Order Code RL30692

CRS Report for Congress
Received through the CRS Web

Global Climate Change: The Kyoto Protocol

Updated June 10, 2004

Susan R. Fletcher
Specialist in Environmental Policy
Resources, Science, and Industry Division

Global Climate Change: The Kyoto Protocol

Summary

Negotiations on the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) were completed December 11, 1997, committing the industrialized nations to specified, legally binding reductions in emissions of six "greenhouse gases."

This treaty would commit the United States to a target of reducing greenhouse gases by 7% below 1990 levels during a "commitment period" between 2008-2012. Because of the fact that "sinks," which remove and store carbon from the atmosphere, are counted and because of other provisions discussed in this report, the actual reduction of emissions within the United States that would be required to meet the target was estimated to be lower than 7%.

The United States signed the Protocol on November 12, 1998. However, the Clinton Administration did not submit the Protocol to the Senate for advice and consent, acknowledging that one condition outlined by S.Res. 98, passed in mid-1997 — meaningful participation by developing countries in binding commitments limiting greenhouse gases — had not been met. In late March 2001, the Bush Administration rejected the Kyoto Protocol. The United States continues to attend the annual conferences of the parties (COPs) to the UNFCCC, but does not participate in Kyoto Protocol-related negotiations. In February, 2002, President Bush announced a U.S. policy for climate change that will rely on domestic, voluntary actions to reduce the "greenhouse gas intensity" (ratio of emissions to economic output) of the U.S. economy by 18% over the next 10 years.

As of April 15, 2004, the UNFCCC Secretariat reported that 122 nations have ratified or accepted the Kyoto Protocol, representing 44.2% of the emissions of developed countries with obligations outlined in the Protocol. In order to enter into force, the Protocol must be ratified by nations representing 55% of these emissions. If Russia were to ratify the Protocol, which it has recently stated it plans to do, it would enter into force. The Protocol's provisions would apply only to those countries that had ratified it.

This report is intended to provide background on the Kyoto Protocol. It will be updated annually or as events warrant.

Contents

Global Climate Change: The Kyoto Protocol

Background

Responding to concerns that human activities are increasing concentrations of "greenhouse gases" (such as carbon dioxide and methane) in the atmosphere, most nations of the world joined together in 1992 to sign the United Nations Framework Convention on Climate Change (UNFCCC). The United States was one of the first nations to ratify this treaty. It included a legally non-binding, voluntary pledge that the major industrialized/developed nations would reduce their greenhouse gas emissions to 1990 levels by the year 2000, and that all nations would undertake voluntary actions to measure, report, and limit greenhouse gas emissions.

However, as scientific consensus grew that human activities are having a discernible impact on global climate systems, possibly causing a warming of the Earth that could result in significant impacts such as sea level rise, changes in weather patterns and health effects — and as it became apparent that major nations such as the United States and Japan would not meet the voluntary stabilization target by 2000 — Parties to the treaty decided in 1995, at the first conference of the parties (COP-1) in Berlin, Germany, to enter into negotiations on a protocol to establish legally binding limitations or reductions in greenhouse gas emissions. It was decided by the Parties that this round of negotiations would establish limitations only for the developed countries (the 38 nations listed in Annex I to the UNFCCC, including the former Communist countries, and referred to as "Annex I countries." (Developing countries are referred to as "non-Annex I countries").[1] This was referred to as the "Berlin Mandate," which reflected the acceptance in the UNFCCC that parties bore "common but differentiated responsibilities" in dealing with climate change issues, and that first steps in reducing greenhouse gas emissions should be taken by the Annex I countries.

During negotiations that preceded the December 1-11, 1997, meeting in Kyoto, Japan (COP-3), little progress was made, and the most difficult issues were not resolved until the final days — and hours — of the Conference. There was wide disparity among key players especially on three items: (1) the amount of binding reductions in greenhouse gases to be required, and the gases to be included in these requirements; (2) whether developing countries should be part of the requirements for greenhouse gas limitations; and (3) whether to include emissions trading and joint implementation, (which allow credit to be given for emissions reductions to a country

---

[1] For additional information on the negotiations in Kyoto and related background, see CRS Report 97-1000, *Global Climate Change Treaty: Negotiations and Related Issues*; and CRS Issue Brief IB89005, *Global Climate Change*.

that provides funding or investments in other countries that bring about the actual reductions in those other countries or locations where they may be cheaper to attain).

Following completion of the Protocol in December of 1997, decisions and details regarding a number of the more difficult issues remained to be negotiated and resolved (see below). At the fourth Conference of the Parties (COP-4) held November 2-13, 1998, in Buenos Aires, Argentina, it was apparent that these issues could not be resolved at this meeting as had been expected. Instead, parties established a two-year "Buenos Aires Plan of Action" (BAPA) to deal with these issues, with a deadline for completion at the COP-6 meeting in The Hague, Netherlands, November 13-24, 2000.

The difficulty in resolving these issues was underlined by the collapse of discussions at COP-6 in The Hague, without agreement. As discussed below, COP-6 resumed in the latter half of July 2001, following U.S. President Bush's announcement that the United States would not continue participating in negotiations on the Kyoto Protocol, and would develop an alternative approach. The U.S. delegation remained on the sidelines, declining to negotiate the key remaining issues related to the Protocol. During the July meeting, the other parties reached final agreement on most outstanding issues, with additional agreements reached on some details at the next meeting, COP-7, in Marrakech, Morocco, October 29-November 9, 2001. (See discussion below)

Major Provisions of the Kyoto Protocol

The Kyoto Protocol was opened for signature March 16, 1998, and would enter into force — become legally binding for countries that have ratified — when 55 nations have ratified it, provided that these ratifications include Annex I Parties that account for at least 55% of total Annex I carbon dioxide emissions in 1990. On November 12, 1998, the United States signed the Protocol, in part because the Clinton Administration wanted to revitalize what was seen as some loss of momentum during COP-4. However, the treaty was not submitted to the Senate for approval in recognition of S.Res. 98, the 1997 resolution indicating disapproval of any treaty that did not include legally binding commitments for developing countries.

As of April 15, 2004, 122 countries had ratified the Kyoto Protocol, including the European Union and most of its members, Canada, and Japan, plus a large number of developing countries. Some 44.2% of Annex I country emissions are represented by the countries that have ratified. Nations are not subject to its commitments unless they have ratified it *and* it enters into force.

The major commitments in the treaty on the most controversial issues are as follows:

Emissions Reductions. The United States would be obligated under the Protocol to a cumulative reduction in its greenhouse gas emissions of 7% below 1990 levels for three major greenhouse gases, including carbon dioxide, (and below 1995 levels for the three other, man-made gases), averaged over the commitment period 2008 to 2012. The Protocol states that Annex I Parties are committed —

individually or jointly — to ensuring that their aggregate anthropogenic carbon dioxide equivalent emissions of greenhouse gases do not exceed amounts assigned to each country in Annex B to the Protocol, "with a view to reducing their overall emissions of such gases by at least 5% below 1990 levels in the commitment period 2008 to 2012." Annex A lists the 6 major greenhouse gases covered by the treaty[2].

Annex B to the Kyoto Protocol lists 39 nations, including the United States, the European Union plus the individual EU nations, Japan, and many of the former Communist nations (the same countries as Annex I to the UNFCCC). The amounts for each country are listed as percentages of the base year, 1990 (except for some former Communist countries), and range from 92% (a reduction of 8%) for most European countries — to 110% (an increase of 10%) for Iceland. The United States agreed to a commitment on this list to 93%, or a reduction of 7%below 1990 levels, to be achieved as an average over the five year commitment period, 2008-2012.

Based on projections of the growth of emissions using current technologies and processes, the reduction in greenhouse gas emissions required of the United States would likely be between 20% and 30% below where it would be otherwise by the 2008-2012 budget period.[3] However, inclusion of greenhouse gas sinks[4] — which the Protocol adopted as urged by the United States — and emissions trading, means that the domestic U.S. emission reductions from fossil fuels needed to meet a 7% target would be substantially less. However, two of the most difficult issues unresolved at Kyoto, and responsible in large part for the breakdown of the COP-6 negotiations in November 2000, are related to (1) emissions trading — specifically, how much of a country's obligation to reduce emissions can be met through purchasing credits from outside, vs. taking domestic action; and (2) the extent to which carbon sequestration by forests, soils and agricultural practices can be counted toward a country's emission reductions.

Developing Country Responsibilities. The United States had consistently taken a firm position that "meaningful participation" 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. This reflects the requirement articulated in S.Res. 98, passed in mid-1997, that the United States should not become a party to the Kyoto Protocol until developing countries are subject to binding emissions targets. The U.S. government also argued that success in dealing with the issue of climate change and global warming would require such participation. The developing country bloc argued that the Berlin Mandate — the terms of reference of the Kyoto negotiations established at COP-1 in 1995 — clearly

---

[2] The six gases covered by the Protocol are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6). The most prominent of these, and the most pervasive in human economic activity is carbon dioxide, produced when wood or fossil fuels such as oil, coal, and gas are burned.

[3] See CRS Report 98-235 ENR, *Reducing Greenhouse Gases: How Much from What Baseline?*

[4] Greenhouse gases, especially CO_2, are absorbed by a number of processes in forests, soils, and other ecosystems. These are called "sinks."

excluded them from new commitments in this Protocol, and they continued to oppose emissions limitation commitments by non-Annex I countries.

The Kyoto Protocol was concluded without such commitments, and the Clinton Administration indicated that it would not submit the Protocol for Senate consideration until meaningful commitments were made by developing countries. At COP-4 in Buenos Aires, Argentina — host country of the meeting — became the first developing country to indicate that it will make a commitment to take on a binding emissions target for the period 2008-2012. Kazakhstan also announced its intention to take similar action. At this meeting, the United States announced it would sign the Kyoto Protocol, which it did on November 12, 1998. To date, none of the largest developing countries, such as China, India or Brazil, have shown a willingness to make commitments to reducing greenhouse gas emissions.

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 greenhouse gas emissions and sinks that remove these gases from the atmosphere. All Parties are also committed to formulate, publish, and update climate change mitigation and adaptation measures, and to cooperate in promotion and transfer of environmentally sound technologies and in scientific and technical research on the climate system.

Emissions Trading and Joint Implementation. Emissions trading, in which a Party included in Annex I "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" for the purpose of meeting its commitments under the treaty, is allowed and outlined in Article 6, with several provisos. Among the provisos is the requirement that such trading "shall be supplemental to domestic actions." The purpose of this proviso is to make it clear that a nation cannot entirely fulfill its responsibility to reduce domestic emissions by relying primarily on emissions trading or joint implementation to meet its targets. Joint implementation is project-based activity in which one country can receive emission reduction credits when it funds a project in another country where the emissions are actually reduced.

One of the more contentious issues in the negotiations concerning how the Kyoto Protocol would work has been this issue of "supplementarity" — finding agreement on what proportion of a nation's obligations could be met through these mechanisms versus domestic actions to reduce emissions within a nation's own borders. At the negotiations in Bonn, Germany, in mid-2001 (COP-6 "bis" discussed below), this issue was resolved with language that indicated there would be no quantitative limit on the credit a country could claim from use of these mechanisms, but that domestic action must constitute a significant element of the efforts of each Annex B country to meet their targets.

A number of specific issues related to the rules on how joint implementation and emissions trading would work were left at Kyoto to be negotiated and resolved in subsequent meetings; in the years since the Protocol was completed, it became increasingly clear that this is an extremely complex issue, and an emissions trading system is not likely to be designed and implemented quickly.

Another major "mechanism" for meeting obligations in the Protocol is provided by the establishment of a "clean development mechanism" (CDM), through which a modified form of joint implementation between developed and developing countries would occur. The United States had pushed hard for joint implementation, and early proposals were formulated with the expectation that "JI" projects would be primarily bilateral. Instead, negotiations resulted in agreement to establish the clean development mechanism to which developed Annex I countries could contribute financially, and developing/non-Annex I countries could benefit from financing for approved project activities; Annex I countries could then use certified emission reductions from such projects to contribute to their compliance with part of their emission limitation commitment. Emissions reductions achieved through this mechanism could begin in the year 2000 to count toward compliance in the first commitment period (2008-2012). Like emissions trading, making the CDM operational appears likely to be a difficult and complex process.

Buenos Aires Action Plan

Although it had been expected just after the 1997 Kyoto conference 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 during the year leading up to COP-4 that parties were far from agreement on all of these issues. Additional time for parties to analyze, negotiate, and work on these issues would be required. 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. It was decided that the work plan should be completed by the end of 2000, and should focus on the key issues, including the following:

— Rules and guidelines for the "market-based mechanisms" that allow flexibility to parties in meeting their obligations. These include emissions trading, joint implementation, and the Clean Development Mechanism (CDM). The list of critical issues to be considered include whether there should be quantified limits on how much of a country's emission reduction requirement could be met through these mechanisms, as argued by the European Union, or no quantified limit, as argued by the United States; "transparency" in making it possible to effectively track emission units; allocating risk in emissions trades — including the question of assigning liability, or responsibility, when emissions trading involves "false" credits; and key measurement, reporting and verification issues.

— Rules and procedures that would govern compliance, including provisions covering non-compliance with the treaty's commitments. This issue was left entirely open at Kyoto and remained one of the major challenges facing negotiators.

— Issues concerning development and transfer of cleaner, lower-emitting technologies, particularly to developing countries.

— Consideration of the adverse impacts of climate change and also the impacts of measures taken to respond to it, an issue of particular

importance to developing countries, who argue the need for financial assistance in order to help them cope with these impacts.

Carbon sinks. Another issue under active negotiation and consideration by the parties, but outside the action plan itself, is defining application of the concept of carbon sinks, including how to measure and verify the categories of carbon sinks. The scientific panel that provides analysis to the parties, the Intergovernmental Panel on Climate Change (IPCC), conducted a comprehensive study on land use, land-use change, and forestry activities to identify their roles as carbon sinks and deal with the measurement and verification issues related to them.

Following the release of this report, which indicated that a large amount of carbon could be stored in a variety of carbon sinks, including not only forests, but in soils, vegetation, grazing lands, etc., the United States made a comprehensive proposal for the COP-6 negotiations to broaden the scope of acceptable carbon sinks. The Kyoto Protocol accepts in principle that a nation's forests — management practices, reforestation or afforestation — may be included in the accounting of net greenhouse gas emissions and their reduction. This would be important to the United States, as its large land area and extensive potential for greater absorption of carbon due to land management changes could greatly reduce the amount of emissions reductions needed from energy production. In a submission to the Secretariat of the UNFCCC, the United States proposed in late summer 2000 that elaboration at COP-6 of land use changes acceptable under the Protocol should also include soil carbon sequestration and vegetation.

Few decisions were reached, nor were they expected, on the more difficult issues outlined in the Buenos Aires Plan of Action at the COP-5 meeting in Bonn, Germany, held October 25-November 24, 1999.

COP-6 Negotiations, The Hague

There were two intersessional negotiation sessions of the UNFCCC Subsidiary Bodies (the key mechanisms for considering Kyoto issues between COP meetings) in 2000, June 12-16 and September 11-15, dealing with the issues of the Buenos Aires workplan and attempting to fashion a negotiating text for final consideration at the November 13-24 COP-6 meeting. At the conclusion of the meeting in Lyon, it was reported that language on aspects of some issues had been agreed upon, but that the negotiating text had been expanded to some 200 pages, much of it "bracketed." [Brackets indicate that no agreement has been found on the language in brackets, and often several alternative possibilities are reflected within brackets.] Thus, though there was negotiating text on most issues, disagreements remained on most key issues. Observers reported that political positions remained entrenched and little movement toward compromise appeared evident in Lyon. The end result was that many participants felt doubtful that many of the key issues could be completely resolved in November, 2000, at COP-6.

As talks began at COP-6 in The Hague, Netherlands, on November 13, they centered initially on the "Buenos Aires Plan of Action" (BAPA), but evolved into a high-level negotiation over the major political issues. These included major controversy over the United States' proposal to allow credit for carbon "sinks" in

forests and agricultural lands, satisfying a major proportion of the U.S. emissions reductions in this way (between half and one-quarter, according to various versions of the U.S. proposal); disagreements over consequences for non-compliance by countries that did not meet their emission reduction targets; and difficulties in resolving how developing countries could obtain financial assistance to deal with adverse effects of climate change and meet their obligations to plan for measuring and possibly reducing greenhouse gas emissions.

In the final hours of COP-6, despite some compromises agreed between the United States and some EU countries, the EU countries as a whole, reportedly led by Denmark and Germany, rejected the compromise positions, and the talks in The Hague collapsed. Jan Pronk, the President of the COP, suspended COP-6 without agreement. Discussions between the EU and the "Umbrella group" that includes the United States, Canada, Japan and Australia, were held in Ottawa, Canada, during the week of December 4, 2000, in order to try and salvage some of the agreement reached at the end of the talks in The Hague. However, the U.S. negotiators reported that these talks were "inconclusive" and the differences were still in place, or even exacerbated, after this meeting.

At the end of 2000, based on discussions at The Hague and in Ottawa, the issues particularly in contention were as follows:

Mechanisms, especially emissions trading: The main issue here was "supplementarity" — the position of the United States was that there should not be quantitative limits to the amount of emissions reductions that are allowed toward a country's obligations through emissions trading or joint implementation. The EU and others argue there should be such limitations, in order to force nations to take more extensive domestic action to reduce emissions. This issue is related to the commitment outlined in the Kyoto Protocol that emissions trading should be "supplemental" to domestic action. The United States was supported by the "umbrella group" in which it is joined by New Zealand, Japan, Canada, Australia, Russia, Ukraine, Norway and Iceland. Another related issue was whether carbon sinks can be included in the Clean Development Mechanism (CDM) in which a contributing developed country can claim credit for actions to reduce emissions in developing countries. There were significant divisions on this issue not among developed countries, but among developing countries, as well.

Compliance issues: Decisions on how non-compliance with Protocol (and UNFCCC) obligations should be handled was a very controversial issue. The United States position was that there should be binding consequences, but these should be in the form of additional obligations in subsequent commitment periods, and not in the form of financial penalties. There was considerable disagreement at The Hague over whether financial penalties should be allowed. Agreement on binding consequences would probably require an amendment to the Protocol, which would be separately agreed to, and separately ratified. Opponents to binding consequences include Japan, Russia, and Australia, who were concerned, among other things, about opening the Protocol to an amendment process. On the structure of a compliance regime, there was substantial agreement on a likely outcome: a single

compliance body with two functions or branches — (1) to facilitate and assist compliance (mainly for developing countries), and (2) an enforcement function where decisions would be made on whether compliance violations have occurred and what consequences should be applied. Consequences under consideration, in addition to financial penalties, included losing access to mechanisms like emissions trading and/or subtracting from future allocations of allowable carbon emissions.

Land use and land use change and forestry (LULUCF): As noted above, the Kyoto Protocol accepts in principle that a nation's forests — management practices, reforestation or afforestation — may be included in the accounting of net greenhouse gas emissions and their reduction. The United States proposed at COP-6 that land use changes acceptable under the Protocol should also include soil carbon sequestration and vegetation. Major issues were how to attain precision in measuring absorption and release of carbon from land-based sources, how permanent such land use mechanisms would be, and the extent to which land use absorption counted by a nation is "additional" to business as usual.

The United States made a series of controversial proposals on how to count carbon sequestration, beginning with basically counting most of the carbon sequestration in its extensive forest cover toward its obligations. It subsequently revised this proposal and put forward a formula that included three parts: a first "interval" allowing up to 20 million tons of carbon to be counted at 100% for any country with forests absorbing that much; a second interval of a certain amount in which credit for a certain percentage would be allowed up to a certain threshold; then full credit for tons absorbed beyond the threshold (which would be historically determined in relation to baseline absorption amounts). The EU opposed the U.S. proposal, mainly on the issue of forests, and the extent to which a country like the United States would receive credits for a "business as usual" scenario that did not involve the harder emissions reductions from fuel sources and technological measures. When the United States put numbers to this proposal, the U.S. credits from carbon sinks appeared to represent about 125 million tons of carbon, against a likely need to reduce emissions by about 600 million tons of carbon to meet its commitment in 2008-2012. This was strongly opposed by the EU and other countries, and a stalemate over this issue, despite several revisions downward of the U.S. position and tentative acceptance of a much smaller amount by the EU, was thought to be a major factor in the collapse of the November COP-6 negotiations at The Hague.

Developing country participation: The United States had been seeking additional commitments from developing countries in a series of informal discussions and consultations during the period since the Kyoto Protocol was completed in late 1997, but only Argentina and Kazakhstan have shown a willingness to make such commitments. Little willingness to do so has been shown by other developing countries. The possibility that it would be discussed under an agenda item dealing with "adequacy of commitments" did not occur at The Hague.

Bush Administration Policy. Just over two months after the COP-6 talks collapsed, President George W. Bush took office and announced his Administration would carry out a cabinet-level review of climate policy. However, the Bush Administration announced in late March 2001 that it would not be interested in continuing discussion on the Kyoto Protocol, which was characterized as "dead" in terms of U.S. policy. The cabinet-level review of U.S. climate policy was on-going, and the Administration indicated that it would be interested in pursuing alternative approaches or cooperative efforts such as market-based incentives and voluntary measures, to address climate change concerns.

The EU nations and others, such as Japan, expressed deep concern and dismay at this new U.S. position, and a high-level delegation of EU officials visited the United States to attempt to re-engage the United States in the Kyoto Protocol process. This effort was reported as having been "rebuffed." Some observers began considering the implications of the new U.S. position for the Protocol, and whether the EU and other nations would ratify the Protocol, and try to bring it into force without the United States.

President Bush made a policy statement in mid-June, 2001, resulting from the continuing cabinet-level review of climate change options, in which he confirmed the U.S. approach as rejecting the Kyoto Protocol and favoring voluntary actions, increased scientific research, and market mechanisms. President Bush also outlined a U.S. Climate Change Research Initiative, and the National Climate Change technology Initiative. During his mid-June trip to Europe, President Bush discussed climate policy with European heads of state and met strong opposition to the U.S. position. The outcome was that Europe and the United States would "agree to disagree" on climate. The Europeans announced they would proceed with ratification of the Kyoto Protocol, without the United States if necessary.

President Bush indicated that the United States would continue to participate in international meetings on climate change, but would not negotiate on Kyoto Protocol issues. When the COP-6 meeting resumed in Bonn, Germany, in July 2001, the U.S. delegation followed this approach, declining to participate in negotiations on most Kyoto Protocol issues, and remaining on the sidelines as observers. The other parties reached agreement on the key political issues and announced that the developed countries would move toward ratification of the Kyoto Protocol without the United States.

COP-6 Resumed, Bonn, Germany

When the COP-6 negotiations resumed July 16-27, 2001, in Bonn, Germany, little progress had been made on resolving the differences that had produced an impasse in The Hague. However, this meeting took place after President George Bush had rejected the Kyoto Protocol in March; as a result, the United States delegation to this meeting declined to participate in the negotiations related to the Protocol and chose to act as observers at that meeting. As the other parties negotiated the key issues, agreement was reached on most of the major political issues, to the surprise of most observers given the low level of expectations that preceded the meeting. The agreements included:

(1) Mechanisms — the "flexibility" mechanisms which the United States had strongly favored as the Protocol was initially put together, including emissions trading; joint implementation; and the Clean Development Mechanism (CDM), which provides funding from developed countries for emissions reduction activities in developing countries, with credit for the donor countries. One of the key elements of this agreement was that there would be no quantitative limit on the credit a country could claim from use of these mechanisms, but that domestic action must constitute a significant element of the efforts of each Annex B country to meet its targets.

(2) Carbon sinks — credit was agreed to for broad activities that absorb carbon from the atmosphere or store it, including forest and cropland management, and revegetation, with no over-all cap on the amount of credit that a country could claim for sinks activities. In the case of forest management, an Appendix Z establishes country-specific caps for each Annex I country; for example, a cap of 13 million tons could be credited to Japan (which represents about 4% of its base-year emissions). For cropland management, countries could receive credit only for carbon sequestration increases above 1990 levels.

(3) Compliance — final action on compliance procedures and mechanisms that would address non-compliance with Protocol provisions was deferred to COP-7, but included broad outlines of consequences for failing to meet emissions targets that would include a requirement to "make up" shortfalls at 1.3 tons to 1, suspension of the right to sell credits for surplus emissions reductions; and a required compliance action plan for those not meeting their targets.

(4) Financing — three new funds were agreed upon to provide assistance for needs associated with climate change; a least-developed-country fund to support National Adaptation Programs of Action; and a Kyoto Protocol adaptation fund supported by a CDM levy and voluntary contributions.

A number of operational details attendant upon these decisions remained to be negotiated and agreed upon, and these were the major issues of the COP-7 meeting that followed.

COP-7 Marrakech, Morocco

At the COP-7 meeting in Marrakech, Morocco October 29-November 10, 2001, negotiators in effect completed the work of the Buenos Aires Plan of Action, finalizing most of the operational details and setting the stage for nations to ratify the Protocol. The United States delegation continued to act as observers, declining to participate in active negotiations. Other parties continued to express their hope that the United States would re-engage in the process at some point, but indicated their intention to seek ratification of the requisite number of countries to bring the Protocol into force (55 countries representing 55% of developed country emissions of carbon dioxide in 1990).

The main decisions at COP-7 included operational rules for international emissions trading among parties to the Protocol and for the CDM and joint implementation; a compliance regime that outlines consequences for failure to meet

emissions targets but defers to the parties to the Protocol after it is in force to decide whether these consequences are legally binding; accounting procedures for the flexibility mechanisms; and a decision to consider at COP-8 how to achieve to a review of the adequacy of commitments that might move toward discussions of future developing country commitments. Other parties reiterated their hope that the United States would re-engage with the international cooperation efforts under the Protocol, but also their decision to seek ratification by their governments and the Protocol's entry into force by the WSSD in 2002, as noted above.

At COP-8 and COP-9 in the subsequent two years, no major policy issues were negotiated or decided.

Current U.S. Policy

Disengagement from the Kyoto Protocol remains U.S. policy, with an emphasis instead on domestic action. On February 14, 2002, President Bush announced a U.S. policy for climate change, based on voluntary domestic measures, characterized as a "new approach for meeting the long-term challenge of climate change." The centerpiece of this announcement was the plan to reduce greenhouse gas intensity of the U.S. economy by 18% over the next 10 years. Greenhouse gas intensity measures the ratio of greenhouse gas emissions to economic output and has been declining in the United States over the past several years. The Administration stated that the goal, to be met through voluntary action, is to achieve efficiency improvements that would reduce the 183 metric tons of emissions per million dollars of gross domestic product (GDP) to 151 in 2012. The plan notes that "if, in 2012, we find that we are not on track toward meeting our goal, and sound science justifies further policy action, the United States will respond with additional measures that may include a broad, market-based program" and other incentives and voluntary measures to accelerate technology development.

In addition, the plan directs the Secretary of Energy in consultation with other key agencies, to "substantially improve the emission reduction registry" to upgrade the voluntary emission reduction program under section 1605(b) of the 1992 Energy Policy Act, to bring about enhanced measurement accuracy, reliability, and verifiability. Other measures include providing for protected, transferable emission reduction credits, increased funding of $700 million in total climate-related spending, and a new management structure to coordinate climate change and technology research. Domestic policies such as tax incentives for renewable energy and new technology, development of fuel-efficient vehicles and cleaner fuels, and carbon sequestration were also proposed, along with several international bilateral initiatives and relatively modest increases in foreign assistance.

Some observers praised the plan for taking a practical, conservative approach to government action and for relying on voluntary measures. Critics observed that voluntary approaches by themselves have not historically often been effective and noted that the reductions in energy intensity are very little different from current trends and would allow for significant increases in over-all greenhouse gas emissions rather than reductions. (For full description of this announcement, see [http://www.whitehouse.gov/news/releases/2002/02/climatechange.html].)

Issues for Congress

Ratification. For the United States to ratify the Kyoto Protocol, the treaty would have to be transmitted to the U.S. Senate by the President for advice and consent. A two-thirds majority vote in the Senate is required for approval. As long as the United States has not ratified the treaty, it is not subject to its terms and obligations. President Clinton expressed strong support for the Kyoto Protocol, though criticizing it for not including commitments for developing countries. During his administration, the United States signed the Protocol on November 12, 1998. The U.S. signature was criticized by several Members of Congress who opposed the treaty on a number of grounds, including questions about the scientific justification for it and about the likely economic impacts that might occur if the United States were to attempt to meet its emission reduction commitments in the treaty. In recognition of the opposition expressed in the Senate by S.Res. 98, which passed 95-0 in the months before the 1997 Kyoto meeting, to a Protocol that does not include requirements for emissions limitations by developing countries, President Clinton did not submit the treaty to the Senate for advice and consent, citing lack of meaningful developing country participation. Given the position announced by the Bush Administration, opposing the Kyoto Protocol, it continues to be unlikely that it will be transmitted to the Senate.

Legislation. A number of legislative proposals have been introduced over the years related to climate change, and in particular, U.S. domestic action on research, science, and emissions trading or sequestration credit. (For proposals and action in the 108th Congress, see CRS Report RL32055, *Climate Change Legislation in the 108th Congress*, and the legislation section of CRS Issue Brief IB89005, *Global Climate Change).* Recent legislation has also included an emphasis on climate/greenhouse gas reduction benefits of several energy proposals for increased energy efficiency and alternative energy research, development and deployment. (See CRS Issue Brief IB10041, *Renewable Energy: Tax Credit, Budget, and Electricity Production*, and CRS Issue Brief IB10020, *Energy Efficiency: Budget, Oil Conservation, and Electricity Conservation*).