

UNITED NATIONS FRAMEWORK CONVENTION ON  
CLIMATE CHANGE

OCTOBER 1 (legislative day, SEPTEMBER 30), 1992.—Ordered to be printed

Mr. PELL, from the Committee on Foreign Relations,  
submitted the following

## REPORT

[To accompany Treaty Doc. 102-38]

The Committee on Foreign Relations to which was referred the United Nations Framework Convention on Climate Change, adopted May 9, 1992, by the Resumed Fifth Session of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change ("Convention"), and signed on behalf of the United States at the United Nations Conference on Environment and Development (UNED) in Rio de Janeiro on June 12, 1992, having considered the same, reports favorably thereon without amendment and recommends that the Senate give its advice and consent to ratification thereof.

## CONTENTS

	Page
I. Purpose.....	1
II. Major Provisions.....	1
III. Background.....	4
IV. Committee Comments and Recommendations.....	14
V. Committee Action.....	15
VI. Entry Into Force.....	15
VII. Text of Resolution of Ratification.....	16

## I. PURPOSE

The purpose of the Convention is to establish a global framework for assessing and responding to climate change.

## II. MAJOR PROVISIONS

The objective of the Convention is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Within this context, the Convention stipulates that this level should "be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner." To this end, the Convention establishes a framework for addressing climate change issues with differentiated obligations among developed countries, developed countries with economies in transition (Eastern European countries and the newly independent states of the former Union of Soviet Socialist Republics), developing countries, and least developed countries.

The Convention applies to all greenhouse gases, except those controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer, such as chlorofluorocarbons and halons.

The Convention commits all parties to develop and make available national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases. Developed countries must submit this report within 6 months of the Convention's entry into force, developing countries must do so within 3 years of entry into force, and least developed countries may do so at their discretion. The reports are expected to contribute to the development of national plans to mitigate and adapt to climate change and more accurate study of greenhouse gas emissions.

In addition, the Convention commits all parties to formulate, implement, and publish national or regional programs to mitigate climate change. Article 4.2.a of the Convention requires developed country parties, including Eastern European countries and the newly independent states, to adopt policies and implement measures to mitigate climate change by limiting emissions of greenhouse gases and enhancing sinks and reservoirs. The provision notes that returning to earlier levels of greenhouse gas emissions by the end of the decade would contribute to modifying the longer term trends in anthropogenic emissions consistent with the objective of the Convention.

Article 4.2.b establishes an additional reporting requirement for developed country parties, including those with economies in transition, requiring them to report on national policies and measures adopted pursuant to article 4.2.a, and on the projected impact of these measures on net emissions up to the end of the decade, with the aim of returning these emissions to their 1990 levels. This aim is in the reporting section of article 4.2 and is not legally binding. Developed country parties are to report within the 6 months of the Convention's entry into force and periodically thereafter.

The Convention commits developed country parties—excluding the Eastern European countries and the newly independent states—to assist developing country parties in meeting certain obligations under the treaty. The Convention commits these parties to provide new and additional financial resources to meet the agreed full costs of the developing countries in preparing their national inventories of sinks and sources and a general description of the steps these parties will take to implement the Convention. It is expected that this financial obligation will be met both through bilateral and multilateral assistance channels. The administration estimates that the total cost for preparing these studies will be on the

order of \$100 million. The United States has committed \$25 million for this purpose over a 2-year period beginning in fiscal year 1993.

In addition, the developed countries commit to provide financial resources needed by developing countries to meet the agreed full incremental costs of implementing measures in article 4.1—including formulation of national and regional plans to reduce emissions and enhance sinks, promotion of sustainable management plans for sinks and reservoirs, and cooperation in preparing adaptation to the impacts of climate change—that are agreed between developing countries and the financial mechanism defined in the Convention.

The Convention defines a financial mechanism to provide financial resources on a grant or concessional basis. The mechanism will function under the guidance of and be accountable to the Conference of the Parties which shall decide on its policies, program priorities, and eligibility criteria related to the Convention. The Global Environment Facility—a joint enterprise of the World Bank, the United Nations Development Program, and the United Nations Environment Programme—is designated as the international mechanism on an interim basis. (The GEF is designated as the “interim” mechanism because it is currently a 3-year pilot program and because the parties are awaiting final details of ongoing restructuring efforts. If, as expected, the GEF is continued, it would likely become the permanent financial mechanism for the Convention.)

The Convention also establishes an institutional structure for implementing its provisions in addition to the financial mechanism just described. The “supreme body” of the treaty is the Conference of the Parties, which reviews the implementation of the Convention and adopts measures to promote effective implementation. A secretariat is established to provide administrative support to the Conference of the Parties. A subsidiary body for scientific and technological advice is established to provide the Conference of the Parties with information and advice on scientific and technological matters. The main body for scientific and technical assessments on climate change issues will continue to be the IPCC. The subsidiary body will act as a liaison between the IPCC, the World Meteorological Organization and other related climate research organizations and the Conference of the Parties. A subsidiary body for implementation is established to assist the Conference of the Parties in assessing and reviewing the implementation of the Convention. Neither of the two subsidiary bodies, nor the Secretariat, have decisionmaking power, this rests with the Conference of the Parties.

The Convention provides for periodic review of evolving scientific information on climate change and of measures taken to implement the Convention. It allows parties to negotiate modifications or additional commitments, to the extent they deem them necessary and appropriate.

The Convention defers a number of issues to be resolved by the Conference of the Parties in its first meeting. These include: rules of procedure which must be adopted by consensus, methodologies for calculating national inventories of greenhouse gas sources, sinks, and reservoirs; a methodology for assessing the impact of developed country parties plans to reduce net greenhouse gas emissions; a mechanism for promoting research and data collection on

climate change; and a host of institutional issues such as the size and representation on the bodies created by the Convention.

### III. BACKGROUND

#### THE SCIENCE

A variety of factors affect the Earth's climate by altering its radiative balance which is the balance between incoming solar radiation and heat emitted. These factors include the concentration of "greenhouse" gases in the atmosphere; the intensity of incident solar radiation; the amount of particulate material in the Earth's atmosphere; and the Earth's reflectivity, including clouds.

These factors can vary over widely different time scales. For instance, during a period of 10,000 to 100,000 years, changes in the Earth's orbit alter the intensity of solar radiation reaching the Earth with consequent implications for climate. Volcanic eruptions can cause wide, albeit, short-lived, fluctuations in the atmospheric concentration of aerosols.

The concentration of "greenhouse" gases also affects significantly the Earth's climate. These gases—water vapor, carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), nitrous oxide ( $\text{NO}_2$ ), chlorofluorocarbons (CFCs), and ozone ( $\text{O}_3$ )—are more transparent to incident solar radiation than they are to outgoing infrared radiation or heat. As a result they trap heat in a similar, but not identical, fashion as a greenhouse. Without this naturally occurring greenhouse effect, the Earth's average temperature would be approximately  $33^\circ\text{C}$  ( $59^\circ\text{F}$ ) colder than it is and considerably less hospitable to life.

Since the industrial revolution, human activities have increased the concentration of greenhouse gases in the atmosphere. This does not include water vapor the concentration of which is determined by the climate system itself and, on a global scale, is not directly affected by human activity. (Emissions of greenhouse gases caused by human activity are commonly referred to as anthropogenic emissions.) In 1990 the atmospheric concentration of carbon dioxide was 353 parts per million by volume (ppmv), roughly 25 percent greater than the 1,750 level of roughly 280 ppmv and was increasing at roughly 0.5 percent per year. Over the same period, methane concentrations slightly more than doubled to 1.72 ppmv and are increasing at a rate of approximately 0.9 percent per year; however, this rate of increase may now be decreasing. The concentration of  $\text{NO}_2$  increased from 288 parts per billion by volume (ppbv) to 310 ppbv and is increasing at a rate of 0.25 percent per year.

The current rates of increase are faster than at any time in the last 10,000 years and will result in a doubling of preindustrial atmospheric  $\text{CO}_2$  equivalent concentrations by the middle of the next century. (In the climate models discussed later, this doubling is used as a benchmark in modeling the effects of greenhouse gas emissions.) The rate of increase in  $\text{CO}_2$  emissions is 30 to 100 times faster than the natural rate of fluctuation indicated by the climate record, the rate of increase of  $\text{CH}_4$  is roughly 400 times that of natural fluctuations.

In its report *Changing By Degrees: Steps to Reduce Greenhouse Gases*, the Office of Technology Assessment stated:

[w]e appear to be pushing the climate system beyond the limits of natural rates of change experienced by the Earth for hundreds of thousands and probably millions of years. The projected rate of climate change may outpace the ability of natural and human systems to adapt in some areas.

The effect of each of the greenhouse gases varies, depending on its heat trapping potential, its atmospheric lifetime, the quantity of gas emitted and the interaction with other gases in the atmosphere. Nonetheless, the larger emissions of CO<sub>2</sub> are a more significant factor in altering radiative forcing because of the larger quantities of CO<sub>2</sub> emitted. Calculations suggest that roughly two-thirds of the warming that may result from the past century's greenhouse gas emissions will be caused by CO<sub>2</sub>.

This raises another aspect of climate change that complicates efforts to predict and mitigate its effects: the climate does not respond instantly to changes in atmospheric greenhouse gas concentrations. There is a timelag before the Earth reaches an equilibrium temperature at which it is in radiative balance. Thus, even if steps are taken now to reduce net greenhouse gas emissions, the Earth is already committed to some degree of climate change as a result of past increases in greenhouse gas concentrations.

As a result, if the goal of the Convention were to stabilize atmospheric concentrations of greenhouse gases at current levels, it would not be enough simply to limit emissions of greenhouse gases at current levels. According to the Intergovernmental Panel on Climate Change (IPCC, a discussion of the IPCC and its origins and functions can be found elsewhere in this report), stabilization of atmospheric concentrations of greenhouse gases would require an immediate 60 percent reduction in CO<sub>2</sub> emissions, a 15-percent reduction in CH<sub>4</sub> emissions, and 70-percent reduction in emissions of N<sub>2</sub>O and CFC's.

#### PREDICTIONS FOR THE FUTURE

There is a broad consensus of scientific opinion that continued increases in the atmospheric concentrations of these greenhouse gases will alter the Earth's radiative balance, causing changes in the Earth's climate. There is uncertainty, however, about the magnitude, rate, and regional patterns of these changes. These uncertainties reflect the complexity of the climate system, and stem in part from the still incomplete understanding of the sources and sinks (areas where greenhouse gases are absorbed, for example in the case of carbon dioxide, oceans and plant life) of greenhouse gases and the role of clouds, oceans, and polar ice sheets.

One example of this uncertainty regards absorption of CO<sub>2</sub> in sinks. Analysis has shown that roughly 40 percent of carbon dioxide emissions remain in the atmosphere for decades, another 15 percent appears to be absorbed into the upper layers of the ocean and a portion of the remaining 45 percent is absorbed in forests, wetlands, and soils. However, it is significant that between 18 and 35 percent cannot yet be accounted for.

A second example relates to the role of CFCs. Originally thought to contribute significantly to global warming, it was discovered that the net warming effect of CFC's may be offset by their deple-

tion of the ozone layer, which itself contributes to warming. Uncertainty remains regarding the magnitude of this offset.

A review of climate history—through analysis of air trapped in Antarctic ice cores—shows a fairly high degree of correlation between carbon dioxide and methane concentrations and local temperature. It has not been proven, however, whether this is a cause or some other unexplained phenomena.

In predicting the potential impacts of increased atmospheric concentrations of greenhouse gases, scientists use general circulation models (GCMs). Applied to the existing information about atmospheric greenhouse gas concentrations over the last 100 years, these models predict an increase in the global average surface temperature of roughly  $0.3^{\circ}$  to  $1.1^{\circ}\text{C}$  ( $0.5^{\circ}$  to  $2^{\circ}\text{F}$ ). Observed warming over this period appears to be about  $0.45^{\circ}\text{C}$  ( $0.8^{\circ}\text{F}$ ), at the low end, but within the error margin of predictions. It is not currently possible to say whether this is due to the increased concentrations of greenhouse gases or other natural or human causes. Moreover, observed climate change over the past has occurred unevenly a fact which is not mirrored in current model calculations.

In documentation submitted to the committee, the administration presented what it described as the “consensus view of a broad range of scientists, including most U.S. scientists, who have participated actively in the international effort to understand this issue”:

While scientists cannot yet establish that a human-induced warming has already occurred, best estimates indicate that increased concentrations of greenhouse gases are likely to increase atmospheric and ocean temperatures and alter their associated circulation and weather patterns. However, the magnitude, timing, and regional details of these changes cannot be predicted with much certainty. Climate models predict changes in the average temperature of the globe's atmosphere as a consequence of a doubling of atmospheric concentrations of carbon dioxide are unlikely to lie outside the range of  $1.5^{\circ}$  to  $4.5^{\circ}\text{C}$  ( $2.7^{\circ}$  to  $8.1^{\circ}\text{F}$ ), with a best estimate, based on model results taking into account the observed climate record of  $2.5^{\circ}\text{C}$  ( $4.5^{\circ}\text{F}$ ). Associated sea-level rise has been estimated to range between a few tens of centimeters and approximately 1 meter (less than 1 foot to approximately  $\frac{3}{4}$  feet). In addition, observed warming in recent years is of the same magnitude as that predicted by the models but also of the same magnitude as natural variability. Thus, the observed increase could be due predominately to natural variability or could be part of a larger warming offset by other human factors.

This statement is consistent with the findings of the IPCC, the National Academy of Sciences, and the Office of Technology Assessment. In its report released in 1990, the IPCC predicted that if emissions of greenhouse gases were to continue at 1990 levels to the year 2100, the Earth would experience an increase in its global mean temperature of roughly  $0.3^{\circ}\text{C}$  ( $0.54^{\circ}\text{F}$ ) per decade, or an increase of  $1.0^{\circ}\text{C}$  ( $2.2^{\circ}\text{F}$ ) by 2030 and  $3.0^{\circ}\text{C}$  ( $6.6^{\circ}\text{F}$ ) by 2100. In its 1992 Update, the IPCC notes that these numbers would likely change if

models counted for CFCs and aerosols. In addition, the IPCC predicted that land surfaces would warm more rapidly than the ocean and high northern latitudes would warm more than the global mean in winter.

In its study of climate change released in April 1991, Policy Implications of Greenhouse Warming, the National Academy of Sciences findings agreed with the IPCC's findings in broad terms. The Academy found that general circulation models predict that "an increase in greenhouse gas concentrations equivalent to a doubling of the preindustrial level of atmospheric CO<sub>2</sub> would produce global average temperature increases between 1.9° and 5.2°C (3.4° and 9.4°F)." The report went on to note, "(t)he larger of these temperature increases would mean a climate warmer than any in human history. The consequences of this amount of warming are unknown and could include extremely unpleasant surprises."

Each of these reports noted that there are still uncertainties associated with the predictions, including: future emissions of greenhouse gases; the role of oceans and biosphere in uptake of heat and CO<sub>2</sub>; the amount of CO<sub>2</sub> and carbon in the atmosphere, oceans, biota, and soils; the effectiveness of sinks for CO<sub>2</sub> and other greenhouse gases, especially CH<sub>4</sub> (methane); the interactions between temperature change and cloud formation and resulting feedbacks; and the interactions between changing climate and ice cover and the resulting feedbacks.

#### PRECURSORS TO CLIMATE NEGOTIATIONS

A formalized process for developing an international consensus toward a concerted plan of action to address long-term global climatic change and its potentially critical near-term precursors has been developing rapidly over the last 15 years. National governments, either by their own initiative or through regional economic integration organizations such as the European Community, through the United Nations and its affiliated agencies, and even through the Group of Seven have worked together to promote increased scientific research on global climate change and to devise ways to either mitigate, forestall, or adapt to it, in the event that it occurs.

#### FIRST WORLD CLIMATE CONFERENCE

Extensive involvement of the U.S. Government from the perspective of formulating U.S. policy and a diplomatic role in world politics which relate to the issues of global climate change probably began in February 1979, around the time of the First World Climate Conference (FWCC), sponsored by the World Meteorological Organization (WMO), United Nations Environment Program (UNEP), and the International Council of Scientific Unions (ICSU). Billed as "A conference of experts on climate and mankind," the scientific themes of climatic change, at this period of time were somewhat different from today's climate change issues.<sup>1</sup> The

<sup>1</sup> World Meteorological Organization. Proceedings of the World Climate Conference: A Conference of Experts on Climate and Mankind. Geneva, 12-23 February 1979. WMO-No. 537, Secretariat of the World Meteorological Organization, Geneva, Switzerland.

Earth, or more specifically the northern hemisphere, had just experienced about a decade of cooling; severe winters occurred in the mid-latitudes of the United States and Central Europe. Concurrently, widespread drought and desertification became prevalent in sub-Saharan Africa. Public concern grew in response to reports that famine and death were becoming common place in a number of countries, because of the impacts of climatic change which had taken its toll on some world agricultural systems.

Out of the FWCC evolved the World Climate Program (WCP) and its four components: (1) the World Climate Data Program; (2) the World Climate Applications Program; (3) the World Climate Impact Studies Program; and (4) the World Climate Research Program. Each program was dedicated to examining the state of scientific knowledge about climate change and deducing the technological capability of various nations to confront global climate change, as applicable within its purview. A number of WCP reports have been generated since on various topics addressed by each program.

The first joint UNEP/ICSU/WMO Meeting of Experts on the Assessment of the Role of CO<sub>2</sub> on Climate Variations and Their Impact was held in Villach, Austria, in November 1980. This meeting investigated how increasing concentrations of greenhouse gas concentrations in the atmosphere could affect various regions of the Earth during the upcoming century. Participants also discussed the technical, financial, and institutional options for limiting or adapting to climatic changes. In October 1982, the three representative organizations of the WCP met in Geneva, Switzerland, and recommended that assessments of the CO<sub>2</sub> issue be held every 5 years, starting from the first meeting in 1980. Also, as a result of that meeting, an Interim Assessment was prepared. A second scientific conference was held in Villach, Austria, in October 1985, whose focus was to update an assessment of the role of increased carbon dioxide and other radiatively active greenhouse gases in climate variation and associated impacts which had originally been prepared in 1980.<sup>2</sup> Participants at the 1985 Villach meeting, concluded in a conference statement that, "As a result of the increasing concentrations of greenhouse gases, it is now believed that in the first half of the next century a rise of global mean temperature could occur which is greater than any in man's history."

Although the U.S. Government had sent representatives to the FWCC, those were mostly expert scientists employed at U.S. scientific mission agencies. Government scientists attending such conferences participated in their capacity as scientists, with no political agenda, and not as ministerial or diplomatic representatives of their respective governments. In a series of conferences and workshops sponsored by the WMO, UNEP, and ICSU which followed, the seeds of interest among world governments, as far as participating in such activities, were sown. Full-scale national government interaction would take root when, in 1985, at Villach, the World Climate Program made recommendations for policy actions to be taken by world leaders to stem potential impacts of climate

<sup>2</sup> World Climate Program. Report of the International Conference on the Assessment of the Role of Carbon Dioxide and of other greenhouse Gases in Climate Variations and Associated Impacts. Villach, Austria, 9-15 October 1985. WMO-No. 661. ICSU/UNEP/WMO, 1986.

change from increasing concentrations of CO<sub>2</sub> and other greenhouse gases.

Two WCP workshops took place in Villach, Austria, and Bellagio, Italy, in the fall of 1987, and led to the discussion of the development of policies for responding to climatic change whose basis was built on the results of both the 1980 and 1985 WCP scientific assessments of CO<sub>2</sub>. The WCP Advisory Group on Greenhouse Gases (AGGG) saw this meeting as important step in the process of policy development in response to possible climate change, and as such a realization of a goal that was called for originally by the Villach conference in 1985.<sup>3</sup>

#### THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

About 6 months after the Bellagio meetings in 1987, the governing bodies of WMO and UNEP established the Intergovernmental Panel on Climate Change (IPCC) to address the issue of climate change, its environmental, economic, and social impacts, and possible national and international responses to such changes. The first meeting of the IPCC convened in Geneva, November 9-11, 1988, and was attended by 35 nations, including the United States and the former Union of Soviet Socialist Republics. Several governmental and nongovernmental international organizations also attended as observers and served as advisers. The IPCC was charged by the United Nations General Assembly to prepare an integrated state-of-the-art report on the science, impacts, and responses to global climate change by September 1990.<sup>4</sup>

At its first plenary meeting, the IPCC created three working groups: Working Group 1, chaired by the United Kingdom, to assess scientific evidence for any global warming trend and determine its possible causes; Working Group 2, chaired by the Soviet Union, to analyze the environmental, economic, and social impacts of climate change; Working Group 3, chaired by the United States, to identify and evaluate legal, technical, financial, economic, and educational measures to implement response strategies, including elements of a possible future framework convention on climate change.

Three consensus documents of the IPCC were produced by the fall of 1990 and were viewed throughout most of the international scientific and global diplomatic community as the definitive statement on the state-of-the-knowledge about global climate change.

The IPCC continues to advise the U.N. International Negotiating Committee (INC) for a Framework Convention of Climate Change. In February 1992, resulting from its meeting in Guangzhou, China, the IPCC's WG-1 released a "Supplement" which is an update to the first interim scientific assessment of climate change. An IPCC plenary document was also released which integrated findings from activities of the other IPCC working groups. Bert Bolin, Chairman

<sup>3</sup> World Climate Program Impact Studies: Developing policies for responding to climate change; a summary of the recommendations of the workshops held in Villach (28 September-2 October 1987) and Bellagio (9-13 November 1987), under the auspices of the Beijer Institute, Stockholm. Report written by Jill Jaeger (Beijer Institute), April 1988.

<sup>4</sup> U.S. Department of Commerce, National Oceanic and Atmospheric Administration. National Climate Program Office. U.S. IPCC News, No. 1/March 1989. Compiled and edited by the National Climate Program Office in cooperation with the Department of State.

of the IPCC, addressed the INC Plenary session at the second UN-INC negotiating session in Geneva in June 1991, stated that, "The role of the IPCC [is] that of translating and interpreting the science of climate change for the INC. The IPCC's mission is technical, not political." The IPCC will begin work on its Second Assessment Report in November 1992, and that report is anticipated for 1995.

#### THE SECOND WORLD CLIMATE CONFERENCE

The three IPCC Working Groups submitted their findings to the full IPCC in June 1990, and, following a plenary session in August 1990, WMO and UNEP presented the IPCC's First Assessment Report to the 45th session of the U.N. General Assembly and to the Second World Climate Conference which convened in Geneva, Switzerland, between October 29-November 7, 1990, under the auspices of WMO, UNEP, and the International Council of Scientific Unions. The IPCC report formed the scientific and technical basis for international negotiations toward a framework convention on climate change.

#### NEGOTIATION OF THE CONVENTION

The United Nations General Assembly on December 21, 1990, recalling its resolutions 43/53 of December 6, 1988, and 44/207 of December 22, 1989 in which it recognized that climate change is a common concern of mankind, established an Intergovernmental Negotiating Committee (INC). The INC supported by WMO and UNEP was charged with preparing an effective framework convention on climate change, containing appropriate commitments and any related legal instruments as might be agreed upon. This resolution, A/RES/45/212, called for the framework convention negotiations to be completed prior to the United Nations Conference on Environment and Development (UNCED) in June 1992 and opened for signature during that conference.

Two issues dominated the negotiation of the Convention. The most publicized of these was the proposal, strongly advocated by the countries of the European Community and many members of the environmental community in the United States, for completion of a Convention with targets for reductions in carbon dioxide emissions and timetables for reaching these targets. Support coalesced around proposals to limit CO<sub>2</sub> emissions in the year 2000 to 1990 levels.

The administration vigorously opposed such proposals, arguing that the science of climate change was not adequate to justify specific quantitative limits on emissions. Moreover, the administration argued that it would not be possible to predict what effect, if any, these limits would have on climate change. The administration also concluded that without reasonable certainty that emissions would not rise again after the year 2000, the benefit of achieving the target would quickly vanish.

Instead, the United States advocated an approach in which countries would prepare national plans containing specific programs and measures to limit net greenhouse gas emissions. The administration contended that only specific actions, not targets and timetables would mitigate climate change and help adapt to its impacts.

Negotiations also proved contentious on technology transfer and financial assistance to help developing countries meet their obligations under the Convention. Developing countries sought a Convention that would promote the transfer of environmentally sound technologies on preferential and noncommercial terms and a financial mechanism that would give them more power than they currently have in the multilateral development banks.

The United States and most of the other developed countries successfully opposed these proposals. The Convention calls for developed country Parties to take "all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how," but makes no reference to preferential access or noncommercial terms.

The INC commenced negotiations February 4-14, 1991, at a session hosted by the United States in Chantilly, VA, near Washington, DC. The second session of the INC met in Geneva, June 19-29, 1991, the third session convened in Nairobi, September 9-20, and the fourth session convened in Geneva, September 9-20, and the fifth session convened in Geneva, December 9-20, 1991. The fifth INC session took place in New York City, February 18-28, 1992. One more negotiating session, referred to as the "resumed fifth session," took place in New York between April 29 and May 9, 1992.

The first meeting dealt primarily with organizational issues. By the close of deliberations, two working groups and their leadership were established. INC Working Group 1 (Commitments), Cochaired by Mexico and Japan, and vice chaired by Mauritania, was charged with drafting text for an international convention which expressed the commitment of nations to stabilize or reduce global greenhouse gas emissions. In creating the text for a convention, WG-1 would consider the ability of various nations to comply and how each might meet those commitments in the best way possible, either by alternatively reducing sources of or enhancing sinks of greenhouse gases. Language would be developed to address the concerns of developing nations which had urged industrialized nations to assist them financially and through the transfer of appropriate technologies.

Working Group 2 (Mechanisms), Chaired by Canada and Vanuatu, and vice chaired by Poland, in addition to devising the means, institutions, and organization to assist developing countries, was charged with investigating the legal ramifications, viability, and enforcement of a climate treaty, and how to develop the legal frameworks necessary to administer, change, and support such treaties. One proposal called for the establishment of a 15-member national implementation committee.

WG-2 would also ensure that the text of the treaty would be flexible and adaptive to ongoing scientific investigations and technological developments such as environmental monitoring improvements, remote-sensing technology enhancements, and advances in data and information collection and assimilation. WG-2's primary charge was to support the creation of international partnerships based on the principle of equality among sovereign states, and also to develop a technological scheme for a global inventory of greenhouse gas emissions to include sources and sinks. A draft article on Education, Training, and Public Awareness was prepared by an in-

formal group of countries for consideration of the WG-2. One paragraph in this draft article specifically addressed the development and exchange of educational and public information materials on climate change, and the secondment of personnel, and development and implementation of education and training programs to improve the capacity, in particular of developing countries, to collect, assess, apply, and disseminate information related to climate change.

In its deliberations, WG-2 would also be encouraged by the United States and other nations to consider the protection of intellectual property and proprietary rights of those nations who might provide such assistance, at the same time as extending technological assistance.

The third session of negotiations produced a heavily bracketed discussion text, which became the basis for the bracketed negotiating text presented at the fourth session in December. This body of language still remained heavily bracketed, even after the fifth session in February.

Therefore, an April session was planned as a last effort to resolve major differences. At the April session, and indeed throughout INC negotiations, U.S. negotiators staunchly refused to make a commitment to include targets and timetables for reducing carbon dioxide emissions in the Convention, even as the rest of the industrialized world appeared to be solidified on its stand for emission cuts.

In his testimony before the committee on September 18, William Reilly, Administrator of the U.S. Environmental Protection Agency, explained that the Bush administration's negotiating strategy in the climate negotiations and its relationship to preparations for the United Nations Conference on Environment and Development (the Rio Conference) as follows:

The decision of the President to attend the conference in Rio is one that he withheld until we got a treaty on climate change that was economically acceptable to the United States that did not commit us to an economic straitjacket. That was a successful technique. It had a negative public relations consequence, but, in fact, was effective in the negotiations on the treaty as Mr. Reinstein, [the chief U.S. negotiator] I think, could attest.

At the conclusion of the resumed fifth session on May 8, 1992, it was evident that a flexible, voluntary response by nations to reduce net atmospheric concentrations of greenhouse gases would be the backbone of the climate convention that would be opened for signature at UNCED. The final framework convention contains no legally binding commitments to reduce greenhouse gas emissions.

#### U.S. IMPLEMENTATION

To meet its financial obligations, the United States has made available \$25 million in direct grants to developing and least developed countries in order to facilitate their inventory of greenhouse gas emissions and to help them prepare national strategies. These strategies would identify ways to adapt to or mitigate global climate change through individual national efforts and through bilateral cooperative technology initiatives with the United States and

other nations. These so-called "climate change country studies" will aid developing nations to produce national strategies to address potential climate change, including assistance for inventorying their sources and sinks of greenhouse gases.

In addition, the United States has joined other industrialized countries and pledged a \$50 million contribution to the GEF, the interim financial mechanism; this is in addition to the \$150 million in parallel financing the United States previously pledged to the GEF.

At the fourth INC session in December, in Geneva, Switzerland, the United States announced that it would put forward a draft national climate action plan for public consideration within 1 year of signing a climate convention. The administration expects that this national plan will be ready by January 1993. The U.S. National Plan is intended to supplement many of the current so-called "no-regrets" actions expected to limit future U.S. net greenhouse gas emissions, and other efforts which would support adaptation to potential climate change, as outlined in the President Bush's February 1991 Action Agenda. The U.S. National Plan would go further than the Action Agenda to include: (1) additional Federal government measures, both legislative and administrative; (2) actions taken by State governments; (3) private sector measures; and (4) measures undertaken in cooperation with other countries.

In addition, in its "Statement on Commitments," submitted on February 27, 1992, at the fifth INC session in New York, the United States outlined a new course of measures that it would undertake to mitigate climate change. The United States emphasized that these action would begin immediately, would be taken unilaterally, and would not be contingent on its final acceptance or rejection of any legally binding timetables or provisions as might be set forth in the text of any future international climate change agreement (the Convention).

Actions would be pursued in several areas including: (1) improved energy efficiency; (2) transportation sector improvements; (3) supply-side changes to lower emission technologies; (4) agriculture and natural resources—methane capture and tree planting; R&D measures—technological and scientific; (5) joint Government-industry programs to reduce emissions; and (6) State and local government actions. Some analysts have estimated that such actions taken by the United States could enable it to realize a reduction in greenhouse gas emissions below 1990 levels by the year 2000. Others have criticized these "new" measures as simply a delineation of what the United States has been prepared to do all along and, in some cases, what is currently required under existing law.

Up until this time, administration representatives, who had attempted to quantify the economic impacts of such measures, had pointed out that in order to achieve such reductions the United States might have to lower its expectation for economic growth over the next decade. A study by the Administration released in April 1992, called "U.S. Views on Climate Change" (reproduced in the committee's print of its September 18 hearing on the Convention), however, suggests that the United States might not be far from the goal of reducing its net emissions of greenhouse gases to 1990 levels by 2000—a goal called for by many INC parties—simply

by supporting voluntary energy efficiency and conservation programs and other mitigation and adaptation strategies for climate change which are already underway in existing Federal and State programs.

In its study, "Policy Implications of Greenhouse Warming" prepared at congressional request, the National Academy of Sciences concluded that "the United States could reduce its greenhouse gas emissions by between 10 and 40 percent of the 1990 level at very low cost. Some reductions may even be at a net savings if the proper policies are implemented."

#### IV. COMMITTEE COMMENTS AND RECOMMENDATIONS

The committee strongly endorses prompt ratification of the Convention on Climate Change and believes that such action by the United States will set a standard for other States Parties to complete their ratification processes.

Nonetheless, the committee is divided on the adequacy of the Convention as a response to climate change induced by anthropogenic emissions of greenhouse gases. Some members believe that the Convention is sufficient in light of existing scientific data and projections of climate change and taking into account the possible economic consequences of limiting emissions of greenhouse gases, particularly carbon dioxide.

Other members think that additional measures are warranted, for example the adoption of targets and timetables for limiting carbon dioxide emissions. These members note that failure to reduce greenhouse gas emissions will make the Convention's objective more difficult to reach and point to studies indicating that reducing carbon dioxide emissions to 1990 levels in the year 2000 would not have adverse economic consequences and could indeed have positive impacts.

The committee notes that a decision by the Conference of the Parties to adopt targets and timetables would have to be submitted to the Senate for its advice and consent before the United States could deposit its instruments of ratification for such an agreement.

The committee notes further that a decision by the executive branch to reinterpret the Convention to apply legally binding targets and timetables for reducing emissions of greenhouse gases to the United States would alter the "shared understanding" of the Convention between the Senate and the executive branch and would therefore require the Senate's advice and consent.

The committee strongly supports those provisions in the Convention which will further scientific research into climate change. These include: the preparation of national inventories of sources, sinks, and reservoirs of greenhouse gases; the call for full, open, and prompt exchange of relevant scientific and technological information related to climate change; and the development of common methodologies for the reporting of such inventories. These measures should help facilitate the ongoing refinement of sound policy responses to climate change.

The committee notes that the relationship between the Conference of the Parties and the financial mechanism (the GEF and its Participants Assembly) will need to be more clearly defined in

practice. Ongoing discussions about the future governance structure of the GEF make it somewhat unclear which responsibilities for implementing the Convention will be vested in the GEF and which will lie with the Conference of the Parties. Failure to resolve these issues will severely impair the operation of the facility and impede the effective implementation of the Convention.

Finally, the committee desires at this time to record its concern with the practice exemplified in article 24 of this protocol, and recently in Article 24 of the Protocol on Environmental Protection to the Antarctic Treaty (Treaty Doc. 102-22), of including in treaties a provision which has the purported effect of inhibiting the Senate from attaching reservations deemed necessary in the national interest or of preventing the Senate from exercising its constitutional duty to give its advice and consent to all treaty commitments before they can in any way have a binding effect upon the United States. Article 24 of the Convention states that "no reservations may be made to the Convention."

Whatever justifications may have existed for inclusion of such a prohibition in the Convention or the Antarctic Protocol in view of the peculiar circumstances there present, the Senate's approval of these treaties should not be construed as a precedent for such clauses in future agreements with other nations requiring the Senate's advice and consent. This committee has made its position on this issue clear in the past (S. Exec. Rpt. No. 3, 85th Congress, 1st Session, p. 17, 1957). The President's agreement to such a prohibition can not constrain the Senate's constitutional right and obligation to give its advice and consent to a treaty subject to any reservation it might determine is required by the national interest.

#### V. COMMITTEE ACTION

On September 18, the committee held a hearing on the Convention on Climate Change. The committee received testimony from: The Honorable Albert Gore, Jr. (D-TN), United States Senate; the Honorable William K. Reilly, Administrator, Environmental Protection Agency; accompanied by Mr. Robert A. Reinstein, Deputy Assistant Secretary for Environment, Health and Natural Resource, Department of State; Dr. John H. Gibbons, Director, Office of Technology Assessment, Washington, DC; Dr. Jerry D. Mahlman, Director, Geophysical Fluid Dynamics Laboratory, National Oceanic and Atmospheric Administration, Princeton, NJ; Dr. Michael Oppenheimer, Senior Scientist, Environmental Defense Fund, New York, NY; and the Honorable Michael E. Baroody, Chairman, Global Climate Coalition, Washington, DC.

The committee considered the Convention at its business meeting on October 1, 1992, and without objection and with a quorum present ordered it reported favorably to the Senate for its advice and consent.

#### VI. ENTRY INTO FORCE

The Convention will enter into force on the 90th day after the date of deposit of the 50th instrument of ratification, acceptance, approval, or accession.

## VII. TEXT OF RESOLUTION OF RATIFICATION

*Resolved, (two-thirds of the Senators present concerning therein),* That the Senate advise and consent to the ratification of the United Nations Framework Convention on Climate Change, adopted May 9, 1992, by the Resumed Fifth Session of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change ("Convention"), and signed on behalf of the United States at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro on June 12, 1992.

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