

CRS Report for Congress

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98-2: Global Climate Change Treaty: The Kyoto Protocol

Susan R. Fletcher

Senior Analyst in International Environmental Policy
Resources, Science, and Industry Division

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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." The treaty was opened for signature on March 16, 1998 through March 16, 1999; the United States signed the Protocol on November 12, 1998. 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 way sinks, which remove these gases from the atmosphere, are counted and because of other provisions discussed in this report, the actual reduction of emissions within the United States required to meet the target is estimated to be lower than 7%. The Administration has indicated that until developing countries also make commitments to participate in greenhouse gas limitations, it will not submit the protocol to the Senate for advice and consent, thereby delaying indefinitely any possibility of ratification. At the November 1998 meeting of the parties in Buenos Aires, Argentina, some of the more difficult unresolved issues were discussed but not resolved; instead, workplans were agreed upon for a number of these issues, with deadlines for completion by the sixth Conference of the Parties (COP-6) to be held in The Hague, Netherlands, November 13-24, 2000. In the 106th Congress, several bills, resolutions and provisions in appropriations bills have been introduced, some to limit activities of the U.S. government that are or could be seen as related to carrying out the goals of the Kyoto Protocol, and others on such subjects as early credit for greenhouse gas emission reductions.

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. 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 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 (those

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⁾

During negotiations that preceded the December 1-11, 1997, meeting in Kyoto, Japan, 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 allow emissions trading and joint implementation, which allow credit to be given for emissions reductions to a country 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, details of 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 as had been expected during this meeting. Instead, parties established a two-year "Buenos Aires action plan" to deal with these issues, with a deadline for completion now set at the end of 2000 or in early 2001--at COP-6 . Elements of this action plan are summarized below.

Summary: Major Provisions of the Kyoto Protocol. The Kyoto Protocol was opened for signature March 16, 1998, for one year, and would enter into force when 55 nations have ratified it, provided that these ratifications include Annex I Parties that account for at least 55% of total carbon dioxide emissions in 1990. This provision is likely to be hard to meet in the absence of U.S. ratification. 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. As of February, 2000, 84 countries had signed the treaty, including the European Union and most of its members, Canada, Japan, China, and a range of developing countries. Some 22 countries were reported by the UNFCCC Secretariat to have ratified the treaty. 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 greenhouse gases (including carbon dioxide), and below 1995 levels for the three 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 lists 39 nations, including the United States, the European Union plus the individual EU nations, Japan, and many of the former Communist nations. 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 is committed on this list to 93%, or a reduction of 7%, to be achieved as an average over the 5 years 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, according to Administration officials, based on the accounting method adopted in the Protocol, which includes (as the United States had urged) greenhouse gas sinks, it appears that the actions that must be taken to reduce emissions within the United States, after sinks are counted, would be substantially less than 7%--probably in the range of 2 to 3% below 1990 levels. The Administration also is assuming that a significant portion of its 7% target could be met through some combination of emissions trading and joint implementation.

Developing Country Responsibilities. The United States had 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--clearly excluded them from new commitments in this Protocol, and they continued to oppose emissions limitation commitments by non-Annex I countries. The negotiations concluded without such commitments, and the United States indicated that it will not submit the Protocol for Senate consideration--and therefore will not be able to ratify it--until meaningful commitments are made by developing countries.

At the COP-4 in Buenos Aires, Argentina became the first nation 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. It was immediately after these announcements that the United States signed the Kyoto Protocol. However, it is unclear exactly what emissions limitations Argentina will undertake, and how many other developing countries--particularly key large greenhouse gas emitting nations such as China, India and Brazil--will make similar commitments.

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.

A number of specific issues related to the rules on how joint implementation and emissions trading would work are to be negotiated and resolved in subsequent meetings, as these issues are clarified and

identified. In the year 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. This will be a major element of the Buenos Aires action plan over the next 2 years.

A major development is the establishment of a "clean development mechanism" (CDM), through which 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). Again, proposals on how this mechanism would operate will be developed and negotiated under the Buenos Aires action plan. Like emissions trading, making the CDM operational appears likely to be a protracted and difficult process, given the increasing number of complexities emerging from the on-going work and discussions on how the CDM might work.

Buenos Aires Action Plan: Summary. Although it had been expected just after the 1997 Kyoto conference that the November 1998 COP-4 meeting in Buenos Aires would negotiate and begin to 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 would be completed by the end of 2000, and would 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 operational issues to be considered include "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 is 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.

Another issue under active negotiation and consideration by the parties outside the action plan itself is defining 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), is to

conduct 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. The IPCC report is due in the spring of 2000, and is expected to contribute to further decisions on the use and scope of carbon sinks in meeting obligations under the Kyoto Protocol.

Few decisions were reached 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. The COP-6 meeting, by which the Buenos Aires Plan of Action is scheduled to be completed, is scheduled for November 13-24, 2000, in The Hague, Netherlands. It will be preceded by two rounds of talks, June 12-16 and September 11-15, 2000, as well as by continuing informal discussions and negotiations.

Issues for Congress

Ratification. For the United States to ratify the Protocol, the treaty must be submitted to the U.S. Senate for advice and consent, with a two-thirds majority vote in the Senate required for approval. If the United States does not ratify the treaty, it is not subject to its terms and obligations. President Clinton has voiced strong support for the Kyoto Protocol, though criticizing it for not including commitments for developing countries. The United States signed it on November 12, 1998. The U.S. signature was criticized by several Members of Congress who oppose 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, to a Protocol that does not include requirements for emissions limitations by developing countries, the President has indicated that he will not submit the treaty to the Senate for advice and consent until meaningful developing country participation has been achieved.

Oversight. Both the House and Senate sent delegations of Members to serve as observers on the U.S. delegation to the Kyoto meeting, as well as to other COP meetings, including the November 1998 COP-4 meeting in Buenos Aires. Supporters and opponents of the Protocol were included in these delegations. A number of committees have held hearings on the implications of the Protocol for the United States, its economy, energy prices, impacts on climate change, and other related issues. While the Administration has stated that it believes the treaty can be implemented without harm to the U.S. economy, and without imposing additional taxes, a number of questions related to how its goals can be achieved and at what cost, continue to be of interest to Congress.

Legislation. If a treaty is sent to the Senate for consideration, legislation that might be required for its implementation would also typically be proposed and introduced. Such legislation would not be likely unless the Kyoto Protocol is sent to Congress. However, the President's proposal on climate change, announced in October 1998, included, among other things, a \$5 billion package of tax credits and spending on research and development over 5 years to encourage energy efficiency and development of new lower emission technologies. In subsequent budget proposals, the President has offered an initiative over multiple years of \$6.3 billion dollars for research and development and some possible tax incentives. A number of legislative proposals in the 105th and 106th Congresses--including bills, resolutions, and provisions in several appropriations bills-- have expressed concerns related to the Kyoto Protocol. Many of these would have limited activities of the U.S. government that might be seen to advance the goals of the Kyoto Protocol prior to its consideration by the Senate. Others would provide early credit for greenhouse gas emissions in the United States (see "Legislation" Section of the [CRS Global Climate Change Electronic](#)

[Briefing Book.](#)

Footnotes

1. [\(back\)](#) 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](#).
2. [\(back\)](#) The six gases covered by the Protocol are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆). 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. [\(back\)](#) See [CRS Report 98-235](#) ENR, *Reducing Greenhouse Gases: How Much from What Baseline?*

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National Council for Science and the Environment
1725 K Street, Suite 212 - Washington, DC 20006
202-530-5810 - info@NCSEonline.org



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