnerable populations and droughts.

The challenge in the coming century will be to ensure that efforts to mitigate and adapt to climate change are not overwhelmed by the demands for emergency relief. As more and

more resources are expended on dealing with the human costs of climate change, the ability of societies and the international community to address root causes of emissions and foster long-term adaptation will be compromised.

USAID programs in a range of sectors currently mitigate emissions and decrease vulnerability to climate change-related threats.

Energy. USAID programs promote renewable energy; energy efficiency; and clean energy generation, distribution and transportation. Programs have focused on three areas in the energy sector: demand for energy services, choice of fuels for those services, and efficiency in energy production. The Agency uses a variety of approaches to achieve those goals— training and education, public-private partnerships, technology cooperation, market transformation, sector restructuring, demonstration projects and voluntary programs.

Many USAID-assisted countries have severe market barriers to the implementation of sustainable energy policies, such as significant subsidies for energy use and inadequate market-based incentives for efficiency. These market imperfections inhibit efficient generation and use of power. USAID provides technical and analytical assistance to develop model power purchase agreements, facilitate power sector restructuring and privatization, and draft pertinent energy sector legislation and regulations. The goal is to help structure a power sector that incorporates incentives for cleaner energy production and use. Voluntary programs also have played an important role in encouraging investment in energy efficient products and services in nascent markets.

Industrial Energy Efficiency in Mexico to Decrease Emissions

The Mexican industrial sector consumes approximately 2 billion tons of oil equivalent annually consuming natural gas, fuel oil, bagasse, diesel oil and liquified petroleum gas; for each percent of industrial energy savings on a national level, Mexico could avoid 1 million tons of carbon dioxide emissions.

One component of USAID's energy program in Mexico focuses on improving the operating efficiency of boiler and steam systems in partnership with industry. The goal is to develop a pilot program that could be expanded nationally. USAID experience indicates that a savings of up to 7.9 percent in energy consumption is possible with boiler tune-up programs. A 7.5 percent savings in consumption is possible with steam system improvements. Efficiency improvements of 7.9 percent would reduce by 40 percent or more hydrocarbon and carbon monoxide emissions, delivering a significant local air quality benefit.

The steam efficiency program in Mexico is being designed to catalyze private sector investments in energy efficiency. It comprehensively examines the opportunities for industrial efficiency, potential cost savings industry could accrue and the financing necessary. Ultimately, it will reveal the opportunities to introduce national steam system efficiency standards. The audits performed through the project will build technical and institutional capacity, spur private sector investment in efficiency, and support small energy consulting firms. In the longer-term, the program will contribute to the introduction of efficiency standards for boilers and steam systems.

USAID is undertaking the steam and boiler efficiency project in partnership with CONAE, the Mexican national commission for energy savings. Initial audit results show savings potentials of 5 to 10 percent of fuel consumption, which would pay for themselves in approximately 2 years.

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These programs also can play an important role in helping to surmount the market barriers to the use of "climate-friendly" technologies.

Through demonstration and pilot projects, USAID is able to introduce low- or non-carbon emitting energy sources and technologies to developing and transition countries. USAID works with public and private sector counterparts in the U.S. and abroad to select appropriate "climate-friendly" technologies. The Agency also jointly funds pilot projects to demonstrate the benefits in terms of pollution prevention and energy savings. Examples of USAID demonstration activities include a pilot pollution control program at a Mexican power plant, an electric vehicles project in Thailand and a comprehensive industrial demand-side management program in the Philippines.

Complementing the range of USAID activities to promote "climate-friendly" energy technologies is a comprehensive effort to build human and institutional capacity. The Agency supports a range of activities designed to provide information and training regarding the economic, environmental and development benefits of environmental technologies. Efforts also focus on building the capacity of technicians and managers to select, implement, operate and monitor equipment. Training and capacity building is done using U.S.-based courses, field training, workshops, information systems development, exchange visits, databases and alumni networks.

Forestry. USAID's forestry and climate change program involves strengthening the sustainable management of natural forests and tree systems in key countries and regions by promoting the development and dissemination of sustainable forest management policies and practices; management, monitoring and control of forest fires; development and dissemination of reforestation, agroforestry and sustainable agriculture practices; analysis and awareness of non-forest sector policies on forest management and conservation; participation of local communities in sustainable forest management and policy development; and establishment of integrated assessment and monitoring systems to better understand changes in forest health, biodiversity conservation and carbon sequestration.

Reducing the Destruction of Forest Carbon Sinks: Reduced Impact Harvesting

In many countries around the world, poor logging practices damage soil, trees and tree seedlings, and increase woodwaste on the forest floor. Recent studies show that Reduced Impact Harvesting (RIH) could reduce forest damage and the release of carbon, while saving timber companies money.

USAID is assisting efforts by the Tropical Forestry Foundation (TFF), the Center for Forestry Research, the U.S. Forest Service, the Brazilian and Indonesian governments, and others to establish RIH demonstration sites in Brazil and Indonesia— two USAID-assisted countries with large timber resources and a great deal of timber exploitation. The objective of the program is to encourage widespread adoption of RIH techniques.

Even in its earliest stages, the program is showing signs of success. RIH techniques have generated widespread interest at universities and research centers, and among timer trade groups and lending institutions. In Brazil, the World Bank redesigned an $18.1 million forest management program to incorporate RIH after seeing the benefits of the approach. Malaysia and Indonesia have incorporated principles of RIH into forest sector policies. The International Tropical Timber Organization recently agreed to fund a series of workshops to expand adoption of RIH in Latin America.

To help protect existing carbon sinks and reduce emissions from destructive forestry practices, USAID has successfully promoted technologies that greatly reduce environmental damage to soils, trees, and tree seedlings thereby maintaining the economic value of forests. For example in Brazil, to curb destructive timber extraction while increasing economic benefits to local logging companies, USAID has supported the development of a model for reduced-impact harvesting (RIH) using research and demonstration plots at eight forest sites in the Brazilian Amazon. Here, environmentally sound timber extraction techniques are demonstrated and promoted for adoption by private timber association members to reduce forest damage and carbon loss through improved forest management. To address the risk of forest fires, a major source of carbon emissions, USAID is supporting fire management training and examining sources of conflict that may be an underlying cause of fire. In recent years, USAID increased the political visibility of extensive fires that emit greenhouse gases and destroy carbon sinks in the Amazon. USAID also has helped to monitor forest burning through the use of satellite imagery in partnership with the Brazilian Government and non governmental organizations.

Urbanization. USAID is working with cities and industrial facilities worldwide to reduce pollution from urban-based activities, including the emission of greenhouse gases. For example, in India and Mexico, USAID has supported the use of energy efficiency and pollution prevention audits to lower energy consumption in the textile, electroplating and foundry industries. In Tunisia, Morocco, Botswana, and Jamaica, USAID works with local governments to improve the management of municipal landfills and control the emission of methane gas. More broadly, USAID administers a credit program that provides cities with access to capital markets to finance investments in infrastructure and technologies to protect human health and environmental quality, including investments that will reduce greenhouse gas emissions.

Biodiversity. USAID promotes the conservation of biological diversity on more than 40 million hectares of land in more than 25 countries. The focus of the program is the conservation of the natural ecosystems in which biodiversity occurs. Since most of this area is forested, these efforts protect existing carbon sinks and mitigate climate change.

Biodiversity Conservation and Climate Change

USAID's biodiversity conservation program in Madagascar is a good example of how ongoing biodiversity initiatives help mitigate climate change and its impacts on biodiversity. Madagascar is one of the highest biodiversity conservation priorities in the world. The island currently has less than 15% of its original forest cover, and at current deforestation rates, forest cover will disappear within 25 years.

USAID has implemented an aggressive program to combat deforestation and maintain the remaining large tracts of forest on the island. Already, there is evidence that deforestation in and immediately surrounding key protected areas is halting. This has been accomplished through an integrated program of improved park management and surveillance, combined with outreach and development initiatives designed in partnership with local communities. Without these interventions, deforestation on the island would likely continue, permanently destroying Madagascar's significant carbon-sequestering forests and reducing the ability of many species to adapt to climate change.

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Combatting Climate Change in an Urban Context

The Sustainable Cities Initiative (SCI) enhances environmentally sound economic growth through broad-based partnerships to promote efficient resource use in cities. The program promotes municipal, non-governmental and private sector investments in energy efficiency and clean energy technology, and leverages funding from international financial institutions and foundations.

In Ahmedabad, India USAID and the U.S. Environmental Protection Agency are supporting an effort to address some of the critical environmental challenges faced by the city. The program has created an alliance involving the Ahmedabad Municipal Corporation (AMC), the Ahmedabad Electricity Company (AEC) and Arvind Mills, one of the largest denim producers in the world which is located in the area.

SCI has helped AEC design and implement three pilot programs to test and install high efficiency equipment. AEC is investing $700,000 in energy efficiency in FY97, and will scale-up its projects in 1998. AEC expects to reduce demand by 24 megawatts, avoiding emission of 133,000 tons of carbon dioxide.

AMC has created an energy efficiency unit with private foundation support as a result of the program. AMC is studying the potential savings the city might accrue from streetlight upgrades and water pumping improvements. Already AMC has invested to improve power factors, and retrofit water pumps and streetlights to reduce energy costs and consumption.

As a result of SCI, Arvind Mills is developing an environmental management system to meet the requirements for ISO 14001 certification. The company has also identified environmental improvements it will introduce in 1998. Arvind Mills' leadership has lead several other manufacturers to perform environmental audits that will reduce pollution.

It is too early to assess the results of these efforts, but the project is a good example of an integrated and coordinated approach to reducing urban greenhouse gas emissions.

The Agency supports initiatives that help manage biologically important areas, identify conservation priorities, strengthen policies to promote conservation, conduct applied research to inform conservation efforts, increase public awareness of biodiversity's role and conservation, and identify sustainable means of financing conservation efforts. USAID primarily focuses on building local capacity for biodiversity conservation. In some regions, USAID also helps support the conservation of corridors of natural areas. These natural corridors will help decrease the vulnerability of natural communities to climate change by providing corridors for species migration.

Coastal Zones. USAID is promoting Integrated Coastal Management (ICM) in diverse communities in the Philippines, Indonesia, East Africa, Mexico, Central America and the Caribbean in an effort to promote the sustainable use of coastal resources while developing the information, skills and socioeconomic relationships necessary to implement these plans. In Africa work is focused on major coastal cities where resources already are degraded and significant infrastructure already is at risk. In Mexico, USAID is working to maintain healthy ecosystems in a relatively pristine setting while supporting the tourism industry.

Decreasing the Climate Change Risk in Coastal Zones

Following devastating floods in 1987 and 1988, USAID developed a program to broaden water resources management in Bangladesh. The objectives were to strengthen local capacity to predict flooding, improve short-term disaster preparedness, and optimize investments in flood control, irrigation, drainage and domestic water systems. As a result, modifications were made to proposed flood control structures that would have interfered with fisheries and agricultural drainage while offering marginal protection. To predict annual flooding, a Geographic Information System using satellite data, cloud-penetrating radar and advanced river survey equipment was introduced. These immediate improvements in Bangladesh's ability to manage flood variability also enhanced Bangladesh's ability to manage the long-term hydrological effects of climate change.

USAID also is making special efforts in several nations to protect mangrove wetlands, which protect against erosion and storm surges while providing habitat to diverse biological communities and commercial fish stocks. Pressures from shrimp and fish mariculture to clear mangroves are balanced against long-term community needs through the ICM process. Successful economic development may draw more people and infrastructure to the crowded and vulnerable coastal zone, but planned growth will offer profound advantages over the current situation. Communities, non governmental organizations, university partners, and the private sector are working to develop guidelines and tools for conservation and planning.

The Road Ahead

A great deal can be done to maximize opportunities for a less carbon-intensive path to development. Chief among them is to focus initially on the "win-win" opportunities to enhance economic development potential while reducing environmental risks. More efficient use of energy is the classic example of a "no regrets" approach that can yield increased economic efficiency and less pollution as it reduces the growth in greenhouse gas emissions. It also is critical to focus on the subset of climate change threats that simultaneously contribute to significant local pollution problems. Fossil fuel combustion causes most urban air pollution. Efforts to decrease greenhouse gas emissions also can vastly improve urban air quality, increasingly a local priority in a rapidly urbanizing and more democratic developing world.

Nonetheless, it is important to recognize that no matter how effectively the development assistance community integrates climate change-related concerns into its efforts to promote sustainable development, some conflicts with the climate change agenda will remain. Efforts to foster economic growth and industrial development will increase energy consumption. In turn, providing sufficient energy for industrial, commercial and residential use in a growing economy will increase greenhouse gas emissions. Developing country emissions will continue to grow to meet burgeoning demand. Key to meeting the climate challenge will be ensuring that growth occurs in the most efficient and least polluting manner possible.

Our climate change objective needs to be to develop and emphasize the critical programs that will minimize the threat of climate change while serving other development objectives. This offers opportunities to strive for economic and social development while reducing the threats posed by climate change. Where win-win alternatives are limited, the central challenge will be resolving trade-offs between climate change mitigation and development assistance priorities.

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The USAID Climate Change Action Plan

Summary

USAID will implement the President's commitment to assist developing nations and countries in transition through a comprehensive program that serves U.S. interests as it meets developing and transition country needs. The program will build on USAID strengths—its local presence, focus on local priorities, and experience in reconciling economic development and environmental management goals—as it helps lead the development assistance community toward greater cooperation in promoting an environmentally sound approach to sustainable development.

Designed to address the links between climate change and development, the USAID Climate Action Plan will focus particularly on three areas:

- Decreasing the rate of growth in net greenhouse gas emissions by decreasing greenhouse gas sources and maintaining or increasing greenhouse gas sinks
- Increasing developing and transition country success in achieving the goals of the United Nations' Framework Convention on Climate Change (FCCC)
- Decreasing developing and transitional country vulnerability to the threats posed by climate change

The $1 billion committed by President Clinton at the U.N. will be focused on decreasing the rate of growth in net emissions from developing nations and transition countries, as well as increasing successful achievement of the goals of the FCCC. Efforts to decrease vulnerability to the threats posed by climate change will complement this commitment. Programs that reduce vulnerability will be integrated into sector programs that already have as their mandates improving coastal zone management, decreasing the threats posed by emerging diseases, strengthening human and institutional capacity, and fostering improved agricultural and natural resource management methods.

A number of central tenets will underlay USAID efforts in each of these areas. USAID will:

- Build upon a large array of past and ongoing activities that promote technology cooperation, create partnerships with the U.S. private sector, and develop human and institutional capacity
- Collaborate more closely with other international institutions to leverage a larger pool of resources, and ensure that bilateral, multilateral and private resources are targeted to foster environmentally sound development
- Strengthen efforts to attract and channel private financing into clean technology markets
- Build upon USAID's strength in addressing fundamental policy and institutional transformations, from the perspective of our developing and transitional country partners

The core of the Action Plan will be programs that promote "climate-friendly" development. USAID will strengthen its efforts in the energy sector that create markets for renewable energy, promote energy efficiency, foster the removal of energy price subsidies and introduce market forces in the power sector. The Agency will also build on programs to facilitate more sustainable forest management and agriculture by promoting reduced impact harvesting, encouraging community forestry, improving land tenure legislation and promoting improved agricultural methods. It will maintain its commitment to habitat protection, especially in forested areas.

An important part of the Initiative will be to more closely manage, track and evaluate the range of climate-related programs to ensure that they are effectively decreasing emissions of greenhouse gases from USAID-assisted countries. The greater emphasis on monitoring and evaluation will guarantee that over the course of the Initiative, strategic emphasis will be sharpened to focus on those efforts that are having the greatest impact. USAID will strive to identify and

use those tools and approaches that are most effective in combating climate change. Every effort will be made to ensure that programs directly lead to reductions in emissions that are significant and real. Over the course of five years, the focus will be honed based upon lessons learned.

Through the Action Plan, several new areas of emphasis will be added to the USAID portfolio. Examples of these are:

- USAID will quantify the health and productivity costs associated with the local air pollution that fossil fuel combustion generates in an effort to expand the definition of "win-win" efforts to decrease greenhouse gas emissions.

- USAID will undertake an analysis of the specific regional and local vulnerabilities posed by climate change. That study will be used to identify "hot spots"—areas of particular vulnerability that USAID needs to address.

- USAID will facilitate private sector transfer of clean energy technology to key countries and regions; a first step in this direction is the promulgation of "Global Climate Change Technology Cooperation Agreements" with key countries.

- USAID will focus on the urban-climate nexus and address opportunities to meet local air quality concerns while decreasing net greenhouse gas emissions.

- USAID will enhance environmental education and outreach to involve non-governmental organizations, the private sector and governments in efforts to promote development while reducing the rate of growth in net greenhouse gas emissions.

- USAID will work with the donor community to more effectively promote development that minimizes the growth in greenhouse gas emissions.

The Agency Focus

The USAID Climate Change Action Plan will encompass three areas of emphasis: mitigating greenhouse gas emissions from developing nations and transition countries, facilitating developing and transition country success in achieving the goals of the FCCC, and reducing vulnerability to climate change. Through a concerted effort in those three areas USAID will strive to balance the need to raise the standard of living in developing nations and transition countries with the obligation to reduce the rate of growth in net greenhouse gas emissions. USAID's investment, while substantial in terms of the U.S. Government's development program, will be quite modest in terms of the problem at hand. Therefore, a strong emphasis will be placed on leveraging the impact of other donors, the private sector and non-governmental organizations, as well as ensuring that the technical, institutional and policy environment is conducive to decreasing the rate of growth in emissions.

In fulfilling the President's commitment, USAID will ensure that at least $1 billion in assistance is devoted to assisting countries over the next five years to decrease the rate of growth in net emissions of greenhouse gases and to facilitating developing and transition country achievement of the goals of the FCCC. In addition to that $1 billion commitment, USAID will continue to devote substantial resources to decreasing the threats that climatic shifts pose to developing and transition countries. Efforts to decrease vulnerability will be firmly grounded in programs to combat disease, destruction of coastal zones, desertification, and decreasing agricultural productivity and other threats that will be exacerbated by climate change.

1. Decreasing the net rate of growth in emissions

Central to any comprehensive strategy that integrates climate change-related goals into the development assistance agenda is a focus on reducing the rate of growth in greenhouse gas emissions. USAID efforts to reduce emissions will strive to promote economic and social

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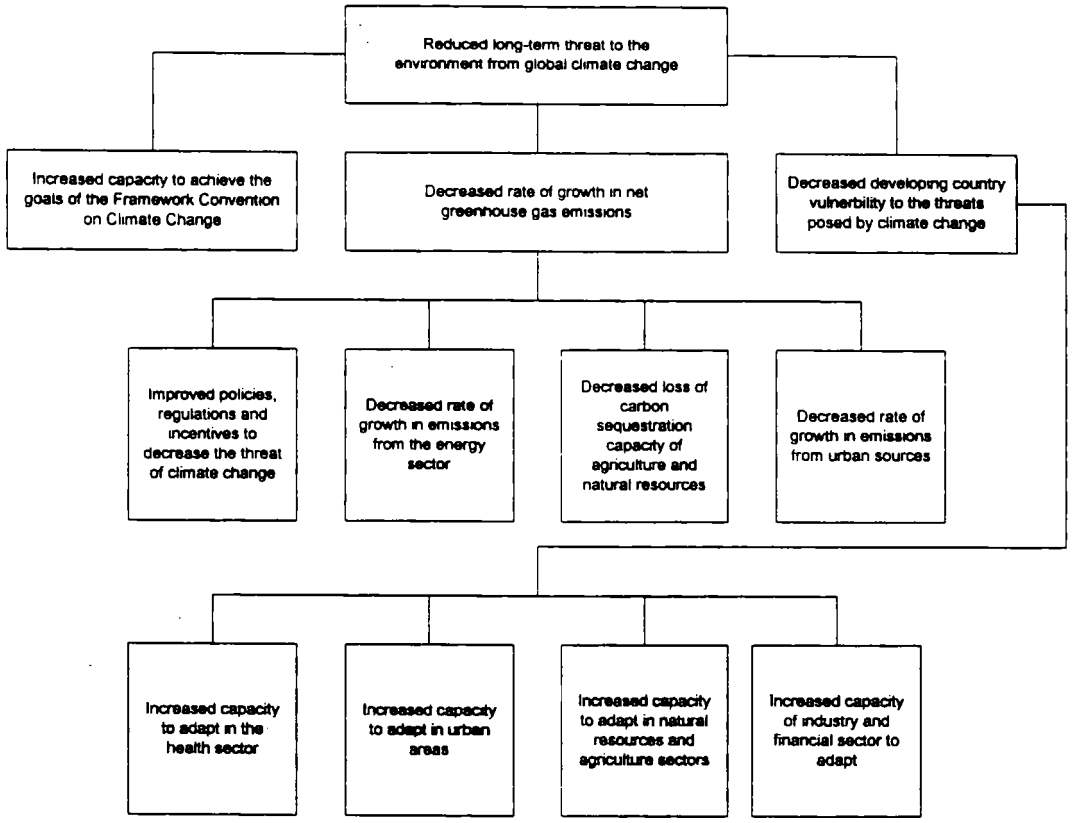
Proposed Agency-wide Special Objective on Climate Change



Note: Though part of the USAID Climate Change Action Plan, activities related to the achievement of objectives in shaded boxes will not receive funding as part of the President's Initiative.

development that is more "climate-friendly." The USAID approach will emphasize the transfer of technologies, policy and regulatory reform, and human and institutional development that will simultaneously promote development and reduce the growth in emissions. That focus will enable USAID to ensure that the development it fosters is truly sustainable—environmentally as well as institutionally.

USAID efforts to decrease net emissions of greenhouse gases will focus on reducing the growth in net greenhouse gas emissions and increasing greenhouse gas sinks. In the energy sector, the focus of the Initiative will be on activities that result in the following improvements:

- The substitution of less carbon-emitting fuel sources for more carbon-intense fuel sources in the generation of heat, electricity or cogeneration (eg. the use of natural gas instead of coal)
- The use of non-fossil energy sources, including renewable energy (eg. solar, wind, biomass, mini and micro hydro or geothermal) instead of coal, oil, natural gas or unsustainably harvested fuelwood
- Increased efficiency and environmental soundness of fossil fuel-based power generation (eg. through plant rehabilitation, operations and maintenance improvements, modernization, cleaner coal-combustion technologies and re-powering with advanced boiler technologies)

- Improved transmission and distribution efficiencies in power systems using fossil fuels for power generation
- Increased end-use energy efficiency (eg. industrial processes, lighting, appliances, HVAC [Heating, Ventilating, and Air Conditioning] systems, buildings, cookstoves, etc.) in power systems using fossil fuels
- Decreased use, increased efficiency or substitution of less carbon-emitting fuels in transportation systems
- The introduction of market forces and other regulatory and non-regulatory incentives that promote more environmentally sound power sector investment (eg. power sector restructuring, elimination of price subsidies and monopolies, and introduction of standards)

USAID will have a wide range of public, private and non-government partners in implementing the strategy. Primary collaborators in the energy sector will include the U.S. Department of Energy and its national laboratories; the U.S. Environmental Protection Agency; multilateral development banks and energy partners from the public, private and non-governmental sectors throughout the world.

In the land use sector, activities will qualify as climate change-related that either increase the storage of carbon in ecosystems or land-use systems, or decrease the release of carbon stored in biomass due to human activities. As part of the Initiative USAID will implement and manage programs that result in the following improvements in land use:

- The preservation, re-establishment or more sustainable management and use of forests, trees and denuded lands
- The maintenance and preservation of wetlands and mangroves
- Decreased burning of savannas, forests and brushland
- Reduced slash-and-burn (shifting) cultivation
- Increased soil organic matter and decreased soil erosion
- Increased use of biofuels

Among USAID's primary partners in the land use sector will be the U.S. Department of Agriculture, U.S. Department of the Interior, Peace Corps and U.S. Forest Service. Internationally, USAID will continue to work closely with a wide range of international, regional, national, and local partners, and Centers for Genetic and International Agricultural Research (CGIAR) including the International Center for Research in Agroforestry (ICRAF), the Center for International Forestry (CIFOR).

Finally, interventions that decrease emissions of methane to the atmosphere from urban solid waste or animal husbandry will be considered part of the USAID Climate Change Action Plan.

A range of approaches will be used to achieve the objectives identified for the land use, energy and industrial sectors. Some will directly affect emissions including pilot and demonstration projects, development and implementation of management plans and technology cooperation activities. Other interventions will have an indirect impact, such as power sector restructuring, elimination of price subsidies, introduction of improved land tenure legislation, incorporation of natural resource endowments in national income accounting, institution of building and appliance standards or the promotion of sustainable forest industries.

2. Increasing developing country success in achieving the goals of the FCCC

To truly stave-off the threat of climate change, action by all nations, developed and developing, will be required. Participation in the negotiation and implementation of the terms and spirit of the FCCC will be fundamental to finding a global solution. A portion of the resources under the Action Plan will be used to enhance developing nation and transition country ability to achieve the goals of the FCCC.

The most critical element in assisting developing and transition countries to take on binding commitments under the FCCC will be their ability to reconcile climate objectives with their economic and social development goals. In support of that objective, USAID will work in

collaboration with other U.S. departments and agencies to promote "Global Climate Change Technology Cooperation Agreements" with key countries. These agreements will help to overcome the barriers to promoting "climate-friendly" development by creating a participatory process through which the combined efforts of governments, private sector and non-governmental organizations can be focused on promoting market-based transfer of cleaner technologies and infrastructure.

The U.S. Country Studies Program and the U.S. Initiative on Joint Implementation have been important vehicles for collaborating with developing nations. USAID programs will seek to enhance further developing country capacity to implement the FCCC. In addition to USAID assistance that helps decrease the net rate of greenhouse gas emissions, efforts that result in the following will be considered components of the President's $1 billion commitment:

- Agreements to cooperate in facilitating public-private partnership that transfer "climate friendly" technology
- Creation of national emissions inventories, national emissions budgets, national climate change action plans, and national communications
- Stimulation of joint implementation/activities implemented jointly (JI/AIJ) projects and participation in JI regimes
- Establishment of legislative and regulatory structures, and local capacity to participate in emissions trading regimes
- Acceptance of greater developing country commitments under the FCCC
- Enhanced capacity to track and monitor greenhouse gas emissions and vulnerability to climate change

Among USAID's primary partners will be the U.S. Department of State, U.S. Environmental Protection Agency, U.S. Department of Energy, U.S. Country Studies Program, U.S. Initiative on Joint Implementation as well as government, public and private sector representatives in the U.S. and abroad. Once created, the Inter-Agency Climate Change Program will be an important collaborator.

3. Decreasing developing country vulnerability to climate impacts

Among U.S. government agencies, USAID is unique in its ability to help reduce developing country vulnerability to impacts of climate change by helping them to enhance their capacity to adapt to change and cope with challenges. This suggests a special role for USAID in the vulnerability area as a part of the portfolio of developing country assistance related to climate change.

USAID has a substantial portfolio of programs that increase the ability of nations to manage crises and adapt to environmental, social and political change. These programs are grounded in local needs and priorities, and local circumstances must drive them. Often, these programs are not focused on combating climate change-related threats; they decrease the vulnerability to climate change as they meet other local needs. For example, most efforts to increase capacity to cope with one type of crisis (such as the outbreak of a disease epidemic, or the need to improve planning for extreme climatic events such as El Niño) also increase capacity to cope with other crises.

To ensure that the specific threats associated with climate change are being considered in planning and programming, USAID will undertake an analysis of the specific regional and local vulnerabilities climate change poses. That study will be used to identify "hot spots"—areas of particular vulnerability that USAID needs to address. The findings will be used to inform and help focus USAID efforts to help countries adapt.

USAID efforts to reduce vulnerability will complement the $1 billion in support that will go toward the Initiative's two other foci. Programs that have the following results will be an integral part of the Agency's Action Plan:

- Increased preparedness for natural disasters (eg. floods, droughts and tropical cyclones)
- Increased adaptability and efficiency of agricultural systems, municipal management, water resources and coastal

zone management and public health systems
- Maintenance of healthy, resilient ecosystems, especially those that provide protection against threats of climatic change (eg. grasslands, forests, wetlands and coral reefs)
- Improved domestic and international capacities for conflict-resolution regarding shared resources (eg. water and arable land)

Strategies to improve the ability to cope with stresses resulting from global climate change will include information and education campaigns, physical infrastructure investments (for example in coastal areas), regulatory initiatives, and research and development (eg. to develop crop varieties adapted to changed environmental conditions).

Partners with USAID will include the World Bank; regional banks; the United Nations Development Program (UNDP); United Nations' Food and Agriculture Organization (FAO); Global Environment Facility (GEF); United Nations Environment Program (UNEP); U.S. Department of Agriculture, U.S. Department of the Interior, International Union for the Conservation of Nature (IUCN), the National Oceanographic and Atmospheric Administration; a wide range of bilateral donors, host country institutions and non-governmental organizations and U.S. private voluntary organizations and non-governmental organizations.

Tools and Techniques

To achieve the results above, USAID will use a range of tools and approaches, including policy reform, institutional capacity building, technology cooperation, education and outreach, and information collection and dissemination in combatting climate change. USAID also will place particular emphasis on four additional tools USAID believes will be particularly critical in

Decreasing Vulnerability to Climate Change by Improving Shared Resource Management

USAID recently sponsored water policy dialogues in the Central Asian Republics of Kazakstan, Kyrgyzstan and Uzbekistan in response to a 1996 water allocation crisis that arose along a river the countries share. Faced with diminished heating fuel supplies during the winter of 1995-96, the Kyrgyz Republic accelerated hydropower production, reducing Spring water availability for agricultural production in neighboring Uzbekistan and Kazakstan.

In May 1996, the three governments signed a declaration agreeing to develop coordinated strategies of water allocation and management for transboundary flow; develop legislation and economic tools for water resource allocation; and use the Toktogul hydropower dam in conjunction with a program to exchange hydropower for gas, coal and oil products. USAID helped organize high level meetings involving the three governments to develop an implementation strategy. Participants discussed the need to establish an inter-republic water rights policy incorporating a water pricing scheme for end-user payment, quality guidelines, efficiency measures, and a management structure to promote stability and shift production decisions to water users, particularly in the agriculture sector.

This program demonstrates the importance of a deliberative policy-focused approach to allocating natural resources that may be threatened by climate change. USAID helped advance development of a long-term solution to water scarcity by promoting open and constructive dialog using participatory approaches to resource sharing.

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mitigating greenhouse gas emissions: technology cooperation, partnerships with the private sector, collaboration and coordination with other bilateral and multilateral donors, and the use of credit to foster trade and investment in "climate-friendly" technologies and projects. Each will be part of an integrated strategy to promote development while reducing the growth in greenhouse gas emissions. Over time, USAID will focus on those interventions that are proven most effective.

Policy Reform. Fundamental in reducing the long-term threats to environment and development from global climate change will be the role of policy reform. Economic restructuring and democratic decision-making do not necessarily mean deregulation; they mean the creation of a policy and regulatory environment that ensures fairness and equity while creating incentives for environmentally and socially sound trade and investment. Policy reform is important because it is a way to send the correct signals for decentralized decision-making, while demonstrating a change in priorities, needs and directions. By creating incentives, it very efficiently mobilizes resources through voluntary action in the national and global interest.

Public policy-making is a prerequisite if progress is to be achieved in reducing emissions and vulnerability, as well as fostering international collaboration. A range of policy reform efforts can and are undertaken because they promote economic and social development; often they are critical means by which to decrease the threat of climate change. Energy sector restructuring, improvements in land tenure regulations, the removal of price subsidies, and the establishment of building and appliance standards are all policy reform efforts that promote development that is less carbon intensive. For example, developing countries have reduced energy subsidies by 40 percent since 1990; this has lead to significant reductions in the rate of growth in carbon emissions. A critical element of the Action Plan will be assistance to facilitate policy and regulatory reform that will hasten economic and social development in a less carbon-intensive manner.

Private Sector Partnerships. Private companies will be a key strategic partner in the Agency's climate action plan. While the commitment of $1 billion over five years is significant for the U.S. government, it will not be sufficient to make an appreciable difference on climate issues in developing and transition countries. It will be critical to engage the far greater resources—human, technological and financial—of the business community.

Already private capital flows vastly outstrip public flows to developing nations and transition countries. In 1996, private capital to these nations totaled $243 billion while official development assistance fell to $40 billion. Private capital today accounts for 86 percent of total long-term capital flows to developing nations and transition countries. As developing country markets open to permit greater private sector trade and investment, the dominant role of the private sector will increase.

The focus of efforts to create private sector partnerships will be on promoting cleaner urban development, industrial development and energy sector expansion. In urban settings, USAID will foster private sector investment to reduce emissions from the transportation sector, municipal infrastructure and in the built environment. The goal will be to improve local air quality and health while reducing net greenhouse gas emissions. In the energy sector, USAID will promote more environmentally sound expansion of the power sector, and overcome market barriers to commercialization of renewable energy and energy efficiency. The approach will involve removing barriers to private sector entry, and promoting private trade and investment. Finally, in fostering cleaner industrial development, USAID will build on the successful model of the U.S.-Asia Environmental Partnership to create regulatory and non-regulatory incentives that will encourage the use of clean industrial technologies and practices.

Technology Cooperation. Technology cooperation will play a critical role in determining the extent to which developing countries are able to achieve the goals of the FCCC. To help them pursue less carbon-intensive economic

The Role of Partnerships with the Private Sector: The Utility Partnership Program

Over the last five years, in partnership with the U.S. Energy Association (USEA), USAID's *Utility Partnership Program* has paired over 35 utilities in developing and transition countries with sister U.S. utilities. Additional partnerships, including five more in India, are planned in the near future.

Each utility pair has a specific workplan structured to foster such efforts as Demand-Side Management (DSM), increased transmission and distribution efficiency or thermal efficiency. Utilities cover the costs of personnel. USAID covers out-of-pocket expenses. The results are impressive. This practitioner-to-practitioner partnering program has improved operations, mitigated the impact of power generation on the environment, stimulated sales of U.S. technologies and opened the door to emerging markets for U.S. utilities.

U.S. utilities currently involved in the program include: Alabama Power, Boston Edison, Brooklyn Union, Central and South West, Central Maine Power, Cincinnati Gas and Electric, CMS Energy, Columbia Gas, Commonwealth Edison, Entergy, Georgia Power, Houston Lighting and Power, Illinois Power, Kentucky Utilities, Mississippi Power, National Fuel Gas, New England Electric, New York Electric and Gas, Otter Tail Power, Pennsylvania Power and Light, Questar, Sacramento Municipal Utility District, Southern Electric, Tennessee Valley Authority, Washington Water Power and Yankee Gas.

Under the Climate Action Plan, USAID is considering establishment of a project development fund to encourage utility partners to develop specific carbon emissions reduction projects. The fund would be structured to support pre-investment analysis. USAID would support project preparation for funding by the Global Environment Facility (GEF) and others, such as the recently-approved International Finance Corporation's "Renewable Energy and Energy Efficiency Fund".

development (and "leap-frog" the polluting carbon-rich industrialization phase many developed countries experienced), developing country governments have sought from developed countries commitments to transfer technology.

The vast majority of technology transfer from industrialized countries to developing and transition countries will not take place through government-to-government grants. It will come about through the marketplace. USAID's critical role should be to help countries shape those markets through policy reform and capacity building, so that they work to benefit the global environment by accelerating the commercialization and dissemination of "climate-friendly" technologies. This will have to be done in partnership with the private sector.

To focus this effort, USAID will help develop model technology cooperation agreements to help catalyze and channel private trade and investment in clean technologies. These agreements will serve as vehicles for government and business dialogue. The intent is to create a mechanism by which public resources and private capital focused on climate impacts can be highlighted and promoted in key developing countries and regions. The anticipated result of these agreements will be the expedited flow of investment and technology to developing countries to assist in meeting emissions reduction goals.

Institution Strengthening. Sufficient human and institutional capacity are prerequisites to the successful implementation of any strategy for promoting sustainable development. In working to reduce the threat of climate change, decision-

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Institution Strengthening as a Climate Change Mitigation Strategy: The Case of Energy Sector Training in Indonesia

Training is integral to USAID's extensive energy sector program in Indonesia. In 1996, the USAID Energy Training Program focused on enhancing sugar industry ability to use cogeneration as a power source. Three courses were organized: "Sugar Industry Cogeneration Project Development", "Renewable Energy Project Finance" and "Renewable Project Bid Solicitation." Each course involved experienced U.S. experts as instructors and resource people. As a direct result of the training, Indonesia's national utility has approved two applications for cogeneration power projects, and the first Power Purchase Agreement for a sugar mill cogeneration project in Indonesia has been signed.

In 1996, USAID also provided training to support a World Bank-funded Solar Home System Project in Indonesia. USAID trained local technicians employed by Bank-supported equipment distributors to ensure that the project will be sustainable. In addition, USAID supported review of the Bank's specifications and local products, providing advise as to how products might be improved and specifications streamlined. It is expected that the World Bank loan will support installation of 200,000 solar home systems in Indonesia, bringing "climate-friendly" power to more than half a million people.

makers, managers, scientists, technicians, operations and maintenance personnel and others must have the necessary skills and know-how to make informed decisions and carry out appropriate actions. Local institutions must be staffed with a critical mass of qualified personnel, and efforts must be made to ensure that this significant resource base is retained and developed. In some cases, USAID uses training to enhance developing country capacity to combat climate change specifically. More often, training is a tool for facilitating improvements that will drive development in a sector; a climate change-related benefit will be an added benefit.

Education and Outreach. One of the primary reasons that new environmental policies and programs often fail is that the target population is not involved in the process until after decisions already have been made. Early work on global climate change suggests that most people and businesses do not believe that they make a significant contribution to the problem— whether they believe there is a problem or not. Undertaking assessments of attitudes and behaviors can provide a basis upon which to build communications and education programs that target select audiences. Almost any effort to reduce greenhouse gas emissions will have benefits that are more immediate than the impact on global climate change— cost savings in energy bills, less air pollution and more trees. All of these short-term benefits are far more visible. "Selling" the changes necessary to make a real difference in the mitigation of greenhouse gases will necessitate tieing desired changes in behavior to results people feel more immediately. Similarly, promoting the necessary societal changes will require inclusive approaches to decision-making that involve broad participation and outreach.

Information Collection and Dissemination. Data and information are critical to climate change-related programs because they provide a basis upon which to measure the environmental performance of those sectors of the economy affecting global climate change. Similarly, they provide an essential means by which to measure progress and assess the success of programs and activities. Information dissemination also has a broader set of functions in environment programs. The sharing of environmental information between community stakeholders—urban and rural communities, civic groups, industry leaders and government officials—is an important addition to traditional environmental policy tools. It increases public

awareness of environmental issues and can serve as an important agent of change. Information dissemination is critical to the proper selection and successful implementation of policies that use market-based approaches to promote environmentally sound development. As incentives are put in place to encourage cleaner investment, the need for information about alternative technologies and strategies for expansion and investment grows.

Research. Research will be important in developing and demonstrating technologies that will enable less carbon-intensive development and reduce the risks associated with climate change. For developing nations and countries in transition, research will be necessary to adapt and apply technologies that will provide cleaner forms of transportation and cleaner sources of power. Research also will be critical in disseminating new agricultural crops, breeds and practices that will decrease the stress of climatic shifts on agricultural practices, as well as reduce emissions from animal husbandry and cultivation. Complementing efforts to support actual research and development will be programs to build the capacity of the local institutions that will generate the innovations, disseminate information about new technologies, and facilitate adoption of new resource management tools and techniques. As part of the Action Plan, USAID will continue and enhance efforts to collaborate with CIFOR, ICRAF and others on carbon sequestration in forests. USAID also will encourage CGIAR member research centers to focus more explicitly on climate change adaptation in crop breeding and other agricultural research efforts.

Partnerships with Bilateral and Multilateral Donors. USAID activities related to global climate change already involve collaboration and close partnership with a variety of actors including multilateral and bilateral donors, international organizations, and other agencies and departments of the U.S. Government. The high profile attention, however, given to climate change in preparation for the third Conference of the Parties to the FCCC provides an opportunity to deepen these relationships, in particular with official donors. USAID will have dual goals in intensifying coordination on climate change issues: multiplying the impact of its programs by joining forces with other donor nations and the private sector, and increasing the pace and durability of needed policy reforms in host countries.
Coordination will need to take place at all levels—within countries, among technical experts, and in policy-level meetings involving USAID officials and bilateral and multilateral counterparts.

Multilateral Collaboration. Maintaining a close working relationship with the World Bank Group will be critically important to the success of USAID's efforts. USAID will seek additional opportunities for project work with the GEF and the International Finance Corporation (IFC). USAID also will work to deepen relationships with other multilateral lenders. USAID has a history of collaboration on climate change-related lending operations with the Inter-American Development Bank and the Asian Development Bank; both already are instrumental in USAID climate change work in key countries and regions. The European Bank for Reconstruction and Development (EBRD), which has a considerable resource base for direct lending to the private sector in Eastern Europe and the former Soviet Union, has the potential to be an even closer partner, particularly in addressing energy efficiency improvements in the region.

USAID will continue to strengthen the relationship with the main institutions of the U.N. and other international organizations (eg. ICRAF and CIFOR) whose mandate includes climate change. In addition, USAID will seek increased opportunities for leveraging U.N. activities in monitoring and in capacity building in developing and transition countries. Potential opportunities exist for collaboration with a range of U.N. agencies, such as FAO and the UNEP.

Perhaps one of the most important venues in which USAID would like to play a leadership role is in the OECD/Development Assistance Committee (DAC). USAID will use the DAC partnership strategy as a foundation for working with developing nations to encourage a coherent response from donors on climate change issues.

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USAID also will use the DAC Working Party on Development Assistance and Environment as a forum for addressing problems of donor policy on climate change and for promoting quality standards in the provision of assistance. USAID will endeavor to lead the development of DAC guidelines for "climate-friendly" development.

USAID also will strengthen its links with the OECD Climate Technology Initiative (CTI). USAID will work with CTI task forces to identify areas of mutual cooperation in the promotion of technology dissemination and institutional capacity building. In addition, USAID will use its network of in-country missions and regional bureaus to identify opportunities for the use of clean technologies and assist the design of specific follow-up activities to enhance commercialization of clean technologies.

Leadership in other regional fora is also possible, such as the Club du Sahel, Southern Africa Development Cooperation (SADC), and Intergovernmental Authority on Development (IGAD) in Africa, as well as with specialized scientific and expert bodies through which USAID could expand the participation of its development partners, such as the IUCN's Sustainable Use Initiative and the Multi-donor Secretariat of the World Bank.

Bilateral Cooperation. USAID will focus efforts to promote bilateral cooperation on large bilateral actors. The European Commission and the Governments of Japan and Germany are among the most important partners.

Though collaboration between the U.S. and the European Commission under the U.S./EU New Transatlantic Agenda primarily has focused on regional issues, both parties are increasingly interested in addressing global issues. USAID will pursue global climate change issues as a regular part of these consultations.

Cooperation with Japan under the U.S./Japan Common Agenda is well-established; it involves not only USAID but also other agencies and departments of the U.S. Government. Protecting the global environment is one of four major foci of the Common Agenda. Beyond the Common Agenda, the development assistance programs of the Government of Japan are likely to continue to devote substantial resources to the environment and energy sectors, and larger amounts to global climate change, even in the face of major aid budget cuts. It is also likely that Japanese loan resources for the environment will be more widely available to poor countries in the future. USAID will look for opportunities to work in partnership with the Japanese lending programs.

Germany could potentially be an important partner for the U.S. in the climate change arena. The German Government has demonstrated a commitment to addressing climate change-related issues, and they are the largest bilateral source of resources (official and private) to the countries of Central and Eastern Europe and the former Soviet Union. The bilateral relationship between USAID and the German aid program is positive but has not received the systematic attention the U.S. has paid to the European Commission and the Government of Japan. USAID will explore the possibilities for closer collaboration.

Credit. The Initiative announced by President Clinton included up to $250 million in the use of credit for climate-related projects and activities. Two conditions will have to be met if USAID is to be able to use credit to advance its climate change program. Congress will have to grant USAID the authority to engage in credit programs (beyond the micro-enterprise and urban environmental credit program authorities), and the Agency will have to demonstrate its ability to implement needed credit management reforms.

Credit would be enormously useful in facilitating the creation of new markets for "climate-friendly" technologies. Clean energy technology, energy efficiency and renewable energy represent important methods by which to decrease the growth in greenhouse gas emissions. Yet significant market barriers exist. Many renewable energy and energy efficiency projects tend to be small, creating relatively high transaction costs. Most commercial financiers are unfamiliar with lending in these sectors and

Using Credit Instruments to Stimulate "Climate-Friendly" Investment

A good example of the potential use of credit can be found in Brazil where one of USAID's objectives is to promote private sector investment in energy efficiency. USAID has been working with a national bank to encourage lending to energy service companies using private demand-side management contracts. Bankers often are reluctant to enter the energy efficiency market because the terms and collateral (saved energy) are unfamiliar. With credit authority, USAID might issue a partial loan guarantee to encourage the bank to enter the market. USAID could, for example, guarantee one-third of a $15 million revolving fund for energy efficiency for a three-year term to catalyze private sector investment in energy efficiency in Brazil. This modest investment would save energy while stimulating creation of a private market for energy efficiency.

these countries. Therefore, clean-energy project developers in emerging and transition economies must turn to international financial institutions for help. But the transaction costs for such small projects are a real obstacle for multilateral lenders.

A USAID credit program for "climate-friendly" technology would fill a specific need. It would not compete with the commercial markets because it would provide financing for projects that are too risky or too small to garner commercial financing. Additionally it would not replicate the efforts of the U.S. Export-Import Bank or the Overseas Private Investment Corporation because it would neither finance the export of materiel nor provide insurance to buy down risk. The use of credit would allow USAID to complement its grant activities where appropriate with partial loan guarantees or loans. USAID could mitigate the risk in projects where a developmental and environmental purpose was being served and where market barriers would otherwise imperil the investment. Finally, the use of credit would allow USAID to leverage private investment for every dollar of USAID assistance. USAID will seek to leverage ten dollars for each dollar the Agency uses in loans or loan guarantees.

Country and Regional Programs

USAID currently has climate change-related activities in 44 countries throughout the world. These programs are important components of a comprehensive strategy that builds links with a variety of countries, while meeting local needs and decreasing the threats posed by climate change. USAID will continue to support a wide range of environmental programs in countries throughout the world. The Agency will, however, use the Initiative to focus on achieving specific, concrete results that will decrease the threat of climate change.

USAID will concentrate resources and attention under the Action Plan on a set of key climate change countries and regions. These countries were selected because of their contribution to net global greenhouse gas emissions and their receptivity to take action to decrease net emissions of greenhouse gas emissions. Twelve key countries and regions will receive priority: Brazil, Central Africa (Cameroon, the Central African Republic, the Congo, the Republic of Congo, Equatorial Guinea and Gabon), Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama), Central Asia (Kazakstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan), India, Indonesia, Mexico, Philippines, Poland, Russia, South Africa and Ukraine. Although China is another large emitter of greenhouse gases, USAID does not operate in China.

All of the USAID key countries and regions will maintain a significant portfolio of climate change-related activities for the duration of the five-year Initiative. At least 40 percent of grant assistance over the course of the five-year Initiative will be devoted to key countries and regions.

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Additionally, assuming credit authority is approved, at least two-thirds of USAID's use of credit instruments to combat climate change will be undertaken in key countries and regions. The climate change program in each country will be designed to meet local needs and priorities. (An overview of each country strategy is included below.) Although USAID missions will have the lead in designing and implementing national programs, they will collaborate closely with USAID staff in the United States. In the absence of a local USAID office, staff in the United States or in regional offices will manage programs, where appropriate.

USAID may decide to discontinue a climate change program in a key country or region if the Agency determines that USAID climate change objectives for that country have been achieved, it is not in the interest of the United States Government to maintain a USAID-supported climate change program in that country, USAID efforts in that country would likely be ineffective, wasteful or have a negative impact or USAID climate change efforts in that country are being met either independently or by other donor(s).

USAID also will continue to be an active participant in the inter-agency climate change programs. The Agency will continue to support the U.S. Country Studies Program and the U.S. Initiative on Joint Implementation as they support programs in developing countries that test the potential for joint implementation, and help develop and implement national climate change action plans. Additionally, USAID will play an active role in the design and creation of the Inter-Agency Climate Change Program that the President called for in June.

Critical to success will be the implementation of strategies for combating climate change that are based upon local needs and interests. USAID emphasizes different priorities in each of its key climate change countries and regions. While those strategies will undoubtedly evolve as the Initiative moves forward, the current suite of programs planned or ongoing in these twelve countries demonstrates the approach USAID intends to use in combating climate change.

Africa

USAID has one key region and one key country in Africa. The region, Central Africa/Congo Basin, was identified as key in 1994 by the Agency's Global Climate Change Strategy and the Africa Bureau's approved Supplemental Climate Change Strategy. South Africa is currently the second biggest African country in terms of emissions.

As an essential part of its strategy in Africa, USAID is monitoring the vulnerability of African countries to the threats posed by climate change. This will include evaluating the impact that climatic changes, including increased weather variability, could have on sustainable development plans, particularly related to agriculture. The primary goal of USAID's efforts will be to increase the development planners' awareness of the potential risk climate change poses, building such considerations where feasible into National Environmental Action Plans, planning related to the Desertification and Biodiversity Conventions and other activities. Short-term impacts of climate change events, such as El Niño, will be used to model impacts locally, nationally and regionally.

The Congo Basin will probably remain the priority for Africa because it has the largest remaining area of tropical forest. One other possible area of focus is gas flaring from petroleum and natural gas facilities, currently concentrated in Nigeria. Africa accounts for 21 percent of world gas flaring, which in absolute terms still represents a modest level of emissions. USAID will, however, pay increasing attention to new petroleum investments in Angola, Equatorial Guinea and elsewhere, which may magnify this source.

Central Africa. Central Africa, with its vast forest reserves, is the most important sub-region of Africa for purposes of storing carbon and mitigating greenhouse gas emissions. Maintaining the carbon "sink" potential of the region is the focus of a four-year forest conservation project in Congo that is just being completed as well as the five-year Central African Regional Program for the Environment (CARPE), which is in the early stages of implementation.

CARPE's objective is to work with African partners to identify and help establish conditions and practices that will reduce deforestation and biodiversity loss in the Congo Basin. CARPE attempts to use local knowledge to identify ways to limit deforestation and thereby retain the forest as a significant global carbon sink. CARPE's specific activities include remote sensing and Geographic Information System (GIS) analysis to improve forest cover data, coordination with scientists studying biomass and developing carbon inventories for various forest types, and coordination with scientists monitoring atmospheric chemistry, testing predictive models of forest degradation and deforestation, and identifying policies that improve forest management.

CARPE's intended goals are to ensure that indigenous forest resource management and conservation practices are better understood and strengthened, identify and pilot strategies for assessing and reducing the negative environmental consequences of logging, identify and test strategies to promote and evaluate smallholder agricultural practices that help reduce deforestation and biodiversity loss, develop infrastructure reconstruction strategies that maximize social and economic benefits while minimizing adverse environmental impacts, determine and pilot test promising strategies for using non-timber forest products to contribute to forest conservation, assess consumptive and non-consumptive use of wildlife and pilot test conservation strategies, enhance the conservation status of biodiversity within protected areas; and map areas of high biodiversity and identify gaps in the protected area system. As the CARPE partners gain a greater understanding of the problems and opportunities, opportunities will arise to undertake specific activities to mitigate emissions. Once CARPE is completed, the understanding of the conditions and practices required to reduce deforestation and biodiversity loss in the Congo Basin will be greatly enhanced.

CARPE is supporting a new organization "Conference on the Ecosystems of Dense, Humid Forests in Central Africa" (CEFDHAC), which is the only African organization dealing with environmental issues of forest management in the Congo basin. As a result of CEFDHAC, Africans are showing a willingness to collaborate with donors on technical issues requiring regional resolution. USAID will continue to nurture the CEFDHAC process. By the end of five years, CEFDHAC will be a significantly better and more pertinent organization, representing the aspirations of its members regarding the issues of the forest environment in the Congo basin.

South Africa. South Africa ratified the FCCC in August of this year. It is currently the fifteenth largest industrial emitter of greenhouse gases worldwide and the seventh largest developing country emitter. One of the key areas for action under the U.S./South Africa Binational Commission (BNC) is energy sector collaboration, and the Vice President and others have indicated a strong interest in cooperation on climate change issues. USAID will begin to identify opportunities to engage South African partners in reducing greenhouse gas emissions, especially emissions related to the country's reliance on coal for power generation.

Asia and the Near East

Reducing greenhouse gases is one of USAID's top environmental priorities in the Asia and Near East region. USAID has three key countries in the region– India, Indonesia and the Philippines– which each have a significant climate change-related portfolio of activities. In 1995, USAID launched the two-year $11.5 million Asia Sustainable Energy Initiative (ASEI) to foster the development and implementation of energy production and distribution strategies that reduce greenhouse gas emissions while promoting economic development in these three key countries.

USAID also has climate change-related activities in Egypt and Nepal. In Egypt, USAID is working to improve the efficiency of the power and transportation sectors to reduce air pollution (greenhouse gases in addition to local pollutants) and to improve economic efficiency. In Nepal, USAID has relatively small programs focused on forest restoration and increasing Nepal's

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capacity to develop small- and medium-scale hydropower resources in an environmentally and socially sound manner. The hydropower programs will enable Nepal to develop in a "climate-friendly" manner, with the side benefit of building Nepal's capacity to eventually sell hydropower to India, thereby reducing India's dependence on carbon-intense coal for power.

The Agency also has helped support the climate change-related efforts of multilateral development banks in Sri Lanka. The portfolio of programs in Asia reflects the need to focus on the rapid growth in energy demand that these countries are facing as well as the loss of important forest resources in Indonesia and the Philippines.

India. India is the world's fifth largest source of greenhouse gas emissions and the second fastest growing source of emissions after China. Electric power generation is the largest source of greenhouse gases and is responsible for 71 million tons of emitted carbon or 48 percent of the carbon emitted from fossil fuels. The second largest contributor is the transportation sector, excluding railways, which contributes 11.3 percent of total Indian carbon dioxide emissions from fossil fuels. India's continued growth depends on extensive investments in infrastructure: ports, highways, and—most importantly—power generation capacity. It is estimated that more than 140,000 megawatts of additional power, requiring approximately $200 billion in investments, will need to be added over the next 15 years to meet needs.

Carbon dioxide emissions from land use changes are also a concern in India, with rapid deforestation degrading more than 50 percent of India's land area. Methane is the other major greenhouse gas in India. Rice cultivation and livestock are the major national sources. Considerable discrepancies exist, however, in estimates of anthropogenic (human-induced) methane emissions in India.

The Indian power sector will continue to be largely coal-based, given India's abundant, inexpensive coal resources. Therefore the dissemination of cleaner coal technologies and the development of renewable and clean alternate sources of energy are all priorities. Serious institutional barriers and resource limitations will have to be addressed.

India's transportation sector is another target of opportunity. India's motor vehicles are highly inefficient and polluting, emitting not only large amounts of carbon dioxide but also hydrocarbons, oxides of nitrogen, and particulate matter, turning most urban areas into large pockets of air pollution. The benefits of a focus on the transportation sector would be local as well as global.

Reducing greenhouse gas emissions in India requires the active involvement and participation of the private sector. Private capital flows to India already outstrip foreign assistance, and the growth in emissions in the future will result primarily from growth in the private sector. USAID activities to promote private sector participation in combating climate change will foster the development of projects that increase profitability while decreasing greenhouse gas emissions. The major foci of assistance will be on developing partnerships involving the U.S. and Indian private sector, non-governmental organizations and the public sector.

USAID has a broad and comprehensive program to increase the environmental soundness of the power sector. The program includes substantial efforts to promote energy efficiency and the commercialization of renewable energy. Additionally, USAID supports a specific climate change program, the Greenhouse Gas Pollution Prevention Project (GEP). As GEP moves forward, the program will be expanded. Its goal will be to facilitate a more "climate-friendly" path to development through a program focused on fostering technology transfer to industries and sectors that are major Indian greenhouse gas emitters.

GEP currently promotes more efficient coal conversion to reduce the carbon dioxide emitted per unit of power generated in existing coal-based power plants and investments in the production of year-round grid-quality power from the waste associated with sugar production (bagasse) and alternative biomass. GEP will now have a more extensive range of activities to

increase the generation efficiency of existing thermal power plants and ensure that new power generation capacity is more environmentally sound. Two additional program components may be added to foster technology transfer by stimulating project financing, and combat climate change through action in cities to improve transportation, energy efficiency and solid waste management.

USAID will work with a wide range of Indian partner organizations in implementing GEP. Collaboration with the Indian National Thermal Power Corporation and the Industrial Development Bank of India will continue. It will be supplemented by links to non-governmental organizations such as Development Alternatives and the Tata Energy Research Institute; academic institutes such as the Jawaharlal Nehru University and the Indira Gandhi Institute for Developmental Research; industry associations such as the Confederation of Indian Industry and the Federation of Indian Chambers of Commerce and Industry; and others involved in transportation, city planning and waste management.

Forest covers approximately 23 percent of India's land area, and USAID has long been involved in improving the health of degraded forest lands in India. In the mid-1980s, India's natural forests were degrading rapidly under immense pressure from the estimated 50 to 200 million forest users who unsustainably gathered biomass in the form of timber, leaves and grasses. USAID helped develop policies to shift forest management from the state to local communities. By late 1996, more than 20,000 villages had formed forest protection groups that oversee protection and rehabilitation of more than two million hectares. Working with the support of USAID, local communities are devising plans to fit their community. In addition, with USAID support, the Asia Forest Network is supporting organizational reforms at the state level to facilitate decentralization of management.

USAID projects that its efforts in the energy sector in India will avoid four million tons of carbon dioxide emissions per year. Additionally, the Agency hopes to increase the percentage of total installed power capacity from clean technologies from 0.2 percent in 1994 to 2 percent in 1998, 3 percent in 1999, and 6 percent in 2000. USAID activities will also accelerate institutional, policy and legal changes to increase efficiency in energy supply and end-use. USAID activities to encourage and assist community participation in forest management ultimately could involve all of India's public forest land, some 70 million hectares, in community-based management by 2003.

Indonesia. Indonesia is the fourth most populous nation in the world, with a population of more than 200 million. As a result of burgeoning economic growth, power demand in Indonesia is growing at a rate of 16 percent per year. At the same time, Indonesia's extensive tropical forest reserves, which constitute about half of Asia's remaining forests, are being deforested at rates estimated to be one million hectares per year. USAID has a portfolio of programs focused on ensuring environmentally sound development of the power sector and more sustainable management of forest resources.

In the power sector, USAID is focused on ensuring that restructuring and reform of the power sector create incentives for energy efficiency and the use of clean and alternative energy technologies. Renewable energy presents a special opportunity for commercial investment in Indonesia: Indonesia enjoys abundant renewable resources; grid-connected projects are being encouraged through a new Small Private Power Producer Program; and off-grid opportunities exist as a result of Indonesia's island geography and vast rural zones. While power sector restructuring will help create a financially viable power sector that will help attract the private investment needed to meet Indonesia's rapidly growing demand for power, it will be critical to ensure that the incentives for use of renewable energy technologies and energy efficiency are not lost.

USAID is focused on assisting the Government of Indonesia to protect and promote the application of renewable energy and energy efficiency, particularly through private sector investment. Government of Indonesia (GOI) policies encouraging renewable energy and

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energy efficiency are in place but supporting regulations are needed. USAID is providing substantial assistance to the Ministry of Mines and Energy. The Agency is helping support decision-making throughout the regulatory and restructuring process to foster restructuring and ensure that the Indonesian Government takes full advantage of the national potential for renewable energy and energy efficiency.

USAID also is focused on fostering energy efficiency in the immediate term. Implemented in partnership with the U.S. Department of Energy, this program focuses on increasing the efficiency of power generation by improving fuels, burner efficiency and steam efficiency. Increases in efficiency translate into enormous reductions in emissions. For example, a 1 percent improvement in overall power plant efficiency of a 400 megawatt coal-fired power plant would avoid emission of 113,648 metric tons of carbon dioxide per year. USAID also is exploring the potential impact that improved motor efficiency would have on energy consumption.

USAID also is providing support to several non-governmental organizations, particularly to promote renewable energy project development. YBUL, an Indonesian non-governmental organization specializing in promoting private sector investment in renewable energy, is coordinating the Renewable Energy Network Indonesia, which fosters U.S. private sector investment in the Indonesian renewable energy sector. USAID also is working with Winrock International to demonstrate the commercial feasibility of wind power systems in Indonesia's eastern islands. The project will demonstrate the potential applications for wind energy in rural Indonesia and teach local people how to operate and maintain self-sustaining, wind-powered enterprises. Finally, in partnership with the World Bank and Winrock, USAID is developing several biomass energy projects.

The goal of the USAID energy sector effort in Indonesia is to avoid the emission of one million tons of greenhouse gases and local pollutants per year over the next three to five years. The projected energy savings over the next five years is 140,000 megawatt hours in 1989/1999, increasing very year until after five years (in 2002) the savings has reached an estimated 420,000 megawatt hours.

USAID's program in Indonesia couples these energy sector activities with an effort to decrease deforestation. Currently, about 70 percent of Indonesia's carbon dioxide emissions result from land use changes. The introduction of sustainable forest management policies and practices, including reduced impact logging techniques, offers significant opportunities to decrease the loss of carbon "sinks." Strengthening and decentralizing Indonesian forest management are crucial components of USAID's climate change strategy. USAID's approach to forestry management in Indonesia includes helping the Indonesian Government to replicate natural resource management "best practices" in parks and protected areas; strengthening the roles of local communities and institutions in sustainable forestry management; working with Indonesia's logging companies to convince them of the benefits of less damaging logging practices; and documenting lessons learned on sustainable forestry management policies and practices, for dissemination to Indonesians.

The impact of these natural resources management program in Indonesia will be measured in several ways. Direct USAID assistance with the management of parks, protected areas, and community-based forest and coastal resources is expected to impact 700,000 hectares by the year 2003. The broader estimated impact of USAID assistance is expected to be 17 million hectares in the year 2003. USAID also will examine the extent to which "best practices" are employed in parks, protected areas, and community-based forest and coastal resources. It is estimated that USAID best practices will have been put to use on 720,000 hectares by the year 2003. USAID also will measure its success in strengthening community organizations and local institutions.

Philippines. The demand for energy in the Philippines is growing exponentially. While energy consumption between 1980 and 1990 increased annually by 2.6 percent, consumption increased by 8.3 percent per year between 1990 and 1994. Over the next decade, per the

Philippine energy plan, the Philippine power sector will grow by 350 percent. Coal will be the primary energy source. Deforestation also is a significant problem in the Philippines. In 1991-1992, land use changes accounted for almost 70 percent of carbon dioxide emissions. The rate of growth in net greenhouse gas emissions will be a critical issue in the Philippines, and the Government of the Philippines is eager to collaborate with USAID in implementing strategies to improve energy efficiency and expand the use of clean fuels for power generation.

Consequently, the most promising area for intervention in the Philippines at this time is the energy sector. The Government is very motivated to secure inexpensive, efficient energy supplies so that the country can sustain its economic growth. The USAID strategy for work in the Philippine energy sector will include efforts to assist national climate change action planning, foster development of a policy framework to encourage private investment in clean technology and energy efficiency, collaborate with the Government of the Philippines to develop and implement several energy efficiency programs, and promote accelerated development of indigenous natural gas resources. Currently, USAID is providing assistance to the GOP to accelerate the development of indigenous natural gas sources; promote the use of clean coal technologies in existing and planned coal-fired power plants; and expand commercial investment in, and development of, indigenous sources of renewable energy for power production.

USAID will continue to provide technical assistance to the Philippine Department of Energy (PDOE), Philippines Department of Environment and Natural Resources, and the Department of Science and Technology in managing the Philippines National Action Plan to mitigate and adapt to changes in global climate. USAID is working with the PDOE to develop economic models that will enable policy makers to compare the financial, economic, environmental and social impacts of natural gas, coal and renewable energy technologies. Using this analysis as the basis, USAID will assist the PDOE in revising regulations to "level the playing field" among the various power generation technologies and require that new coal-based power meets the GOP's more stringent 1998 environmental standards.

USAID recently completed an analysis of constraints that impede the expanded commercial investment in the development of renewable energy resources. Based on this analysis, USAID has opened discussions with the PDOE and other GOP agencies to amend the policy and regulatory constraints and look at changing institutional procedures that discourage investors from developing renewable energy for commercial power generation. In addition to this work, USAID supports the Renewable Energy Project Support Office in the Philippines, which helps finance pre-feasibility studies of potential renewable energy development projects.

USAID is carrying out a wide range of activities to improve energy generation, transmission, distribution and end-use efficiency. For example, USAID is financing a program that is working with the PDOE, the Philippines Energy Regulatory Board, and several industries to pilot industrial demand side management (DSM). USAID is also supporting industrial demand side management through the development of a database on motors, that will enable industry managers to compare life-cycle costs and efficiencies of various motors before making purchases, a national effort to enhance local capacity to test and rate electric motors, lights and appliances for energy efficiency and increase energy code compliance, and a commercial DSM effort focused on shopping malls.

In addition to energy sector work, USAID has an on-going program to bring at least 10 percent (500,000 hectares) of the country's remaining forests under more sustainable management by 1999. To achieve this goal, USAID is working with the Government of the Philippines to transfer management responsibility and use rights to communities that border or are located within public forest lands. In return for protecting and managing the forests, the communities will be given the right to harvest some forest products within the limits of an approved management plan. USAID, working through the

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Philippine Department of Environment and Natural Resources, is assisting the communities to develop these plans and set up the management systems to monitor management of the forests. Since land conversion is a significant source of greenhouse gas emissions, putting in place this "social fence" already has significantly reduced the incidence of slash-and-burn agriculture and fire in areas under community-based forestry management.

The impact of these efforts to reduce greenhouse gases will be measured in terms of metric tons of greenhouse gas emissions avoided. Through efforts in the energy sector, USAID's goal in the Philippines between 1998 and 2002 is to avoid more than 47 million metric tons of carbon dioxide, with 40 million metric tons avoided through efforts to promote the use of renewable energy technologies and natural gas, and 7 million metric tons through increased energy efficiency.

Central and Eastern Europe, and New Independent States

The transition from centrally planned to market economies in the countries of Central and Eastern Europe and the New Independent States of the former Soviet Union (ENI countries) has important implications for the energy and environmental systems affecting the threat of global climate change. The transition initially resulted in sharp reductions in economic output, energy consumption and greenhouse gas emissions from peak 1990 levels. While economic growth and energy demand have been restored in several countries that have implemented economic reforms, it will be some time before greenhouse gas emissions reach former levels. Some countries have made progress in improving energy efficiency, shifting from coal to natural gas and petroleum products, and putting environmental controls in place.

The ENI region has significant fossil fuel energy resources as well as forests. Russia dominates production and consumption of fossil fuels and is the principal supplier of energy imports to Central and Eastern Europe and the New Independent States. Other major energy producers are Poland, Kazakstan, Ukraine, Turkmenistan and Romania. As a heavily industrialized region, these countries are large and highly inefficient energy consumers. Due to an economic system that heavily subsidized energy production and consumption, energy intensity in the ENI economies — measured as the amount of energy consumed per dollar of GNP produced — generally ranges from double to quintuple the energy intensity of Western industrialized countries. For this reason, USAID's approach to mitigating the ENI-based threat of global climate change focuses heavily on energy efficiency and direct emissions reduction, with less emphasis on carbon-absorption and land management.

The four key climate change countries and region in ENI are Russia, Poland, Ukraine and the Central Asian Republics (CAR) of Kazakstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan. All use significant quantities of domestic coal and lignite — a major factor in their greenhouse gas emissions. Assessments have confirmed the substantial potential for coal-bed methane production. Nuclear power generation is significant in Russia and Ukraine, but many of the plants are unsafe. It is likely that thermal generation will replace some of these plants (increasing emissions), although potential for increased energy efficiency will make it possible to defer new capacity in many cases.

With assistance from USAID and the multilateral banks, many ENI countries are undertaking major reforms to improve power-sector efficiency through the development of decentralized competitive power markets. USAID bilateral assistance programs are supporting these reforms by improving the legal and regulatory framework for investment and introducing commercial management systems in utility companies. Foreign investor interest is high in the CAR, Poland and Russia, and major strategic investors have committed to rehabilitation of thermal plants in the CAR and Poland. The creation of these power markets will lead to more rational energy prices and improved tariff collection, which will provide incentives for energy efficiency investments. Competitive electricity markets also will improve efficiency and reduce emissions in the ENI region. USAID industrial and municipal energy efficiency

programs are demonstrating the large potential for savings in heat and electricity and supporting the development of local energy service companies (ESCOs) and associations.

In Russia, USAID is an active participant in the Environment Committee of the Gore-Chernomyrdin Binational Commission, where efforts to introduce emissions trading are a high priority.

The bilateral programs in the key countries are complemented by ENI regional programs that seek to develop regional power pools and further interconnection with Western Europe, establish energy efficiency and environmental business networks and partnership arrangements between local and US organizations, further cooperation among the growing number of ENI countries regarding the regulatory aspects of competitive power market development, and promote environmental trade and investment through U.S.-ENI business and non-governmental organization partnerships.

With respect to increasing carbon absorptive capacity, USAID programs in the ENI Bureau stress reliance on sustainable forestry. Programs in the region have used a multifaceted approach incorporating forest regeneration capability; fire suppression and control; reforestation requirements for logging concessions; efficient downstream processing of domestic timber harvests and conservation efforts aimed at preserving biodiversity; and promotion of ecotourism, non-timber forest products and indigenous cultures.

USAID's sustainable forestry program in the Russian Far East has worked in Primorskii and Khabarovskii Krai to build Russian capacity in all these areas. The program in the Ukraine has worked with local and national authorities to promote ecotourism and biodiversity conservation. USAID programs also build community-based forestry in Albania, and promote national parks and conservation areas in Bulgaria.

As the USAID program in Poland phases out over the next few years, USAID's strategy in ENI will shift to focus increasing on efforts in the Souther Tier countries such as Romania where problems will worsen. As Poland strives to meet European Union standards for accession, Polish efforts to reduce greenhouse gas emissions may only impact on the margins of the issue as problems in other nations mount. Limited funding might best be dedicated to other countries in the region.

Central Asia. Kazakstan is the fourteenth largest industrial emitter of carbon dioxide worldwide and has the second highest rate of per capita greenhouse gas emissions after the United States. Uzbekistan also is a significant carbon emitter, ranking 27th worldwide in industrial carbon dioxide emissions. The nations of the CAR are highly interdependent when it comes to energy sector resources. All share the same watershed; hence, when Kyrgyzstan absorbs a higher percentage of the available hydroelectric power, Kazakstan is forced to increase its dependence on coal. All of the Central Asian Republics (CAR) – Kyrgyzstan, Turkmenistan, Uzbekistan and Tajikistan– have significant oil and gas, electric power and natural resources management needs. USAID therefore considers the CAR a key climate change region.

Part of the explanation for the high rate of emissions is the fact that Kazakstan has large energy-intensive metal, chemical and refining plants within its borders. Kazakstan also has approximately 24.5 million hectares of forest land, 95 percent of which is protected area. In 1995, there were 1,320 forest fires in Kazakstan which destroyed thousands of hectares of forest. Pests severely affected another 163,500 hectares.

Almost 80 percent of all greenhouse emissions generated in Kazakstan, however, come from the use of coal in the electrical power sector. While Kazakstan's electrical generation capacity was 17,380 megawatts in 1995, Kazakstan is a net importer of energy. Kazakstan is also a major producer, consumer and exporter of coal. Kazakstan produces about 125 million tons of coal per year, about 70 percent of which is consumed domestically. Oil consumption accounts for 40 percent of the carbon dioxide produced from fossil fuels every year. Development of the oil and gas sector in the

Caspian Sea is expected to accelerate rapidly and will likely result in greatly expanded refining capacity in the basin. Finally, natural gas resources in Kazakstan offer the potential to reduce emission levels by reducing coal and oil consumption.

USAID will expand its global climate change strategy in the CAR to support power sector restructuring and environmentally sound development of oil and gas resources. After meeting needs in these priority areas, USAID will contemplate support for the urban and industrial pollution control activities of the Kazakstan National Environmental Action Plan being developed in cooperation with the World Bank. Finally, limited agriculture sector interventions to mitigate global climate change also may be undertaken.

Poland. Poland has the largest electric power sector in Central and Eastern Europe, 90 percent of which is coal-based. As a result of the high level of coal consumption, 60 percent of Poland's industry relies on coal. Poland is the sixth largest emitter of carbon dioxide in Europe. On a per capita basis, carbon dioxide emissions are slightly above average for OECD/European Union member countries. Nonetheless, in terms of emissions per unit of GDP, Poland produces twice as much carbon dioxide as the worst emitter in the OECD. Methane emissions result mainly from animal husbandry and coal extraction (1 million tons each). A relatively small quantity comes from landfills (360,000 tons). In fact, the combined effect of methane emissions may be as large as one-third of the effect of carbon dioxide emissions.

In 1991, the U.S. swapped 10 percent ($360 million) of Poland's total debt in the region's first debt-for-nature swap aimed as protecting and improving the environment. One year later, the newly established Ecofund received $26 million in funding from the swap. Projects that reduce greenhouse gas emissions are the fund's top priorities. To date, USAID has undertaken more than $33 million in environmental project activities in Poland, including improvements in district heating, promotion of energy-efficient buildings, and clean coal and low emissions demonstration projects. The GEF project in Poland targets the reduction of emissions through gas conversion, forestry development and biodiversity activities.

The Government of Poland has made environmental considerations prominent in its national Transport Policy (1994) and Industrial Policy (1993). These new laws address the pollution caused by the transport sector, including fuel sources, as Poland rebuilds its infrastructure. The legislation introduces an obligation to (1) prepare environmental impact assessments for investments related to transport infrastructure, (2) tighten the requirements for reduction of exhaust gases, (3) increase power efficiency, and (4) set new standards for fuels with a lower content of hazardous substances. The dramatic increase in vehicle usage, however, coupled with new road projects, may offset progress.

The National Agency for Efficient Energy Use and the Polish Power Centre were recently established. Parliament has adopted a national energy policy through the year 2010. In addition, a modest fee on carbon dioxide emissions was introduced in 1995 and government subsidies to the coal industry have been reduced. Procedures for "tradeable permits" for emissions are being developed. Energy consumption per unit of GDP during the period 1991-1995 dropped by about 18 percent, and hard coal use decreased markedly.

As part of its Local Government Partnership Program (LGPP), USAID/Poland will focus climate change efforts on selected activities at the local level. USAID will not be involved in policy creation on the central level, except perhaps in response to a specific request from the relevant central administration.

USAID efforts in Poland will focus on the energy, transport and solid waste sectors. In the energy sector, efforts would focus on improving district heating systems; promoting integrated resources planning; promoting energy efficiency in industry and municipalities through demonstration projects, energy efficiency investment planning and financing; renovation of buildings; and

strengthening energy service companies. Efforts in the transport sector would focus on enhancing the ability of local governments to plan and manage transport infrastructure to improve air quality and reduce greenhouse gas emissions. Activities to improve solid waste management would focus on reducing methane emissions.

Russia. Russia is responsible for approximately 10 percent of the world's greenhouse gas emissions (which is 22 percent lower than it was in 1990). The energy sector is the major source of emissions (up to 98 percent of carbon dioxide, and over 50 percent of methane and oxides of nitrogen). Russia also contains more than 22 percent of the world's forested area, 50 percent of the world's coniferous forest lands, and 21 percent of its estimated timber volume. Because Russia's forests provide the largest land-based carbon store in the world, the threat of logging and inefficient land-use practices is critical.

The Russian Federation ratified the FCCC in November 1996. In 1995-96, the Russian Federation prepared the Federal Program for Climate Change to focus on policy reform, capacity building, and the introduction of new technologies to transform the Russian energy and forestry sectors into sustainable areas of growth. Building on the commitment of the Russian Federation and the support of the international development community, the primary areas of opportunity for intervention in Russia will be in energy and industry, sustainable land use and forestry, and natural resources management.

The Russian energy sector suffers from overwhelming financial difficulties, extreme inefficiencies, and the difficulties of transition from a large, centrally planned state entity to a modern, efficient provider of power. The Russian energy sector can reshape itself to support the transition to a market economy while supporting climate change initiatives by rationalizing energy prices and developing sound national energy policies; improving energy efficiency in industry, buildings, power and municipal heating systems; and restructuring, commercializing and privatizing specific power, oil, gas and coal energy sub-sectors.

Forestry and natural resource management also will be critical. Sustainable land-use policies will be needed to balance the demand for valuable natural resources with the desire to protect the environment. Interventions— such as land-use zoning, sustainable agriculture, land-use planning, forest and timber management, and geographic information systems— can have the greatest impact. USAID and the Government of Russia share the goal of strengthening the policy and institutional framework for sustainable natural resource management, promoting environmentally sustainable forest management, and protecting endangered species and critical habitats.

USAID has begun to address global climate change-related issues by providing assistance to Russia in reshaping its energy sector to support the transition to a market economy. The program supports efforts to rationalize energy prices and develop sound national energy policies, and restructure, commercialize and privatize specific energy sub-sectors (power, oil, gas and coal). The project supports cooperation between U.S. and Russian utilities and energy organizations. USAID also support efforts to promote fuel switching and combustion efficiency in district heating boilers and central power plants. Additionally, a housing sector reform program promotes residential energy efficiency in six cities in Russia by installing meters. USAID also provides assistance to strengthen the policy and institutional framework for sustainable natural resource management; promote environmentally sustainable forest management; and enhance the protection of endangered species and critical habitats. USAID is supporting the development of sustainable land-use programs in four of Russia's most pristine areas.

In coordination with the Government of Russia, USAID has identified strategic areas that will address climate change-related concerns over the next five years. Given adequate resources, USAID would build on its current energy and forestry portfolios. On the energy side, the focus will be on energy sector restructuring and tariff reforms, particularly in the electric utility sector to increase power generation, transmission,

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distribution and use efficiency. In forestry, programs will include additional work on fire management, reforestation and forestry policy. USAID will add technical assistance to support emissions trading. (This would be contingent on consensus in support of emissions trading at the third Conference of the Parties, Russian agreement to implement a bilateral emissions trading program, and perhaps the viability of a World Bank proposal for fostering emissions trading of greenhouse gases.)

Ukraine. Ukraine is the eighth largest industrial emitter of carbon dioxide. Ukrainian emissions result from the fact that a high proportion of the economy is devoted to manufacturing using energy-intensive equipment and outdated technology. In 1995, emissions of carbon dioxide were 9 percent lower than 1990 levels. This was due to a drop in industrial output and a 13 percent decrease in the supply of fossil fuels. During the same period, however, coal's share of the Ukrainian fuel supply rose by 15 percent. Ukraine's 1995 carbon dioxide was 13 tons per capita— greater than the European Union targets which are 5.4 tons per capita in 2010 and 1.1 tons per capita in 2050. As Ukraine's economy recovers and its industry, agriculture. and energy sectors increase output, emissions of greenhouse gases will rise unless significant interventions are made to restore sinks and minimize sources.

The Government of Ukraine (GOU) is currently planning how to meet its obligations under the FCCC. The GOU signed or ratified more than 20 international agreements pertaining to the environment that require the modification of legislation. The Ministry of Environmental Protection and Nuclear Safety (MEPNS) is undertaking a series of programs to comply with the agreements. MEPNS has identified a series of strategic interventions that will be required to comply with the climate change convention. According to preliminary calculations, Ukraine's emissions of greenhouse gases can be reduced below 1990 levels by implementing the "State Complex Program of Energy Efficiency in Ukraine up to 2010." The GOU estimates it can reduce emissions of greenhouse gases equivalent to 104 million tons carbon dioxide by the year 2015 through increased energy efficiency in industry, municipalities, transportation, agriculture, gas, and the fuel and power sectors.

The GOU recognizes the need for significant investments and restructuring of its economy, particularly the energy and industrial sectors. With investments of $300 to $400 million, the Government estimates that coal bed methane technology could reduce emissions of methane by 3,348 metric tons. An investment of $4 to 6 million in diagnostics could introduce efficiencies and reduce system losses in the methane production, storage and distribution network by 6138 metric tons. Emissions of nitrogen oxides could be reduced by introducing specialized combustion equipment and technologies for $15 to 20 million. Investments of $1.1 billion to establish new waste processing enterprises would enable the Ukraine to reduce the volume of solid wastes at landfills and reduce methane emissions. Installation of purification facilities for wastewater processing would enable the methane recovery and result in significant methane emission reductions.

The GOU is studying the use of economic instruments to achieve its reduction goals and commitments. The reform program in Ukraine has not moved smoothly or predictably. Because of the large manufacturing sector, the heavy reliance on coal, and the Chernobyl issue, USAID has focused on demonstration activities and targeted policy assistance. The current emphases are energy efficiency, waste minimization, environmental auditing, demand side management, coal bed methane, policy reform, sustainable agriculture, sustainable forestry and biodiversity conservation.

USAID's ongoing programs in energy efficiency, waste minimization, alternative energy sources, renewable energy, power and coal sector reform and natural resources conservation provide significant support for the climate change-related priorities of the GOU. Additional resources would enable USAID to leverage international financial institutions and the private sector to institutionalize these programs, fill critical gaps in existing programs, and help Ukraine fulfill the terms and spirit of the FCCC. Activities would be

initiated to encourage gas sector reform, promote clean coal technology, increase fuel efficiency and improve transport planning, increase energy efficiency in district heating, improve municipal waste and landfill management, and enhance forest conservation.

Latin America and the Caribbean

USAID has two key climate change countries and one key region in Latin America. For more than seven years, USAID's climate change activities in Brazil, Mexico and Central America have introduced cutting-edge energy technologies and improved land use practices that reduce greenhouse emissions and continue to leverage significant donor resources.

The USAID program in Brazil protects forests covering an area larger than the country of Israel and has introduced pilot activities for protecting forests that have leveraged tens of millions of dollars from the G-7 Pilot Program to Conserve the Brazilian Amazon. In Mexico, USAID's efforts have reduced deforestation rates on lands equivalent in size to the Carolinas and have avoided the emission of more than 350,000 tons of carbon dioxide emissions through the promotion of renewable energy and energy efficiency. Many of those energy programs are now being replicated with Government of Mexico and World Bank funding. In Central America, USAID has improved protection of over 20 forested national parks, established trust funds for forest conservation and environmental protection in six countries, supported establishment of joint implementation offices in 2 countries, and launched a region-wide $10 million environmental enterprises fund with Inter-American Development Bank and bilateral support. USAID intends to build on these successes. USAID also is continuing its programs to protect the forests of the Andean countries by promoting forest conservation and sustainable forest management programs in Ecuador, Peru and Bolivia and the regional Parks in Peril program.

Complementing the core program of activities in Latin America have been initiatives focused on building the portfolio of environmental programs in the region. For example, in 1995, the Environmental Initiative for the Americas devoted $9.7 million to promoting sustainable energy production and use throughout Latin America; that initiative spurred a greater focus on promotion of renewable energy and energy efficiency in Central America, Brazil and Mexico.

Brazil. Brazil is the largest emitter of greenhouse gases in Latin America, and in 1991 Brazil was the fifth largest net greenhouse gas emitter worldwide. Most of Brazilian emissions result from the loss of Amazonian forests. From 1980-1990, Brazil's annual deforestation rate was 0.6 percent per year. Although this may seem modest compared to other tropical countries, 36,700 square kilometers of forests were lost over the decade; between 1991 and 1994, the deforestation rate increased to about 0.8 percent per year.

Brazil is also the 22nd largest industrial greenhouse gas emitter. According to a 1997 WorldWatch Institute report, Brazil's industrial carbon dioxide emissions increased 20 percent from 1990 to 1995. Given the recent improvement of Brazil's economy, it is likely that industrial carbon dioxide emissions will continue to increase.

Brazil's poor and overpopulated northeast region is particularly vulnerable to climate change if the frequency of regional droughts increases, as predicted by some climate change scenarios. The potential for increased El Niño events would threaten the globally important biological diversity of the Atlantic Coastal Rain Forest ("Mata Atlantica") and the neighboring Cerrado, which also harbors Brazil's agricultural heartland.

USAID has robust forestry and energy sector efforts in support of its climate change-related goals. The program works primarily through U.S. non-governmental organizations and a host of partner Brazilian organizations. In the forestry sector, the presence of large, multi-donor efforts in the Brazilian Amazon and Mata Atlantica as well as the proliferation of strong Brazilian environmental non-governmental organizations provide a unique opportunity for successful USAID interventions to reduce greenhouse gas

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emissions from deforestation. The multilateral G-7 Pilot Program to Conserve the Brazilian Amazon (PPG-7), a $290 million effort managed by the World Bank, is beginning to implement forest conservation activities, primarily in the Amazon.

To meet its energy needs, Brazil will need more than 6,000 megawatts of additional generation capacity by the year 2000. This increased energy demand does not fully account for the development needs of the poor. Currently, Brazil's electric grid system fails to reach approximately 30 million people. Much of the additional capacity will probably come from fossil fuel power plants. In an effort to avoid constructing some new capacity and deliver energy services to a greater percentage of the population, USAID will promote clean renewable energy technologies and help the Brazilians shape and implement a $150 million renewable energy loan from the World Bank. To minimize the need for new capacity, USAID also will work with Brazil's rapidly privatizing industrial sector to increase energy use efficiency.

The USAID forestry program in Brazil will continue to promote the development of ecologically and economically sustainable policies and activities to manage forest resources in the Amazonian states. The program's strategic focus will include applied research and demonstration activities with forest communities on the harvest non-timber products from standing forests and plantations; training and institutional strengthening in research, planning and management skills; and policy analyses and environmental impact assessments. USAID will continue to influence the design and implementation of the PPG-7; USAID and its Brazilian partners will demonstrate successful alternatives to tropical deforestation and unsustainable land use practices that can be replicated. Smaller activities will conserve key fragments of the Mata Atlantica.

USAID's energy strategy in Brazil will continue to promote the use of renewable energy and energy efficiency technologies, improve private sector participation in the energy services sector, and train key public and private sector personnel in the technologies, approaches and public policies necessary to promote clean energy sector development in Brazil.

Over the next two years, USAID's global climate change program in Brazil will focus more on promoting effectively managed forests and conservation units, especially in the Amazon, and increasing the use of efficient and renewable sources of energy. By the end of 1999, 9 million acres of parks and extractive reserves will be better protected, 600,000 acres of Amazon commercial forests and agroforestry systems will be managed sustainably, 200 megawatts of energy from renewable sources will be produced in northeast Brazil, and the Brazilian industrial sector will save 300 megawatts of energy by adopting energy efficiency technologies.

Central America. Central America is unique in the developing world because of its unequivocal support, at the highest levels of government and industry, for North-South collaboration on climate change initiatives. Central America has been particularly effective among G-77 countries in promoting approaches which promote climate change mitigation and adaptation. Designating Central America as a priority region will recognize and ensure continuation of its climate change leadership. It also will promote and accelerate a wide range of additional initiatives that will serve as models for the rest of the developing world, including those intended to transcend national boundaries or affect small nations.

Central America also possesses two of the Western Hemisphere's largest contiguous carbon sinks north of the Amazon: the Mayan Forest in Guatemala and Belize (and southern Mexico) and the Mosquitia Region of Honduras and Nicaragua. Unfortunately, Central America's deforestation rate ranks among the world's highest and currently stands at an estimated 2.13 percent loss in forest cover per year.

Central America depends heavily on hydroelectric power for energy. Should climate change impact rainfall patterns or reduce forested watersheds, electricity production and

hence economic development, will be greatly impaired. Changing rainfall patterns and the exaggerated El Niño effect also would lead to increased desertification, crop failure, flooding and landslides with significant losses in national production, infrastructure repairs and human casualties. Coastal zones are especially vulnerable to flooding during storm surges if major climate events, such as hurricanes, increase. In the Caribbean, along the world's second largest barrier reef, the growing ecotourism industry is vulnerable if climate change leads to coral bleaching. In some cases, the coral around keys off the coast of Belize have already suffered from severe bleaching.

At the December 1994 Miami Summit of the Americas, the Heads of State of the U.S. and Central America signed the "Declaracion Conjunta Centroamerica-USA" (CONCAUSA)– a joint declaration and Action Plan to protect the region's rich biodiversity, strengthen environmental protection legislation, expand renewable energy use and promote more open trade. CONCAUSA, therefore, demonstrates the region's political will, and U.S. Government commitment, to confront the region's critical deforestation and sustainable energy supply problems.

Within the energy sector, recent serious shortages of electricity rocked the region's economies, especially in Honduras. As a result of these shortages, and in concert with worldwide trends, the countries of the region have been shifting toward much more private sector involvement and investment in the power sub-sector, greater interest in renewable energy sources, and increased desire to acquire U.S.-based energy technologies.

USAID's primary approach to addressing climate change issues in Central America is to ensure the conservation of critical carbon sinks which simultaneously protect biological diversity. Additional key approaches include improving the region's legal and regulatory frameworks to reduce greenhouse gas emissions and other pollutants, such as potentially more dangerous methane gas from Central America's urban landfills, and to encourage rural electrification using renewable energy, and private sector investment in "clean energy" technologies (renewable energy and energy efficiency) through joint implementation.

USAID will work regionally and bilaterally to address these needs. Regionally, USAID will accelerate our work in developing and disseminating models for reducing the impacts of climate change, such as regional projects to capture carbon within the Meso-American Biodiversity Corridor; encourage shaded coffee and methane gas recovery; establish a regional monitoring, reporting and feedback systems to facilitate the flow of resources to the most effective mitigation efforts, further develop private sector partnerships and access to U.S. technology, and engage in regional policy dialogue and donor coordination. Bilaterally, USAID will assist host countries to establish and strengthen national climate change offices, clarify institutional responsibilities, identify national climate change priorities, conduct training and provide technical assistance in carbon sequestration certification and monitoring, develop new joint implementation projects, and facilitate participation in the FCCC.

Mexico. Mexico is the second largest emitter of greenhouse gases in Latin America and the twelfth largest industrial emitter of greenhouse gases worldwide. Significant Mexican greenhouse gas emissions also result from deforestation. Between 1981 and 1990, the Mexican deforestation rate was 1.3 percent per year, meaning that almost 6.8 million hectares of Mexican forest were lost over that time.

Mexico's drylands and coastal areas are especially vulnerable to climate change. Many formerly fertile areas of northwest and Central Mexico are desertifying due to unsustainable land use practices. The increased droughts that are expected under some climate change scenarios would exacerbate the desertification problem, reducing agricultural yields and water supplies for urban and industrial uses, and increasing poverty and migration. Coastal areas— including many tourist zones, such as Cancún, Mazatlán and Puerto Vallarta— are vulnerable to sea level rise. Mexico's Caribbean

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coast is also vulnerable to increased frequency of hurricanes, while coral reefs could experience increased bleaching and death as water temperatures rise.

Currently, more than 80,000 villages, or about 5 percent of households, lack electricity. In response to this need, and a Presidential pledge to electrify every Mexican village of 100 or more people, several Mexican federal and state agencies are promoting renewable energy technologies as a tool for providing electricity to the rural poor. USAID and the U.S. Department of Energy-funded pilot renewable energy projects were instrumental in leading the Mexicans to this strategy. Maquiladora industries, which are growing at 5 percent per year, are starting to profit from energy efficiency and pollution prevention technologies that make them more competitive while they reduce greenhouse gas and noxious emissions. In Mexico City, the integration of renewable energy, energy efficiency, and pollution prevention activities into "Resource Management Systems" (RMS) is occurring through USAID-supported demonstration activities. Mexican energy organizations have been replicating USAID-funded energy efficient technologies and applications.

The Government of Mexico (GOM), with support from the GEF and the USAID-supported Mexico Nature Conservation Fund, has committed to conserving Mexico's biological diversity. Much of this biodiversity resides in heavily forested protected areas that also are significant carbon sinks. Additionally, the increasing number and strength of Mexican non-governmental organizations and community-based organizations interested in conservation and natural resource management offer unique opportunities to strengthen local capacity and garner grassroots support for conserving Mexican forests.

The USAID energy sector program in Mexico will reduce greenhouse gas emissions from the energy sector by promoting clean energy technologies (eg. renewable energy, energy efficiency and pollution prevention); fostering the introduction of policies to promote investment in clean energy technologies; and strengthening Mexican institutions involved in promoting, financing and regulating clean energy technologies.

As part of a strategy to protect Mexico's globally important biological diversity while also addressing climate change issues, USAID will help protect Mexican carbon sinks by improving the management of forested protected areas and buffer zones. Key interventions will include supporting on-site management of core protected areas; providing alternatives to deforestation and unsustainable land use in the buffer zones around protected areas (eg. agroforestry, organic coffee production, and ecotourism); promoting sustainable, non-destructive resource use in buffer zones and non-protected areas (eg. sustainable forestry, honey production and marketing and use of medicinal plants); strengthening Mexican organizations devoted to conservation; and improving the policy environment for protected areas management.

Over the next two years, the USAID global climate program in Mexico will be to reduce carbon dioxide emissions from industrial and household sources and reduce deforestation rates in southern Mexico, primarily by improving the conservation of key protected areas and their buffer zones. By the end of 1999, the adoption of renewable energy and energy efficiency technologies will prevent the emissions of almost 820,000 tons of carbon dioxide and the yearly deforestation rate in targeted areas will be reduced by 33 to 50 percent. In addition, more than 80 industrial firms will adopt cleaner production technologies and practices, more than 6,500 Mexican will benefit from adopting clean energy technologies, and more than 15 million acres of Mexican protected areas and their buffer zones will be adequately managed.

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Managing the Action Plan

USAID Management

USAID climate change programs will combine an emphasis on meeting local needs with a greater focus on global goals and objectives. Climate change activities will be developed based upon local priorities, while effectively combating the growth in net emissions of greenhouse gases.

A USAID Climate Change Committee will be formed to make decisions over issues of policy related to implementation of the USAID Climate Change Action Plan. The Committee will include representatives nominated by Assistant Administrators from each bureau within USAID. Any issues that the Committee cannot resolve will be sent forward for resolution to Agency Senior Staff in the form of a Decision Memorandum.

The Agency-wide Climate Change Team will continue to serve as the locus for information sharing on programming, current events, results reporting and USAID collaboration with other Agencies and development partners. Consistent with its role as Agency technical representative on climate change, the USAID Global Bureau Center for Environment (G/ENV) will continue to facilitate the Climate Change Team.

The USAID Policy and Program Coordination Bureau (PPC) will continue to oversee and ensure the consistent application of USAID policy on climate change Agency-wide. PPC will continue to act as USAID representative on matters of policy. Finally, as the USAID Bureau with the lead for development partnering, PPC will ensure that climate change receives a high level of attention on the Agency's development partnering agenda, and will facilitate the involvement of other USAID actors in this area.

The G/ENV will continue to serve as USAID representative to all future inter-agency climate change programs. G/ENV will be expected to inform fully other centers within the Global Bureau, regional bureaus and missions of all relevant activities, analyses, workshops and conferences being undertaken by inter-agency programs, and provide ample opportunity for mission and/or regional bureau involvement. G/ENV also will be expected to monitor and report on the results achieved for USAID contributions to inter-agency activities.

The USAID Management Bureau will ensure that obligations are commensurate with fulfilling the President's commitment. The Management Bureau also will provide guidance on closeout plan and nonpresence country procedures related to operating in countries moving to nonpresence status. PPC and G/ENV Bureau will track attributions of funding for climate change against reporting of results to the Agency-wide Special Objective on climate change. A review and revision of the Activity Code/Special Interest (AC/SI) coding system will be undertaken to ensure that coding facilitates results reporting.

Budget

The obligation of resources under the President's Initiative will focus on mitigating net greenhouse gas emissions, and fostering developing and transition country participation in the FCCC. USAID obligations will include at least $750 million in grant assistance over the next five years, as well as the use of credit instruments to leverage at least $250 million in additional climate change-related trade and investment.

An annual floor of $150 million in Agency-wide climate change-related obligations will be created for the next five years. Of the total $750 million in climate change-related grant assistance, at least 40 percent will be obligated to programs in the Agency's key climate change countries and regions. A significant additional percentage will be obligated to the Agency's program in Egypt. Assuming Congressional

approval for the use of credit, at least two thirds of the investment USAID stimulates through the use of credit instruments also will focus on USAID key climate change countries and regions. In total, almost fifty percent of obligations under the Initiative will be focused in key countries and regions.

USAID funding for Inter-Agency Climate Change Programs will come from the overall Agency budget. An additional increment will be devoted to climate change from the overall Agency budget for each of the five years of the Action Plan. Those funds will support inter-agency climate change programs.

Monitoring and Measuring Results

Monitoring and measuring the results achieved will be among the Agency's highest priorities. Though USAID has been spending substantial resources on climate change-related activities since 1990, insufficient attention has been devoted to tracking the impact of those programs. Similarly, too little attention has focused on replicating successful approaches and determining which interventions have the greatest effect.

Under the Action Plan a concerted effort will be made to measure the impact of programs, assess the most effective strategies for combating the threat of climate change, and hone and focus the Agency's approach. Currently, USAID is developing a series of indicators that will measure the impact of programs. One proposed measure will track avoided greenhouse gas emissions. The target will be developed by examining total emissions from each relevant nation and region (in particular USAID key countries and regions) and determining a reduction that will be in USAID's manageable interest. The target also will be derived by examining existing related USAID targets to determine the estimated Agency-wide impact on emissions over five years. A measure related to policy reform and human capacity development also is being developed. It will look at the extent to which policies and measures that foster "climate-friendly" development are being adopted in key climate change countries and regions. Targets related to each of these indicators will be developed over the next six months.

In the immediate term, the measure of success for activities to decrease vulnerability to climate change will be based upon mission indicators and targets. Once an analysis of critical areas of vulnerability is completed, objectives for specific sectors and countries may be set. Achievement of local objectives relevant to decreasing vulnerability to climate change also will be tracked.

Over the next several months, considerable effort will be devoted to creating a global monitoring and reporting system. At this point, USAID is only initiating development of that system. Ultimately, the system will include indicators and targets of success and will be structured to capture the full range of program impacts. As part of standard reporting procedures, USAID will report every year on the status of the Initiative. Additionally, the Agency will issue a final report at the end of the five-year period that will summarize achievements and lessons learned.

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