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Climate change: the new agenda

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Group Chief Executive
The British Petroleum Company p.l.c.

A presentation to Stanford University, California
19 May 1997

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The prediction of the IPCC is that, over the next century, temperatures might rise by a further 1 to 3.5 degrees centigrade, and that sea levels might rise by between 15 and 95 centimetres. Some of that impact is probably unavoidable, because it results from current emissions.

Those are wide margins of error, and there remain large elements of uncertainty – about cause and effect and, even more importantly, about the consequences. But it would be unwise and potentially dangerous to ignore the mounting concern.

The time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven, but when the possibility cannot be discounted and is taken seriously by the society of which we are part.

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We in BP have reached that point. It is an important moment for us. A moment when analysis demonstrates the need for action and solutions.

To be absolutely clear, we must now focus on what can and what should be done, not because we can be certain climate change is happening, but because the possibility can't be ignored.

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planet, then it falls to us to begin to take precautionary action now.

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I think the right metaphor for the process is a journey. Governments have started on that journey. The Rio conference marked an important point on that journey. So was the Berlin review meeting. The Kyoto conference scheduled for the end of this year marks another staging post.

It will be a long journey because the responsibilities faced by governments are complex, and the interests of their economies and peoples are diverse, and sometimes contradictory. But the journey has begun, and has to continue.

The private sector has also embarked upon the journey, but now that involvement needs to be accelerated. This too will be long and complex, with different people taking different approaches. But it is a journey that must proceed.

Alternative responses

As I see it, there are two kinds of actions that can be taken in response to the challenge of climate change.

The first kind of action would be dramatic, sudden and surely wrong. Actions which sought, at a stroke, drastically to restrict carbon emissions or even to ban the use of fossil fuels would be unsustainable because they would crash into the realities of economic growth. They would also be seen as discriminatory, above all in the developing world.

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In the North Sea, for instance, we've gone well beyond the legal requirements in reducing oil discharges to the sea. And now at our crude oil export terminal in Scotland at Hound Point, which handles 10% of Europe's oil supplies, we're investing \$100 million to eliminate emissions of volatile organic compounds. These VOCs would themselves produce carbon dioxide by oxidation in the atmosphere.

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Now we want to go further.

We have to continue to improve the efficiency with which we use energy. And in addition we need a better understanding of how our own emissions of carbon can be monitored and controlled, using a variety of measures including sequestration. It is a very simple business lesson that what gets measured gets managed.

It is a learning process, just as it has been with the other emissions we've targeted, but the learning is cumulative and I think it will have a substantial impact.

We have already taken some steps in the right direction. In Norway, for example, we've reduced flaring to less than 20% of 1991 levels, primarily as a result of very simple, low-cost measures. The operation there is now close to the technical minimum flare rate which is dictated by safety considerations.

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Why are we doing all those things? Simply because the oil industry is going to remain the world's predominant supplier of energy for the foreseeable future.

Given that role, we have to play a positive and responsible part in identifying solutions to a problem which is potentially very serious.

The fourth step – the development of alternative energy – is related but distinct.

Looking ahead, it seems clear that the combination of markets and technology will shift the energy mix. The world's population is growing by 100 million every year. By 5,000 just since I began this speech.

Prosperity is spreading. By the end of the century 60% of the world's economic activity will be taking place in the South, in areas which 10 years ago we thought of as Third World countries.

Both these factors will shape a growing level of demand for energy.

At the same time technology moves on. The sorts of changes we've seen in computing, with continuing expansion of semiconductor capacity, are exceptional but not unique.

I think it is a reasonable assumption that the technology of alternative energy supplies will also continue to move forward. One or more of those alternatives will take a greater share of the energy market as we go into the next century.

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The cultures of politics, of science and of enterprise must work together if we are to match and master the challenges we all face.

I started by talking about the end of history. Of course it hasn't ended. It's moved on.

Francis Fukuyama, who coined that phrase, describes the future in terms of the need for a social order – a network of interdependence which goes beyond the contractual. An order driven by the sense of common human interest. Where that exists, societies thrive.

Nowhere is the need for that sort of social order – at the global level – more important than in this area. The achievement of that has to be our common goal.

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Speeches
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NINE REASONS WHY WE MAY NOT HAVE REACH A CLIMATE CHANGE AGREEMENT IN KYOTO

by

Eileen Claussen*

Thank you. It is a great pleasure to be here this afternoon to talk about what I believe is one of the greatest challenges facing the world today: global climate change. From an environmental point of view, it has no rival. The breadth and depth of its potential impacts around the globe far exceed those of any global environmental issue tackled in the past. From an economic point of view, its reach is of enormous consequence. Stabilizing greenhouse gas concentrations in the atmosphere will require significant changes in the sources of energy we now use, sources that have fueled the world economy over the past two hundred years. And from a foreign policy point of view, its difficulty is almost unmatched. The international negotiating process involves 166 countries, each influenced by the nature of its economy, its state of development, the level of environmental awareness and interest of its public, and how much it stands to win or lose economically and/or environmentally by the actions that may be taken. My focus in this paper will be on what is necessary to meet this challenge globally, both in terms of where we have been and, even more important, where we may be going. But a brief review of the science, which is the driving force behind the international process, might be a useful beginning.

*Eileen Claussen, a partner with the firm of Alcalde & Fay, is the former Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs. This paper was delivered as the Atkeson Lecture at Yale University on November 13, 1997.

While I know many of you are aware of the facts, let me briefly reiterate a few of the most critical scientific points. Greenhouse gases, such as carbon dioxide caused by the burning of fossil fuels, accumulate in the atmosphere and trap solar radiation that is reflected off the earth's surface. This natural "greenhouse effect" is beneficial, and serves to warm the earth sufficiently to support life. Human induced climate change is caused by emissions of greenhouse gases that add to the "natural" concentration of greenhouse gases in the atmosphere. Since the start of the industrial age in the late 18th century, the concentration of carbon dioxide in the atmosphere has risen from 280 parts per million to more than 360 parts per million. With rapid industrialization in the developing world, and continued economic growth in the developed world, human emissions of greenhouse gases will almost certainly result in a doubling of pre-industrial greenhouse gas concentrations sometime around the middle of the next century, with the obvious possibility of even greater levels.

This is a troubling prospect, because the best science, while still uncertain, indicates that such a doubling of atmospheric concentrations will lead to a global average temperature rise of 1.5 to 3.5 degrees centigrade, accompanied by a sea level rise of between 15 and 95 centimeters. Further, the likely consequences of warming are expected to include increases in vector born diseases such as malaria, increases in the frequency and intensity of precipitation and extreme weather events, and shifts in crop patterns. We can expect some global displacement of people both from rising sea levels and from impacts on natural ecosystems that are unable to adapt to changing climate change patterns. We should also bear in mind

that the consequences of climate change will take place against a backdrop of an already stressed global environment, in which too many people are chasing too few resources, and where water scarcity, water pollution and air pollution problems will be exacerbated by rising surface temperatures.

It has now been almost a decade since the world first came to grips with the global climate change issue, recognizing that it was a global problem of enormous and unprecedented significance that clearly required a global response. It was obvious, even then, that greenhouse gases emitted in New Haven can affect the climate in New Guinea, that those generated from rice cultivation in Korea can cause flooding in Key West. And while the United States is the largest emitter of greenhouse gases, accounting for almost 25% of total world emissions, the second largest is China, now emitting almost 13%. In fact, the developed world, which has emitted close to 80 percent of the greenhouse gas concentrations now in the atmosphere, will soon be replaced by the developing world as the source of most emissions.

To deal with the problem of global climate change, the world community reached several agreements over the past decade. In 1988, the world agreed to create the Intergovernmental Panel on Climate Change (IPCC), an international body charged with preparing assessments on the science and economics of climate change. In 1991, the nations of the world agreed to establish a Global Environmental Facility (GEF) to provide incremental funding to developing countries to deal with global environmental problems, including climate change. Finally, at the Earth Summit in Rio in 1992, nations agreed to the Framework Convention on

Climate Change. This Convention, which now has 166 parties, requires all countries to inventory their emissions of greenhouse gases, develop national plans to mitigate climate change, and adopt policies and take measures to reduce their emissions of greenhouse gases. It also requires developed countries to aim to reduce their emissions of greenhouse gases to 1990 levels by the year 2000.

But it took only a few years for the Parties to realize that the obligations of the Convention were inadequate to address its long term objective of preventing dangerous interference with the climate system. This was apparent given that the developed country aim of reducing emissions did not extend beyond the year 2000. It was further amplified by the realization that a majority of the developed country Parties, including the United States, would not reach the goal of limiting emissions in the year 2000 to 1990 levels. The Parties therefore decided at their first meeting in Berlin in April 1995 to develop a mandate for next steps under the Convention. This mandate, known as the Berlin Mandate, required developed countries to seek to develop new targets and timetables to reduce or limit their greenhouse gas emissions. It also mandated that next steps would include advancing the implementation of the existing commitments of both developed and developing countries, recognizing that emissions from this latter group were growing rapidly and that without action by developing countries, there could be no effective global management of the climate change issue. The timetable established in Berlin was for an agreement to be reached at the Third Conference of the Parties in Kyoto in December 1997, if at all possible.

The next international milestone was the Second Conference of the Parties held in Geneva in July of 1996. At that meeting, a Ministerial Declaration was agreed that was designed to advance the negotiations so that an agreement could be reached in Kyoto in December of 1997. This declaration recognized and endorsed the Second Report of the IPCC, noting that this assessment, for the first time, indicated that the balance of evidence suggested a discernible human influence on global climate. Based on the IPCC report, Ministers agreed on the need for urgent action including the adoption of quantified, legally-binding targets for developed countries, and the development of a mechanism to allow for the review and strengthening of the commitments that would be agreed in whatever legal instrument emerged from Kyoto.

We are now 1 month away from the Third Conference of the Parties to the Framework Convention on Climate Change in Kyoto. And while it is impossible to predict the outcome of that meeting, it is apparent that there are major and severe political and substantive obstacles that must be overcome if the meeting is to yield an international treaty. I would submit that there are nine key impediments to international action.

1. THE PARTIES TO THE CONVENTION DO NOT AGREE ON THE FUNDAMENTAL SCOPE OF WHAT IS TO BE AGREED IN KYOTO

While the Berlin Mandate was agreed by a consensus of the Parties to the Convention, there is a fundamental difference of view among nations on what is required to address the global climate problem and by extension, on what should emerge from the current international negotiating process. The

European Union, for example, has focused almost exclusively on the initial target that must be agreed by developed countries. This target is at the heart of its proposal, with the remainder of the proposal dealing primarily with policies and measures, which are designed both to illustrate and mandate how the target will be achieved.

The United States, on the other hand, has viewed the problem in terms of the system that must be established to ensure that the climate change issue is successfully dealt with over the long term. It supports the negotiation of a binding target for developed countries, but also believes that other provisions must be included in the treaty, such as global emissions trading and joint project implementation, both designed to achieve emissions reductions in a cost-effective manner; a compliance regime, to assure that the targets are actually met; a long term goal, so that the private sector can engage in the long term technology research, development and diffusion that will be necessary to achieve what will be required over the coming decades; and a system for the inclusion of developing countries, since the issue cannot be effectively addressed without their participation and commitment. The United States has argued that these provisions will affect not only the reduction level that can be achieved, but will also be required to support the series of targets that will be needed for both developed and developing countries over the long term.

Finally, the developing countries view this stage of the negotiations as requiring action only from the developed world. The statement in the Berlin Mandate that there would be no new commitments for developing countries was highly contentious and bitterly argued during the negotiation

of the mandate, and the compromise reached -- that all countries would advance the implementation of their existing commitments -- has all but been ignored by the developing world and much of the developed world in the current negotiating process.

This lack of basic agreement on the goal of the negotiation and what should be included in a treaty has been at the core of the conflict thus far in the international discussions. The result has been that there is, as yet, no agreement on either a developed country target or on any parts of the broader framework proposed and deemed essential by the United States and others.

2. THE TIMETABLE FOR THE NEGOTIATION IS TOO SHORT.

The European view of the centrality of the emissions reduction target, coupled with the strengthened scientific base for the treaty, led the parties both in Berlin and in Geneva to urge that the negotiations conclude as rapidly as possible. This did not, however, adequately take into account the U.S. insistence on establishing a broader system, with provisions that would allow the emission reductions to be taken cost-effectively through a global trading system and through projects implemented jointly by public and private enterprises around the world. In fact, the U.S. proposal, tabled in January 1997, was highly complex, not fully thought through even in the United States, and not thoroughly explained and debated with other Parties to the Convention. Although the system proposed is not as complex as the trading system established under the World Trade Organization, it is closer to that model than to any of the global

WTO

environmental treaties negotiated to date. The trade regime took more than a decade to negotiate. The idea that a sophisticated system to protect the global climate, with far reaching effects on the global economy as well, could be negotiated in two years is, in hindsight, an almost absurd notion. For while it is possible that a target for the developed world could be agreed in Kyoto, the other proposals on the table, from a system for developing country participation to an emissions trading regime, are beyond what is possible for 166 countries to resolve in a time span of two years.

3. NATIONAL GOVERNMENTS HAVE BEEN NEITHER TIMELY
IN THEIR DECISION-MAKING PROCESSES NOR
SUFFICIENTLY ENGAGED AT THE HIGHEST LEVELS.

Equally to blame for the troubled state of the negotiations is the national decision-making process in a number of different countries. This is particularly true for the United States, but also for a large number of developing countries. With respect to the United States, the major difficulty has been with the development and timing of the presentation of the U.S. position. It is worth noting here that the framework endorsed by President Clinton in October of this year was precisely the framework put forward by the United States in the negotiations in July of 1996 and January of 1997. However, both the European Union and the developing countries made clear by the late Spring of 1997 that no decisions could be taken (and no detailed discussions would be entertained) until an entire proposal, including a binding target, was tabled. A target was not

presented by the United States until October 22, however, barely more than a month before the Kyoto meeting. While it could be argued that the European Union strategy of refusing to seriously negotiate other parts of the U.S. proposal in the spring and summer of this year is equally responsible for the current state of the negotiations, it is obvious that, had the United States developed its completed proposal early in 1997, the negotiations would have progressed far beyond where they now stand.

Also at issue is the apparent lack of high level attention to this issue on the part of the developing countries. For while the Environment Ministers in most of these countries have been participants in the process, the lack of participation by others of Ministerial rank (for example, Trade Ministers, Finance Ministers, Ministers of Industry) or by Heads of State is at least partially responsible for the inability of the developing world to engage in serious discussions of how their existing commitments can be advanced, and what kind of process can be agreed for developing and implementing their obligations in the future.

4. THERE HAS BEEN NO FACILITATOR OR BROKER TO DEVELOP A COMPROMISE.

Given the scale and impacts (both environmental and economic, national and global) of a treaty to deal with the climate change issue, one element that has been sorely missed in the negotiating process is the presence of a broker who can work to cement a compromise among the conferring parties. Having someone play this role was crucial to the success of the Montreal Protocol on Substances that Deplete the Ozone

Layer, where Mostafa Tolba, the Executive Director of UNEP, performed this function both in 1987, when the treaty was first agreed, and then again in 1990, when the London Amendments, with the Multilateral Fund, were negotiated. Although from a developing country (Egypt), he was credible with both the developing and the developed world, and did not hesitate to use a combination of charm, directness and pressure to broker a result. Without his interventions, it is unlikely that the Protocol would have been successfully negotiated.

In the case of the climate negotiations, which are far more complex and politically charged than the ozone layer negotiations, there is no individual or country who has successfully played this role of mediator and broker. The Japanese, as the hosts for the Kyoto conference, have perhaps the greatest political incentive for making the negotiation a success. But they have been wracked with internal divisions in reaching their own decision on what might be acceptable for Japan, and have been unable to forge a consensus on any single aspect of the negotiations. One individual who has attempted to play the role of broker has been Raoul Estrada, the Argentinean Chairman of the Ad Hoc Group on the Berlin Mandate (AGBM). However, being the Chair has made it difficult for him to distance himself enough from the specifics of the process to be an effective, detached broker of a final agreement. In addition, the position outlined publicly by the Argentine President, Carlos Menem, in October of this year in support of joint implementation and developing country commitments, appears to have severely undercut his credibility with other developing countries.

5. THERE IS NO WIDELY ACCEPTED ANALYSIS OF THE
ECONOMIC IMPACTS OF CLIMATE CHANGE MITIGATION.

Although not all countries attach as much value to quantitative analyses of the economic impacts of particular actions as does the United States, it is not unreasonable for all countries to want to understand the economic consequences of a greenhouse gas reduction regime before agreeing to abide by that regime. Clearly, significantly limiting greenhouse gas emissions will mean changes in energy sources, energy use and energy cost. The consequences of these actions could mean lower or higher industry profits, gained or lost jobs, and changes in international trade and investment patterns. However, there is no credible, widely accepted economic analysis that currently exists either in the United States, or in most other countries, that could answer very basic cost and benefit questions. In fact, Janet Yellen, Chair of the Council of Economic Advisors in the United States, essentially admitted that efforts to produce such an analysis had failed. This failure in the United States led to a protracted decision making process within the Administration, and to strongly divergent views among lawmakers, the Administration and the various interest groups that believe they either stand to win or to lose from control of the emissions that affect the global climate. Many members of Congress have strongly criticized the Administration for its failure to produce an economic analysis, and have indicated that they would not vote to ratify a treaty unless the economic consequences were well understood. The implications for the treaty negotiations are obvious: if the United States negotiates a treaty but fails to ratify it (as it has with the Biodiversity Convention, the Law of the Sea, and others), greenhouse gas

emissions will continue to rise. This lack of consensus within the United States has cast a pall over the negotiations, with one country (Canada) indicating that it would not negotiate a treaty unless it was clear that it would be ratified by the United States.

6. SPECIAL INTEREST STRATEGY AND SPENDING HAS BEEN BOTH SIGNIFICANT AND EFFECTIVE.

Because there are serious economic issues at stake for certain industries and certain segments of the labor movement, these interests have banded together to argue strongly and vociferously against a climate change treaty. In the United States, they have funded a very aggressive advertising campaign (said to cost \$13 million), focused on the two aspects of the treaty that early polling and focus groups indicated were of importance to the public: cost and fairness. The message is essentially that every American will have to pay more for gasoline and heating oil, and that the treaty being negotiated is not fair since Americans will have to take on burdens that will not be required of other nations. These same themes have been highlighted by industry and labor groups in Australia.

In both countries, this effort has had a serious impact. In Australia, the government has almost completely adopted the position espoused by the industry, and has argued that Australia requires a lesser target than other countries (basing this on analyses that show that the costs will fall disproportionately on Australians, and that all countries, including developing countries with whom Australia competes economically, must have emissions targets). In the United States, these arguments have held

more sway with the Congress than with the Administration. The Byrd resolution, which passed the Senate by a vote of 95 to 0 essentially requires that developing countries adopt emissions targets for the same period (although not necessarily as the same level of stringency) as the United States. In addition, many in the Congress have raised the cost and economic impact issue, arguing that the science is not sufficiently certain so as to warrant significant costs to the American consumer. While it is the Executive Branch that is responsible for negotiating treaties, it is the Senate that is required to give advice and consent. By targeting the Congress, the industries responsible for the advertising campaign have widened the rift between the two branches, making it incumbent upon the Administration to consider the ratification possibilities as they progress with the negotiations. This has had the effect of pulling the United States farther away from most of the other countries in the negotiations, and hardening its position on what would constitute an acceptable target and on what should be required of developing countries.

This industry segment has also been involved with the oil producing nations, arguing that a climate change regime in which oil imports declined would have severe economic impacts for these producing nations. The countries have, in turn, insisted that they be compensated for any loss of revenue resulting from reduced oil exports. Although not taken seriously at first, this concept of compensation has now become a part of the developing country proposal that has been tabled at the negotiations. And with the consensus system used in negotiations conducted under the auspices of the United Nations, this group of countries can block any outcome of the negotiations should their demands not be met.

7. THE GLOBAL NGO COMMUNITY HAS BEEN WEAK AND DISORGANIZED.

Politicians respond to the concerns and need^s of their constituents, particularly as articulated by interest groups and citizens that vote in their elections. However, even in the United States, there has not been a coherent and consistent point of view expressed by the environmental community as a whole, either to the Administration or to the Congress. Nor has there been a successful effort implemented to build public awareness that could in turn be used to influence climate change policy decisions. The result has been a public that is broadly sensitive to this issue, but not well enough informed either to articulate a strong point of view, or to be able to make choices that could positively affect the climate (by purchasing more energy efficient automobiles or refrigerators, for example).

This situation is magnified when applied to the global environmental community, where there has not been a sufficiently strong and focused effort to develop a set of messages on what must be done to respond to the threat of global warming that could be used with all governments or all citizens. Contrasted with the message provided by the industry groups that perceive themselves to be losers if an aggressive climate control regime is negotiated, environmental NGOs have failed to make clear and public the consequences of climate change on the environment and public health. If governments are to take coordinated and aggressive action on this issue, public awareness has to be raised and governments have to understand what

the environmental community and the broader public deem an acceptable outcome in Kyoto. The lack of public consensus on this issue, coupled with a somewhat garbled and confused message on what is acceptable, has weakened the resolve of some governments to negotiate an effective treaty.

8. THE DISCONNECT BETWEEN LONG TERM ISSUES AND SHORT TERM POLITICS HAS DIVIDED RATHER THAN UNITED COUNTRIES.

Governments generally have considerable difficulty in dealing with long term issues where the costs will be felt during the tenure of a political decision-maker but the benefits will accrue long after the decision-maker will be gone from his or her office. This is certainly true for ~~an issue like~~ climate change, where significant environmental change is expected well into the next century, but where efforts to mitigate that effect must be launched now.

This phenomenon has resulted in two conflicting responses. In some countries, like the United States, it has made politicians reluctant to deal with the issue aggressively since it could affect their political prospects or those of their political party, particularly if the costs of action are thought to be significant in the short to medium term, while the costs of inaction are unlikely to be felt or proven for some period of time. In other countries, like those of the European Union, the politics of the issue have moved in the opposite direction. A short-term political gain is seen from taking a position that is viewed as aggressively "green," particularly if the costs are not ~~accepted~~ expected to accrue until some time in the future. This political

expected

difference has served to sharpen further some of the disagreements on approach that exist between the countries of the European Union and those of the "JUSCANZ" countries (Japan, the United States, Canada, Australia and New Zealand).

With respect to most developing countries, whose environmental concerns center on air and water pollution, this issue barely rises to the political level. In countries where a majority of citizens have no access to clean water or sewage treatment, these other environmental concerns clearly dominate the agenda. The fact that the most serious impacts from climate change may not be felt for decades only serves to push this issue further away from the political center.

9. FAIRNESS REMAINS THE CENTRAL UNRESOLVED ISSUE IN THE NEGOTIATIONS.

Finally, and perhaps most important of all, much of the conflict in the climate change negotiations results from disagreements, sometimes explicit, over what kind of climate change regime would ultimately be "fair." Can a uniform target for each country in the world be fair, given the disparities in total emissions, per capita emissions, overall GNP or GDP, and natural resource base? Should the greatest burden fall on those who have the greatest historic responsibility for "creating" this problem? Should those whose reductions would be cheapest have the same reduction targets as those who have already taken most of the available cheap reductions, or should the costs be equalized rather than the emissions targets? Should those with greater economic growth have lesser or greater

targets? At what stage of development should countries begin to assume obligations, or, put simply, should there be a "means test" for participation? To what extent should industrial infrastructure be considered in determining a "fair" target? How can trade flows be factored into the development of fair targets?

While these issues have not been comprehensively debated in the negotiation process, many countries have used them to argue their own case for what should be agreed in Kyoto. The Australians, for example, have argued that their investment in energy intensive industries should not penalize them since they export much of the product that is derived from those industries to the developing world. They therefore insist upon a less stringent target for themselves. The Japanese have argued that since they are highly energy efficient, further emission reductions would be very costly, and therefore they, too, should have a lesser target. The European Union, while arguing for a uniform target, allows for different targets among EU countries based on their fuel mix (France, which is heavily nuclear, for example, would have a less stringent target than Germany), their economic growth and development potential (Portugal and Greece are allowed emissions growth), and other, political factors. And the developing countries argue that they should not have any targets, even growth targets, because of their stage of development. (And this is true even for those countries that have recently joined the OECD, like Mexico and Korea).

How, and whether these fundamental issues of fairness can be resolved in time for the Kyoto conference remains an open question. But it

is clear that unless these concerns are addressed, the possibilities of reaching an agreement are much diminished.

The purpose of this paper is not to say that no agreement **WILL** be reached in Kyoto, or, even more important, that no agreement **SHOULD** be reached in Kyoto. There is no question that this is a problem that must be dealt with, and that must be dealt with globally. But whether the world is ready to reach an agreement, or whether any agreement that could be reached now is worth reaching are very much open for debate. Certainly, we are far from finding a viable and fair solution to an enormously complex problem, and much work needs to be done to debate the essentials, confront the difficulties, and find the compromises that will make it possible for all countries to become part of the solution. It is a challenge that is worth meeting; it is a challenge that must be met.

The Administrator

Oct. 6

To Todd Stern

In light of the slight distortion of my remarks in today's Post piece on climate change, I wanted you to see what I have been saying re the developing countries since my return from India. We can get them on board sooner if 1) we set meaningful US targets and 2) if we continue to cooperate with them to help them grow more cleanly. Best regards, Ben

**Remarks of
J. Brian Atwood
Fulbright Association
20th Annual Conference**

**October 4, 1997
Washington, D.C.**

I want to thank the Fulbright Association for inviting me here today. I would particularly like to acknowledge board member Sally Shelton-Colby, who heads USAID's Global Programs Bureau. Ambassador Shelton-Colby was a Fulbright scholar at the Institut des Sciences Politique in Paris. She exemplifies this program's potential for developing enlightened leadership.

I also want to extend a warm welcome to the former and current American and international Fulbrighters who are with us today. This program has sent 120,000 people from around the world to the United States to study, teach or conduct research and 90,000 Americans have gone abroad as Fulbright scholars. What a wonderful contribution to global understanding, peace and stability. Those of you who have participated know well how your own lives and perspectives have been shaped by your experience.

Like President Clinton, Senator Fulbright's roots were in the Arkansas Ozarks. Last year, at the 50th Anniversary Dinner for the Fulbright Program, the President spoke of his fellow Arkansan:

“His vision and brilliance and the power of his example said to a whole generation of us who were landlocked -- and most of us had never been very far from home by the time we were nearly grown -- that we could still imagine a world beyond the borders of our state and relate to it, to participate in it; that we needed to understand that world and that perhaps we had something to give it.”

Along with Sally Shelton-Colby and perhaps others here, I was privileged to work in the Senate when Senator Fulbright chaired the Foreign Relations Committee. He used that Committee to educate -- to educate his colleagues, the American people, even the Executive Branch, though that was never easy. The Senator could be very tough in exposing the weaknesses of a policy approach. His hearings on Vietnam certainly revealed flaws that historians and newly retrospective participants such as Robert McNamara now confirm as painfully real.

A handful of laws bear the Fulbright name -- the Fulbright Scholars program is the best known. But I remember his reluctance to legislate in the area of foreign affairs. He believed the Executive Branch should not be bound by inflexible legislative formulas. He gave Presidents and Secretaries of State the benefit of the doubt until they lost his trust on a given issue. Then he would conduct a seminar that was more revealing and more painful for the witness than any amendment.

Today we seem to pass amendments and ask questions later. We are at a juncture when it is more complicated than ever to pursue American interests abroad. Yet, we are more constrained in doing so than ever before. We need more seminars -- even painful seminars -- and fewer rigid laws whose objectives may be good but whose prescription is to deny our country needed flexibility.

I am encouraged that, in many respects, Fulbright's global vision lives on. There is a growing recognition in America that a global approach is the only approach. Most of our top business schools, for example, have undergone major restructuring to better educate students of the growing importance of international economics, commerce and finance, and to expose tomorrow's captains of industry to the international diversity of cultures and societies.

Nonetheless, the debate about American investment in global peace and development continues. Many on Capitol Hill are calling for cuts in American contributions to the Fulbright program. There are similar strains in the debate in which I have been engaged over the last five years. I have tried with some degree of success to argue that foreign aid is a misnomer. Today's aid program supports American domestic interests as never before whether it is protecting Americans against deadly infectious diseases, creating new markets for our exports, or waging the battle against climate change.

I know I'm preaching to the choir when I tell this group that we live in a world where trends toward globalization and increased interdependence are powerful and accelerating. International cooperation is no longer a choice we make out of the goodness of our heart. It is a necessity. We can't hide from the world's problems behind our borders. The diverse fields of health, trade, crime, environmental protection and job creation all require an international reach. In all of these areas, the benefits of fruitful cooperation are obvious, while the failure to work together is increasingly costly and immediate.

The U.S. spends a smaller percentage of its wealth on foreign assistance than any other industrialized country. One of these days we may hear a presidential candidate charge as Kennedy did about the missile gap, that we have allowed our first line of defense to grow terribly weak. We may wake up and discover that the investments we made thirty years ago are no longer producing an edge for Americans. Then we will hear the recriminations.

Fortunately, those investments are still paying off. We are exploiting the emerging markets of Asia and Latin America as never before (though we need fast track legislation if we are to compete in our own hemisphere). We work with American-educated ministers and leaders all over the world. We still have an edge, but I worry about the next generation.

One area where international cooperation will be vital is the global climate change issue. You will hear a great deal about this issue from now on. On Monday, President Clinton and others from the Administration will speak at a full day White House conference on climate change. If you haven't followed the issue, I recommend you start -- it has major implications for the well being of future generations.

The American author and humorist Mark Twain once observed that "everyone talks about the weather, but nobody does anything about it." That is no longer the case. Collectively, we are changing the weather. As President Clinton noted at the United Nations in June, the science on climate change is clear and compelling. Two thousand eminent scientists serving on the Intergovernmental Panel on Climate Change concluded in 1995 that human activity is having a "discernible impact on global climate."

The greenhouse effect, as most of you know, is caused by gases such as carbon dioxide which accumulate in the atmosphere and trap solar radiation, increasing the Earth's temperature. Current levels of carbon dioxide are the highest in 200,000 years and will soon reach double the concentrations of the pre-industrial age. If this trend continues, scientists expect that global temperatures will rise by 1 to 3.5 degrees centigrade over the next century. What will this mean?

Sea levels are expected to rise one-and-a-half feet, putting 100 million people around the world at risk from flooding and storm surges. Many nations would lose millions of acres of sea-level land. Island nations would be devastated. People will be displaced as flood-prone areas will increase by 300 percent. Malaria, dengue and other water-related diseases would become more common. Crops would suffer droughts in some areas while enduring flooding elsewhere. Rice yields, forest productivity and forest cover would all decline.

The cumulative effect of climate change will change the face of global politics in the coming century. Over 200 million environmental refugees worldwide could be created by the combined effect of shifting agricultural patterns, weather-related damage, epidemics and disrupted water supplies. Scientists predict that a doubling of atmospheric greenhouse gas concentrations is a virtual certainty under current trends. A trebling or quadrupling of greenhouse gas concentrations would have even more drastic -- and unpredictable -- effects.

Coping with climate change is not just a scientific issue, but one that involves politics, policy, economics, finance and social concerns. In democracies such as ours, wrestling with these issues becomes particularly complex. Reaching global agreement on these issues will be a major challenge.

What can be done?

The issue is being made more difficult as a result of a disinformation campaign being waged by a few industries who oppose our setting meaningful targets to reduce carbon emissions. The tactics are simple: question the science, exaggerate the economic impact and demand that our negotiators in Kyoto bring home a treaty that includes all countries -- including the developing countries -- even though the agreed framework for the negotiation requires the industrial countries to agree first to binding emissions targets. No wonder some people are confused!

President Clinton stated at the United Nations in June that the United States "will bring to the Kyoto conference a strong American commitment to realistic and binding limits that will significantly reduce our emissions of greenhouse gas." We are currently studying how we fulfill this presidential commitment in a way that protects our economic growth and is fair to the developing countries.

It is clear that we must convince the largest developing economies to join this international effort. I visited India last week to explore the climate change issue with one of the largest nations and fastest growing economies in the developing world. I was surprised at the receptivity of the Indians with whom I met. They understood that climate change will do more damage to developing countries than to the richer countries. They want access to private capital and the latest technology for their energy sector.

Their problem is very simple and very serious. India has 25 percent less electricity than it now needs to support its economic growth rate. That means power outages and generally undependable power for manufacturers, farmers, hospitals, schools and homes. As one wise Indian told me "The most expensive power is when there is no power." A nation cannot produce up to its potential without adequate power.

A World Bank study shows that India will need to add 140,000 megawatts of electricity by the year 2012 if it is to maintain its rate of economic growth. India currently is able to produce only 85,000 megawatts for a country of 950 million people. Compare that to the United States: in 1990 we produced and consumed 775,000 megawatts for a population of 260 million.

It is not in our interests to constrain India's economic growth or to try to force this nation into an international regime that will make it more difficult for India to fulfill its potential. Seventy percent of India's population lives in poverty. Poverty is the number one cause of environmental decay in the developing world. It forces growing populations into cities and destroys rainforests. Fossil fuel is the agent of climate change, but poverty is the cause.

We cannot encourage India to grow economically with old, fossil fuel-generated power. Only the introduction of clean technology and appropriate energy-sector policies will allow India to grow while limiting greenhouse gas emissions. Through USAID, we are now introducing these techniques and technologies -- energy efficient power plants, renewable energy, reduced subsidies for energy, better methods to collect tariffs for electricity use.

The key to success in Kyoto is to engage in this type of international cooperation and collaboration. We are all in the same boat heading toward the same reef. We don't know how much time we have, but we know that we must begin to slow the boat down and change its direction. We can best do this by being aware of the needs of our interlocutors in countries like India and by showing real American leadership.

Part of that leadership means arriving in Kyoto with a strong commitment to reduce our greenhouse gas emissions. The other part is fulfilling President Clinton's \$1 billion commitment to help developing countries reduce emissions. USAID will release its action plan on climate change on Monday for public comment. It will contain many of the programs we have underway in India: partnership between U.S. and Indian utilities; technical assistance to state electricity boards; demonstration energy efficiency technology; and renewable energy projects to introduce solar, wind and hydroelectric systems in areas not covered by India's grid.

The Clinton Administration shares the objectives of Senator Byrd's resolution urging us to include the developing countries to join a worldwide treaty and climate change. But we will not achieve that objective by demanding compliance from poor countries while we duck responsibility. We are going to have to show that we mean business in reducing emissions and we are going to have to continue to serve our own interests by cooperating with less fortunate countries as they seek both to grow economically and contain greenhouse gases.

The stakes are high at Kyoto. Climate change is a public policy issue that cannot be put off just because it is difficult to handle politically. We cannot allow those most responsible for polluting the atmosphere to buy public opinion on this issue.

The President is taking the issue to the public. On Monday he will bring scientists, economists, business executives and academics together at Georgetown University to discuss the science and the economics of climate change. He will speak to the people directly and he will let the facts speak for themselves. This is what leadership is all about.

The President, in conducting this all-day seminar, is doing exactly what Bill Fulbright would have done. He is educating the American people. He knows that climate change is an issue we cannot walk away from. If we are honest about the economic projections and if we employ ingenuity and technology, we will not need major sacrifice. But if we delay, we are asking for trouble. And the next generation will not forgive us if we fail to answer the call of history.

Thank you.

SEP 29 09:45

speeches

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(202) 785-4888

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GLOBAL CLIMATE CHANGE: THE POLICY OPTIONS

Presented by
JOHN BROWNE
CEO BRITISH PETROLEUM
Berlin, Germany
September 30, 1997

Ladies and gentleman, good morning.

It is a great pleasure to come back to Berlin and a great honour to be invited to speak to you in this magnificent building.

I think we are at an historic moment in the debate on climate change, and this seems a particularly appropriate venue for a discussion on a subject of immense significance.

Germany has been at the forefront of those nations seeking solutions to the challenge of climate change and environmental policy generally. The climate change secretariat is based in Germany. It was here in Berlin three years ago that the policy options raised at the Rio Earth Summit in 1992 were first seriously discussed.

What we are addressing is the future, and Berlin is a city where the future comes into focus — indeed where it is being made. Berlin is not only the biggest building site in Europe, as I've seen for myself this morning, it is also in Berlin that policies on the environment are being built and tested. And that's why I'm delighted that BP is becoming one of the "Partners for Berlin."

So this is the right place, and it is also the right time, because after much analysis and debate I think it is now possible to see the nature of the actions we should take in response to the challenge of climate change.

The key word is "we." For so long this has been an issue on which few were prepared to accept responsibility. Given the uncertainties it was always easier to pass the burden to others.

Now though I think it is becoming more apparent that climate change requires action not just by Government, but by Government, and industry and consumers, working together and in parallel. I believe we all have a responsibility to take constructive, precautionary action.

If we start to take that constructive action now I think the issue can be managed without disrupting economic development. If we fail — and I can't believe we will — then the danger of disruption at some later point becomes a serious risk.

Before talking about the sorts of constructive actions I think we could take, let me set the context — the developments which make those actions necessary.

This I did for the first time this spring, speaking at Stanford University in California. What I had to say surprised some people, but they shouldn't have been surprised.

Responsible corporate leadership — in the energy industry and elsewhere — requires realism and carefully considered action. So let me again paint the picture as I see it.

With growth in the global population and standards of living, the demand for energy will continue to rise. By 2010 the world's population will have increased by around 1.3 billion. In terms of people, that means another China.

The forecast of the International Energy Agency, which reflects the general consensus, is that by 2010 total energy demand will rise by over 30 per cent. An extra 2.5 to 3 billion tonnes per annum of oil equivalent. Extra demand which is equal to twice Europe's current consumption.

It is that growth in the use of energy, and of hydrocarbons in particular, which has given rise to the concern about climate change.

The science of climate change is still provisional. Perhaps all science is provisional. But some things are clear. The concentration of carbon dioxide in the atmosphere is rising and the temperature of the earth's surface is increasing.

There's a lot of noise in the data. It is hard to isolate cause and effect. But there is now an effective consensus that there is a discernible human influence on the climate and a link between the concentration of carbon dioxide and the increase in temperature.

The forecast of the Intergovernmental Panel on Climate Change is that over the next century temperatures might rise by between 1 and 3.5 degrees centigrade and that sea levels might rise by between 15 and 95 centimeters.

Some of the impact is probably already unavoidable because it results from current emissions.

Those are wide margins of error and there remain large areas of uncertainty — about cause and effect, and more importantly, about the consequences. But it would be unwise and potentially dangerous to ignore the mounting concern. We need to take precautionary action now.

Developing the right policies to deal with that situation will be a complex process.

The problem won't be solved by denying or restricting the economic expectations of the people of Asia, or Africa or Latin America. Nor will it be resolved by destroying the living standards of the world's developed economies. The first would be immoral, the second, unrealistic.

The challenge is to achieve growth and a continuing rise in the living standards of all the people of the world in a way which isn't destructive of our common environment.

And what is at stake is economic activity as a whole, not simply the transportation sector.

Of all the carbon emissions which result from global human activity, only 20 per cent come from the transportation sector. The rest — 80 per cent — comes from the static uses of energy in industry, in power generation, and in the domestic and commercial sectors.

So how should we approach this complex challenge?

I approach it as a businessman and as an optimist. Optimism, after all, is a prior condition for being in business. Being an optimist doesn't mean that I think there are easy or cost free solutions, but it does mean that on the basis of experience I think we can find a constructive way forward.

During my working lifetime, I've seen my company and the industry respond successfully to immense change and volatility, such as dramatic changes in the oil price. I've seen us respond equally successfully to the immense technical challenges of working in new and completely unfamiliar areas, such as the North Sea and Alaska.

And I've seen us produce better financial performance, while improving our safety record and reducing the environmental impact of our operations. With all those gains reinforcing each other.

I've also been struck since I first spoke on this subject in Stanford in May by the degree of support there is within our company for a constructive approach — an approach which doesn't start with a denial of the problem, but rather with a determination to treat this as another challenge which we can help to resolve.

I want to stress that I speak as a businessman not a politician. Politicians are the people who must define policy. But I think that business has a responsibility, in fact, a duty to help the process of defining the means by which that policy can be achieved.

My instinctive approach is to say that if you want to do something you need to identify who the people are who can do it, then encourage them to deliver. That means measuring what they do against targets and rewarding delivery.

Incentives work in business and I think they are the key instrument which should also shape public policy in this area.

We're now in the run up to the conference in Kyoto. I think it is important to see that conference in perspective.

The problem of climate change will not be resolved at any single summit meeting. As an issue, climate change is on a par with the development of an open world trading system or the process of disarmament. It will take time.

Climate change is a long-term problem and what matters now is that we begin to take rational, precautionary steps — even if there are still areas of uncertainty and disagreement. We can't wait for a finished, polished solution which has unanimous endorsement. Uniformity must not be the precondition for action. If Kyoto pursues the chimera of a single solution to be pursued everywhere it will fail.

Kyoto is an important meeting but it is just one more step in a continuing process. I hope that some measure of agreement will be reached, and that it will lead to the involvement of the whole world. That wide involvement — of countries of the North and of the South — is necessary to remove the concern, which is felt in different ways in both the developed and the developing world, that participation in the process will create a competitive disadvantage if others opt out.

Any agreement seems most likely to be around objectives and aspirations rather than around a detailed programme. There may be a target — for an overall reduction in emissions by 2005 or 2010 — but that will just be the beginning of the next process, which is the development of the means to achieve that target.

Different governments in different countries will work in different ways to achieve their own targets using instruments which match local circumstances and political realities.

The key is to ensure that each of those instruments achieve the desired result. And that is where business has a responsibility and an opportunity to contribute.

That is what we and many others in the industry have done in terms of health and safety. It is what we in BP have done in response to many local environmental issues — in areas such as Alaska — using our skills to meet the requirements set by public policy and by local communities.

We should adopt the same approach to this issue.

The three policy instruments which seem likely to be taken up by different governments are taxation, carbon trading and joint implementation. Each are instruments which use the market to change behaviour.

In each case I think the key lies in the detailed design of the instruments and in particular the establishment of the right incentives for action by those whose choices and decisions can make a difference.

Let me take them in turn.

First taxation. The level and nature of taxation is, of course, a matter for national governments. But there is no doubt that taxes can change the behaviour of manufacturers, producers and consumers and could have an effect on the pattern and efficiency of energy use.

Taxes are not simple or easy tools. They raise issues of distribution and they have an impact on economic activity.

The test of any proposed tax in this area should be its actual impact on reducing greenhouse gas emissions. So called "green taxes" can't simply be a politically convenient means of raising revenue.

In the UK we have long experience of petrol taxation. Two-thirds of the price of a gallon is now accounted for by a tax of one sort or another. Those taxes raise a lot of revenue, but they don't change behaviour — consumption continues to rise. Those taxes don't create real incentives for change because the choices available to consumers are too limited.

To be effective, taxation designed to improve the efficiency of energy consumption would have to cover all industry sectors and be based on a level playing field between fuels. It would need to be set at a rate which actually changed behaviour, with the revenue used to give manufacturers and consumers the opportunity as well as the incentive to reduce emissions by changing the fuel mix or using improved technology.

The second option is the development of a system which puts a value on carbon emissions and establishes a mechanism by which they can be traded on an open market.

Such a system would rely on the allocation of permits for carbon emissions. Here again, the playing field must be level. These permits would be bought and sold at competitive market prices. A company's permit holdings would become just one element of ordinary business planning. On a macro scale, industries would reduce emission levels according to the supply of permits in the market. On a micro scale, companies would be encouraged to seek new technologies that provide cheaper alternatives to the market's permit prices.

There are, of course, important practical issues to resolve and I do not underestimate the challenge of establishing a system which would work on a global level. The principles, however, are clear and there is some practical experience on which we can draw.

The U.S. already operates two domestic permit trading systems — one aimed at curbing sulphur emissions, the other at phasing out ozone-depleting substances. The sulphur trading system has been hailed by many as a great success. Since it began in 1992, five auctions have taken place on the trading floor of the Chicago Board of Trade, seven

million allowances have been sold, and the price per allowance has fallen by almost 50 per cent.

The result has been a 5.6 million tonne reduction in sulphur emissions with the prospect of a further 4.4 million tonne improvement by 2010. On this basis, the programme will meet its objective which is to cut sulphur emissions by 40 per cent from a 1980 baseline.

The third policy option has been christened joint implementation, which really means doing the most effective things in the places where they have the greatest impact.

Defining how the different regions of the world respond to the issue of climate change is a sensitive and highly political issue. We have to be alive to the fact that it is hard for countries which don't have clean drinking water to deal with climate change before they deal with the challenge of providing basic living standards.

When I go around the places where we do business — in the emerging markets of the world, such as Vietnam and China and Colombia — I realise how important it is that any measures taken to solve the problem of climate change also help those countries to deal with their more immediate concerns, such as the improvement of competitiveness through technical progress and the control of some of the more immediate environmental problems, such as inner city pollution.

Joint implementation could be one way of approaching the issue.

Using market-based incentives, a system could be developed to encourage individual firms from the developed and developing worlds to curb their emissions in those countries, many of them in the developing world where the marginal cost of such curbs is lowest, but where their marginal effect is greatest. By targeting those things which can be done at lowest cost, they allow time for further technology to be developed and deployed.

Each of these instruments — designed well on the basis of past experience — could have an influence on behaviour.

I believe that much could be done, and will be done, if the right incentives are in place.

Simply adopting current best practice and technology would be an enormous benefit — and in the emerging markets, would have a parallel and highly positive benefit for economic activity as a whole.

It is possible to develop oil fields without flaring, to improve engine quality, to run cleaner power stations, and to develop measures of conservation.

Here in Germany you have shown just how much can be done to improve environmental conditions in an area where they have been neglected. I know the process isn't complete, but it is already a tremendous achievement.

The right incentives would produce a more rapid turnover of capital stock, which would be enormously beneficial because so many emissions and so much general pollution come from the oldest plants. That is true not just in the transportation sector, but also in power generation and in industry.

The right incentives could also encourage other activities, such as sequestration and the capture, reinjection and storage of CO₂.

The studies by the British Geological Survey under the auspices of the European Union's R & D programme show that there is extensive capacity for reinjection and storage of CO₂. Much of the necessary technology already exists, and the right incentives would encourage the work necessary to reduce costs to a viable level.

Reforestation is also an attractive way of mitigating at least part of the impact of CO₂ emissions.

Of course there is uncertainty here too about the precise impact, but it is clear from the IPCC report that slowing the process of deforestation, promoting natural forest regeneration in the tropics, and implementing a global forestation programme could offset up to 15 per cent of the projected cumulative fossil fuel emissions over the next 50 years.

Reforestation, of course, is not an alternative to the reduction of emissions. It is a complementary contributor, which could be undertaken alongside all the other efforts.

Climate change is a matter for public policy, for decision by Governments on the basis of political judgements which have to be acceptable to populations and electorates.

But business can't be passive in the process. We must be alive to our own responsibilities. It isn't enough to ask for acts of leadership from politicians. The British Prime Minister Tony Blair said in New York in June that "no country can opt out of global warming or fence-in its own climate." Nor can any company. The oil industry and its employees are part of society and we have to set a constructive example. We should help in the period after Kyoto to develop the detailed instruments, drawing on our own practical experience about what works and what doesn't.

And, we can also take action ourselves — in advance of anything agreed at Kyoto and in the wider public policy discussions. We can't solve the whole problem, but we can make a contribution, and we can test within our own systems, some of the processes which might have a wider public application.

It is in that spirit of constructive engagement that BP is taking some action of its own.

Four months ago, I set out our objectives in this area.

- Supporting scientific research and contributing to the public policy debate.
- Playing our part in joint implementation initiatives.
- Investing in renewable energy, particularly in photovoltaics — that is solar power.
- And controlling our own emissions of CO₂.

We've made progress in each of those areas, and we are today publishing a paper summarising the steps which are being taken. I don't have time to go through every item in detail but let me briefly describe some of the actions which we've taken to follow up those commitments.

We've begun work in conjunction with the Battelle Institute and EPRI on a programme of scientific research. The aim is to identify the technical advances in the use of energy which can do most to respond to the challenge of climate change. Its theme is low carbon technology. And to extend the current debate we're sponsoring and taking part in a major technology workshop in China in November.

We have in place an agreement for a joint implementation project involving American Electric Power, the Nature Conservancy and the Government of Bolivia. That will involve over 800,000 hectares of trees, and we are now working to identify a similar project in Eastern Europe. And we've joined a very interesting and creative initiative by the World Bank to examine the feasibility of a carbon offset fund, which will be established in cooperation with the private sector, including companies from Norway and Switzerland, as well as ourselves.

In terms of public policy, we've developed a set of principles which we're publishing today. Those have arisen out of many discussions with governments in Europe, in the US and in the developing world. They're a starting point, not a conclusion, but I'm encouraged by talking to senior politicians around the world at the amount of common ground which does exist in the search for solutions.

And alongside that we are working through the World Resources Institute to improve the understanding of each of the various policy options which are available.

All those are external activities. But we've also made some important steps within the company.

The one I emphasised earlier this year at Stanford and I wish to reiterate now is our commitment to solar power. I wish to do so not only because of its potential, which I'll describe, but also because it is vital to be realistic about that potential.

Here again, there is the deceptive attraction of a single, simple solution. Solar is not that, but it will become an increasingly useful, and strategic part of the energy mix.

Let me be clear. There is no doubt that there is sufficient sunlight to generate all the energy the world needs. But at the moment, it generates just 0.001 per cent of the total — 1500 GWh — which is around 0.3 per cent of the total annual electricity consumption here in Germany alone.

The trends in photovoltaics are very encouraging, but there are still large obstacles. The acceptability of solar to the consumer will determine whether we can achieve the economies of scale in production which are necessary and the technology needs more work to bring down costs.

Again I'm optimistic. By 2020 we believe up to 5 per cent of world energy could be supplied by renewable energies, including solar power. Within 50 years, it could be as much as half. Those are just possibilities — but it is interesting that those figures have also been given by John Jennings, the former head of Shell Transport and Trading and one of the most experienced people in the energy industry.

We're working to make those possibilities become reality. We see solar as a significant long-term business opportunity.

We continue to develop the technology and to build the market. We are testing what is possible by using solar power on a series of our own retail sites — and I'm delighted to say that one of the those sites, here in Berlin, started to use its solar power today. If those tests are successful we will look to extend these solar powered sites across the world.

We're also installing solar on bigger projects as well, including the site of the athletes village for the next Olympics in Sydney, Australia. That will be the largest concentration of solar-powered homes connected to the grid anywhere in the world.

But it is a long-term process. Given the current economics, solar won't replace oil and gas as the prime source of energy supply in the lifetime of anyone in this room. But given the advances in medical science, as well as in photovoltaics, I could envisage solar playing a significant role well within the lifetimes of many people here.

Oil and gas will be required to meet the world's energy needs. That is why we continue to explore and develop new resources, and why we are so committed to ensuring that they are used with maximum efficiency and the minimum of emissions.

We are determined to make a constructive contribution to that effort.

Accordingly we are setting our own targets to measure and to report the volumes of CO₂ emitted from our own operations. That system will be in place by next year, and our

intention is to develop a set of firm realistic targets over the following two years. Those targets and the results will be independently verified and published.

As a contribution to that process, we are developing our own internal emissions trading system in coordination with the Environmental Defense Fund. That system will set a value on emissions and encourage cooperation between our different business units to achieve the targets at the lowest practical cost. We'll start with a system involving 10 of our key operations. And if that works, we'll expand it to cover more — and eventually, the entire company.

No single company or country can solve the problem of climate change. It would be foolish and arrogant to pretend otherwise. But I hope we can make a difference — not least to the tone of the debate — by showing what is possible through constructive action.

To conclude.

Even though there is no certainty in the science, it is clear that climate change is a serious concern which merits precautionary action. There is no immediate crisis, and so long as we take precautionary action, there will be no crisis in the future.

That precautionary action will have a common end, but a diversity of means.

There are a range of options available — each of which, used wisely, could have a positive impact.

The oil industry has the ability and the responsibility both to contribute to the debate on the design of those policy instruments and to take a leadership position by showing that we, ourselves, can make a constructive contribution to the solution.

The world needs oil and gas in growing volumes. But the people of the world have to be convinced that their needs can be met without destructive consequences.

I recognise that we have to do that and I believe we can.

Thank you very much.

CONTACT:**Tom Koch 212-421-5010****Sue Garman 202-530-4532****NOTES TO EDITORS:**

Following are notes from a speech on global climate change delivered by British Petroleum CEO John Browne Tuesday, Sept. 30, in Berlin, Germany.

Speaking before an audience in the Berlin Parliament building, British Petroleum CEO John Browne called on the world's governments, industries and consumers to work together to take the critical first steps forward in the process of addressing global climate change.

"We need to take precautionary action now," Browne said. "We can't wait for a finished, polished solution which has unanimous endorsement. Just as the science of climate change is provisional, so too are the politics."

Acknowledging the widely varying political and economic situations facing the nations coming to the Kyoto conference in December, Browne urged an approach that emphasizes flexibility in achieving targets for emissions reductions. The key is to achieve economic growth in all parts of the world in a manner that is not destructive to the environment, he said.

"The problem won't be solved by denying or restricting the economic expectations of the people of Asia, or Africa, or Latin America. Nor will it be resolved by destroying the living standards of the world's developed economies."

To develop the policies that can balance environmental and economic concerns, Browne suggested that governments look at the problem as a business would. "I speak as a businessman, not a politician. But I think business has a responsibility, in fact, a duty to help the process of defining the means by which that policy can be achieved." According to Browne, the course he would take is almost instinctive: set high but achievable targets; delegate the power to design solutions; establish incentives to encourage action; measure progress; and reward delivery.

Browne's speech elaborated on how this model could be applied to three of the policy instruments likely to be used to address climate change — taxation, carbon trading and joint implementation.

Taxation. Taxes are not simple or easy tools. They raise issues of distribution and they have an impact on economic activity.

"The test for any proposed tax in this area should be its actual impact on reducing greenhouse gas emissions. So called 'green taxes' can't simply be a politically convenient means of raising revenue," Browne said.

Carbon Trading. A valuation and trading system for carbon emissions would provide companies with the incentive to make advances in existing technology that will bring the costs of emission reduction down to a more realistic level. "Much of the problem of climate change could be solved simply by the spread of current best practice and current best technology," Browne said. Under a trading system, firms would have the incentive to invest in new equipment and technology in order to avoid costs and meet targets. The result — improved productivity and efficiency — would benefit the entire economy.

Joint Implementation. Browne said that joint implementation projects could be a primary instrument for approaching the differing needs of developing and developed nations.

Such initiatives bring together the implementation skills of business and the policy imperatives of government. They are action-oriented, measurable, and by targeting those things that can be done at the lowest cost, they allow time for further technology to be developed and deployed. He cited reforestation in developing countries as one such promising approach.

"It isn't enough to ask for acts of leadership from politicians, we must be alive to our own responsibilities," Browne said. "Oil and gas will be required to meet the world's energy needs. That is why we continue to explore and develop new resources, and why we are so committed to ensuring that they are used with maximum efficiency and the minimum of emissions."

Browne reported on several of the steps BP is taking to address climate change.

Managing CO₂ emissions. BP is setting targets to measure, report and ultimately reduce CO₂ emissions from its operations. The process will take a few years to establish, but once in place, targets and results will be independently verified and published. Additionally, the company is developing its own internal emissions trading system to encourage cooperation between different business units and to achieve targets at the lowest practical cost. BP is working with the Environmental Defense Fund on this internal effort, as well as a broader system for carbon trading.

Scientific research. BP is collaborating on projects in the US with Battelle and the Electric Power Research Institute; in Asia, BP is a sponsor/participant in a technology workshop to be held in China in November.

Joint initiatives. BP is a partner with The Nature Conservancy and American Electric Power in a Bolivian reforestation project; and a participant in a World Bank initiative to examine the feasibility of a carbon offset fund.

Solar power. To test and demonstrate the broader applications of solar, BP is in the process of incorporating solar into its own operations, beginning with a retail station in Berlin. Other projects will include the athletes' village for the next Olympics in Sydney, Australia. It is anticipated this will be the largest concentration of solar systems feeding into the power grid anywhere in the world.

Note: John Browne's speech is available at www.bp.com.

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speeches
contact: E
Ann K. H. H. H.
Martha W. H. H.
USAID
647-4274

**Remarks of
J. Brian Atwood
Confederation of Indian Industries
"Meeting the Challenge of Global Climate Change:
New Paths, New Partnerships"**

**September 26, 1997
New Delhi, India**

I would like to thank the Confederation of Indian Industries for inviting me to speak. The confederation is playing a very constructive role in promoting economic development and sound environmental policies in India. I am grateful for the opportunity to share some thoughts with such a distinguished group of industry leaders.

The 50th anniversary of independence focused the world's spotlight on India. I would like to join in congratulating you on your remarkable achievements. I was particularly heartened to see India's anniversary receive a great deal of attention from the United States press. This brought a welcome opportunity for Americans to understand the important role India plays in global matters, and helped foster a better understanding of a sister democracy with whom we share so many fundamental interests and values.

Like all anniversaries, the independence celebration not only gave India an opportunity to look back, but it also gave us an occasion to look ahead. Clearly, as we anticipate the next fifty years, many critical challenges remain. I would like to focus my remarks today on one of the most difficult of those challenges: global climate change. Just as the United States and India came together to meet the food needs of a growing global population in the 1960s, we must now join in common cause to prevent global warming from undermining development in the coming century.

The American author and humorist Mark Twain once observed that "everyone talks about the weather, but nobody does anything about it." That is no longer the case. Collectively, we are changing the weather. As President Clinton noted at the United Nations in June, the science on climate change is clear and compelling. Two thousand eminent scientists serving on the Intergovernmental Panel on Climate Change concluded in 1995 that human activity is having a "discernible impact on global climate".

The greenhouse effect, as most of you know, is caused by gases such as carbon dioxide which accumulate in the atmosphere and trap solar radiation, increasing the earth's temperature. Current levels of carbon dioxide are the highest in 200,000 years and will soon reach double the concentrations of the pre-industrial age. If this trend continues, scientists expect that global temperatures will rise by 1 to 3.5 degrees centigrade over the next century. What will this mean?

Sea levels are expected to rise one and a half feet, putting 100 million people around the world at risk from flooding and storm surges. Bangladesh could lose nearly 20 percent of its land. Island nations like the Maldives would be devastated. In India, the increased sea level could displace more than seven million people and increase flood prone areas by 300 percent. Malaria, dengue and other water-related diseases would become more common. Crops would suffer droughts in some areas while enduring flooding elsewhere. Rice yields, forest productivity and forest cover would all decline. It is clear that the economic and human impact of climate change will be felt most acutely in developing nations.

Both the United States and India today face a range of pressing social and economic issues, and global climate change has not traditionally been seen as a top priority. It is easy to appreciate that a future problem of uncertain proportions is not as compelling as meeting the urgent unmet needs of today's generation. But we ignore the threat of global warming at our grandchildren's peril. Climate change will seriously impact both of our countries; and, if we do not begin now to slow down the accumulation of greenhouse gases, we will face the need for drastic action later.

The debate has just started in the United States. Some economists fear that limiting greenhouse gas emissions will constrain economic growth. Environmentalists worry about the damage we are doing to the world's ecosystems and the costs to generations -- to their health, to their food supplies, to their way of life. The United States is the number one emitter of greenhouse gas. We have built our economy on fossil fuel and now we are being told we must change. This is not an easy issue in my country. The world awaits our answer.

The international community will convene to consider binding targets for greenhouse gas emissions in Kyoto, Japan this December. This will be a difficult negotiation as economic interests will clash with increasingly convincing scientific evidence and the need for global action.

Whatever the result we achieve in Kyoto, the cumulative effect of climate change will change the face of global politics in the coming decades. Over 200 million environmental refugees worldwide could be created by the combined affect of shifting agricultural patterns, weather-related damage, epidemics and disrupted water supplies. Scientists predict that a doubling of atmospheric greenhouse gas concentrations is a virtual certainty under current trends. A tripling or quadrupling of greenhouse gas concentrations would have even more drastic -- and unpredictable -- effects.

Coping with climate change is not just a scientific issue, but one which involves politics, policy, economics, finance and social concerns. In democracies such as ours, wrestling with these issues becomes particularly complex. Reaching global agreement on these issues will be a major challenge. What is clear is that American actions will affect public opinion here and India's position will effect public opinion in the United States.

So we must ask ourselves today what more enlightened people in both countries should do to avoid an impasse that will set back the timetable for taking vital action.

Many argue that the industrialized countries have created the climate change problem and that they must lead the way in addressing the challenge. I agree. The United States is the world's largest energy user, and we have a responsibility to take action on our own domestic front to meet the challenge of climate change. As President Clinton stated at the United Nations in June, the United States "will bring to the Kyoto conference a strong American commitment to realistic and binding limits that will significantly reduce our emissions of greenhouse gases."

As part of the ongoing challenge of educating the American people about the magnitude of the climate change problem, President Clinton has called together industry leaders and scientists for a full day White House conference on climate change on October 6. A great deal of careful effort is going into developing a credible American commitment to reduce greenhouse gas emissions.

But the American public is already hearing that we are not the only cause of the problem. Many in the U.S. who oppose setting specific targets are pointing to other sources of greenhouse gasses. They are asking why we should sign a treaty that does not include nations that will contribute significantly to the problem in the next two decades.

We do know, of course, that climate change is a global phenomenon. While it is important to recognize that India and other major developing countries not be asked to sacrifice economic and social development goals to meet climate change commitments, it is equally important to recognize that developing nations must join in this global effort by taking on responsibilities to mitigate greenhouse gas emissions.

Indian efforts in the area of climate change will be critical. India is a leader in the community of developing countries, and the decisions it takes will have repercussions well beyond its borders.

India's rapid industrialization has the potential to greatly increase greenhouse gas emissions. Economic liberalization and industrial growth rates of ten percent are great achievements; at the same time, they mean that India is also the second fastest growing contributor of these emissions. During the next fifteen years, it is expected that India's industrial capacity will quadruple.

The leadership India has already shown in slowing climate change could be a model for the developing world. Your reduction of greenhouse gas emissions is tied directly to increasing the efficiency of your industrial operations. Your work in reforming the economy and the energy sector over the last several years has offered a powerful demonstration that by reducing subsidies, unleashing the private sector and increasing energy efficiency, economic growth can take place while improving the environment.

Through further restructuring and reform in the energy sector, India can not only attract new investment, but it can reduce emissions and cut the cost of industrial operations through more efficient fuel use. You have demonstrated that energy efficiency is a win-win proposition. The consumers win because of lower energy costs and the environment wins because of lower emissions.

Through a combination of sound public policy and market forces, we can effectively address climate change without sacrificing growth. By increasing energy efficiency and eliminating subsidies, India can further lessen unnecessary dependence on fossil fuels, reduce the energy needs of manufacturing, enhance your balance of trade, reduce urban air pollution and improve public health. Simultaneously, these improvements will help attract private trade and investment in India. Energy technology itself offers a tremendous economic opportunity: a recent Confederation of Indian Industries study showed that the market for environmental technologies and new management systems could be \$2 billion by the year 2000. This market will only grow larger.

Meeting the climate challenge will require that we create a new set of development tools that advance economic growth while protecting the natural resource base on which we depend for life itself. A less carbon-intensive path to development will be required even without the threat of climate change. Our current approach to economic growth demands too many depletable resources and produces too much waste to deliver the full fruits of development to Asia, Latin America, Africa and the Near East over the long-term.

USAID has been a partner with India in exploring these new paths and in demonstrating the "win win" opportunities. For example, USAID's private power initiative in India has supported efforts to attract local and foreign investment in private power generation. Since the program's inception in 1993, over 400 proposals have been submitted by firms to construct private power plants. Five large power deals have been closed, three with American partners. These power plants are using state-of-the-art technologies to meet strict environmental guidelines. They will certainly operate with greater efficiency and produce more power per ton of fossil fuel than their predecessors.

We have also brought together the Tennessee Valley Authority, the Electric Power Research Institute and the U.S. Department of Energy together with the National Thermal Power Corporation in a program to improve the efficiency of coal fired power plants and reduce pollution. Already, the National Thermal Power Corporation has decreased carbon dioxide emissions by 18,000 tons. If the National Power Corporation was to replicate these pilot programs nationwide, they would prevent 3 million tons of carbon dioxide emissions each year. And for those of you who think such ideas are abstract, understand this: such energy efficiency would save \$21 million in coal purchases annually. I had the good fortune to visit your NTPC's central office yesterday and was very impressed by their commitment to innovation and efficiency.

Through USAID's Utility Partnership Program, Indian and American utilities are working together to find new approaches to increase efficiency and cut demand: the Andhra Pradesh State Electricity Board is working with Pennsylvania Power & Light, Calcutta Electric with Gulf Power in Florida and Bombay Suburban with Niagara Mohawk in New York. I am pleased that on my visit to Mumbai next week I will be able to announce a renewed commitment to that program, increasing the funding available to partnerships between American and Indian utility operators.

Working with IDBI (The Industrial Development Bank of India), we are supporting efforts to use alternative fuels, like sugar cane bagasse, to cut carbon emissions. We are encouraging a wide range of experiments with renewable energy, like small hydro plants in Himachal Pradesh and solar power in Karnataka. We are supporting joint ventures between American and Indian companies to bring in new technologies and environmental management systems.

As a measure of America's continuing commitment to international cooperation on climate change, President Clinton announced at the United Nations on June 27 that the U.S. would provide at least \$ 1 billion in assistance over the next five years to help developing nations promote energy efficiency, develop alternative energy sources and improve resource management. I am here today to carry this pledge to India and to commit the support of the U.S. Agency for International Development (USAID), to India's efforts to promote sustainable economic development and reduce greenhouse gas emissions.

I am happy to be able to announce today that as part of President Clinton's commitment, USAID will be expanding its climate change program in India. USAID will complement its range of efforts on environment and the energy sector with a series of programs focused on slowing the rate of growth in emissions that will accompany the expected 50 percent increase in India's power demand over the next five years.

These programs will include a concerted effort to reduce emissions from India's urban areas. As the percentage of the Indian population living in cities grows from 24 percent to 50 percent by 2015, it is our hope that U.S.-Indian collaboration will decrease the environmental costs of urbanization. And the human and health costs of fossil fuel combustion in cities is very high. The World Bank recently estimated that annual health damages from fossil fuel air pollution in Mumbai alone cost over \$1 billion. Imagine what that number would be if we calculated the health costs on a national basis.

USAID's expanded climate change program in India will also focus on fostering technology transfer by marshalling the resources of multilateral and bilateral lenders, and further enhancing U.S. and Indian private sector trade and investments that promote environmentally sound development.

Meeting the challenge of global climate change will require new paths to development and new partnerships -- public-private partnerships and North-South partnerships. We can

imagine a future in which Indian and American firms, working in partnership with the public sector, work together in a "greening" of the international market place, creating jobs and income and economic opportunities in both of our countries.

I would like to challenge you to consider the possible benefits to your businesses and your country in joining the effort to address global climate change -- not as an external political demand, but as a clear business opportunity and a part of your corporate responsibility to help keep India safe, secure and prosperous in the decades ahead.

We owe it to future generations to begin to address the risks posed by climate change today. Just as cooperation between our two great nations brought the Green Revolution to the world, our partnership on climate change can help make the world a better and more prosperous place for generations to come. So I ask India to join the United States in a new green revolution, this one to capture the dynamic spirit of our democratic systems to save the earth from global warming.

Thank you

--End--

speeches

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON DC 20460

September 18, 1997

OFFICE OF COMMUNICATIONS,
EDUCATION, AND PUBLIC AFFAIRS

MEMORANDUM TO TODD STERN

FROM: Loretta Ucelli, EPA

SUBJECT: Global Warming

Thought you'd be interested in the attached remarks by Administrator Browner on
global warming.

Attachment



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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
COMMUNICATIONS, EDUCATION AND
PUBLIC AFFAIRS

Carol M. Browner, Administrator
U.S. Environmental Protection Agency

Remarks Prepared for Delivery
"Global Climate Change: Threats and Solutions"
Florida State University
Tallahassee, Florida
September 18, 1997

Thank you, President D'Allemberte, for that introduction. And thank you, Nick Iarossi, for your warm welcome to FSU. I'm delighted to be here. And I'm grateful for this opportunity to have this discussion on a topic of critical importance to the future of our country -- and to our planet, as well.

It's appropriate that the venue for our meeting today is a class entitled "Introduction to Atmosphere" -- appropriate because the issue of global climate change is one that challenges all of us to learn more about our atmosphere, as well as how human activity is affecting it.

So I want to thank Nancy Dignon and her class for providing this forum, as well as Dr. Peter Ray, the Chairman of the Meteorology Department, for helping make it possible for me to be here with you today.

Four-and-a-half years ago, when President Clinton and I went to Washington, we called on businesses, communities, and all levels of government to build a new generation of environmental and public health protection -- one that builds on the successes of the past and meet the challenges of the next century.

Today, we can look back on four-and-a-half years of progress in protecting public health and the environment. Real people in real communities are reaping real, everyday benefits.

We're cleaning up more of the nation's hazardous waste dumps -- in fact, more in the last four years than in the previous 12 years combined. And we're planning to clean up 500 more over the next four years.

Across this country, we are helping cities begin the process of cleaning up and redeveloping their abandoned industrial properties -- the brownfields -- which at the same time helps to save the pristine, open spaces outside our cities.

Under the leadership of President Clinton and Vice President Gore, we have taken measures to improve our air quality -- the strongest measures in two decades -- that will prevent thousands of premature deaths each year, and improve health protections for people of all ages.

We have enacted new laws to protect our drinking water and our food from dangerous contaminants.

We have expanded the public's "right-to-know" about toxic pollutants in their own neighborhoods -- so they can take steps to protect themselves and their families, and so they can take action to work with industries and reduce pollution in their communities. Indeed, this has been one of our most effective tools in fighting pollution.

But, of course, the job is not done. We cannot rest. We still face tremendous environmental and public health challenges.

This administration is determined to continue to meet these challenges head-on -- with standards that are second to none, vigorous enforcement of those standards, by giving the American people the tools to reduce pollution in their own communities.

But the new generation of environmental protection means something else, too.

It means what the President has said, on many occasions, and what has proven to be true: that environmental protection and economic progress do go hand-in-hand. Over the past four-and-a-half years, we have proved that you can have strong environmental protection and still have strong economic growth and prosperity. We do not have to choose between our health and our jobs. In fact, the two are inextricably linked.

We believe in building upon this progress. We must bring to this challenge that which has long made this country great -- our creativity, innovation, ingenuity. We must reward those willing to do more than just an adequate job -- to go further, to push the envelope, and to create new technologies and new ways to prevent pollution. We must seek to build the kinds of partnerships -- between industries, governments and communities -- partnerships that get the job done.

The challenge of global warming will test this philosophy as never before.

The science on this phenomenon is compelling.

More than two-thousand of the world's foremost experts on the global environment have come together to conduct a joint assessment on global warming. They are now telling us there is ample evidence that, for the first time in history, pollution from human activities is changing the earth's climate.

Modern industrial activity -- particularly the burning of fossil fuels -- namely coal and petroleum products -- is filling the atmosphere with carbon dioxide and other "greenhouse gases," which trap the Sun's heat in the atmosphere and cause the steady, gradual warming of the Earth's surface temperatures.

The average surface temperature is now a full degree Fahrenheit higher than it was at the beginning of this century -- and it may rise another two to six degrees over the next century.

That may not sound like much to many people. But here's what the scientific community says it will mean over the course of the next century:

More frequent and more intense heat waves, causing thousands more heat-related deaths. Severe droughts and floods will become more common. Tropical diseases like malaria will expand their range. Agriculture will suffer. The oceans will rise, perhaps by several feet over the next century -- swamping many coastal areas.

This will be our legacy to our children, if we do not look for some way to begin reducing our emissions of greenhouse gases.

As the President has said, this is a great challenge for our democracy. We have the evidence, we see the train coming, but most ordinary Americans, in their day-to-day lives, cannot yet hear the whistle blowing. Unless they live in a place where they have experienced a couple of hundred-year floods in the past decade, the consequences of global warming are not yet readily apparent to them.

But, again, the scientific evidence shows that these consequences are on the way.

Do we know everything there is to know about global climate change? No.

Do we know exactly what will happen in the decades ahead? Of course not.

But we have enough to go on -- based on years of rigorous scientific analysis -- to know that we must begin dealing with this problem. And we should act sooner, rather than later, because -- scientists say -- of the substantial "lag time" involved. Global warming will continue for many years after we begin reducing the emissions that are causing it. Even if we begin today, you probably won't see the results of any progress we make today until your own kids are in college.

In December, the nations of the world will meet in Japan to seek a global agreement on reducing the emissions of greenhouse gases that cause climate change.

President Clinton is committed to securing realistic and binding agreements that ensure that all countries -- both industrial and developing -- participate in this process and do their part to address the challenge of global warming.

Although the U.S. now produces more than 20 percent of the world's greenhouse gases, our share is expected to decline over the next couple of decades as nations like China and India increase their level of industrialization -- and with it their emissions of climate-changing pollutants.

So we cannot go this alone. Pollution does not know political boundaries. And the challenge of global warming brings a whole new perspective to the notion that the nations of the world "are all in this together."

But those who oppose action are on the march. Some industries are funding a massive advertising campaign attempting to portray the fight against global warming as a loser for America. They warn of dire consequences -- drastically higher fuel prices, economic catastrophe. In the words of one campaign sponsor: "All pain and no gain."

They are wrong.

Addressing the challenge of global warming is not about ratcheting down our economy. It is about investing in new technologies and using America's technological leadership to develop new ways to make things, new ways to get where we want to go, to work and to play.

It's about economic growth. Those who are first in bringing pollution-reducing technologies to market are going to be very well-positioned in the global economy of the 21st Century. And American industries are leaders in developing these technologies.

Much of it has to do with getting more out of the energy we are currently using.

According to the National Academy of Sciences, we can cut global warming pollution by one-fifth -- right now, at no cost -- simply by using technologies that are already on the market. In fact, many of our industries can actually save money in the process.

For example, using available technologies, the typical manufacturing plant can cut its pollution and energy use by 10 to 20 percent -- and recoup its investment in two years. After that, the yearly cost savings are pure profit. That's an attractive deal, and many companies are already taking advantage of it. We need to encourage more to do so.

When you reduce energy use -- when you use more efficient equipment and make better use of electricity -- you reduce the need to burn fossil fuels -- the coal and petroleum -- that contribute to global climate change. Every little bit helps, but we are finding opportunities for huge improvements.

Office buildings can cut their global warming pollution and their utility bills by 30 percent or more -- and they can do it by investing in efficient lighting, office equipment, heating and cooling systems, and building materials. These investments pay for themselves over two to four years.

Sometimes the energy savings come from obvious sources -- more efficient motor systems in factory equipment, advanced turbine systems, computer workstations that use less electricity -- or capturing the enormous amounts of heat that is wasted during electricity generation and, rather than throwing it away, using it to meet our heating and cooling needs. We can save billions of gallons of oil.

Sometimes you can find a huge potential for energy savings -- and for pollution reduction -- where you least expect them.

Exit signs, for example -- like the ones you see over the doors in the buildings right here on campus. Did you know that, in this country, a billion dollars is spent each year on electricity to operate exit signs?

Now they make LED signs that are every bit as effective, but use 75 percent less energy. Think about it. Simply by focusing on one item -- exit signs -- you can save more than a thousand dollars a year for a 100,000-square-foot building. And, by using less energy, you're helping reduce the creation of the greenhouse gases that cause global warming.

So this is not a question of who is going to sacrifice and how much. Rather, it is about investing in new technologies -- available technologies -- that make our industries more efficient, more profitable -- and cleaner in the process.

And we need to provide incentives for industries to develop even better pollution-reducing technologies. We've found that the best way to do this is through market-based strategies like "emissions trading" -- where overall emissions are "capped" and pollution reductions are traded on the open market. These market-based strategies allow industries to find the most flexible, cost-effective ways to reduce their pollution. And they get government out of the business of mandating particular technologies.

We are also looking to make great strides in efficiency and energy savings of the products that many of us use every day in -- in our homes and on the road.

After you are graduated from this university -- and have a few years to earn enough money to purchase a new car -- you'll likely be able to choose one that gets as much as three times the gas mileage of today's vehicles -- without sacrificing safety, performance, size or affordability. That's because government and the auto industry are working in partnership to develop a new generation of automobiles.

Considering that today's typical car emits more than 10,000 pounds of carbon dioxide each year, tripling the gas mileage is going to go a long way toward reducing greenhouse gases.

A new generation of consumer products is enabling homeowners to cut this pollution -- and their energy bills -- by 30 percent or more. I'm talking about energy-efficient lighting, refrigerators, heating and cooling equipment, washing machines, and other appliances -- as well as energy-efficient insulation, windows, and other building materials.

Now, how are you supposed to know which consumer products are making use of these new technologies? How can businesses and public institutions make the most of their energy efficiency programs?

EPA and other federal agencies are working with thousands of private sector partners to bring these technologies into more widespread use.

You can look for our "Energy Star" label to find energy-efficient computers, copiers, and other office equipment -- as household appliances. We believe that, over the next 15 years, these more energy-efficient products have the potential to cut the nation's utility bills by \$100 billion -- and, most importantly, to reduce global warming pollution by an amount equal to taking 17 million cars off the roads.

Right here in Tallahassee, the city government is doing something to prevent emissions of nearly 15 million pounds of carbon dioxide into the atmosphere each year. How? By upgrading the light bulbs on city property. And the taxpayers here will save some \$325,000 in electricity costs -- each year.

That's just one city. The state of Florida will be reducing carbon dioxide emissions by 800 million pounds a year -- and its annual utility costs by \$17 million -- when it finishes its upgrading the lighting at state facilities. Right here on this campus, Florida State University will be reducing carbon emissions by 27 million pounds -- the equivalent of taking 2,700 cars off the road.

You get the picture. But this is just the tip of the iceberg. Over time, as we increase the use of available technologies -- and as new technologies come on line -- this nation can make tremendous strides toward a future where prosperity and economic growth can co-exist with a cleaner, healthier environment.

As the great science writer, Arthur C. Clarke, once said: "Any sufficiently advanced technology is indistinguishable from magic."

Well, now is the time to believe in magic -- and to believe in our own ingenuity.

But we're going to need more than magic to see us through.

Global warming is for real. We must squarely face its potential consequences.

I believe we can build a shared commitment and a consensus -- among the American people, among industries, among the nations of the world -- to develop the kinds of strategies and market-based approaches that will enable us to solve this enormous problem while enabling the economy to grow.

We owe it to our children -- to all the children of the world -- and all of the generations to come -- to give it our best effort.

One hundred years from now, let the people of the world look back and say: "They saw the challenge. They answered the call. And they did not flinch the face of their responsibility to build a better world for us."

Thank you. And now to your questions.

OFFICE OF TIMOTHY E. WIRTH
UNDER SECRETARY
FOR GLOBAL AFFAIRS

speeches

DEPARTMENT OF STATE
2201 C Street, N.W.
Room 7250

Washington, D.C. 20520

Phone: 202-647-6240 Fax: 202-647-0753

97 SEP 11 PM 7:36

TO: TODD STERN
FROM: RODRIGO
DATE: Sept 11
FAX: 456-2215

Number of Pages (including cover): 15

COMMENTS: Todd- I'm sending the section of Tim's speech
he will give in London next week. It is draft so your
comments would be welcome.

Thanks, Rodrigo

NBB

Boz

preservation can be linked with enormous promise for posterity.

And now to the third of the Big Three: Climate Change. Global warming, caused by our dumping billions of tons of carbon dioxide and other greenhouse gases into the atmosphere every year, is likely to have a tremendous impact on every aspect of the natural order. We need to think about climate both as a sustainable development issue and as a global issue.

We believe that the science is compelling:

- 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 global assessment by the Intergovernmental Panel in Climate Change reported that “the balance of evidence suggests that there is**

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.

US Policy on Climate Change flows from this science -- the risk is too great to ignore, and we must act now.

Our proposals have three central components:

First, we will propose realistic and achievable targets and timetables for significantly reducing our own greenhouse gas emissions and those of the other developed nations.

Second, we will propose that developing nations agree to a process that will ensure that they will have binding emissions limitation commitments of their own.

And, finally, we will propose to establish a system of emissions trading and other market mechanisms that will reduce the costs of limiting emissions, in both developed and developing countries.

Let me address each of these three aspects of our proposal in turn.

I want to start with our ideas for emissions trading and market mechanisms, because we see them as essential to our whole

proposal, both environmentally and economically. We believe that these market mechanisms can reduce the costs of implementation significantly -- thus enabling us to achieve much greater reductions in emissions -- in both developed and developing nations.

In the United States, the concept of emissions trading has been successfully used to reduce costs as much as tenfold in meeting the standards set for power plant emissions of sulfur dioxide. In the climate context, we envision that participating nations, and their private-sector companies, would be allowed to trade greenhouse gas emission permits, thus creating the opportunity to reduce emissions where it is cheapest to do so. Such a program could cut the cost of reducing emissions by as much as 50%.

An international emissions trading regime must be designed and implemented. We will need to establish a reliable system of monitoring and verification to ensure that everyone plays by the rules; but that's the case with almost all international agreements, from arms control to intellectual property rights.

Another key piece of our climate strategy is joint implementation. We propose that private-sector companies in developed countries be allowed to undertake emissions reductions projects in developing countries, and count these reductions against their own emissions. We believe that joint implementation can harness the expertise and capital of the private sector, to reduce global greenhouse gas emissions in a cost effective manner.

The U.S. already has launched many successful demonstration projects of activities jointly implemented from forestry to energy conservation, from Costa Rica to Czechoslovakia, from Belize to Bolivia to Russia.

As these projects have demonstrated, joint implementation can do much more than just reduce costs. Developing countries reap substantial, short-term benefits from such a system, through the transfer of cutting-edge technologies and business practices. Moreover, as we have seen in Central America, joint implementation projects can provide an invaluable mechanism to protect forests and other critical habitat around the world.

We see the combination of emissions trading and joint implementation as a more comprehensive, "greener" alternative to the idea of a European 'bubble,' and to other purely regional schemes. Climate change is a global issue, not a regional one, and the mechanisms that we put in place to reduce costs should be as inclusive as possible. To be sure, we should encourage European governments and companies to work together to reduce emissions; but Great Britain and its neighbors should also be encouraged to cooperate with the United States and Australia, Russia and Japan, China and India. The guiding principle should be cost – we should reduce emissions wherever and whenever it is cheapest to do so, even when that means crossing national or regional boundaries. Lower costs will, in turn, enable us to aim for and then to achieve much more significant reductions in greenhouse gas emissions.

At the same time, we think all developed nations should have to take significant emissions reductions measures. This is a problem which effects every nation, and every nation must be part of the solution. But unlike emissions trading, the EU bubble

would create a system in which countries such as Spain, Portugal and Greece had little or no incentive to limit their emissions -- indeed, the current EU proposal would encourage these countries to increase their emissions by as much as 40% over 1990 levels. That's not the best way to reduce overall emissions, and it's not the right signal we want to send to newly-developed countries such as Mexico and Korea.

That brings me to the subject of targets and timetables for reducing emissions in developed countries.

President Clinton recognizes that the United States, as the world's leading emitter of greenhouse gases, must set a strong example for other nations around the world. That is why the President and his cabinet members are now engaged in an intensive education campaign "to convince the American people and the Congress that the climate change problem is real and imminent. An that is why President Clinton has promised that '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.'" We believe that market

mechanisms such as the ones I have discussed will make it possible to achieve meaningful emissions reductions in a cost-effective manner.

But even with such mechanisms, there are limits as to what we can or should agree to in Kyoto. It's one thing to say that each of our countries will reduce emissions by 15% or 20% below 1990 levels over the next two decades. But we need to be honest about what is realistically achievable; and we need to be able to deliver what we promise. Otherwise, the entire international negotiating process on climate will degenerate into political posturing, and, with no agreement in sight, emissions will continue to rise rapidly.

Over the past decade, your country has made difficult and admirable decisions to reduce energy subsidies. In doing so, you set a fine example for other nations around the world, that will need to make similar choices in the years to come. I commend Prime Minister Blair for his enthusiastic and public commitment to further emissions reductions. Yet even with the outstanding reforms your country has made, Great Britain's emissions still increased by 2.9% 1st year; and this year's

cut in your gas tax strongly suggests that your emissions will continue to increase significantly over the next several years, probably rising well above 1990 levels. So it would be a mistake to let rhetoric get too far ahead of reality.

Indeed, by the year 2000, it is likely that the only developed countries to hold their emissions to 1990 levels will be Germany and the nations of the former Soviet Union. Germany will reach its emissions target by shutting down the factories of former German Democratic Republic; while Russia and its neighbors will reach their targets only because of massive, and extremely painful, economic restructuring.

Looking at the larger picture, we also need to recognize that action by the United States, Great Britain and the other industrialized nations will not, by itself, put the world on the road to stable greenhouse gas concentrations. As I've said, climate change is a global issue, requiring a world-wide response. It's all one atmosphere, whether it's polluted by American power plants, Brazilian steel mills, or Korean traffic jams.

At present, developed country emissions account for approximately 60% of the global total. But developing country emissions are growing rapidly, and by 2020, will account for more than half of the world's emissions.

China, which is already the world's second largest emitter, will surpass the U.S. within 15 years. So it is imperative that any next step we take include action from both developed and developing countries.

I should add that the United States Congress shares our sense of the importance of developing country participation. Indeed, the Senate, by a vote of 95-0, recently indicated that it will approve a climate change agreement only if it contains specific provisions to address this issue. Many of my former colleagues in the Senate see this as a competitiveness problem. A rapidly growing percentage of U.S. exports go to developing countries; we compete world-wide with China, the world's largest exporter of consumer goods. So many Americans are worried that a Kyoto agreement could result in their jobs being shipped overseas.

We regard the participation of developing countries as an essential part of a comprehensive Kyoto agreement, along with

the legally-binding commitments for developed countries and the creation of cost-effective implementation mechanisms. There are over one hundred developing nations, and they vary greatly in size and level of economic development; but each of those nations can and should take actions commensurate with its capabilities and responsibilities.

The U.S. proposal for developing country participation has three elements:

- first, we call on all nations, developed and developing, to advance the implementation of their existing commitments to undertake climate-friendly policies and measures;
- second, we ask that some developing countries, particularly those like Mexico and South Korea, which are graduating to OECD status, voluntarily undertake quantified emission limitations;
- and third, we call for a new series of negotiations to develop quantified obligations for all countries, and to establish a "trigger" for the automatic

application of these obligations, based upon agreed criteria.

Let me say a few more words about each of these three aspects of our developing country strategy:

First, there is the issue of advancing the implementation of existing commitments under the Climate Convention. We believe that all nations should increase their energy efficiency, eliminate subsidies, and emphasize market-oriented pricing; increase the use of renewable energies; facilitate investment in climate-friendly technologies; and promote the development and sustainable management of forests and other carbon "sinks" and "reservoirs." These are all measures that are justified economically in their own right and can also help in solving other environmental problems.

Second, there is the need for big and rapidly-developing countries to take on quantified emissions limitations. Countries that are responsible for a significant share of global emissions, such as China and India, or that have high per capita incomes, such as Israel and Singapore, should be asked to take

on such obligations as part of the Kyoto agreement.

Third, we need to address the urgent need for a regime in which all nations particularly the bigger and richer ones, become full partners in responding to the threat of climate change. Negotiations for the establishment of such a regime will begin in Kyoto, and should conclude early enough so that we begin to see a confluence of actions by developed and developing countries. For example, why shouldn't the U.S. Senate and other national legislatures have the opportunity to see the full implications of a comprehensive climate package – making it much more likely that they would approve such a package for their own country?

I've gone into quite a bit of detail about the rationale for our proposal for Kyoto because the United States and the European Union will need to agree on a common position – preferably sooner rather than later – so that we can work together during the upcoming negotiations. The Alliance, which has served our common interests so well during World War I, World War II, and the Cold War, will be essential here as well. That's why I'm here today, to talk with you

and to engage in consultations with our government.

This is an ambitious, exciting, consuming agenda, not costless, not barrier free, but doable. In fact, the question is no longer what to do, the question is how to facilitate what so clearly needs to be done. Success will send benefits rippling across both our nations, both our economies and most important the lives of present and future generations. I believe that our legacy large measure on our ability to understand and react to these new challenges. more ominously, the future habitability and stability of the world is in the balance. In this way, protecting the globe is a metaphor for the degree to which we recognize the interdependent nature of the new world order unfolding before us.

In 1948, when the notion of space exploration was still science fiction, the Astronomer Fred Hoyle said: "Once a photograph of the Earth, taken from the outside, is available... new idea as powerful as any in history will be let loose.

Twenty years later, when space travel became a reality, the travelers themselves

provided powerful testimony to Hoyle's sense of the unity of the world. Let me read to you from our own astronaut, James Irwin:

"That beautiful, warm, living object looked so fragile, so delicate that if you touched it with a finger it would crumble and fall apart."

And now from a Russian cosmonaut: "After an orange cloud - - formed as a result of a dust storm over the Sahara - - reached the Philippines and settled there with rain, I understood that we are all sailing in the same boat."

In this last decade of the millennium, we have the power and enormous responsibility to captain that boat carefully. We also have the ability to shape change for the benefit of the entire world. The interests and intellectual capacity reflected in this room today bears a special burden in this regard. Working together, your talents, your energy and your power is more than the match for the challenges and the institutions involved. I know that each of you will engage in this effort and that we can harness that energy and wisdom in service of these objectives. Our future certainly depends on it.