

The groups endorsing this include the March of Dimes Birth Defects Foundation, the American Academy of Pediatrics, the National Association of Children's Hospitals, the American Hospital Association, the National Easter Seals Society, the Spina Bifida Association of America, and numerous others.

I urge all of my colleagues and people who may be listening around the country to urge the House to take up this important legislation and pass it this year. As we get to the end of a particular year's session, there are always so many things, so many other bills that people think are priorities. Let me ask anybody to name me a priority that would be higher than helping the families of America of each of our States avoid the tragedy of the loss of an infant through birth defects or the permanent disability of a child born with birth defects.

America's families and all of us have waited too long for this measure because it can go a long way in preventing birth defects, which is the leading cause of infant death. Quite simply, a little prevention goes a long way in avoiding family pain and heartache. It is up to Congress, it is up to us to seize this excellent opportunity to protect our most valuable resources—our children. I urge all of my colleagues to pay attention and to take an interest in this vital matter.

Mr. President, I yield the floor.

RECESS

The ACTING PRESIDENT pro tempore. Under the previous order, the Senate stands in recess until 2:15 p.m. today.

Thereupon, at 12:39 p.m., the Senate recessed until 2:15 p.m.; whereupon, the Senate reassembled when called to order by the Presiding Officer [Mr. COATS].

The PRESIDING OFFICER. The Chair, in his capacity as a Senator from the State of Indiana, suggests the absence of a quorum.

The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. KERRY. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. KERRY. Mr. President, I ask unanimous consent I be permitted to speak as in morning business.

The PRESIDING OFFICER. The Senator is recognized to speak as in morning business.

GLOBAL WARMING

Mr. KERRY. Mr. President, this week, representatives from over 160 nations are meeting in Bonn, Germany, for the final negotiating session prior to the climate change conference scheduled in Kyoto in December. It is a critical meeting, the culmination of

several years of international cooperation on this extraordinarily important global issue.

Over the past several months I have had an opportunity to discuss global warming with scientists and representatives from the United States and abroad and, indeed, we have had one brief discussion on the Senate floor in the context of the Byrd-Hagel amendment.

Last week, I met in London with a number of officials of the Government of Great Britain, but most importantly on this subject with Foreign Minister Robin Cook, to discuss our mutual concerns about the climate change problem and how best to address this issue from a global perspective. As our U.S. negotiators continue their work in Bonn and the President finalizes the U.S. position for the Kyoto conference, I wanted to share with my colleagues some views on the science of global warming, on the international process, the U.S. role, and the next steps that the United States and others should undertake to address this issue in a responsible manner.

Last July, I joined with Senator BYRD and others in the Chamber to discuss global warming and to debate Senate Resolution 98 which addressed some of the Senate position on the Kyoto treaty. The Byrd-Hagel resolution called for the United States to support binding commitments to reduce greenhouse gases only if: One, all nations, developed and developing, participate in addressing this global problem; and two, if the commitment did not adversely impact the U.S. economy. In addition, the resolution created a bipartisan Senate observer group of which I am pleased to be a member. Our task is to continue to monitor this process.

I supported the Byrd-Hagel resolution, Mr. President, which passed the Senate 95-0 after we worked out in colloquy some of the interpretations of definitions contained therein. I supported it because I believe that there has to be a universal effort to tackle this ever-growing problem, and that the United States, while taking a lead role, need not jeopardize its economic viability in order to meet our international obligations.

The resolution language, in my judgment, provides enough flexibility to address the concerns of growing economies of the developing world even as we encourage them to join in this global effort.

The resolution was silent, however, as to the science of global warming. It addressed only the U.S. role in the Kyoto negotiations. During the debate over the resolution, there was some discussion by a few Senators over their interpretation individually of the science. But there was no broad debate about the science, and there was certainly in the resolution no judgment by the U.S. Senate whatsoever as to the foundations of science which might or might not be applied to the negotia-

tions in Kyoto. From the statements in the RECORD by the resolution's chief sponsor, Senator BYRD, it is clear that he agrees, as I and others do, that the prospect of human-induced global warming as an accepted thesis is beyond debate, and that there are many adverse impacts that can be anticipated as a consequence of those theories in fact being found to be true. We are joined by many of our colleagues in thinking that there is sufficient scientific consensus that human activities are exacerbating climate changes.

The vast majority of scientists and policymakers who have examined this issue carefully have concluded that the science is sound and that it is time to take additional steps through the established international theory to address this issue in a more systematic way. A small but extremely vociferous minority continue to assert that the science is not yet convincing. They advocate a wait-and-see approach. They believe that continued review and inaction is best for the U.S. economy and for Americans in general.

Given the money that the very vociferous minority has been expending in trying to promote their view, and given the fact that shortly we will be engaged in some discussions based on the factual foundations of this issue, I would like to address the issue of science for a few moments on the floor of the Senate.

Mr. President, the vast majority of the scientific community—the vast majority of those who have taken time to make a dispassionate, apolitical, nonideological determination based on lifetimes of work, and certainly on a lifetime-acquired discipline in their particular areas—the vast majority of consensus of those who have been so engaged is that the science regarding global warming is compelling and that to do nothing would be the most dangerous of all options.

In the late 1980's, a number of our Senate colleagues—among them Vice President GORE, State Department Counselor Tim Wirth, Senators JOHN HEINZ and FRITZ HOLLINGS—and I, and a few others became increasingly concerned about the potential threat of global warming. It was at that time that I joined as an original cosponsor of Senator HOLLINGS' bill, the National Global Change Research Act, which attracted support from many Members still serving in this body, including Senators STEVENS, MCCAIN, COCHRAN, INOUE, and GORTON. After numerous hearings and roundtable discussions, this legislation to create the global change research program at the National Oceanic and Atmospheric Administration became law in 1990.

As a Senator from a coastal State I take very seriously parochial implications of global warming. As a United States Senator and a member of the Foreign Relations Committee, I am also concerned about the crafting of a workable international response that treats all parties—including the United States—fairly.

I have stated that I would be happy to engage any of my colleagues in the debate on the science of climate change here on the Senate floor, or elsewhere. And I have sought on numerous occasions—as yet not successfully—to try to get an adequate airing of the science within the Senate observer group. And it is my hope that, before that group reports to the Senate, a broad-based review of the science will be undertaken in a bipartisan, nonpolitical way.

But, Mr. President, before we even proceed further with that analysis, I want to take this opportunity to at least lay out some precursor truths with respect to the science as we know it.

Whether by nature or experience, we know that scientists are a fundamentally cautious group of people. That is why I find it particularly compelling that over 2,000 scientists who participated in the Intergovernmental Panel on Climate Change—the most comprehensive and thoroughly reviewed assessment of any environmental problem ever undertaken—concluded that global climate change is currently under way. The 1995 IPCC report concludes that the Earth has already warmed about 1 degree Fahrenheit over the last century, and that “the balance of evidence suggests that there is a discernible human influence on global climate.” The IPCC estimates that the global surface air temperature will increase another 2 to 6.5 degrees Fahrenheit in the next century. Their “best guess” is that we will experience warming of about 3.5 degrees Fahrenheit by the year 2100. That would be a faster rate of climate change than any experienced during the last 10,000 years of the history of this planet. And we have to recognize that the human history as we have recorded it and, therefore, understand its impact on ourselves and current human endeavor is within a span of about 8,000 years.

The conclusion that the observed warming trend is not simply a natural fluctuation is affirmed by the research of several institutions. Basing their conclusions on climate model calculations, scientists at the Max Planck Institute for Meteorology in Hamburg, Germany, concluded that the warming of the Earth over the past 30 years goes far beyond natural variations. Indeed, there is a judgment that there is only a 1-in-40 chance of that variation being natural. So we are dealing with a 1-in-40 prospect in terms of odds.

The United States and other governments have been collecting at ground-based and ocean-based sites global surface temperature measurements since the year 1880. Remarkably the 11 warmest years this century have all occurred since 1980, with 1995 the warmest on record.

Some will argue that there are discrepancies between our long-term surface record and recent satellite observations. But that fact—by again non-ideological dispassionate and non-

political scientists—has been determined to be not surprising at all because the two techniques—measurement at the surface and measurement by satellite—are entirely different. They measure temperature at different parts of the Earth's system—the surface and various layers of the atmosphere. In addition, other factors, such as the presence of airborne materials from the 1991 eruption of Mt. Pinatubo volcano, affect each record in a very different way.

The natural “greenhouse effect” has made life on Earth possible. Without it, our planet would be about 60 degrees colder. Water vapor, carbon dioxide, and other trace gases, such as methane and nitrous oxide, trap the solar heat, and they slow the loss of that solar heat by the reradiation back into space. That is a natural process.

But with industrialization and with population growth, greenhouse gas emissions from human activities have consistently increased. Anthropogenic climate changes, most importantly the burning of fossil fuels—coal, oil, and natural gas—and deforestation, have tipped the very delicate balance of nature. We all know that the forests of the planet play a critical role in the recycling of carbon dioxide. The forests in the Amazon, all through Central and Latin America, and all through Asia have been disappearing in entirely measurable and discernible ways. As we have seen by satellite photography over the last 15 or 20 years, all of the areas of the Earth's green are beginning to shrink in those satellite photographs; we understand that we are diminishing our capacity to do the recycling of the CO₂.

Therefore, more gas is trapped. More gases have the impact of diminishing the amount of reradiation that takes place. This natural climate variability alone, including the effect of volcanic eruptions and solar variability—that is, sunspot activity—would not have changed carbon dioxide levels in the atmosphere. However, the manmade addition, presently about 3 percent of annual natural emissions, is sufficient to exceed what is known to be the balancing effects of “carbon sinks.” As a result, carbon dioxide is gradually accumulated in the atmosphere, until, at present, its concentration is 30 percent above preindustrial levels. Existing data of other greenhouse gases show increasing concentrations of methane, nitrous oxide, and chlorofluorocarbons over recent decades. While ice core data show that concentrations of methane and nitrous oxide have increased in the past few centuries, after having been relatively constant for thousands of years, chlorofluorocarbons are absent from deep-ice cores because they have no natural sources and were not manufactured before 1930.

So I want to emphasize for those who try to doubt the science, for those who come and say there is no indicator of this change and that we have only been recording the temperature since 1880,

the fact is that both in the Arctic and the Antarctic we have accumulations of thousands of years—tens of thousands of years—of ice. And we have to be able to bore down into that ice. In the bores that we bring out—just as we have tested and found geological formations which have allowed us to drill for gas—we have been able to come up with ice cores. And as the scientists look at those ice cores, they have been able to measure the degree of carbon dioxide that was trapped in those ice cores. By measuring that, and, indeed, by measuring the absence of chlorofluorocarbons, we have been able to trace thousands of years of climatic activity and change that we otherwise would not have knowledge of.

That is what has given us this capacity to make a determination about the rapidity with which changes are taking place today relative to what we knew or can discern was taking place thousands of years ago.

While we have no control over sun spots or volcanoes, we, obviously, can control human activities.

Then the question will be, “Well, why should we do that? What is the showing that somehow this really represents a danger sufficient to require a response from Government?” Well, the essential issue here, Mr. President, is one of compounding emissions over time. We know that the emissions we put into the atmosphere today have a life that goes on and on and on. It is like nuclear material that has a half-life. So does this material have a half-life. And the fact is that, even if we were to stop our activity today, what is already in the atmosphere will continue to do the damage that it does. And the models have to measure the rate at which we might be able to reduce today in order to guarantee that you have turned off the spigot sufficiently to be able to control what will happen in the future. But anyone who follows the stock market or even your back account, obviously, understands the miracle of compounded interest. It means that a small amount set aside becomes a big amount over time.

That is what is happening to the Earth's accumulation of greenhouse gases. Many of these gases reside in the atmosphere for years to come—hundreds to thousands of years. Even constant emissions of the gases can cause atmospheric concentrations to build up rapidly.

So, unlike the stock market, when it comes to emissions, the small amounts don't necessarily bring a miracle. But they could bring enormous calamities.

So why would we care if the Earth warms a few degrees? I have actually heard people say it really doesn't matter that much if all of a sudden North Dakota or South Dakota became a little more attractive, and they don't have as long a winter, or somehow you have a longer hiking season in a particular State. Well, Mr. President, it isn't that simple. It just isn't reduced to that kind of simplistic judgment about the overall impacts.

The IPCC scientific assessment of climate change estimated that the average surface temperature will increase by 1 to 3.5 degrees with an associated rise in sea level of 6 to 37 inches. These changes are projected to lead to a number of potentially serious consequences with incidence of heat waves, floods, droughts, hurricanes, and other extreme events affecting human health and natural ecosystems.

Americans will experience more health problems and there will be an increase in health-induced deaths from future warming. Heat waves of the type in the 1995 Chicago heat wave which killed 465 people will occur more frequently, and increased warming will exacerbate existing air quality problems such as smog that aggravate asthma and allergic disorders, especially in children and the elderly. Warmer climates breed diseases such as malaria, dengue and yellow fevers, encephalitis, and cholera due to the expansive range of mosquitoes as a consequence of increased warmer climates and other disease-carrying organisms.

One key aspect of climate change that is important to remember is the slow capacity of any corrective action to have an impact. Harvard professor and member of the President's Committee of Advisors on Science and Technology, Dr. John Holdren, shared his analogy at the White House Round Table on Climate Change. He said:

The world's energy-economic system is a lot like a supertanker, very hard to steer and with very bad brakes * * * and we know from the science that the supertanker is heading for a reef * * * it's a bad idea to keep on a course of full speed ahead.

The oceans are going to continue to expand for several centuries even after the temperatures stabilize. We are currently dealing with rising sea levels that are already eroding beaches and wetlands, inundating low-lying areas and increasing the vulnerability of coastal areas to flooding from storm surges and intense rainfall.

We know how costly droughts, flood control, and erosion mitigation efforts can be to the taxpayers. We constantly, every year, are facing requests from one community or another to do a beach-erosion project or to undertake some kind of erosion mitigation, and we spend literally millions of dollars in insurance as a consequence of those anticipated problems already.

Damages from the southern plains drought of 1996 were estimated at \$4 billion; the 1993 Mississippi River flood damages were \$10 billion to \$20 billion; the Pacific Northwest floods of the winter of 1996-97 were \$3 billion; the 1997 Ohio River flood was nearly \$1 billion; and the 1997 river flood in the Northern Plains was another \$2 billion. And this is just the impact of the changes perceived in the United States in the last few years.

Scientists have not definitively said that any one of these events I just listed is absolutely tied to global warming. And I am not going to suggest that

that is in fact true if they are not willing to suggest that there is that linkage. But the scientists have issued a warning. The scientists have issued a warning—not the politicians, the scientists. And their warning is that these disasters collectively show precisely what we are likely to see if we do not reverse the current trend lines of global warming. And we will see them with greater frequency, with more destruction under global warming.

The areas of greatest vulnerability are those where quality and quantity of water are already problems such as the arid and semiarid regions in the United States and the world. If warming trends were to continue, then water scarcity in the Middle East and Africa will become even more pronounced, exacerbating tensions among countries that depend on water supplies that originate outside of their borders.

Another key area of concern will be the dramatic alteration of geographic distributions of vegetation. The composition of one-third of the Earth's forests would undergo major changes as a result of a doubling of preindustrial carbon dioxide levels. Over the next 100 years, the range of some North American forest species will shift by as much as 300 miles to the north, far faster than the forests can migrate naturally. For example, in my region of the country, New England, we could lose the most economically important species, the sugar maple.

Other areas of the country would be hit economically as well. The tourism industry, for instance, surrounding the Glacier National Park could literally evaporate along with glaciers which we already know have receded steadily for decades. Since the park's founding, over 70 percent of the glaciers have already melted. Model projections indicate that all of the park's glaciers will disappear by the year 2030 unless temperatures begin to cool. One-third to one-half of the world's mountain glacier mass could disappear by the year 2100, thus eliminating a natural reservoir of water for many areas.

Let me give an example. In Lima, Peru, the entire water supply for 10 million people depends on the annual summer melt from a glacier that is now in rapid retreat. These are just some of the predictions, predictions made by various models where they have taken the data which scientists have agreed on—not speculated about, but agreed on.

The facts about global warming are beyond reasonable scientific doubt, and they ought to be beyond reasonable policymaking doubt.

Mr. John Browne, CEO of British Petroleum, in a recent speech at Stanford University said:

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. We in BP have reached that point.

That is the CEO of British Petroleum saying that they have reached the point of concluding that linkage exists.

Efforts to rein in and reduce man-made contributions of such emissions are now warranted. Worst case scenarios under current business-as-usual practices are catastrophic.

So let me turn for a moment to the international efforts and the role of the United States at this point.

In 1992, it was precisely because of those scientific conclusions that I have just enumerated that President Bush at the Earth Summit in Rio signed a climate-change agreement, and it was ratified later that year by the Senate. That agreement pledged that nations would reduce their gas emissions to their 1990 levels by the year 2000. Regrettably, the vast majority of nations, including the United States, have failed to achieve this goal. Today, the United States has increased emissions about 8 percent above 1990 levels. Much of that increase has been tied to our economic expansion.

However, it should also be noted that industry during this remarkable growth period was also engaged in a voluntary program to reduce emissions. While not achieving its objective completely, the voluntary effort did meet 70 percent of the original targets at a time when the American economy grew and wherein the American jobs machine was rolling along at as high a rate as we have seen in recent years. The relative success of voluntary industry effort ought to encourage confidence that more comprehensive efforts under a global regime can result in greater progress at far less cost than Cassandras allowed for.

However, the question is now for all countries, developed and developing, to step forward to support binding commitments to reach an acceptable level of human-induced emissions. That is why the United States is engaged in negotiating a legally binding climate-change agreement to be finalized in Kyoto this December.

Our challenge is to shape an agreement which sets tough, realistic global emission standards and goals while harnessing the market forces to lower costs, foster technological development, and ensure economic growth.

The climate change problem is global. It requires a solution, obviously, that includes a global response—participation from all nations, industrialized countries and those countries in the developing world. The best approach is to establish a global economic incentive program in which the free market and not Government intervention is driving the reductions.

The goal of universal participation via an international treaty with binding commitments ought to be undertaken now, not with delay, not with an effort to try to have subterfuge diminish what we can accomplish in Kyoto. The United States, with 22 percent of global emissions, is the world's largest emitter of greenhouse gases. And today

the industrial world comprises nearly three-quarters of all of the global emissions. But that does not mean that we are the only ones who should deal with this problem. The reason for that is clear. China is currently the world's second largest emitter, and it is expected to displace the United States as the largest emitter by the year 2015. Over the next few decades, 90 percent of the world's population growth will take place in the developing world. Given the projected economic and population growth statistics of China and other quickly developing countries such as India, Mexico and Brazil, the developing world will exceed the industrialized world in emissions by the year 2035.

Universal participation, therefore, does not mean we have to all begin at the same time. It does not mean you have to embrace the exact same commitment at the exact same implementation moment. Clearly, if one country is doing more than another, there is room for us to be able to negotiate an agreement where we all meet at the appropriate point. But it does mean that it is quite reasonable for the industrialized nations, those nations that have put most of the greenhouse pollution into the atmosphere, initially to take the lead, as long as in so doing they do not simply fall into a trap of disadvantaging themselves economically. A scenario where the industrialized world acts alone will not be enough to prevent the costly implications of global warming in the future.

I want to emphasize that. The developing nations cannot go to Kyoto and suggest that it is up to the developed world simply to bear the burden of reductions, because even if we reduce to the greatest degree possible, we cannot alone avert the problems that will come from global warming. It is absolutely essential that China, India, Brazil, Mexico, and other countries join in the effort with an understanding that we are moving down this road together.

Currently, many of these developing nations are not inclined to join in an international treaty. Some believe it is not in their immediate economic interests to do so. Others believe that as long as the biggest contributors to the problem, the industrialized nations, are not taking sufficient effective steps to cut back on greenhouse pollution, it is not in the interest of their nations to do so either. One could well understand how they would make that kind of determination. Some of them cite the language of the 1995 "Berlin Mandate," calling on the Annex I countries, the developed countries, to be the ones to complete a treaty with binding commitments by December 1997 but to leave excluded the developing world from an established binding reduction target.

Let me say that in my reading of the "Berlin Mandate," I do not believe that we are precluded from proceeding to Kyoto in an effort to come up with a

two-stage arrangement which would have the developed countries enter into an agreement while simultaneously bringing the developed countries along. I don't believe it is in any nation's interest to thwart international efforts to reduce greenhouse gases in as expeditious and as economically feasible a manner as possible. The remaining option is the option of doing nothing, and nothing would, in most people's judgment, be ultimate mutual devastation.

The only viable solution is a global treaty which provides economic incentives for all nations. I believe such a treaty can be crafted, one that would include all nations but permit flexibility in the targets and flexibility in the timing of compliance for developing nations, while at the same time requiring all countries to agree to make legally binding commitments by a date certain. If the United States signs such a treaty, it would be reasonable for the President to refrain from transmitting that treaty to the Senate until the developing world signs its binding commitments. In that way we can make Kyoto a success, coming up with the binding agreements necessary but still maintain and keep good faith with the approach we have thus far deemed to be the roadmap to the achievement of this treaty.

In this Chamber I previously shared my concerns with a component of the European proposal as it currently stands. The Europeans continue to argue for a treaty that would enable the European Union to secure an exclusive bubble emissions policy. This is tantamount to a regional emissions trading program. They want Europe to be contained under one bubble, whereby they can trade their emissions within the European bubble, a license, in effect, to increase emissions in some European countries by relying on the trendline decreases that are already in place in others. Such a posture is helpful only to the European Union. It fails to address the essential need to engage those rapidly growing economies of the developing world, and it excludes other industrialized countries which could be left to meet target reductions in a more costly manner.

The European proposal would provide the Europeans with a competitive advantage over the United States by creating this collective emissions cap as opposed to country-by-country reduction targets. Some European countries could actually increase their emissions by up to 40 percent. This approach, coupled with their opposition to joint implementation with developing nations, seems to be aimed almost exclusively at beating the United States out of economically sensible emissions reduction activities in Eastern Europe, Russia, the Far East, and elsewhere. I think they should know that is not acceptable under most people's definition of fairness.

Therefore, it is my feeling that we should approach Kyoto in the following way. I believe President Clinton and

his advisers have been developing a U.S. position for these negotiations that moves mostly in the right direction. I have shared views with the administration over the course of these last months and in recent weeks, and there are a number of different options that are currently rumored to be under consideration by the President. It is my hope the President will announce a U.S. position that is aggressive in curbing the projected business-as-usual trendline.

I believe the President ought to press for a proposal that will seek at least a target of 2010, rather than the outyear options of 2020 or 2030 that we have heard discussed. The Europeans, given the protection of their European bubble proposal, have proposed a 15 percent reduction below the 1990 levels by the year 2010. Perhaps without the bubble this level may prove to be too ambitious to achieve without significant harm to their economies. However, I believe it is realistic for the United States and other nations to stabilize their emissions at 1990 levels by the year 2010, remembering, of course, that our original goal was to do so by the year 2000. With additional economic incentives such as early credits for reductions and joint implementation and a market-oriented emissions trading system, perhaps additional reductions could be undertaken.

I believe also that the centerpiece of the U.S. negotiating position should be a worldwide emissions trading program. Emissions trading is an important market mechanism that will benefit all countries including the United States. But it is not only advantageous to U.S. businesses. It will provide developing countries with incentives to sign up to binding legal commitments that are absolutely essential to a workable treaty.

The market-based approach of emissions trading is a sensible one that helps businesses lower costs by promoting emissions reductions and by giving the industry flexibility to decide how they will go about reducing pollution. We know an emissions trading system could reduce the cost of emissions controls dramatically, afford American industry great opportunities to do what we do best, which is to innovate, to develop cheaper, better ways of getting the job done. And, if the system includes joint implementation with developing countries, providing jobs here at home in the well-paying technology export sectors that serve the booming demands in rapidly industrializing nations, we would be well served.

Experiences in States such as Massachusetts or California or Texas or Florida, States which have invested in technology and which have built on their combined technology bases and education bases—those experiences have proven where we invest in technology in order to solve some of these problems, we inevitably not only create jobs for Americans but we wind up creating an export capacity, because

we are the leading, cutting edge of technology and we wind up greatly reducing the costs that the original estimates are based on.

If you look at the SO₂ reduction programs in this country, I remember the automobile and other industries arguing it was going to be upward of \$1,000 per ton to reduce. In fact, because of the technology advances, the costs have come in around \$90. Therefore, the opportunity, by virtue of pushing our technology and advancing our capacity to transfer that technology to the developing countries, can assist all of us in the effort to create jobs and to provide for the gains necessary to be able to meet these targets. The United States should contain in this effort, along with the rest of the industrialized countries, a significant technology transfer component in order to assist in achieving this treaty and its goals.

Economically, the best time to establish an international trading program is now. Many developing countries are currently investing in long-term energy programs. By excluding any discussion of joint implementation with developing countries and early credits for reductions prior to implementation of such a system, important incentives to encourage developing countries to begin shifting their development trajectory to a cleaner path would be lost. U.S. industry and U.S. competitiveness are the winners of an international trading system, wholly apart from any environmental gains.

Environmentally, we need to get the trading program going as soon as possible, and world events are escalating the seriousness of the problem. The terrible fires in Indonesia and the havoc that that conflagration continues to wreak on the people of South Asia are additional testaments to an urgent need for a global framework that provides powerful market incentives for environmentally friendlier behavior. Emissions from these fires are pumping greenhouse gases into the atmosphere and destroying forests that could be protected and harvested in a much more sustainable manner. A Kyoto protocol that provides credits for protecting forests that sequester carbon dioxide, and an income stream that would potentially be available to those who husband the forest, would be an important step for the nations and the peoples of the worlds.

A model for such a regime is the SO₂ trading program contained in the 1990 Clean Air Act. That program, as I mentioned a moment ago, really contradicted what had been predicted by the industry. According to the Wall Street Journal, some initial industry estimates for those SO₂ reductions were \$1,500 per ton but which actually came in at \$90 per ton, which was 6 percent of the original doom forecast of the industry.

I would like to emphasize one point about the sulfur program that is key to its success. In the sulfur trading pro-

gram, the Government has resisted the temptation to intervene in the market and provide price props or cushions, or to print new allowances and sell them at a set price. I understand that one option before the President is exactly such an approach. I believe other Senators would join me and strongly urge him to resist such intervention here. When the Government intervenes in market trading it inevitably drives those prices up.

My recommendation to the President would be that any proposal that would make companies pay the Government for additional carbon permits is likely to be regarded—in this institution, anyway—as a thinly veiled tax, and would, frankly, not receive favorable reception. I urge the President to let the market for greenhouse emissions reductions do what the markets do best, which is to spur companies to develop better products at a lower cost. I am very optimistic that the President will ultimately make a judgment that would be opposed to that alternative, significant intervention in the marketplace.

A second goal should be a framework that brings all countries into this effort at the beginning while allowing for the developing countries to initiate their reduction efforts at a different rate than the industrialized world. I think this is an essential component of any realistic approach to this effort. Even without a universal emission reductions program, the Montreal Protocol, signed by President Reagan during his second term, called for the phase-out of chlorofluorocarbons. As with the SO₂ estimates, the CFC reduction costs were grossly exaggerated by certain industry sectors. Market-type mechanisms in the Montreal Protocol and the U.S. domestic implementation program drove prices down, with the result that companies were spurred to bring online CFC substitutes that proved cheaper and cleaner. A more inclusive treaty, covering all greenhouse gas emissions, sources and sinks would produce even more economic and environmental progress.

A final goal is to recognize the opportunity presented by technology to help in this effort. The United States is now a world leader in the high tech industries of pollution prevention, abatement and control. With a global emissions reduction treaty, the faster we invest in new pollution prevention and energy conservation technologies, the faster we will achieve emissions reductions and the quicker we will gain market share in the international arena. This means more jobs for U.S. workers and more revenues for U.S. companies. If we don't, then someone else will.

I would simply cite the example of what took place in the two decades ago. At the end of the 1970's, President Carter had made a commitment to alternative and renewable fuel research. Regrettably, when the Reagan administration arrived in 1980, support for the institute in Colorado was withdrawn.

So it was that over a 10-year period of time the great lead that the United States had built up in photovoltaics and in alternatives and renewables was lost.

Today, as the former Soviet bloc countries of Eastern Europe come online in their effort to try to reduce the grotesque pollution that is one of the longest legacies of the Communist rule, they are turning to the Japanese and to the Germans for the technology where we once were the leader. But since we withdrew our own investment, we ceased to be that leader.

So I believe there is, in this effort, an enormous economic opportunity for the United States for the future. At home, we need to consider ways to leverage our technological leadership through domestic tax provisions, such as a zero capital gains tax rate, or a specifically targeted investment tax credit for companies that invest in pollution prevention and energy conservation, or quicker depreciation of investment in such technologies. I repeat, a zero capital gains tax rate or faster depreciation for those companies that invest in energy saving, energy conservation and pollution prevention.

I anticipate, Mr. President, that following the announcement the President makes regarding a U.S. proposal, regardless of what that proposal entails, there will be a number of colleagues on the floor of the Senate denouncing it, arguing that the science is not yet there or that the economic assumptions are unreliable. Some will argue it is unnecessary and too costly for the United States to participate in an international treaty.

On the contrary. I believe the evidence from scientists is overwhelming, that it is far too costly to sit on the sidelines and do nothing. Mr. President, 2,500 leading economists, including 8 Nobel laureates tell us:

For the United States in particular, sound economic analysis shows that there are policy options that would slow climate change without harming American living standards, and these measures may, in fact, improve U.S. production in the long term.

I believe that if we heed the warnings, if we plan for the future now, if we avoid allowing this to become the political football that it might, if we seek the involvement of all nations, we can secure a healthy planet for ourselves and for our children and for future generations, and we can exercise our responsibility as U.S. Senators in the way that we ought to. I yield the floor.

Mr. CHAFEE addressed the Chair.

The PRESIDING OFFICER (Mr. KEMPTHORNE). The Senator from Rhode Island.

Mr. CHAFEE. Mr. President, I thank the distinguished Senator from Massachusetts for his thoughtful comments about global warming. It is a subject in which I am deeply interested.

I was very interested and pleased with his references and comparisons

with what took place with the Montreal protocol and our efforts that were successful in controlling chlorofluorocarbons, so-called CFC's. There is an example where the first scientific body of opinion suggested that, indeed, the CFC's were destroying the ozone layer. There was great skepticism, not only in this body, but throughout the Nation. But gradually, through testimony and through powerful speeches and articles by those who were involved, this country came to recognize that, indeed, CFC's were destroying the ozone layer, were causing skin cancer to our population and the population of the world.

As a result of that, we moved forward and various meetings were held, which many of us remember, and capping it all off was the Montreal protocol, which called for substantial reduction of the production of CFC's in our country and the world.

At the time, it looked as though it would be very difficult to achieve, but as the Senator from Massachusetts pointed out, the United States' scientific and mechanical ingenuity rose to the surface and, lo and behold, we not only met those reductions but we exceeded them.

The results are now showing that the amount of chlorofluorocarbons in the atmosphere has been reduced, at least the increases have been reduced, and gradually we will see a reduction in the total body of CFC's, as it were, in the atmosphere, because all of this takes a long time to achieve.

I also say to the Senator from Massachusetts that I think it is important to stress not only the costs of complying with a global warming treaty—that is always what is portrayed, it is going to cost our farmers, it is going to cost our manufacturers, it is going to cost our automobile industry, the coal miners, and on and on it goes. The costs of complying. But rarely does anybody ask, what are the costs if we don't have the treaty?

The scientific evidence, as the Senator from Massachusetts was pointing out, is increasingly coming to be recognized that, indeed, the world is becoming warmer, just as the Senator pointed out what is happening to the ice accumulations, the glaciers. In every single place in the world, the glaciers are retreating. Why is that coming about? It is coming about because of the increased temperature, infinitesimal though it might seem, that is occurring throughout the world.

So more and more I believe we have to say to ourselves, what does it cost if we don't do anything? Just take Florida. I don't know what the height of Florida is above sea level, but it must be tiny. If they get an increase in the level of the oceans of the world, and particularly those in the Caribbean, for example, the effects to Florida can't help but be devastating. Indeed, in my State, likewise; Massachusetts, likewise. In all our States, we are doing what we can to increase seawalls. What

is happening? We are not sure. All we know is, once upon a time, our beaches were steeper and now they have been cut away. Now we have to have breakwaters and barriers and groins, as they call them, and so forth, to try and prevent the erosion of the soil.

The Senator from Massachusetts pointed out what one of the presidents of one of the oil-producing countries of the world had to say. I would like to also point out a statement by the chairman of the Ford Motor Co. finance committee, none other than William Clay Ford, Jr. This is what he had to say on October 11, just 10 days ago, as quoted in the Washington Post:

Ford Motor executive William Clay Ford, Jr., called global warming a genuine threat to the environment and said automakers who oppose a proposed treaty to address the problem risk being "marginalized" in the court of public opinion.

This is what someone, whose family owns 40 percent of the voting stock of Ford Motor Co., had to say.

The remarks by Ford, a leading contender to become chairman of the No. 2 automaker, distances himself from several Detroit executives who, in recent months, have criticized the proposed global warming treaty saying the phenomenon might not exist or its causes are uncertain.

So that's what the leader of the second largest automobile manufacturing company in our country had to say.

All I am saying to my colleagues, and substantiating what the Senator from Massachusetts said, is let's examine this thing carefully. Let's look at what the scientists have to say. We can say we don't agree with them. I don't know how many Nobel laureates there are in that group—are there 10 Nobel laureates in that most recent group? It is something like that—plus a total of 2,500 scientists.

I believe this thing is serious, and I think we ought to approach it with that attitude and not say, "No, we're not going to have anything to do with it because if we have anything to do with it and try and solve the problem it will be very expensive." Well, that is no way to approach things.

I commend the Senator from Massachusetts for the remarks he made, and I hope that all our colleagues were listening. This thing is serious; let's take it seriously. We may not agree. We may have different scientific evidence, but let's not just trash it because it is going to be expensive to comply with.

Mr. KERRY addressed the Chair.

The PRESIDING OFFICER. The Senator from Massachusetts.

Mr. KERRY. Mr. President, I thank the Senator from Rhode Island for his generous comments and also for his substantive comments. He has been dealing with this issue for a long period of time. As chairman of the committee of jurisdiction with respect to the environment, as well as a Senator from a coastal State, a neighbor of ours, he is very knowledgeable about these impacts. He serves also on the observer

group. So I appreciate his comments particularly and his leadership on it.

I will just say to my friend from Rhode Island, when I was in this discussion with the British minister just last week, he was quite dumbstruck, in fact, that Senators here are still questioning the science or that some people want to make an issue out of the science. There is almost a universal European acceptance among those in Government of the science. They really have stepped beyond that debate.

The debate now is not over the science. The debate is how do you really deal with this the best. The Senator from Rhode Island pointed out Ford Motor Co. Let me just share with my colleague the environmental commitment statement by the insurance industry. The insurance industry in America is increasingly concerned about this. Here is what they said:

Based on the current status of climate research and on their experience as insurers and reinsurers, the member companies of the UNEP-Insurance Industry Initiative conclude that . . . Man-made climate change will lead to shifts in atmospheric and ocean circulation patterns. This will probably increase the likelihood of extreme weather events in certain areas. Such effects carry the risk of dramatically increased property damage, with serious implications for property insurers and reinsurers . . . We are convinced that in dealing with climate change risks, it is important to recognize the precautionary principle, in that it is not possible to quantify anticipated economic and social impacts of climate change fully before taking action. Research is needed to reduce uncertainty but cannot eliminate it entirely . . . We insist that in accordance with the precautionary principle, the negotiations for the Framework Convention on Climate Change must achieve early, substantial reductions in greenhouse gas emissions.

So I think that increasingly businesses are aware of the fact that the costs of not doing something are the real measurement here.

I thank the distinguished chairman for bringing that to the Senate's attention. I yield the floor.

Mr. CHAFEE. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. INHOFE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

AMBIENT AIR STANDARDS

Mr. INHOFE. Mr. President, tomorrow we will be holding public hearings on a bill that is very significant. It is Senate bill 1084.

Back almost a year ago, in November of last year, the Administrator of the EPA, Carol Browner, came out with the recommendation and the rule change to lower the ambient air standards as they pertained to particulate matter and to ozone.

After looking at this, we found that there was at that time no scientific