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# A Look at Climate Change and the Evolution of the Kyoto Protocol

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*The withdrawal of the United States from climate change negotiations and the Kyoto Protocol ratification almost single-handedly defeated the only concerted international attempt to curb worldwide carbon dioxide emissions. Climate change discussions entered the international arena in 1988, and by 1997 the Kyoto Protocol was drafted and ready for signing and ratification. It will not enter into force until it has been ratified by at least 55 states that account for 55 percent of the total industrialized carbon dioxide emissions of 1990. During the course of negotiations, U.S. participants have effectively worked to minimize commitments and increase alternatives to straightforward reductions. Although no longer a signatory, and with no intentions to ratify, the United States has forced the parties to the Protocol to accept weaker targets and greater compromises. Even if climate change proves not to be the threat that some scientists claim it will be, an entire international legal, political, and economic structure is now being created that will substantially affect the global economic environment. Isolating itself from the rest of the world, the United States will surely face the consequences of non-involvement in the years to come.*

## INTRODUCTION

Over the course of the Earth's history, average temperatures have fluctuated slightly by one or two degrees centigrade over any given span of time. These slight variations are evident in the geologic record and are responsible for events such as ice ages. The understanding that such small changes in the climate can have incredibly devastating effects on the Earth's ecosystems and the species inhabiting them has led to increasing concern about the recent global warming phenomenon. The last decade has been the warmest in the last 1000 years and scientists have predicted that temperatures will continue to increase for several

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decades to come.[1] The average temperature has already increased by approximately one degree Centigrade in the last 100 years[2] and is expected to rise anywhere from two to eleven degrees over the next century.[3] The strong scientific consensus is that this is due largely, if not entirely, to humanity's ever-increasing consumption of and dependence on non-renewable fossil fuels.

International negotiations began in 1988 to address climate change. Most of the discussions were aimed at curbing the amount of carbon dioxide ($CO_2$) that is produced by industrialized countries. Due to their heavy dependence on fossil fuels and the industries that support them, the United States was wary of entering into any binding agreements. The United States is responsible for emitting over 30 percent of the industrialized emissions of $CO_2$ and any requirements to reduce these emissions would have a significant effect on business and the American economy in general.[4] The lack of commitment by the United States to any binding targets has effectively diluted climate change negotiations and has forced the Parties to the Protocol (Parties) to accept a weak and potentially impotent document.

**Environmental Background**

During the last few decades, the topic of global warming has inspired heated debates among world leaders, industry representatives, and environmentalists. Although there is a strong consensus in the scientific community that human contribution of significant concentrations of greenhouse gasses to the environment has created a greenhouse effect, much remains unknown about the long-term consequences of human activity on the climate.

Greenhouse gases (GHG)—water vapor, $CO_2$, nitrous oxide, methane, chlorofluorocarbons (CFCs), and ozone—trap heat in the atmosphere instead of allowing it to radiate back to space. This is essentially the same process by which glass traps heat in a greenhouse—thus the term "greenhouse effect." Except for CFCs, greenhouse gases are natural components of the atmosphere, and the greenhouse effect itself is a natural phenomenon. Without it the Earth would be about 60

1. The Woods Hole Research Center, *The Warming of the Earth: A Beginner's Guide to Understanding the Issue of Global Warming*, *at* http://www.whrc.org/globalwarming/warmingearth.htm (last visited Mar. 17, 2003).

2. U.S. Environmental Protection Agency, *Global Warming: Climate*, *at* http://yosemite.epa.gov/oar/globalwarming.nsf/content/climate.html (last modified Oct. 31, 2002).

3. *Id.*

4. *Id.*

degrees cooler than it is today, and life as we know it would be impossible.[5]

Human activities such as deforestation and the burning of fossil fuels are increasing the levels of these gases in the atmosphere, causing an enhanced greenhouse effect and therefore trapping more heat. There is substantial evidence that global warming is already underway. The U.S. Environmental Protection Agency reported that the twentieth century was the hottest in the last thousand years, that the nine hottest years on record have occurred since 1987, and that 1998 was the hottest year on record.[6] Scientists' estimates of the total amount of surface warming that will occur during the next century range from as little as 1.8 to as much as 11 degrees Fahrenheit.[7] In comparison, the global average temperature change in 1816, the infamous "Year Without a Summer" when crops failed around the world, was a drop of less than one degree Fahrenheit.[8]

Regardless of the amount of warming that occurs, not all regions will feel the same effects. Some areas may become much hotter and drier, while others in the far northern and southern hemispheres may experience colder weather patterns. Due to predicted melting of the polar ice caps and a subsequent rise in global sea levels of 15 to 95 centimeters over the next century, nearly a third of the world's homes could be left underwater.[9] (See Figure 1.[10]) Severe storms and irregular precipitation patterns will likely become more frequent and widespread, and infectious diseases may increase due to an expansion of habitat for disease carriers such as mosquitoes. Ultimately, the Earth's ecological balance could become so radically upset that many species will be unable to adapt to the swift changes and will likely become extinct.[11]

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5. NATIONAL SAFETY COUNCIL, ENVIRONMENTAL HEALTH CENTER, REPORTING ON CLIMATE CHANGE: UNDERSTANDING THE SCIENCE (2d ed., June 2000), *available at* http://www.nsc.org/ehc/guidebks/climtoc.htm.

6. *See* U.S. Environmental Protection Agency, *supra* note 2.

7. *Id.*

8. *See* Woods Hole Research Center, *supra* note 1.

9. G. TYLER MILLER, LIVING IN THE ENVIRONMENT: PRINCIPLES, CONNECTIONS, AND SOLUTIONS (2001).

10. This diagram was produced by Brett Cherrington for the Database for Use in Schools project. *Effects of Global Warming, at* http://www.soton.ac.uk/~engenvir/environment/transport/globwarm.htm (last updated Feb. 9, 1996).

11. Natural Resources Defense Council, *Consequences of Global Warming, at* http://www.nrdc.org/globalwarming/fcons.asp (last visited Mar. 17, 2003).

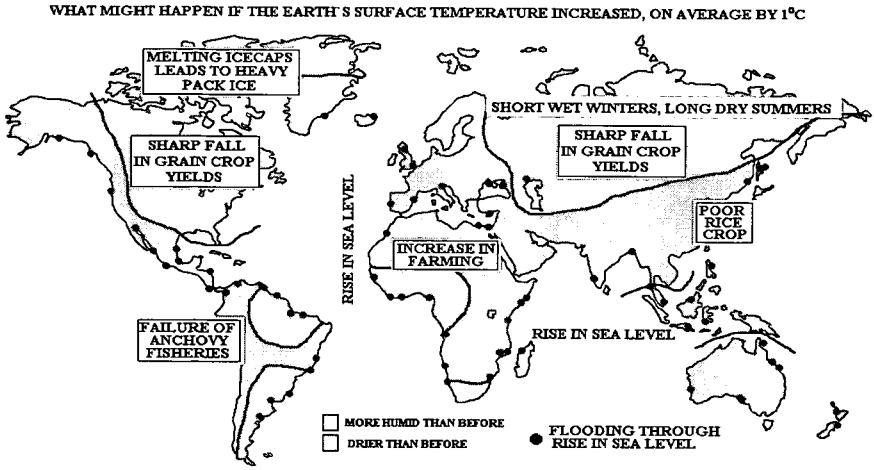


**Figure 1**

Humans enhance the greenhouse effect primarily by burning fossil fuels (coal, oil, and natural gas). We do this every day in order to keep our houses warm, our cities lit, and our cars running. The fuels we use are carbon-based and formed over millions of years in thick deposits of organic matter that became trapped between layers of rock in the Earth's crust. When these fuels are extracted and burned, the carbon is returned to the atmosphere in the form of carbon dioxide, the gas that contributes most significantly to the enhanced greenhouse effect. In a single year, an estimated 5.5 gigatons (1 gigaton = 1 billion tons) of carbon (GtC) is added to the atmosphere as a result of fossil fuel burning.[12] Electricity generation accounts for around 1.5 GtC and transportation, industry, and domestic uses account for nearly 4 GtC.[13]

Land use, in particular deforestation, also contributes to the accumulation of greenhouse gases in the atmosphere. Cutting down and burning forests not only releases carbon dioxide but also reduces an important carbon storage reservoir, so that less carbon can be removed or absorbed from the atmosphere. Deforestation and agricultural techniques add about 2.0 GtC to the atmosphere each year.[14]

Other natural processes like plant respiration, sea-surface exchange of gases, and natural decay of residue also give off carbon dioxide, while plant photosynthesis and ocean activity absorb it. Each

12. NATIONAL SAFETY COUNCIL, ENVIRONMENTAL HEALTH CENTER, *supra* note 5, at ch. 3, *available at* http://safety.webfirst.com/public/ehc/climate/chaptr3.pdf (last visited Mar. 17, 2003).

13. University College London, Centre for $CO_2$ Technology, *Introduction*, *at* http://www.chemeng.ucl.ac.uk/co2centre/ (last visited Apr. 25, 2003).

14. *Id.*

year, natural processes add and remove about the same amount of carbon from the atmosphere. This amount is estimated at around 102 GtC.[15]

The amount of carbon in the atmosphere has changed dramatically in the past 150 years. It has increased from 280 parts per million (ppm) at the time of the Industrial Revolution to 367 ppm today, an increase of 30 percent.[16] Most scientists believe that this is a direct result of human contributions and various scenarios have been assessed which indicate that by 2100, in the absence of emission control policies, carbon dioxide concentrations could increase to levels as much as 150 percent higher than those of today.[17]

But carbon dioxide is not the only substance of concern. As one publisher of scientific information explains:

> Other greenhouse gases are less common than carbon dioxide but have more potent effects. Nitrous oxide, for example, is only one-one thousandth as common as $CO_2$ but is 200–300 times as effective at trapping heat and remains in the atmosphere for a much longer period of time. Chlorofluorocarbons, which were not present in the atmosphere at all prior to the Industrial Revolution, have warming effects ranging from 3,000 to 13,000 times that of $CO_2$, and persist for up to 400 years.[18]

The most disconcerting fact about these statistics is the long lag time built into the system. Even if all human contributions to the greenhouse effect were to cease entirely, the atmosphere would return to "natural" pre-industrial levels very slowly, by a few ppm every 50 years or so.[19] This means that it may be some time before we see the effects of the millions of tons of $CO_2$ and other greenhouse gases that have been added to the atmosphere in recent decades. The fact remains that no one really knows how much the climate will change, how much the human contribution to greenhouse gases will and has affected it, or what the long-term effects of global warming will be on ecosystems, species distribution, and our own civilization.

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15. *Id.*

16. R.P. Detwiler & C.A.S. Hall, *Tropical Forests and the Global Carbon Cycle*, 239 SCI. 42, 44 (1998).

17. C.J. JEPMA, M. MUNASINGHE & B. BOLIN, CLIMATE CHANGE POLICY (1998).

18. Cambridge Scientific Abstracts, *Environmental Hot Topics: Global Warming and the Kyoto Protocol*, *at* http://www.csa.com/hottopics/ern/01jul/overview.html (last visited Mar. 26, 2003).

19. *Id.*

**International Response**

Climate change looms as a defining issue of the twenty-first century, because it pits the potential disruption of our global climate system against the future of a fossil-fuel based economy. Policy makers are the arbiters in this battle, attempting to negotiate between vastly different interests, and challenged by significant uncertainties in science and computer modeling.[20]

International efforts aimed at addressing and curtailing emissions of greenhouse gases began over a decade ago. In 1988, the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) created the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and economic bases of climate change policy.[21] Understanding that strong scientific support is essential to building the political will necessary to effectively respond to climate change, the IPCC has played a significant role in developing a scientific consensus about global warming. The reports of the IPCC have been critical in shaping the continuing international policy dialogue.

In 1990, the IPCC recommended a framework climate change convention following the format of the Vienna Convention (on depletion of the ozone layer). The model was accepted and the U.N. General Assembly established the Intergovernmental Negotiating Committee (INC) shortly after the Second World Climate Conference in November of 1990. Charged with producing an agreement to be signed at the Rio Earth Summit in June 1992, the INC began working in Chantilly, Virginia, in February 1992, during a record heat wave.[22]

Prior to the Climate Convention, many countries had already committed to reducing GHG emissions, while others, like the United States, were reluctant to enter into any binding agreements. The European Community (EC), for example, was prepared to return its joint $CO_2$ emissions to 1990 levels by the year 2000 because of individual country commitments by Germany, Denmark, Sweden, Australia, Austria, and Norway.[23] Japan had suggested that both an overall framework and specific measures should be decided upon during the negotiations. The United States was reluctant to agree on exact dates or targets and wanted to rely heavily on the phasing out of CFCs in order to

20. DAVID HUNTER, JAMES SALZMAN, & DURWOOD ZAELKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 609 (1998).

21. *Id.* at 610.

22. Donald Goldberg, *As the World Burns: Negotiating the Framework Convention on Climate Change*, 5 GEO. INT'L. ENVTL. L. REV. 239, 239 (1993).

23. *Id.* at 240.

reach potential emissions reductions.[24] Many objected to this notion and considered it disingenuous because of recent agreements under the Montreal Protocol on Substances that deplete the Ozone Layer, which detailed the curbing of CFCs by all Parties.[25]

As negotiations in anticipation of the Summit continued, it became increasingly clear that the United States was not going to make any decisions lightly and the original text of the document was cut down to a third of its size in order to encourage U.S. participation. Much of the once bold and decisive text was put into brackets, indicating that it was controversial and had not yet been fully adopted as the language of the agreement. The commitment section of the draft acknowledged both that an agreement was not achievable if the United States declined being a signatory and the recognition of this belief by the other Parties. Consequently, the Summit at Rio failed to establish any firm resolutions or targets and the Chairman placed the blame for the weak and ambiguous GHG commitment language squarely on the United States.[26]

The central objective of the UN Framework Convention on Climate Change (UNFCCC), as established in 1992, can be found in Article 2, which requires the Parties to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[27] The use of the language "stabilization of greenhouse gases" might be the greatest failure of the agreement, implying some sort of balancing act rather than a straight reduction in emissions.

Richard Benedick, in his essay, *A Case of Déjà vu*, which was written just before the UNFCCC, discussed the implications of an agreement on climate change that lacked any mandatory provisions for the reduction of GHGs.[28] He revisits the negotiations during the Montreal Protocol on Substances that Deplete the Ozone Layer and the successes of mandating a timetable for deep cuts in consumption of CFCs even though at the time scientists warned that adequate technology did not yet exist to achieve those cuts.[29] This radical approach to international negotiations

24. *Id.*

25. *Id.*

26. *Id.*

27. United Nations Framework Convention on Climate Change, May 29, 1992, art. II, 31 I.L.M. 849 (entered into force Mar. 21, 1994) [hereinafter UNFCCC].

28. Richard Benedick, *Essay: A Case of Déjà Vu*, SCI. AM., Apr. 1992, at 610.

29. Benedick points out, "The current debate about greenhouse warming conveys a distinct sense of déjà vu. The world again confronts a classic situation: weighing the risks of action and inaction in the face of uncertainties. Short-term costs loom large; long-term dangers seem remote. Nature, however, is not in the habit of providing convenient early-warning systems. So astounded were scientists in the early 1980s to detect a dramatic seasonal drop in ozone levels over Antarctica that they spent two years rechecking their data. They soon discovered that satellites had dutifully been recording the ozone collapse

was the first time that policy makers departed from the customary accommodation of environmental regulation to commercial convenience. Considering that the UNFCCC was to be modeled on the Vienna Convention and the resulting Montreal Protocol, it was hoped that any agreements reached in Rio would have the same "bite." This, however, was not to be.

The resulting UNFCCC was in many ways disappointing to environmentalists, but given the vast complexities inherent in the climate change issue it may nonetheless be viewed as a positive step toward the control of GHGs. Perhaps the most controversial provisions of the Convention were those that addressed the specific commitments of the Parties. The Parties were essentially divided into three categories: all Parties; Annex I Parties, which includes all industrialized countries; and Annex II Parties, which includes all industrialized countries except those from the former Soviet bloc in a process of economic transition. Article 4(1) places certain information and data collecting requirements on all Parties. Article 4(2)(a) subjects the Annex I countries to additional requirements, including most notably the obligation to "adopt national policies and take corresponding measures on the mitigation of climate change, by limiting anthropogenic emissions of greenhouse gases and protecting and enhancing greenhouse gas sinks and reservoirs." This language is not tied legally to any specific target, but Article 4(2)(b) requires the developed countries to provide detailed information on their policies as well as their projected anthropogenic emissions "with the aim of returning individually or jointly to their 1990 levels...."

The framework established for the continued implementation of the Convention can be found in Article (4)(2)(d), which details the duties of the Conference of the Parties to the Convention (CoP). The CoP is responsible for periodically meeting and reviewing the adequacy of

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for several years but had not raised any alert because the computers were programmed to reject such extreme data as anomalies.

The Antarctic ozone hole is an example of what scientists call a nonlinear response; that is the ozone layer kept absorbing ever more chlorine from man-made sources without revealing any problem, until the concentrations reached a breaking point, and collapse ensued. With respect to greenhouse warming, scientists warn that billions of tons of carbon dioxide and other gases being emitted by modern industrial economies constitute an unpredictable experiment on the atmosphere.

Even the most dire predictions are now shown to have underestimated ozone loss by CFCs. Had CFCs been permitted to continue growing, they would have wrought irreparable damage on the ozone layer. And yet, at the time, powerful voices in government and industry strongly opposed regulations, on the grounds of incomplete scientific evidence. Under these circumstances, the lesson for policy makers seems clear: if we are to err, let us err on the side of caution. The very existence of scientific uncertainty about global warming should lead us to action rather than delay, especially when most of the international scientific community persistently warns of the risks." *Id.* at 610.

subparagraphs (a) and (b) of Article 4(2) "in the light of the best available scientific information and assessment on climate change and its impacts, as well as relevant technical, social, and economic information." A deadline for the second review of Article 4 was set for December 31, 1998, and "thereafter at regular intervals determined by the [CoP], until the objective of the Convention is met."[30]

Although the 1992 Convention did not include a legally binding obligation to meet 1990 levels of GHG emissions by 2000, Article 4 required at least that developed-country Parties try to do this. By the time the first CoP was scheduled to meet in Berlin in 1995 two things seemed clear. First, the original target of freezing emissions at 1990 levels for Annex I countries was not going to be sufficient to meet the Convention's Article 2 objective "to achieve stabilization of GHG concentrations at a safe level". Second, few developed countries were even going to come close to meeting the 1990-level freeze.[31]

Environmentalists and most developing countries came to Berlin hoping to persuade the Annex I countries to step up their level of commitment. A group of developing countries drew up a document that became known as the "Berlin Mandate," which would establish a timetable for developed countries to negotiate a protocol with clear "quantifiable limitation and reduction objectives" (QELROs)[32]—a new term for "targets and timetables." It concluded that Article 4, paragraph 2(a) and (b) of the UNFCCC was inadequate and needed to be strengthened through the adoption of a "protocol or another legal instrument."[33] Article 6 established a deadline "to ensure completion of the work as early as possible in 1997 with a view to adopting the results at the third session of the Conference of the Parties [in Kyoto]."[34]

Around the same time as the Berlin Mandate and the first CoP, the IPCC released a report that became one of the most significant milestones in the evolution of the international climate change agreements. Some 2,000 scientists, experts and government officials prepared and signed off on the broadest international consensus ever on the issue. Based on 133 scientific publications, the report delivered a widely quoted conclusion: "The balance of evidence suggests that there is a discernible human influence on global climate."[35] This conclusion ignited serious debate, pitting the great majority of atmospheric

30. UNFCCC, *supra* note 27, at art. 4(2)(d).

31. HUNTER ET AL., *supra* note 20, at 645.

32. *Id.*

33. Conclusion of Outstanding Issues and Adoption of Decisions: The Berlin Mandate, Apr. 7, 1995, FCCC/CP/1995/L.14.

34. Id. at art. 6.

35. Miguel Llanos, *A Consensus Emerges Around Global Warming*, MSNBC, Jan. 10, 1998, *at* http://www.msnbc.com/news/106332.asp (last visited Mar. 26, 2003).

scientists and environmentalists who endorsed the IPCC report against some extremely vocal skeptics funded largely by the fossil fuel industry.[36] Despite the controversy, the report provided one of the most important catalysts for the negotiations about to ensue.

At CoP-1 in Berlin, the United States continued its lack of clear commitment, but their position was an increasingly isolated one. Because of increased public pressure and the recent findings of the IPCC, the United States did announce that defined targets would be supported, but they were silent on what specific levels they would support.[37] They remained silent throughout the next year even though Europe and many developing countries were looking to the United States to show leadership on the issue. Instead, President Clinton announced that he would use the time remaining before the third Conference of the Parties at Kyoto to educate the American public about the need for GHG reductions.[38]

The Europeans and others were not pleased with the U.S. position. British Prime Minister Tony Blair indirectly criticized the United States by saying,

> [S]ome of the greatest industrialized nations...have not lived up to their promises. To be really effective, we must act globally. At Kyoto, industrial countries must agree to legally binding targets for significant reductions in greenhouse gas emissions during the first decade of the next century. The biggest responsibility falls on those countries with the biggest emissions. We in Europe have

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36. Between 1991 and 1995, according to a study called *Pollution Politics* by the California Public Interest Research Group (CALPIRG), oil companies and automakers spent nearly $34 million to influence public policy in the state, the sum included $29 million in lobbying; $3.97 million in donations to statewide and legislative candidates; and $945,000 specifically to the gubernatorial campaign of Republican Governor Pete Wilson. WSPA's lobbying expenditures were $7,349,718 in the period, the CALPIRG study shows. The cash-rich auto and oil companies—acting together or not—made a formidable lobbying team, their slick PR materials preying mostly on fear of new taxes and higher car prices. "We oppose the assessment of nearly $18 billion in hidden taxes and other costs to promote electric, natural gas and other alternative-fueled vehicles," read a CAHT petition. A flyer added, "Once again, the vast majority of motorists who use gasoline are forced to subsidize the minority that uses alternative fuels. That's just not right." Jim Motavali, *The Ties That Blind: Big Oil Goes Hunting for Electric Cars in California*, EMAGAZINE, Mar.–Apr. 1997, *at* http://www.emagazine.com/march-april_1997/0397feat2.html (last visited Mar. 26, 2003).

37. UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, US SECOND NATIONAL COMMUNICATION: CLIMATE ACTION REPORT, 1997 SUBMISSION OF THE UNITED STATES OF AMERICA UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (U.S. Department of State Publication No. 10496), *available at* http://www.unfccc.int/resource/docs/natc/usnc2.pdf (last visited Mar. 26, 2003).

38. *Id.*

> put our cards on the table. It is time for the special pleading to stop and for others to follow suit. If we fail at Kyoto, we fail our children, because the consequences will be felt in their lifetime. And we must all deliver on the commitments we make. Setting new targets means little if old ones are ignored.[39]

The G-77[40] Chairman, David Mwakawago, was even clearer when he said, "[President Clinton] articulated the problems very clearly, but when it came to global action, joining the rest of humanity to address them, there wasn't very much there."[41]

Clinton's announcement that he would build political will over the next six months rallied both sides of the climate debate in the United States to encourage support for either a stronger or a weaker convention. Just a few months after the June 1996 speech, U.S. industry announced a $13 million dollar campaign under the ambiguous name of the "Global Climate Information Project."[42] With the slogan "It's not global, and it won't work,"[43] they first attacked the Climate Change Convention as being unfair to the United States because it let developing countries off the hook. Other ads in the campaign claimed that energy prices would rise more than 20 percent.[44] Over 1500 utilities, trade associations, labor unions, and other corporations signed on to an advertisement asking the President not to "rush into an unwise and unfair United Nations agreement that's bad for America."[45]

Congress added their support to this position by passing Senate Resolution 98 urging the President not to agree to any convention that did not include developing countries and that would have a significant effect on the U.S. economy.[46] The Byrd Resolution, as it has since been

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39. 10 Downing Street, *Speech by the Prime Minister Tony Blair to the UN General Assembly–Monday 23rd June 1997, at* http://www.number-10.gov.uk/output/Page1045.asp (last visited Mar. 26, 2003).

40. There are 153 non-Annex I/B countries. Of these, 130 are members of the group G-77. The chair of G-77 rotates among the countries on an annual basis. During the 1990s the chairs were Bolivia, Ghana, Pakistan, Colombia, Algeria, Philippines, Costa Rica, Tanzania, Indonesia, and Guyana. Group of Seventy-Seven at the United Nations, *What Is the Group of Seventy-Seven?, at* http://www.g77.org/main/main.htm (last visited Mar. 26, 2003).

41. Commission on Sustainable Development, *Report on the Fifth Session, Apr. 7-25, 1997, at* http://www.agora21.org/cdd5/cdden00.html (last visited May 5, 2003).

42. Common Cause, Some Like It Hot: As Global Temperatures Rise, Contributions Flow to Parties and Candidates, at http://www.commoncause.org/publications/hot/pg04.htm (last visited Mar. 26, 2003).

43. *Id.*

44. *Id.*

45. Joby Warrick, *White House Fosters Awareness of Global Warming but Hedges on Policy*, WASH. POST, Oct. 6, 1997, at A9.

46. S. Res. 98, 105th Cong. (1997) (enacted).

referred to, strongly influenced the subsequent negotiations in Kyoto because the U.S. Senate would have to ratify any agreements made.

Environmental groups countered the attacks by launching media and public information campaigns. Some environmental groups attacked Vice President Gore, quoting passages from his book, *Earth in the Balance*, and running advertisements with the words "withdrawn by the author" superimposed over the copy of the book's cover.[47] A scientists' statement from over 2600 leading scientists was handed to the President on June 18, 1997, endorsing strong and clear commitments at Kyoto.[48] A similar statement from over 1000 leading economists argued that the United States could meet the objectives of the climate convention without harming the national economy.[49] Even a Department of Energy study concluded that energy efficient technologies could allow the United States to reach 1990 levels by the year 2010 with little or no overall costs to the economy.[50] Despite these and other efforts, the Administration's position could not be softened.

The Clinton Administration finally announced its policy on October 22, 1997. The proposal specified a target of reducing emissions to 1990 levels between 2008 and 2012, and further unspecified reductions by 2017.[51] To meet these deadlines the President outlined a program of $5 billion in tax and other incentives to spur energy efficient technologies; endorsed the concept of an international pollution trading system that would allow for reduced costs of compliance; and emphasized the restructuring of the electric industry concurrent with deregulation.[52] The Administration's position drew immediate criticism from both U.S. environmentalists and industry groups, and by governments around the world, who believed the dominant role of the United States in the international political system warranted a stronger position. However, with the U.S. position finally publicized, the major proposals for targets and timetables leading up to Kyoto could be identified. (*See* Figure 2.[53])

47. HUNTER ET AL, *supra* note 20, at 650.
48. *Id.*
49. *Id.*
50. *Id.* at 650.
51. *Id.* at 656.
52. *Id.*
53. HUNTER ET AL, *supra* note 20, at Box 10-2: Negotiating Positions on GHG Reductions.

**Figure 2**

| | |
|---|---|
| AOSIS | 20% below 1990 levels by 2005 |
| G–77 | 35% below 1990 levels by 2020 |
| European Union | 7.5% below 1990 levels by 2005; 15% below by 2015 |
| Russia | 1990 levels by 2010 |
| Czech Republic | 5% below 1990 levels by 2005; 15% below by 2010 |
| Eastern Europe | 1990 levels by 2005 |
| Peru | 15% below 1990 levels by 2005 |
| Brazil | 30 % below 1990 levels by 2020 |
| Switzerland | 10% below 1990 levels by 2010 based on per capita consumption |
| Philippines | 20% below 1990 levels by 2005; 40% below by 2020 |
| Japan | 0–5% below 1990 levels by 2008–2012, depending on economic factors |
| United States | 1990 levels by 2008 to 2012; further unspecified cuts by 2017 |

## THE KYOTO PROTOCOL

"These 10 days could change the history of humankind." This is what Japanese Foreign minister Keizo Obuchi told the 2000 delegates at the third Conference of the Parties (CoP-3) that met in Kyoto, Japan, in 1997. The delegates, who represented over 150 nations, were trying to forge a treaty that would mandate reductions in the emission of greenhouse gases. Not since the 1992 Earth Summit had so much press and attention been paid to an international environmental negotiation as was paid to the Kyoto negotiations. Thousands of official delegates, reporters, scientists, activists, and industry officials arrived not knowing how the conference would turn out. The external interest was so heavy that failure to reach an agreement would be deemed an embarrassing failure to many of the governments.[54]

Many predicted that the initial U.S. negotiating position, which called for a return to 1990 emission levels by 2012 and the inclusion of developing countries in any treaty, would hinder any potential agreement. "We are perfectly prepared to walk away from an agreement that we don't think will work," Vice President Gore said before heading to Kyoto to join the U.S. delegation.[55]

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54. *Id.* at 649.

55. PBS, *Online Forum: Environmental Diplomacy: Analysis of the Kyoto Global Climate Conference* (Dec. 12, 1997), *at* http://www.pbs.org/newshour/forum/december97/kyoto_12-12.html (last visited Mar. 26, 2003).

Despite a rocky beginning to the conference, negotiators were able to produce an agreement to reduce greenhouse gases after going into an eleventh day of talks. The agreement called for 159 countries to reduce their aggregate emissions of greenhouse gases by 5.2 percent below 1990 levels by 2012.[56] Each country had an individual reduction target to reach the worldwide reduction of 5.2 percent, although there were a few nations that would be allowed to increase their emissions. Under the draft proposal, the United States would reduce its emissions by seven percent below 1990 levels, the European Union's emissions would drop by eight percent and Japan would reduce emissions by six percent. Australia, on the other hand, was allowed to increase its emissions by five percent.[57]

Going into the conference, the United States had proposed stabilizing emissions at 1990 levels by 2012. The European Union had called for all developed nations to reduce their emissions by 15 percent by 2010, while Japan had called for a 5 percent reduction. (*See* Figure 2.) The deal finally reached appears to be a compromise between those positions.

Consensus was also reached regarding the gases covered in the treaty. The United States had called for any treaty negotiated in Kyoto to cover six greenhouse gases—three natural (carbon dioxide, $CO_2$; methane, $CH_4$; and nitrous oxide, $N_2O$) and three man-made (hydrofluorocarbons, HFCs; perfluorocarbons, PFCs; and sulfur hexafluoride, $SF_6$)—while Japan and the European Union only wanted negotiations to cover the three natural gases.[58] Ultimately it was decided that all six gases would be part of any deal.[59]

Of significance to the United States was the provision that only 38 developed nations were required to reduce their greenhouse gas emissions while the remaining developing nations would only have to set voluntary limits.[60] That provision appeared to doom any possibility of U.S. ratification considering that the U.S. Senate voted 95-0 on the Byrd Resolution to demand the participation of developing nations in any agreement.[61] The exclusion of developing countries remains one of the main criticisms of the Protocol by the United States. In the end, however,

56. Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted Dec. 10, 1997), 37 I.L.M. 22 (1998) [hereinafter Kyoto Protocol].

57. *Id.*

58. *See* PBS, *supra* note 55.

59. *See* Kyoto Protocol, *supra* note 56.

60. *Id.*

61. Paul G. Harris, *Common but Differentiated Responsibility: The Kyoto Protocol and United States Policy*, 7 N.Y.U. ENVT'L. L.J. 27, 29 (1999).

the United States, represented by Vice-President Al Gore, signed the treaty on November 12, 1998.[62]

**Legal Effect of Signing the Kyoto Protocol**

Merely signing the Kyoto Protocol does not make the United States bound by the agreement. The Kyoto Protocol was negotiated as a means of implementing the UNFCCC to which the Senate gave its advice and consent on October 7, 1992 and by which the United States is legally bound.[63] The Framework Convention set a general objective of stabilizing GHGs and anticipated that the Parties would adopt protocols to the Convention in order to achieve that objective. However, such protocols must themselves be ratified by the participating states before they can become legally binding.[64]

The Kyoto Protocol was negotiated and signed by the Clinton Administration, and the administration indicated its intent to seek ratification. However, the Protocol was not ratified nor was it ever sent to the Senate for its advice and consent.[65] The Protocol will not enter into force until it has been ratified by at least 55 states representing at least 55 percent of the total industrialized carbon dioxide emissions in 1990.[66] Both steps—ratification by the United States and entry into force internationally—are necessary for the Protocol to be legally binding on the United States.

Though signing the Protocol in itself does not make it legally binding on the United States, it does carry some consequences. First, signature authenticates the text of the agreement because it represents "the assent of the negotiating states that a given text expresses the agreement they have reached."[67] Second, it initiates the process by which the United States could become legally bound. Signature of the Protocol is essentially a political statement of approval and represents "at least a moral obligation to seek [its] ratification."[68] Finally, signature of a treaty or protocol obligates a state to "refrain from acts that would defeat the

62. David M. Ackerman, *Global Climate Change: Selected Legal Questions About the Kyoto Protocol*, CAMBRIDGE SCI. ABSTRACTS, *at* http://www.csa.com/hottopics/ern/01jul/2-kyoto.html (last visited Mar. 26, 2003).

63. 138 CONG. REC. S33521-27 (daily ed. Oct. 7, 1992).

64. Ackerman, *supra* note 62.

65. Susan R. Fletcher, *Global Climate Change: The Kyoto Protocol*, CAMBRIDGE SCI. ABSTRACTS, *at* http://www.csa.com/hottopics/ern/01jul/1-kyoto.html (last visited Mar. 26, 2003).

66. Kyoto Protocol, *supra* note 56, art. 24.

67. RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 312 (1987).

68. *Id.*

object and purpose of the agreement."[69] It is difficult to determine what kinds of actions "defeat the object and purpose of [an] agreement," but it is suggested that one criterion may be whether a particular action has a "negative effect on what would be a state's obligations under a treaty which is irreversible."[70]

**Major Provisions of the Kyoto Protocol**

During negotiations in Kyoto, little progress was made on key issues until the final days and hours of the Conference. There was wide disparity among the Parties especially in regards to three topics: (1) the amount of binding reductions in GHGs to be required and the gases to be included in these requirements, (2) whether developing countries should be part of the requirements for GHG reductions, and (3) whether to include emissions trading and joint implementation.

*1. Emissions Reductions*

The United States would be obligated under the Kyoto Protocol to a cumulative reduction in its GHG emissions of seven percent below 1990 levels, averaged over the commitment period 2008 to 2012.[71] Annex B to the Protocol lists 39 countries and the amount of reductions, in percentages, required of each. These range from 92 percent (a reduction of eight percent) for most European countries, to 110 percent (an increase of 10 percent) for Iceland.[72] Based on projections of the growth of emissions using current technologies and processes, the reduction in GHG emissions required of the United States is between 20 percent and zero percent below where it would otherwise be by the 2008–2012 budget period.[73]

Inclusion of GHG "sinks,"[74] which the Protocol adopted as urged by the United States,[75] and emissions trading would make the ultimate reductions substantially lower. The two separate concepts of sinks and emissions trading, and specifically how they can be used to meet a coun-

69. *Id.* at § 312(3).
70. *Id.* cmt. at 174.
71. Fletcher, *supra* note 65.
72. Kyoto Protocol, *supra* note 56, Annex B.
73. Larry Parker & John Blodgett, *Global Climate Change: Reducing Greenhouse Gases-How Much from What Baseline*, CRS Report for Congress No. 98-235 ENR, *available at* http://www.ncseonline.org/NLE/CRSreports/Climate/clim-13.cfm?&CFID=7243272&CFTOKEN=7269030 (last visited Mar. 26, 2003).
74. GHGs, especially $CO_2$, are absorbed by a number of processes in forests, soils, and other ecosystems. These are called sinks.
75. Fletcher, *supra* note 65.

try's overall emissions reduction obligations, are responsible for many of the difficulties surrounding ratification of the Protocol.

*2. Developing Countries' Responsibilities*

As already mentioned, the United States, through the Byrd Resolution, has taken a firm position that "meaningful participation"[76] of developing countries in commitments made in the Protocol is critical both to achieving the goals of the treaty and to its approval by the U.S. Senate. The Kyoto negotiations concluded without such commitments and the Clinton Administration indicated that it would not submit the Protocol for Senate consideration until those commitments were made.[77] The Protocol does call on all Parties, developed and developing, to take a number of steps to formulate national and regional programs to improve local emission factors, activity data, models, and national inventories of GHG emissions and sinks that remove these gases from the atmosphere.[78] All Parties are also committed to formulate, implement, publish, and regularly update national and, where appropriate, regional programs containing measures to mitigate climate change.[79] They are also committed to cooperating in the promotion and transfer of environmentally sound technologies[80] and in scientific and technical research on the climate system.[81]

*3. Emissions Trading and Joint Implementation*

Article 6 allows for and outlines emissions trading in which a Party included in the Annex I countries "may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases."[82] These projects, however, can only be used as supplemental measures to domestic actions.[83] The added language concerning "supplemental measures" makes it clear that a country cannot meet its entire reduction objective by relying on emissions trading. This raises the question of what proportion of a country's obligations could be met through this mechanism.

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76. S. Res. 98, 105th Cong. (1997) (enacted).
77. Fletcher, *supra* note 65.
78. Kyoto Protocol, *supra* note 56, art. 10(a).
79. *Id.* art. 10(b).
80. *Id.* art. 10(c).
81. *Id.* art. 10(d).
82. *Id.* art. 6.
83. *Id.*

Another major mechanism for meeting obligations in the Protocol is provided in Article 12 by the establishment of a Clean Development Mechanism (CDM) through which joint implementation (JI) between developed and developing countries would occur. The United States pushed hard for JI and negotiations resulted in the agreement that developed Annex I countries could contribute financially to projects aimed at reducing emissions in developing countries and use any actual reductions in those countries as credit towards their own reduction obligations.[84]

A number of specific concerns related to the rules on how emissions trading and joint implementation would work were left at Kyoto to be negotiated and resolved in subsequent meetings. In the years since Kyoto, it has become increasingly clear that these are extremely complex issues that need to be well defined if they are to contribute successfully to the original goals of the UNFCCC.

**Buenos Aires Action Plan**

Although it had been expected that the November 1998 CoP-4 meeting in Buenos Aires, Argentina, would resolve some of the more difficult issues left unresolved in Kyoto, it became clear in the year leading up to CoP-4 that parties were far from agreement on all of the issues.[85] Therefore, the Parties arrived in Buenos Aires with an agenda focused on formulating an "action plan" that would allow for the needed additional work to be done. The plan was titled the Buenos Aires Action Plan (BAPA) and was scheduled to be completed by the end of 2000 at The Hague during the Sixth Conference of the Parties.[86] The major focus of BAPA was on the formulation of rules and guidelines for the "market-based mechanisms" of JI, emissions trading, and the CDM. The critical issues to be considered included how much of a country's emission reduction requirement could be met through these mechanisms, which the United States argued should be limitless and which the European Union felt should be supplementary to domestic reductions; how emission units would be tracked; and what penalties would accompany the trading of "false" credits.[87] The Plan also focused on the compliance mechanisms of the Protocol (how it would be enforced) and the issues concerning transfer and development of technology.[88]

84. *Id.* art. 12.
85. Fletcher, *supra* note 65.
86. *Id.*
87. *Id.*
88. *Id.*

The other major issue under active negotiation, but outside the scope of BAPA, was how to define carbon sinks and the role they would play in the Protocol. During negotiations in 1999 the IPCC released a report indicating that a large amount of carbon could be stored in a variety of sinks including not only forests, but soils, vegetation, and grazing lands.[89] This was important to the United States due to its large land area and extensive potential for greater absorption of carbon due to land management changes.

Talks began at The Hague on November 13th and centered initially on the Buenos Aires Action Plan. The Conference quickly degraded into a major controversy over the proposal by the United States to allow credit for carbon sinks in forest and agricultural land as a major portion of their reduction obligations.[90] After calculations, the U.S. credits from carbon sinks appeared to represent about 125 million tons of carbon against a likely need to reduce emissions by 600 million tons in order to meet the seven percent reduction target by 2008–2012.[91] Heated opposition by the European Union and other countries ensued and the negotiations at The Hague collapsed without any agreements whatsoever. In early 2001, it was announced that talks would resume in the last two weeks of July at meetings in Bonn, Germany, a session now referred to as "COP-6 bis" because it represented a continuation of the COP-6 meeting suspended at The Hague.

**The White House Effect**

On March 13, 2001, President George W. Bush wrote to four Republican Senators informing them that he would not ratify the Kyoto Protocol. A few days later he bluntly defended his decision at a Washington press conference by stating, "I will not accept a plan that will harm our economy and hurt American workers...first things first are the people who live in America; that's my priority."[92] A few days later Vice President Dick Cheney, like Bush a Texas oil-industry veteran, announced a new American policy of generating more energy rather than conserving existing supplies. He predicted that the United States would need between 1300 and 1900 new power stations in the next twenty years, most of them burning coal, which he said "[is] not the

89. *Id.*
90. *Id.*
91. *Id.*
92. Murray Sayle, *After George W. Bush, the Deluge,* LONDON REV. OF BOOKS, June 21, 2001, *at* http://www.lrb.co.uk/v23/n12/sayl01_.html (last visited Mar. 26, 2003).

cleanest source of energy, but [is] the most plentiful source of affordable energy in the country."[93]

Europeans began calling Bush the "Toxic Texan" and *Nature* magazine published an article claiming that Bush's decision, together with other decisions easing restrictions on ergonomics and the levels of arsenic permitted in Americans' drinking water, "[made it] abundantly clear where his Administration [stood] on matters in which scientists would normally play an important advisory role. It stands firmly with the employers and polluters who helped to pay for Bush's singularly unimpressive election victory last November, and damn the scientific evidence."[94] Bush replied by stating that "America's unwillingness to embrace a flawed treaty should not be read by our friends and allies as any abdication of responsibility. To the contrary, my administration is committed to a leadership role on the issue of climate change."[95]

**Bonn Synopsis**

In July 2001, more than 160 governments came together in Bonn, Germany, to complete the operating rules for the 1997 Kyoto Protocol, requiring 55 countries representing 55 percent of industrialized country emissions to ratify the treaty before entry into force. The United States, representing such a significant portion of industrialized emissions, made the Kyoto agreement achievable only if Japan, the European Union, and Russia all decided to ratify. The U.S. position dramatically affected the climate of the conference, considering that negotiations had been going on for nearly a decade and now it seemed like the situation was hopeless. Jan Pronk, the Dutch Environmental Minister and President of the conference, urged Parties to take the necessary steps towards ratification even if one nation felt it could not join in (indirectly referring to the United States).[96]

The Conference was ultimately successful in achieving one major resolution. The issue of how compliance would be achieved for those countries not meeting their targets was finally agreed upon despite last-minute hold-outs Japan, Australia, and Canada.[97] The compliance

93. *Id.*

94. *Id.*

95. Press Release, White House Office of the Press Secretary, President Bush Discusses Climate Change (June 11, 2001), *available at* http://www.whitehouse.gov/news/releases/2001/06/20010611-2.html (last visited Mar. 26, 2003).

96. *Id.*

97. The agreement provides solutions to the key issues that the technical negotiators had been unable to resolve by establishing the following:

- There will be a compliance committee comprised of two "branches." The facilitative branch will be available to assist all Parties—both devel-

mechanism established at Bonn was described as one that will "stand out as the 'cutting edge' for compliance mechanisms in international environmental law...[and] it will provide a strong basis for...evaluating compliance, as well as responding to cases of non-compliance during the first commitment period and beyond."[98] Though several issues were left undecided, the Parties left the Conference believing that ratification could be achieved without U.S. participation and final negotiations were scheduled for the Seventh Conference of the Parties in Marrakech, Morocco, in November 2001.

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oped (Annex I) and developing (non-Annex I)—in their implementation of the Protocol. Importantly, it will serve as an "early warning system" for Annex I Parties that may have trouble meeting their emissions targets.

The enforcement branch will serve as a judicial-like forum for determining whether an Annex I Party has (1) met its target, (2) complied with its monitoring and reporting requirements and (3) met the eligibility tests for participating in the mechanisms. When the enforcement branch finds that a Party has failed to comply with one of these obligations, the enforcement branch will decide upon the appropriate consequence(s) for the Party.

- The membership of both the facilitative and enforcement branches will be based upon equitable geographical representation. This was a dramatic victory for the G-77 and China. "Composition" of the enforcement branch was the final, seemingly most intractable issue for negotiators to agree upon. We had predicted that the Umbrella Group would never consent to equitable geographic representation; yet, in the final moments, Australia finally conceded and the Pronk political agreement became a reality.
- There will be specific consequences when an Annex I Party fails to comply with its emissions target: (1) For every tonne of emissions by which a Party exceeds its target, 1.3 tonnes will be deducted from its assigned amount for the subsequent commitment period. That rate may be increased for future commitment periods. (2) The Party will prepare a detailed plan explaining how it will meet its reduced target for the subsequent commitment period. The enforcement branch will have the power to review the plan and assess whether or not it is likely to work. (3) The Party will not be able to use Article 17 emissions trading to sell parts of its emissions allocation ("assigned amount").
- After the enforcement branch determines that a Party has exceeded its target, the Party will have the right to appeal the decision to the supreme body of the Protocol, the COP/MOP. The branch's decision will stand unless a three-fourths majority of the COP/MOP votes to overturn it. The appeal provision was a significant concession to the G-77 and China, who wanted assurances that decisions of the enforcement branch could not be made completely independently from COP/MOP oversight.

Glen Wiser, *CIEL's Summary of the Compliance Mechanism*, CIEL, *at* http://www.ciel.org/Climate/bonn_cm_summary.html (last visited Mar. 26, 2003).

98. *Id.*

**United States Under Attack**

On September 11, 2001, the United States experienced what might be remembered as the single greatest tragedy in its history when thousands died in the collapse of the World Trade Center. British Prime Minister Tony Blair, keen to be seen as Bush's closest ally in the war on terrorism, hinted that a new sense of multi-lateralism after the attacks could extend into other areas. "The power of the international community to fight terrorism...[could be] used to improve the environment," Blair said at a Labour Party conference in October.[99] He added, "We could defeat climate change if we choose to. Kyoto is right. We will implement it and call upon all other nations to do so."[100]

Others were not as confident that the attacks would have any effect on U.S. involvement in Kyoto negotiations. Christian Engelhofer, an energy-expert at the Brussels-based Centre for European Policy Studies, said it was now less likely than ever that the U.S. State Department would come up with an alternative plan for fighting climate change, which the United States said it would put forward after Bonn.[101] "One thing is clear, the United States will not rejoin the Kyoto Protocol, this has not changed since September 11th," said Engelhofer. "Nobody expects a 'big idea' anymore...After Bonn what would be the point of a counter-proposal? Bonn was very clear—people said 'we have invested 10 years [negotiating Kyoto], we will stick with it.'"[102] Belgian Energy Minister and head of the EU delegation at Bonn Olivier Deleuze said the European Union would not push the United States to return to Kyoto, but it would push the rest of the world to move forward regardless of the U.S. position. "We might have total unreserved solidarity with the U.S. in relation to the attacks, but that does not mean we would change our position on Kyoto."[103] Rob Bradley of Climate Network Europe added, "In the near future, climate change has pretty much slipped off the U.S. agenda. It isn't really possible to criticize them for that...[but] it does re-emphasize that for the time being the rest of the world needs to go it alone."[104] And, as the Parties prepared for Marrakech and CoP-7, they were ready to do just that.

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99. *Multilateralism Unlikely for Kyoto*, CHINA DAILY, Oct. 15, 2001, *available at* http://www1.chinadaily.com.cn/cndy/2001-10-15/38386.html (last visited Mar. 26, 2003).
100. *Id.*
101. *Id.*
102. *Id.*
103. *Id.*
104. *Id.*

**CoP-7**

"The world has now agreed on the most complex environmental treaty ever and the first which is legally binding."[105] The Marrakech Accords drafted during CoP-7 effectively completed the work under BAPA and ultimately set the stage for countries to ratify the Kyoto Protocol and bring it into force.[106] The United States participated in the talks but maintained its position that it refused to ratify. Major decisions were made and most, if not all, of the demands made previously by the United States over the past decade were firmly incorporated into the agreement. This was likely due to the fact that key players such as Japan and Russia, who sought many of the provisions concurrent with the U.S. position, held strong bargaining positions because their acceptance of the final text was necessary to give the Protocol a chance for ratification.[107] All three of the market-based mechanisms—JI, emissions trading, and the CDM—were incorporated along with the principle that countries could receive credit toward their emissions targets for carbon absorbed by forests, soils, vegetation, grassland, and other sinks.[108] "There is an agreement by everyone on everything," said French environment minister Yves Cochet.[109]

While the Parties deserve great recognition for finally settling disputes and preparing for ratification and entry into force at CoP-7, the Protocol arguably lacks the type of commitments necessary to effectively combat global warming. The recognition of the three market-based mechanisms and carbon sinks as valid methods for reducing emissions will likely draw attention from efforts aimed at energy efficient technologies and reducing global consumption of non-renewable fossil fuels. The future of global warming is uncertain, but the reality is that the world has finally taken its first step toward curbing overall human contribution to the greenhouse effect.

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105. *One World After All: Quite a Week for Global Governance*, THE GUARDIAN, Nov. 17, 2001, *available at* http://www.guardian.co.uk/leaders/story/0,3604,596326,00.html (last visited Mar. 26, 2003).

106. PEW Centre on Global Climate Change, *Summary of the Marrakech Accords on Climate Change*, *at* http://www.pewclimate.org/cop7/update_110901.cfm (last visited Mar. 26, 2003).

107. *Climate Conference Nears End*, BBC NEWS, Nov. 9, 2001, *available at* http://news.bbc.co.uk/hi/english/sci/tech/newsid_16470000/1647894.stm (last visited Mar. 26, 2003).

108. *Id.*

109. *Climate Conference Reaches Deal*, BBC NEWS, Nov. 10, 2001, *available at* http://news.bbc.co.uk/hi/english/sci/tech/newsid_1648000/1648515.stm (last visited Mar. 26, 2003).

## CONCLUSION

It is difficult to know exactly why the United States, which dominates the world economy and often leads the way on international law, would suddenly back out of the Kyoto negotiations altogether. Certainly by not being a party to the Protocol, the United States will avoid any consequences associated with non-compliance of emissions reduction targets, but likewise they will not be able to take advantage of many of the benefits associated with the agreement. Nevertheless, they will possibly benefit from a more stable climate through no action of their own. The United States has isolated itself from the rest of the world on the climate change issue and the ramifications of this decision will be felt over the coming years.

One explanation for the sudden withdrawal of the United States from climate negotiations could be that the United States was attempting to establish a strategic position. Certainly the United States was not going to accept any agreement that did not include provisions for market mechanisms and carbon sinks, and because the United States finally backed out completely, the only possibility for ratification lay in convincing Russia and Japan, who had many of the same demands as the United States, to join. This forced the Parties to give wide allowances in order to encourage total participation. In the end, whether the United States was strategically positioning itself or not, nearly all previous requests by the United States were incorporated to encourage commitments from the more reluctant Parties and increase the chances of ratification.

Regardless of why the United States backed out, there are definite consequences associated with non-involvement. Even if climate change proves not to be the threat that some claim it will be, an entire international legal, political, and economic structure is now being created. This structure will substantially affect the global economic environment. And, notwithstanding the rejection of the Protocol by the United States, American-based transnational corporations will surely operate in many of the nations that have ratified, or are in the process of ratifying, the Kyoto Protocol. In the face of these dynamics alone—not to mention the prospect that climate change could truly be a threat—the American corporate community must lead, both in its own interest and in the interest of the world community that it serves.

In the short-term one might expect the U.S. economy to thrive as fossil fuels are consumed at ever-increasing rates. Perhaps industry will even grow as Americans continue to depend on the cheap and convenient sources of energy to which they have become so accustomed. But what happens when those sources of energy are no longer readily available and prices begin to skyrocket? And what happens when, at the

same time, the United States has not adequately prepared itself for such an event by developing new technologies and the market mechanisms by which to implement them? The United States might suddenly find itself in a difficult situation with little bargaining power. If and when the economy suffers and thousands lose their jobs, America and the rest of the world will not have forgotten March 2001, when George W. Bush said that Americans come first.

# APPENDIX: KYOTO PROTOCOL—STATUS OF RATIFICATION

**Notes**
**R = Ratification**
**At = Acceptance**
**Ap = Approval**
**Ac = Accession**

| COUNTRY | SIGNATURE | RATIFICATION OR ACCESSION | REMARKS | % OF EMISSIONS |
|---|---|---|---|---|
| 1. ANTIGUA & BARBUDA | 16/03/98 | 03/11/98 (R) | | |
| 2. ARGENTINA | 16/03/98 | 28/09/01 (R) | | |
| 3. AUSTRALIA | 29/04/98 | | | |
| 4. AUSTRIA | 29/04/98 | 31/05/02 (R) | | 0.4% |
| 5. AZERBAIJAN | ---- | 28/09/00 (Ac) | | |
| 6. BAHAMAS | ---- | 09/04/99 (Ac) | | |
| 7. BANGLADESH | ---- | 22/10/01 (Ac) | | |
| 8. BARBADOS | ---- | 07/08/00 (Ac) | | |
| 9. BELGIUM | 29/04/98 | 31/05/02 (R) | | 0.8% |
| 10. BENIN | ---- | 25/02/02 (Ac) | | |
| 11. BHUTAN | ---- | 26/08/02 (Ac) | | |
| 12. BOLIVIA | 09/07/98 | 30/11/99 (R) | | |
| 13. BRAZIL | 29/04/98 | 23/08/02 (R) | | |
| 14. BULGARIA | 18/09/98 | 15/08/02 (R) | | 0.6% |
| 15. BURUNDI | ---- | 18/10/01 (Ac) | | |
| 16. CAMBODIA | ---- | 22/08/02 (Ac) | | |
| 17. CAMEROON | ---- | 28/08/02 (Ac) | | |
| 18. CANADA | 29/04/98 | 17/12/02 (R) | | 3.3% |
| 19. CHILE | 17/06/98 | 26/08/02 (R) | | |
| 20. CHINA | 29/05/98 | 30/08/02 (Ac) | (9) | |
| 21. COLOMBIA | ---- | 30/11/01 (Ac) | | |
| 22. COOK ISLANDS | 16/09/98 | 27/08/01 (R) | (4) | |
| 23. COSTA RICA | 27/04/98 | 09/08/02 (R) | | |
| 24. CROATIA | 11/03/99 | | | |
| 25. CUBA | 15/03/99 | 30/04/02 (R) | | |
| 26. CYPRUS | ---- | 16/07/99 (Ac) | | |
| 27. CZECH REPUBLIC | 23/11/98 | 15/11/01 (Ap) | | 1.2% |
| 28. DENMARK | 29/04/98 | 31/05/02 (R)* | | 0.4% |
| 29. DJIBOUTI | ---- | 12/03/02 (Ac) | | |
| 30. DOMINICAN REPUBLIC | ---- | 12/02/02 (Ac) | | |
| 31. ECUADOR | 15/01/99 | 13/01/00 (R) | | |
| 32. EGYPT | 15/03/99 | | | |
| 33. EL SALVADOR | 08/06/98 | 30/11/98 (R) | | |
| 34. EQUATORIAL GUINEA | ---- | 16/08/00 (Ac) | | |
| 35. ESTONIA | 03/12/98 | 14/10/02 (R) | | 0.3% |
| 36. EUROPEAN COMMUNITY | 29/04/98 | 1/05/02 (Ap) | (1) (7) | |
| 37. FIJI | 17/09/98 | 17/09/98 (R) | | |
| 38. FINLAND | 29/04/98 | 31/05/02 (R) | | 0.4% |
| 39. FRANCE | 29/04/98 | 31/05/02 (Ap) | (2) (8) | 2.7% |
| 40. GAMBIA | ---- | 01/06/01 (Ac) | | |
| 41. GEORGIA | ---- | 16/06/99 (Ac) | | |
| 42. GERMANY | 29/04/98 | 31/05/02 (R) | | 7.4% |
| 43. GREECE | 29/04/98 | 31/05/02 (R) | | 0.6% |
| 44. GRENADA | ---- | 06/08/02 (Ac) | | |
| 45. GUATEMALA | 10/07/98 | 05/10/99 (R) | | |
| 46. GUINEA | ---- | 07/09/00 (Ac) | | |

*With a territorial exclusion to the Faroe Islands

| | | | | |
|---|---|---|---|---|
| 47. HONDURAS | 25/02/99 | 19/07/00 (R) | | |
| 48. HUNGARY | ---- | 21/08/02 (Ac) | | 0.5% |
| 49. ICELAND | ---- | 23/05/02 (Ac) | | 0.0% |
| 50. INDIA | ---- | 26/08/02 (Ac) | | |
| 51. INDONESIA | 13/07/98 | | | |
| 52. IRELAND | 29/04/98 | 31/05/02 (R) | (3) | 0.2% |
| 53. ISRAEL | 16/12/98 | | | |
| 54. ITALY | 29/04/98 | 31/05/02 (R) | | 3.1% |
| 55. JAMAICA | ---- | 28/06/99 (Ac) | | |
| 56. JAPAN | 28/04/98 | 04/06/02 (At) | | 8.5% |
| 57. KAZAKHSTAN | 12/03/99 | | | |
| 58. KIRIBATI | ---- | 07/09/00 (Ac) | (6) | |
| 59. LATVIA | 14/12/98 | 05/07/02 (R) | | 0.2% |
| 60. LESOTHO | ---- | 06/09/00 (Ac) | | |
| 61. LIBERIA | ---- | 05/11/02 (Ac) | | |
| 62. LIECHTENSTEIN | 29/06/98 | | | |
| 63. LITHUANIA | 21/09/98 | | | |
| 64. LUXEMBOURG | 29/04/98 | 31/05/02 (R) | | 0.1% |
| 65. MALAWI | ---- | 26/10/01 (Ac) | | |
| 66. MALAYSIA | 12/03/99 | 04/09/02 (R) | | |
| 67. MALDIVES | 16/03/98 | 30/12/98 (R) | | |
| 68. MALI | 27/01/99 | 28/03/02 (R) | | |
| 69. MALTA | 17/04/98 | 11/11/01 (R) | | |
| 70. MARSHALL ISLANDS | 17/03/98 | | | |
| 71. MAURITIUS | ---- | 09/05/01 (Ac) | | |
| 72. MEXICO | 09/06/98 | 07/09/00 (R) | | |
| 73. MICRONESIA (FEDERATED STATES OF) | 17/03/98 | 21/06/99 (R) | | |
| 74. MONACO | 29/04/98 | | | |
| 75. MONGOLIA | ---- | 15/12/99 (Ac) | | |
| 76. MOROCCO | ---- | 25/01/02 (Ac) | | |
| 77. NAURU | ---- | 16/08/01 (R) | | |
| 78. NETHERLANDS | 29/04/98 | 31/05/02 (Ac)** | | 1.2% |
| 79. NEW ZEALAND | 22/05/98 | | | |
| 80. NICARAGUA | 07/07/98 | 18/11/99 (R) | | |
| 81. NIGER | 23/10/98 | | | |
| 82. NIUE | 08/12/98 | 06/05/99 (R) | (5) | |
| 83. NORWAY | 29/04/98 | 30/05/02 (R) | | 0.3% |
| 84. PALAU | ---- | 10/12/99 (Ac) | | |
| 85. PANAMA | 08/06/98 | 05/03/99 (R) | | |
| 86. PAPUA NEW GUINEA | 02/03/99 | 28/03/02 (R) | | |
| 87. PARAGUAY | 25/08/98 | 27/08/99 (R) | | |
| 88. PERU | 13/11/98 | 12/09/02 (R) | | |
| 89. PHILIPPINES | 15/04/98 | | | |
| 90. POLAND | 15/07/98 | 13/12/02 (R) | | 3.0% |
| 91. PORTUGAL | 29/04/98 | 31/05/02 (Ap) | | 0.3% |
| 92. REPUBLIC OF KOREA | 25/09/98 | 08/11/02 (R) | | |
| 93. ROMANIA | 05/01/99 | 19/03/01 (R) | | 1.2% |
| 94. RUSSIAN FEDERATION | 11/03/99 | | | |
| 95. SAINT LUCIA | 16/03/98 | | | |
| 96. SAINT VINCENT AND THE GRENADINES | 19/03/98 | | | |
| 97. SAMOA | 16/03/98 | 27/11/00 (R) | | |
| 98. SENEGAL | ---- | 20/07/01 (Ac) | | |
| 99. SEYCHELLES | 20/03/98 | 22/07/02 (R) | | |
| 100. SLOVAKIA | 26/02/99 | 31/05/02 (R) | | 0.4% |
| 101. SLOVENIA | 21/10/98 | 02/08/02 (R) | | |

** For the Kingdom in Europe

| | | | | |
|---|---|---|---|---|
| 102. SOLOMON ISLANDS | 29/09/98 | | | |
| 103. SOUTH AFRICA | ---- | 31/07/02 (Ac) | | |
| 104. SPAIN | 29/04/98 | 31/05/02 (R) | | 1.9% |
| 105. SRI LANKA | ---- | 03/09/02 (Ac) | | |
| 106. SWEDEN | 29/04/98 | 31/05/02 (R) | | 0.4% |
| 107. SWITZERLAND | 16/03/98 | | | |
| 108. THAILAND | 02/02/99 | 28/08/02 (R) | | |
| 109. TRINIDAD & TOBAGO | 07/01/99 | 28/01/99 (R) | | |
| 110. TURKMENISTAN | 28/09/98 | 11/01/99 (R) | | |
| 111. TUVALU | 16/11/98 | 16/11/98 (R) | | |
| 112. UGANDA | ---- | 25/03/02 (Ac) | | |
| 113. UKRAINE | 15/03/99 | | | |
| 114. UNITED KINGDOM OF GREAT BRITAIN & NORTHERN IRELAND | 29/04/98 | 31/05/02 (R) | | 4.3% |
| 115. UNITED REPUBLIC OF TANZANIA | ---- | 26/08/02 (Ac) | | |
| 116. UNITED STATES OF AMERICA | 12/11/98 | | | |
| 117. URUGUAY | 29/07/98 | 05/02/01 (R) | | |
| 118. UZBEKISTAN | 20/11/98 | 12/10/99 (R) | | |
| 119. VANUATU | ---- | 17/07/01 (Ac) | | |
| 120. VIET NAM | 03/12/98 | 25/09/02 (R) | | |
| 121. ZAMBIA | 05/08/98 | | | |
| **TOTAL** | **84** | **100** | **—** | **43.7%** |