UN Framework Convention on Climate Change

3rd Conference of the Parties

Kyoto, Japan

December 1-10, 1997

UN Framework Convention on Climate Change

3rd Conference of the Parties (COP-3)
Kyoto, Japan
December 1 - 10, 1997

BRIEFING BOOK

Contents

COP-3 Overview — Tab A
- Role of Congressional Observers to U.S. Delegations
- Background on the Third Conference of the Parties
- Provisional Meeting Agenda

Delegation List *(with biographies of key members)* — Tab B

General Information/Logistics — Tab C
- Hotels
- Transportation
- Information on Kyoto
- General Information on Japan

Background Information on Climate Change — Tab D
- Climate Change: State of Knowledge *(in side pocket)*
- Reports to the Nation: Our Changing Climate *(in side pocket)*
- Cool Facts about Global Warming *(in side pocket)*
- U.S. Press Coverage of Global Warming
- USIA Daily Digest – Foreign Media Reaction
- USIA Opinion Analysis
- CRS Report for Congress
- The Intergovernmental Panel on Climate Change (IPCC)
- Climate Negotiations Calendar of Events
- Glossary of Terms on Climate Change
- Glossary of Terms on Negotiations

The U.S. Position Tab E

U.S. Draft Protocol Framework—January, June 1997
White House Climate Change Conference, October 6, 1997 *(summary)*
Remarks by the President on Global Climate Change, October 22, 1997
President Clinton's Climate Change Proposal *(with fact sheets)*
Statement by Under Secretary of State for Global Affairs Timothy E. Wirth
White House Climate Change Task Force – US Policy Directions
USAID Climate Change Initiative
U.S. Interventions at the AGBM Meetings, Bonn, October 20-31, 1997

Other Key Country Positions Tab F

Reference Documents Tab G

UN Framework Convention on Climate Change *(w/ list of Ratifiers)*
The Berlin Mandate
AGBM Chairman's Negotiating Text *(11/7/97 draft)*
The Geneva Declaration
NGO Schedule of Events at COP-3
United Nations Background Notes

Clinton Presidential Records
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Divider Title: **A**

United States Department of State

Washington, D.C. 20520

NOV 17 [illegible]

Dear Mr. Chairman:

In response to recent inquiries, this letter provides clarification regarding the role of Congressional observers to U.S. delegations. As you know, the Administration supported the formation of the Senate Observer Group on Climate Change, and welcomes the participation of Congressional observers from both the House and the Senate at the upcoming Climate Change Conference in Kyoto, Japan. We continue to value and seek out the advice and counsel of Members of Congress in formulating our policy.

To assist Members participating as Congressional observers to the U.S. Delegation at the upcoming negotiations, we would like to convey the following clarifications:

- To ensure access to the conference facility, Members and staff will be included in the official U.S. Delegation for purposes of accreditation.

- Congressional observers on the U.S. Delegation are of course free to express their views and opinions to the press, so long as they make clear that they are not speaking on behalf of the U.S. Delegation.

- However, unlike Executive Branch officials who are responsible for negotiating on behalf of the United States, the role of Congressional observers will not include speaking on behalf of the United States Delegation in negotiating sessions or with foreign delegations.

The Honorable
Chuck Hagel, Chairman,
Observer Group on Climate Change,
United States Senate.

- Congressional observers will have full diplomatic support. The State Department will assign staff to assist Members of Congress and their staff to ensure that their administrative needs in Kyoto are met. Additionally, Department staff, both here and in Japan, have begun and will continue to assist Congressional staff in planning other meetings and activities to make their participation as productive as possible.

- Consistent with the rules of the Conference, space availability, and our negotiating needs, we will seek access for observers to appropriate Conference proceedings.

- Congressional observers and their staffs are welcome to attend meetings of the full U.S. delegation, which customarily occur in the morning. Observers will also receive regular and frequent briefings in Kyoto. Additionally, they will be welcome to attend other meetings of the Delegation as appropriate and consistent with Executive Branch responsibilities.

We hope this information is useful to you as you plan your participation in the Kyoto Conference. Please let us know if we can provide further assistance.

Sincerely,

Barbara Larkin

Barbara Larkin
Assistant Secretary
Legislative Affairs

United States Department of State

Washington, D.C. 20520

NOV 17 1997

Dear Mr. Chairman:

Thank you for your letter to Under Secretary Timothy Wirth on November 5th regarding the upcoming Climate Change negotiations in Kyoto, Japan. As you know, the Administration supports the participation of Congressional observers from both the House and the Senate. We continue to value and seek out the advice and counsel of Members of Congress in formulating our policy.

Given your questions regarding the roles of Congressional observers to the U.S. Delegation, we would like to convey the following clarifications:

- To ensure access to the conference facility, Members and staff will be included in the official U.S. Delegation for purposes of accreditation.

- Congressional observers on the U.S. Delegation are of course free to express their views and opinions to the press, so long as they make clear that they are not speaking on behalf of the U.S. Delegation.

- However, unlike Executive Branch officials who are responsible for negotiating on behalf of the United States, the role of Congressional observers will not include speaking on behalf of the United States Delegation in negotiating sessions or with foreign delegations.

The Honorable
James F. Sensenbrenner, Chairman,
Committee on Science,
House of Representatives.

- Congressional observers will have full diplomatic support. The State Department will assign staff to assist Members of Congress and their staff to ensure that their administrative needs in Kyoto are met. Additionally, Department staff, both here and in Japan, have begun and will continue to assist Congressional staff in planning other meetings and activities to make their participation as productive as possible.

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Sincerely,

Barbara Larkin

Barbara Larkin
Assistant Secretary
Legislative Affairs

Background on the Third Conference of the Parties
Kyoto, Japan
December 1-10, 1997

State of Play: We are now in the final countdown to the Third Conference of the Parties to the UN Framework Convention on Climate Change meeting which will be held in Kyoto, December 1-10. In the U.S. view, several elements will be critical to a successful outcome at this important meeting, including targets and timetables, emissions trading, joint implementation (JI) and the role of developing countries.

In the weeks leading up to Kyoto, our aims for its successful outcome were addressed at the highest levels in the U.S. Government. In our diplomatic efforts, we have pressed key aspects of our position, particularly with respect to realistic targets, inclusion of all major greenhouse gases and "sinks" in an agreement, policy flexibility, and meaningful participation of developing countries.

The proposals that we have advanced for Kyoto are realistic, achievable and pragmatic – not just rhetoric. We have backed up those proposals with a pledge to limit and reduce greenhouse gas (GHG) emissions in two budget periods and with a comprehensive domestic initiative. We have also called for a comprehensive international framework that will ensure that all countries participate in a global effort to reduce GHGs in a cost-effective manner.

Realistic Targets: Our proposal involves real and meaningful reductions based on a two budget period approach, beginning with a binding, realistic target to reach 1990 emissions levels by 2008-2012. In real terms, this U.S. proposal amounts to a 22 percent reduction in U.S. emissions of carbon below where they otherwise would be in 2010, accompanied by significant reductions in emissions of other GHGs. We also stipulate that further reductions – below the 1990 baseline – would be achieved in a second five year emissions budget period.

Inclusion of GHGs and "Sinks": Some of the other targets, as proposed by the EU and Japan, aren't all that they seem to be in comparison to our proposals. For example, both EU and Japanese proposals omit a number of significant and long-lasting GHGs, like hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). We propose that these GHGs be included, in addition to carbon dioxide, methane and nitrous oxide, in the Kyoto agreement. We also believe that the Kyoto agreement should provide for the inclusion of "sinks" (i.e., within the carbon cycle, the amount of carbon that is taken up through oceans, forests, other vegetation and the soil) in the overall calculation of carbon mitigation. Our comprehensive approach is more environmentally friendly and will hold up better over time.

Policy Flexibility: We have made the point time and again that the Kyoto agreement should clearly outline that all countries should be given maximum flexibility to meet their target in ways best suited to their national circumstances. The EU, on the other hand, has strongly urged that all developed countries adopt common policies and measures to reduce emissions (particularly related to taxation measures). The U.S. must have the elements of flexibility to move forward as they provide the primary rationale for the level of effort we are willing to undertake. International emissions trading and JI for credit serve as integral parts of the U.S. proposals because they are cost-effective and environmentally sound mechanisms for mitigating GHG

emissions. JI, in particular, can affect climate-friendly investment flows in developing countries that are in line with their priorities and our interests, and spur technology cooperation/diffusion to developing countries.

Developing Countries: Climate change is a global problem, and requires a global solution. That is why the President has indicated that the U.S. will not adopt binding obligations without meaningful developing country participation. At the same time, the U.S. plans to provide assistance to developing countries - through bilateral and multilateral means - as well as allow for private investment through innovative mechanisms such as JI.

Framework Convention on Climate Change: Based on the findings in an earlier assessment by the Intergovernmental Panel on Climate Change (IPCC) and a growing concern over the problem, nations came together in 1990 to begin negotiations which led to the U.N. Framework Convention on Climate Change (the Convention)-- adopted May 9, 1992, and opened for signature at the Earth Summit in Rio de Janeiro one month later. The ultimate objective of the Convention is to stabilize atmospheric concentrations of greenhouse gas concentrations of levels that are not dangerous. The Convention established a first step in which developed (Annex I) countries were to aim to return emissions in the year 2000 to their 1990 levels. All countries have specific reporting requirements and other commitments to promote technology transfer, climate-friendly policies and scientific research. The United States was the fourth nation overall, and the first industrialized nation, to ratify the Convention in 1992. Currently, there are over 160 Parties to the Convention.

The Convention entered into force on March 21, 1994, and the Parties held their first meeting in April 1995 in Berlin. There, they launched a negotiating process designed to produce a new legal instrument to deal with the threat of climate change in the post 2000 period. They called for the instrument to be adopted at their third meeting, scheduled for Kyoto, Japan, in December 1997.

Ad Hoc Group on the Berlin Mandate: The negotiating process began in August 1995, in accordance with the decision of the Parties (known as the "Berlin Mandate"). It took place in a temporary subsidiary body of the Convention known as the Ad Hoc Group on the Berlin Mandate (AGBM). The AGBM met eight times over the course of two years (in August and October 1995; in February, July and December 1996, and in March, August, and October 1997). AGBM-8 will resume for one day in Kyoto on the afternoon of November 30 to complete several unfinished items, including consideration of sinks. Because the Convention's secretariat is now located in Bonn, Germany, meetings of the Convention take place there, unless otherwise agreed by the Parties.

Background on the Science: Climate change is one of the most serious environmental threats facing our planet. In its Second Assessment Report -- the most authoritative and comprehensive scientific report to date -- the Intergovernmental Panel on Climate Change (IPCC) concluded that "there is a discernible human influence" on the detected increase in greenhouse gas concentrations in the atmosphere. It predicts an increase in temperature (from 1 to 3.5°C by 2100), a rise in sea level (from 15 to 95 cm by 2100), and other potentially adverse impacts on human health, terrestrial and aquatic ecosystems, and on socio-economic systems (i.e., agriculture, forestry, fisheries and water resources).

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CONFERENCE OF THE PARTIES

Third session

Kyoto, 1 - 10 December 1997

Item 2 (c) and (f) of the provisional agenda

PROVISIONAL AGENDA AND ANNOTATIONS, INCLUDING SUGGESTIONS FOR THE ORGANIZATION OF WORK(1)

Note by the Executive Secretary

CONTENTS

Paragraphs Page

PROVISIONAL AGENDA 1 2

ANNOTATIONS TO THE PROVISIONAL AGENDA,

INCLUDING SUGGESTIONS FOR THE ORGANIZATION

OF WORK 2 - 79 4

Annex

Tentative schedule of meetings for the third session of the Conference of the Parties

I. PROVISIONAL AGENDA

Rule 9 of the draft rules of procedure being applied provides that, "in agreement with the President, the secretariat shall draft the provisional agenda of each session" of the Conference of the Parties (COP). In preparing the draft provisional agenda for the third session for consideration by the President of the Conference of the Parties at its second session (COP 2), the Executive Secretary took account of views expressed by the Subsidiary Body for Implementation (SBI), notably at its sixth session (FCCC/SBI/1997/16, para. 34), the Bureau of the COP and the delegation of Japan representing the host Government of the third session of the Conference of the Parties (COP 3). The provisional agenda has been approved by the President and is presented for adoption as follows:

Opening of the session:

(a) Statement by the President of the Conference at its second session;

(b) Election of the President of the Conference at its third session;

(c) Statement by the President;

(d) Addresses of welcome;

(e) Statement by the Executive Secretary.

2. Organizational matters:

(a) Status of ratification of the Convention;

(b) Adoption of the rules of procedure;

(c) Adoption of the agenda;

(d) Election of officers other than the President;

(e) Admission of organizations as observers;

(f) Organization of work, including the establishment of a sessional Committee of the Whole;

(g) Calendar of meetings of Convention bodies 1998-1999;

(h) Date and venue of the fourth session of the Conference of the Parties;

(i) Adoption of the report on credentials.

Review of the implementation of the Convention:

(a) Reports of the subsidiary bodies and matters arising therefrom:

(i) Reports of the Subsidiary Body for Scientific and Technological Advice;

(ii) Reports of the Subsidiary Body for Implementation;

(iii) Reports of the Ad Hoc Group on the Berlin Mandate;

(iv) Reports of the Ad Hoc Group on Article 13;

(b) Development and transfer of technologies;

(c) Financial mechanism: report of the Global Environment Facility to the Conference;

(d) Second review of the adequacy of Article 4.2(a) and (b);

(e) Review of information and possible decisions under Article 4.2(f);

(f) Other matters relating to implementation.

Amendments to the Convention and its Annexes:

(a) Proposal to amend Article 4.3;

(b) Proposal to amend Article 17;

(c) Proposals to amend Annexes I and II.

Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate.

6. High-level segment attended by ministers and other heads of delegation.

7. Other matters.

8. Conclusion of the session:

(a) Adoption of the report of the Conference of the Parties on its third session;

(b) Closure of the session.

II. ANNOTATIONS TO THE PROVISIONAL AGENDA, INCLUDING SUGGESTIONS FOR THE ORGANIZATION OF WORK

1. Opening of the session

The Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) will hold its third session from 1 to 10 December 1997. In accordance with rule 3 of the draft rules of procedure, the session will be opened at the Kyoto International Conference Hall, Kyoto, Japan on Monday, 1 December 1997.

Pursuant to rule 26 of the draft rules of procedure, the session will be opened by

Mr. Chen Chimutengwende, Minister for Information, Posts and Telecommunications of Zimbabwe, in his capacity as President of COP 2.

(a) Statement by the President of the Conference at its second session

The outgoing President of the Conference, Mr. Chen Chimutengwende, will make a statement.

(b) Election of the President of the Conference at its third session

According to rule 22 of the draft rules of procedure, the office of President is subject to rotation among the five regional groups. The President of the third session of the

Conference of the Parties should accordingly be the representative of a Party belonging to the Asian Group. Moreover, in accordance with established practice, the hosting of a session of the COP away from the headquarters of the secretariat confers the Presidency upon the head of the delegation of the host country. Following both these criteria, the President of COP 2 will call for the election of the head of the delegation of Japan as President.

(c) Statement by the President

The President will make a statement after his election.

(d) Addresses of welcome

There may be one or more addresses of welcome by the authorities of the host country.

(e) Statement by the Executive Secretary

The Executive Secretary of the UNFCCC secretariat will make a statement on the tasks to be undertaken by the Conference.

2. Organizational matters

(a) Status of ratification of the Convention

A status report on the ratification of the Convention, including declarations made under

Article 4.2 (g) will be before the Conference for its information (FCCC/CP/1997/INF.1). This will confirm which States are Parties to the Convention and therefore eligible to participate in decision-making.

For each State that ratifies, accepts or approves the Convention or accedes thereto after the deposit of the fiftieth instrument of ratification, acceptance, approval or accession, the Convention enters into force on the ninetieth day after the date of deposit with the Depositary of its instrument of ratification, acceptance, approval or accession. The Parties as at the opening of COP 3 on 1 December 1997 will be the 168 States and the regional economic integration organization that had deposited such instruments by 1 September 1997.

It should be noted that Yugoslavia, which deposited its instrument on 3 September 1997, will become a Party during COP 3, thus bringing the total number of Parties to 169 as of

4 December 1997. States that have deposited or will deposit such instruments after

11 September 1997 will not become Parties until after the closure of the session.

No provision is made for statements under this sub-item; relevant information may be communicated in statements made under other items. In addition, delegations of States that have not ratified or acceded to the Convention are invited to inform the secretariat, in writing, of their Governments' plans to do so.

(b) Adoption of the rules of procedure

According to Article 7.2(k) of the Convention, the COP "shall agree upon and adopt, by consensus, rules of procedure ... for itself and for any subsidiary bodies". The Conference was unable to adopt its rules of procedure at its first and second sessions; it decided to apply the draft rules with the exception of draft rule 42 on voting, and requested its successive Presidents to conduct consultations thereon. The draft rules have been similarly applied, *mutatis mutandis*, to the subsidiary bodies (FCCC/CP/1995/7, para. 10 and FCCC/CP/1996/15, para. 12).

The Conference of the Parties will have before it document FCCC/CP/1996/2 containing the text of the

draft rules of procedure and a report by the President of COP 2 on his consultations that he will introduce in his opening statement to the session. The COP is invited to adopt by consensus, at the start of its third session, rules of procedure for itself and its subsidiary bodies. Representatives of Parties are urged to undertake consultations to this end before the session.

(c) Adoption of the agenda

The provisional agenda for COP 3, prepared in accordance with rule 9 of the draft rules of procedure, is presented for adoption (see section I of this document).

A list of documents relating to the provisional agenda, as well as other documents available at the session, will be issued in an addendum to this document after the October 1997 sessions of the subsidiary bodies.

(d) Election of officers other than the President

(i) Election of officers of the Conference of the Parties other than the President

Rule 22 of the draft rules of procedure provides that "at the commencement of the first meeting of each ordinary session, a President, seven Vice-Presidents, the Chairmen of the subsidiary bodies established by Articles 9 and 10 of the Convention, and a Rapporteur shall be elected from among the representatives of the Parties present at the session. They will serve as the Bureau of the session. Each of the five regional groups shall be represented by two Bureau members and one Bureau member shall represent the small island developing States. The offices of President and Rapporteur shall normally be subject to rotation among the five regional groups." Rule 22 further states that "no officer may serve on the Bureau for more than two consecutive terms of one year". Accordingly, the representatives of Antigua and Barbuda, the Russian Federation and Samoa, who are serving as Vice-Presidents for a second consecutive term and the representatives of Hungary and Mauritania, who are in their second terms as Chairmen of the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI), respectively, are not individually eligible for

re-election to the Bureau. The representatives of Canada, Costa Rica, Germany and Kuwait, who are serving their first terms as Vice-Presidents, may be re-elected for a second term. In line with established practice, the Rapporteur, currently the representative of the Philippines, should be elected from the region which will provide the President for the Conference of the Parties at its fourth session (COP 4); however, the said representative is eligible for election to another post in the Bureau for a consecutive term of one year.

The SBI, at its sixth session, invited the President of COP 2 to start consultations with a view to advising the newly elected President of COP 3 on the election of the other members of the Bureau and the Chairman of the Committee of the Whole (FCCC/SBI/1997/16, para. 34 (f)).

It is hoped that a complete slate of candidates for the Bureau of COP 3 will be before the Conference at its first plenary meeting and that the Conference will adopt the list by consensus.

(ii) Election of the Chairman of the Committee of the Whole

Taking into account the importance of the tasks to be entrusted to the

Committee of the Whole, a smooth transition from the Ad Hoc Group on the Berlin Mandate (AGBM) to the Committee of the Whole and a prompt start to the work of the latter, the COP may wish to designate

the Chairman of the Committee at its first plenary meeting, taking account of the consultations of the President of COP 2.

(iii) Election of other officers of subsidiary bodies

In the light of rule 22 of the draft rules of procedure, it will also be necessary to elect the Vice-Chairmen and the Rapporteurs of the SBSTA and the SBI. Rule 27 of the draft rules of procedure provides that "each subsidiary body shall elect its own Vice-Chairman and Rapporteur". However, if there is agreement on the nominations for these officers of subsidiary bodies, the whole list of officers may be elected directly by the Conference in plenary session. Consultations may be conducted during the Conference to enable the Parties to reach consensus on the election of the other officers of the SBSTA and the SBI.

It may be noted that the AGBM will have concluded its work at its eighth session. The Chairman and the other officers of the Ad Hoc Group on Article 13 will serve for the duration of the group's work. Thus no election of officers of these bodies will be required.

(e) Admission of organizations as observers

The admission of intergovernmental and non-governmental organizations as observers is governed by Article 7.6 of the Convention, which provides, *inter alia*, that "any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by the Convention, and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties as an observer, may be so admitted unless at least one third of the Parties present object".

At its first session, the COP agreed (FCCC/CP/1995/7, para. 22), on the proposal of the President, that the secretariat should invite to the future sessions of the Conference and of its subsidiary bodies all intergovernmental and non-governmental organizations admitted at that session and at future sessions, unless an objection was raised to any particular organization in accordance with the Convention and the rules of procedure. Consequently, all the organizations admitted to the first and second sessions have been invited to attend the third session, and the procedure for admission to the COP will apply to new applicants only.

In this context, the secretariat is preparing a list of intergovernmental and non-governmental organizations that have expressed a wish to be invited to COP 3, for consideration by the Conference at the start of the session (FCCC/CP/1997/3). The list includes all intergovernmental and non-governmental organizations that have requested and been accorded provisional admission to the work of the subsidiary bodies since COP 2. In drawing up the list, the secretariat has taken due account of the provisions of Article 7.6 and of the established practice whereby non-governmental organizations are required to furnish proof of their non-profit (tax-exempt) status in a State Member of the United Nations or of a specialized agency or of the International Atomic Energy Agency.

The COP Bureau will consider the list of applicants during the October 1997 sessions of the subsidiary bodies with a view to establishing that the organizations contained in the list meet all requirements, and authorize the secretariat to advise those applicants of their "pre-admittance status", on the understanding that the final authority for the admission of observers rests with the COP. At its first plenary meeting, the Conference will have before it for approval a document containing the list of organizations recommended for admission as observers (FCCC/CP/1997/4).

(f) Organization of work, including the establishment of a sessional

Committee of the Whole

The SBI at its sixth session requested the Executive Secretary to proceed with the organizational preparations for COP 3, in particular, the organization of work on the basis of the proposals contained in paragraphs 15 to 45 of document FCCC/SBI/1997/11, seeking advice from the Bureau as needed and taking into account views and comments expressed by delegations during that session (FCCC/SBI/1997/16, para. 34 (e)).

(i) Purpose of the session

Article 7.2 of the Convention provides that "the Conference of the Parties, as the supreme body of [the] Convention, shall keep under regular review the implementation of the Convention ... and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention." Article 7.2(a) further provides that the

Conference of the Parties shall "periodically examine the obligations of the Parties and the institutional arrangements under the Convention, in the light of the objective of the Convention, the experience gained in its implementation and the evolution of scientific and technological knowledge". The principal objective of COP 3 in this context will be to fulfil the

Berlin Mandate, set by its decision 1/CP.1, on the basis of the results of the Ad Hoc Group on the Berlin Mandate. The Conference will in addition consider for the first time amendments to the Convention proposed by the Parties.

(ii) Allocation of tasks and establishment of a Committee of the Whole

The session should be organized in such a manner as to facilitate the successful achievement of that principal objective. To this end, the SBI, at its fifth session, recommended that "after dealing with the opening and organizational matters, COP 3 would immediately allocate the completion of decisions on the Berlin Mandate process to a sessional committee of the whole, open to all delegations" (FCCC/SBI/1997/6, para. 44 (c)(ii)). In pursuance of this recommendation, the following organizational proposals are presented for adoption by the Conference.

At the opening plenary meeting on 1 December, statements will be made by the outgoing President of the second session of the COP, the newly-elected President of the third session and the Executive Secretary. There may be one or more addresses of welcome. In order to dispose quickly of opening procedures, it is proposed that these be the only statements at the opening of the session. The first plenary meeting will then take up a number of organizational matters, namely sub-items 2 (a) to (e) (see annotations above).

The first plenary meeting will next start consideration of item 3 (a), under which the Chairmen of the subsidiary bodies will introduce their reports including the decisions recommended by the subsidiary

bodies. The Conference will be invited to adopt these decisions. Any outstanding issues arising from the reports will be considered further by the plenary or allocated to the Committee of the Whole.

The first plenary meeting will then revert to organizational matters, namely

sub-item 2 (f). The establishment of the sessional Committee of the Whole will be dealt with under this sub-item. Item 5 of the provisional agenda will be allocated to the Committee and it will be expected to begin its work immediately. On the completion of its work, the Committee will recommend action thereon for adoption by the COP. The Committee of the Whole will also consider any other issues that may be referred to it by the Conference.

The Committee of the Whole will also make arrangements for a comprehensive editorial and linguistic review of the draft instrument, to ensure consistency within the text and among the languages.

Other items or sub-items not allocated to the Committee of the Whole will be dealt with directly in plenary meetings. The President may refer drafting tasks to informal groups, as appropriate.

By the end of the first week of the session, the Committee should identify a limited number of issues that require the priority attention of ministers and other heads of delegation during the high-level segment. On the morning of Friday, 5 December 1997, the Chairman of the Committee of the Whole and other officers entrusted with any informal consultations will present status reports to the COP at a plenary meeting, at which the COP will decide on further organization of work, including setting time limits on the work of the Committee of the Whole and on any consultations.

(iii) Schedule of meetings

The number of meetings taking place simultaneously should be limited to two, to facilitate the work of small delegations. A tentative schedule of meetings is contained in the annex to this document. The schedule is based, *inter alia*, on the organizational proposals in paragraphs 29-35 above. The scheduling of meetings during COP 3 is based on the availability of conference servicing facilities during normal working hours, evenings and weekends. Given the workload of COP 3, provision has been made for the holding of two simultaneous meetings, with full interpretation facilities, in the mornings, afternoons and some evenings of the sessional period of 1 to 10 December 1997. Arrangements have been made for evening meetings during the high-level segment on Monday, 8 December and Tuesday, 9 December 1997. Delegates may wish to note that meetings with interpretation have been scheduled for Saturday,

6 December 1997.

(g) Calendar of meetings of Convention bodies 1998-1999

The SBI at its sixth session took note of the calendar of meetings for 1998-1999 and invited the Bureau of the COP to keep it under review (FCCC/SBI/1997/16, para. 38). At its meeting held on 8 August 1997, the Bureau of the COP agreed that further sessions of Convention bodies should be scheduled as follows:

(a) First sessional period in 1998: from 2 to 12 June;

(b) Second sessional period in 1998: from 16 to 27 November;

(c) First sessional period in 1999: from 31 May to 11 June;

(d) Second sessional period in 1999: from 24 October to 5 November.

The COP may wish to confirm this schedule and ask the Bureau of the COP to keep the dates under review, bearing in mind that commercial facilities are to be contracted.

(h) Date and venue of the fourth session of the Conference of the Parties

Rule 3 of the draft rules of procedure states that "the sessions of the

Conference of the Parties shall take place at the seat of the secretariat, unless the

Conference of the Parties decides otherwise or other appropriate arrangements are made by the secretariat in consultation with the Parties". Rule 4, paragraph 2, of the draft rules specifies that "at each ordinary session, the Conference of the Parties shall decide on the date and duration of the next ordinary session".

At its sixth session, the SBI was informed by the secretariat that no offer to host COP 4 had been received. The SBI invited any Party desirous of making an offer to host COP 4 to communicate such proposal to the secretariat before 30 September 1997 so that the secretariat could take it into account in its planning for the Conference (FCCC/SBI/1997/16,

paras. 35 and 37). No such offer was received by that date.

In this connection, the COP is invited to adopt the recommendation made by the SBI at its sixth session that COP 4 should be held in November 1998. If no offer to host COP 4 is received, the venue will be Bonn unless the Conference decides otherwise. The SBI also requested the Executive Secretary to initiate the preparations for COP 4 (see annex V to FCCC/SBI/1997/16).

(i) Adoption of the report on credentials

According to rule 19 of the draft rules of procedure being applied, the credentials of representatives of Parties, as well as the names of alternate representatives and advisers, shall be submitted to the secretariat not later than twenty-four hours after the opening of the session. Any later change in the composition of the delegation shall also be submitted to the secretariat. The credentials shall be issued either by the Head of State or Government or by the Minister of Foreign Affairs or, in the case of a regional economic integration organization, by the competent authority of that organization. The Bureau of COP 3 shall examine the credentials and submit its report to the Conference (see rule 20 of the draft rules of procedure). Representatives shall be entitled to participate provisionally in the session, pending a decision by the COP to accept their credentials (see rule 21 of the draft rules of procedure). With regard to the adoption of a protocol or another legal instrument, only Parties with credentials would be able to participate in its adoption which may be followed by an initialling of the text or signature of a final act. The Conference will have before it for adoption the report on credentials to be submitted by the Bureau.

3. Review of the implementation of the Convention

(a) Reports of the subsidiary bodies and matters arising therefrom

According to Article 7.2(j) of the Convention, the Conference of the Parties shall review reports submitted by its subsidiary bodies and provide guidance to them. The subsidiary bodies currently are the

Subsidiary Body for Scientific and Technological Advice (SBSTA), the Subsidiary Body for Implementation (SBI), the Ad Hoc Group on Article 13 (AG13) and the

- Ad Hoc Group on the Berlin Mandate (AGBM).

At its first and second sessions, the Conference of the Parties adopted decisions providing for the subsidiary bodies to report to it at its third session. The reports of the subsidiary bodies on their sessions since COP 2 will be before COP 3. These reports will contain, *inter alia*, draft decisions or conclusions recommended for adoption by COP 3.

Each set of reports will be introduced by the Chairman of the subsidiary body after which the COP will be invited to adopt the recommended decisions without further discussion. The SBI and the AG13 have already agreed on such recommendations. A full list of the recommended decisions and conclusions will be made available in the update to this document. Any outstanding issues from the subsidiary bodies will be referred to the plenary for consideration.

(b) Development and transfer of technologies

At its first session, the COP decided, *inter alia*, "to review, at the second session of the Conference of the Parties, and at each session of the Conference of the Parties thereafter, the implementation of Article 4.5 and 4.1(c) of the Convention as a separate agenda item"

(see decision 13/CP.1). This decision was reaffirmed by COP 2 (see decision 7/CP.2).

By the same decision, COP 2 requested the secretariat to undertake a number of activities related to inventorying and assessing environmentally sound and economically viable technology and know-how conducive to mitigating and adapting to climate change; this was further elaborated by the SBSTA (see FCCC/SBSTA/1997/4, paras. 43-44). These activities included reports on non-Annex II activities, terms of transfer, adaptation technologies, technology information centres and networks and a survey of the technology needs of developing countries. The COP may wish to review the implementation of the above-mentioned provisions of the Convention and the related activities of the secretariat and adopt any decision it considers necessary.

(c) Financial mechanism: report of the Global Environment Facility to the Conference

The Memorandum of Understanding (MOU) between the COP and the Council of the Global Environment Facility (GEF) provides, *inter alia*, that the Conference of the Parties should receive and review at each of its sessions a report from the GEF which should include specific information on how it has applied the guidance and decisions of the Conference of the Parties in its work related to the Convention (see decisions 11/CP.2 and 12/CP.2). Accordingly, the Conference of the Parties will have before it a report from the Council of the GEF contained in document FCCC/CP/1997/3.

The MOU further provides that, in accordance with Article 11.1 of the Convention, the Conference of the Parties will, after each of its sessions, communicate to the GEF any policy guidance approved by the COP concerning the financial mechanism.

The Conference may wish to take note of the report from the GEF and adopt any decision on guidance to the GEF it may consider necessary.

(d) Second review of adequacy of Article 4.2(a) and (b)

Article 4.2(d) provides that the Conference of the Parties shall, at its first session, review the adequacy of Article 4.2(a) and (b). The first review of Article 4.2(a) and (b) was undertaken by COP 1 and, having considered that the subparagraphs were not adequate, the COP agreed to begin a process to enable it to take appropriate action for the period beyond 2000, including the strengthening of the commitments of the Parties included in Annex I to the Convention

(Annex I Parties) in Article 4.2(a) and (b) through the adoption of a protocol or another legal instrument by COP 3 (see decision 1/CP.1). Article 4.2(d) further provides that a second review of Article 4.2(a) and (b) shall take place not later than 31 December 1998, and thereafter at regular intervals determined by the Conference of the Parties, until the objective of the Convention is met.

The SBI at its sixth session requested the secretariat to make all the necessary preparations for COP 3 to consider the second review of the adequacy of Article 4.2,

subparagraphs (a) and (b), and invited COP 3 to place on the agenda for COP 4 the second review of Articles 4.2, subparagraphs (a) and (b) of the Convention (FCCC/SBI/1997/16,

para. 34 (c)).

The COP may wish to draw on the first compilation and synthesis of second national communications of Annex I Parties (FCCC/SBI/1997/19 and Add.1) and its review by the SBI at the latter's seventh session.

(e) Review of information and possible decisions under Article 4.2(f)

The SBI at its sixth session recommended that COP 3 undertake a review of available information, in accordance with Article 4.2 (f), with a view to taking decisions regarding amendments to the lists in Annexes I and II to the Convention (FCCC/SBI/1997/16, para. 34 (d)).

Article 4.2(f) of the Convention provides that the Conference of the Parties shall review, not later than 31 December 1998, available information with a view to taking decisions regarding such amendments to the lists in Annexes I and II as may be appropriate, with the approval of the Party concerned.

So far submissions that are relevant to Article 4.2(f) have been received in connection with the specific cases of the Czech Republic, Slovakia and Turkey. These cases are explained below. In addition, lists of countries to be subject to quantified emission limitation and reduction objectives (QELROs) are being considered in the AGBM.

Czech Republic and Slovakia

At its second session, the COP considered a request from the Czech Republic and Slovakia that the name of Czechoslovakia be deleted from Annex I to the Convention, and that the names of the Czech Republic and Slovakia be included in its place. The COP requested the secretariat to seek a legal opinion from the United Nations Office of Legal Affairs and report to the Parties to the Convention in due course through the SBI (FCCC/CP/1996/15, para. 10).

The opinion provided by the Office of Legal Affairs was conveyed to the SBI at its fifth session. In that opinion the depositary discounted the use of the correction procedure as not applicable for the inclusion of the two countries in Annex I to the Convention. An amendment procedure under Article 16 of the Convention was considered too cumbersome for the envisaged change. The SBI took note of the opinion and decided to recommend that the COP take up the request from the Czech Republic and Slovakia when it comes to review the lists in

Annexes I and II to the Convention (FCCC/SBI/1997/6, para. 36).

Turkey

On 21 May 1997, Pakistan, at the request of Turkey, submitted a proposal to delete the name of Turkey from the lists of Parties included in Annexes I and II to the Convention through the review process envisaged in Article 4.2(f). Another request to delete the name of Turkey through the review process envisaged in Article 4.2(f) was submitted by Azerbaijan on

28 May 1997. (The deletion of the name of Turkey from the list of Parties included in

Annexes I and II to the Convention will also be considered under item 4 (Amendments to the Convention and its Annexes, see FCCC/SBI/1997/15)).

The COP is invited to commence the review of the lists in Annexes I and II to the Convention at this session, taking into account the discussions on annexes in other subsidiary bodies and on the basis of information provided by the Czech Republic and Slovakia and the proposals from Pakistan and Azerbaijan.

(f) Other matters relating to implementation

Any other matters relating to implementation of the Convention may be considered by the COP under this sub-item.

4. Amendments to the Convention and its Annexes

Article 15.1 provides that "any Party may propose amendments to the Convention" and Article 15.2 provides that "amendments to the Convention shall be adopted at an ordinary session of the Conference of the Parties. The text of any proposed amendment to the Convention shall be communicated to the Parties by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate proposed amendments to the signatories to the Convention and, for information, to the Depositary". Article 16 relates, *inter alia*, to the amendment of Annexes by application of the procedure set out in Article 15.

In accordance with the above provisions, Parties have submitted three proposals to amend the Convention and its Annexes. As indicated below, the proposed amendments were sent out to all Parties, signatories and, for information, to the Depositary (FCCC/SBI/1997/15).

(a) Proposal to amend Article 4.3

A proposal to amend Article 4.3 of the Convention was received from Kuwait on

2 June 1997 and communicated to all Parties, signatories and, for information, to the Depositary in a note verbale dated 4 June 1997.

(b) Proposal to amend Article 17

The Netherlands on behalf of the European Community and its member States submitted a proposal dated 23 May 1997 to amend Article 17 by the insertion of an Article 17 bis. The proposal was sent out to all Parties, signatories and, for information, to the Depositary in a note verbale dated 29 May 1997.

(c) Proposals to amend Annexes I and II

The proposals from Pakistan and Azerbaijan dated 21 and 28 May 1997 respectively, submitted at the request of Turkey, called for the deletion of the name of Turkey from the lists of Parties included in Annexes I and II to the Convention. The proposal from Pakistan made reference to Articles 4.2(f), 15.2 and 16.2; that from Azerbaijan was made in the context of Article 4.2(f). Their proposals were communicated to all Parties, signatories and, for information, to the Depositary in a note verbale dated 29 May 1997.

The SBI at its sixth session decided to conduct a preliminary exchange of views on the proposed amendments contained in document FCCC/SBI/1997/15 (FCCC/SBI/1997/16,

para. 34 (h)). An update on the discussions at the seventh session of the SBI will be provided in the report of that session.

5. Adoption of a protocol or another legal instrument: fulfilment of the

Berlin Mandate

At its first session, the COP by its decision 1/CP.1 agreed to begin a process to enable it to take appropriate action for the period beyond 2000, including the strengthening of the commitments of the Parties included in Annex I to the Convention (Annex I Parties) in

Article 4, paragraph 2(a) and (b), through the adoption of a protocol or another legal instrument. An open-ended ad hoc group was established to conduct the negotiations and ensure the completion of its work as early as possible in 1997, with a view to adopting the results at the third session of the Conference of the Parties. The AGBM will conclude its work at its eighth session in October 1997. A report on the work of the Ad Hoc Group on the Berlin Mandate will be given by the Chairman of the AGBM under item 3 (a)(iii) of the provisional agenda. The COP at its first plenary meeting on 1 December 1997 is expected to entrust the completion of the protocol or another legal instrument to a sessional Committee of the Whole.

The COP may wish to request the Chairman of the Committee of the Whole to present his status report on the work of the Committee to plenary on the morning of Friday, 5 December 1997. Decisions on further work, including the setting of time-limits on the work of the Committee of the Whole, could be decided at that meeting.

The report of the Chairman of the Committee of the Whole will provide a basis for the COP to adopt a protocol or another legal instrument.

6. High-level segment attended by ministers and other heads of delegation

The SBI, at its sixth session, recommended the holding of a high-level segment of the session from 8 to 10 December 1997 "to promote decision-making" and noted that it should be open to participation by ministers and other heads of delegation in all its meetings accompanied by senior advisers as necessary (FCCC/SBI/1997/16, para. 34 (g)).

A high-level segment to be attended by ministers and other heads of delegation has been scheduled for those recommended dates. Arrangements are being made for it in the light of the conclusions of the SBI at its sixth session and of further guidance received from the COP Bureau, and in consultation with the Government of Japan, host of COP 3.

The high-level segment will be opened by a representative of the host Government. It will also receive a message from the Secretary-General of the United Nations.

Ministers and other heads of delegation of Parties will have the opportunity to make statements at the plenary meetings on Monday, 8 December, and Tuesday, 9 December; meetings will be held for this purpose in the morning, afternoon and evening of these days. Representatives of observer States and organizations will also have the opportunity to make statements during this time.

In view of the number of Parties and the time available for statements during the ministerial segment, it will be necessary to limit the duration of each statement to some five minutes. Priority will be given to the scheduling of statements by ministers. Statements by observers will normally be scheduled towards the end of plenary meetings. The COP should set the time-limit for statements during the high-level segment at the start of the session, on the basis of the number of speakers inscribed on the list to be maintained by the secretariat. This would facilitate the preparation of statements for the following week. In order to allow all registered speakers to make their statements within the allocated time, it will be necessary for plenary meetings to start punctually.

The list of speakers for the high-level segment will be opened by the secretariat as from 28 October 1997 in Bonn during the sessions of the subsidiary bodies. The high-level segment will conclude with the adoption of a protocol or another legal instrument and may be followed by an initialling of the text or signature of a final act. Further information will be given in the update to this document (FCCC/CP/1997/1/Add.1).

7. Other matters

Any other matters for the attention of the COP will be taken up under this item.

8. Conclusion of the session

(a) Adoption of the report of the Conference of the Parties on its third session

A draft report on the work of the session will be prepared for adoption by the Conference at the end of its session. In accordance with established practice, the COP is invited to authorize the Rapporteur to complete the final report after the session, with the guidance of the President and the assistance of the secretariat.

(b) Closure of the session

The President will declare the closure of the session.

Annex

TENTATIVE SCHEDULE OF MEETINGS FOR THE THIRD SESSION OF THE CONFERENCE OF THE PARTIES*

DATE	PLENARY		COMMITTEE OF THE WHOLE
Monday, 1 December 10 a.m - 11 a.m.	Item 1 (a) (b) (c) (d) (e)	Opening of the session Statement by the President of COP 2 Election of the President of COP 3 Statement by the President Addresses of welcome Statement by the Executive Secretary	

11 a.m. - 1 p.m.	Item 2 (a) (b) (c) (d) (e) Item 3 (a) Item 2 (f)	Organizational matters Status of ratification of the Convention Adoption of the rules of procedure Adoption of the agenda Election of officers other than the President Admission of organizations as observers Review of the implementation of the Convention Reports of the subsidiary bodies and matters arising therefrom: • Statements by the Chairmen • Adoption of draft decisions • Identification of outstanding issues Organization of work • Establishment of a sessional Committee of the Whole • Allocation of items • Schedule of meetings		
3 p.m. - 6 p.m.	Item 2 (f) Item 3 (b) (c)	Continued Development and transfer of technologies Financial mechanism: report of the Global Environment Facility (GEF) to the Conference	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate (Committee of the Whole will convene immediately after the completion of item 2(f) in plenary) (possible extension to 8 p.m.)

* Subject to decisions on allocation of items to the Committee of the Whole.

DATE	PLENARY	COMMITTEE OF THE WHOLE

Tuesday, 2 December 10 a.m. - 1 p.m.		Informal consultations	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate
3 p.m. - 6 p.m.		Informal consultations	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate
Wednesday, 3 December 10 am. - 1 p.m.	Item 2 (g) (h) Item 3 (d) (e) (f) Item 4	Calendar of meetings of Convention bodies, 1998-1999 Date and venue of the fourth session of the Conference of the Parties Second review of the adequacy of Article 4.2 (a) and (b) Review of information and possible decisions under Article 4.2(f) Other matters relating to implementation Amendments to the Convention and its Annexes	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate
3 p.m. - 6 p.m.		Informal consultations	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate
Thursday, 4 December 10 a.m. - 1 p.m.		Informal consultations	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate
3 p.m. - 6 p.m.		Informal consultations	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate

Friday, 5 December 10 a.m. - 1 p.m.	Item 2 (f) Item 7	Stock-taking and decisions on further organization of work, including setting time limits on the work of the Committee of the Whole and any consultations. Status reports by the Chairman of the Committee of the Whole and by officers entrusted with informal consultations. Other matters	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate (after plenary)
3 p.m. - 6 p.m.		Informal consultations	Item 5	Adoption of a protocol or another legal instrument: fulfilment of the Berlin Mandate

DATE	PLENARY		COMMITTEE OF THE WHOLE	
Saturday, 6 December 10 a.m. - 1 p.m.		Informal consultations		To be decided
3 p.m. - 6 p.m.		Informal consultations		To be decided
Monday, 8 December 10 a.m. - 1 p.m.	Item 6	High-level segment attended by ministers and other heads of delegation Statements at the opening of the high-level segment Statements by ministers and other heads of delegation		
3 p.m. - 6 p.m.		Statements (continued)		To be decided
7 p.m. - 10 p.m.		Statements (continued)		To be decided

Tuesday, 9 December 10. a.m. - 1 p.m.	Item 6	Statements (continued)	To be decided
3 p.m. - 6 p.m.	Item 6	Statements (continued)	To be decided
7 p.m. - 10 p.m.	Item 6	Statements (concluded)	To be decided
Wednesday, 10 December 10 a.m. - 1 p.m.	Item 2 (i) Items 2, 3 and 4	Adoption of the report on credentials Adoption of outstanding decisions	
3 p.m. - 6 p.m.	Item 5 Item 8 (a) (b)	Adoption of a protocol or another legal instrument [Possible initialling of the instrument or signature of a final act] Conclusion of the session Adoption of the report of the Conference of the Parties on its third session Closure of the session	

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1. Further information on the organization of the high-level segment of the session, an update arising from the outcome of the October sessions of the subsidiary bodies of the Conference of the Parties, and the list of documents for the third session of the Conference will be issued in an addendum to this document after the October sessions.

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U.S. DELEGATION TEAM TO THE COP-3
Final as of 11-25-97

Senior Negotiating Team

Stuart E. Eizenstat, Under Secretary for Economic, Business and Agricultural Affairs, Head of Delegation
Ambassador Thomas Foley, American Embassy Tokyo, Alternate
Melinda L. Kimble, Acting Assistant Secretary for Oceans and International Environmental and Scientific Affairs (OES), Co-Alternate
Rafe Pomerance, Deputy Assistant Secretary, OES, Co-Alternate
Ambassador Mark G. Hambley, OES, Co-Alternate

White House Team (11)

Katie McGinty
Todd Stern
David Sandalow
Bill Antholis
Dirk Forrister
Natalie Wymar
Elliot Diringer
Lucia Wyman
Nicholas Lapham
Jonathan Adashek
Tom Peterson

Negotiation Team

Department of State

Daniel Reifsnyder, Director of Global Change, OES
Jonathan Pershing, Deputy Director of Global Change, OES
Susan Wickwire, Foreign Affairs Officer, OES
Sue Biniaz, Legal
Evan Bloom, Legal
Mario Merida, Economic

EPA
Jane Leggett-Emil, OPPE
Claire Breidenich, OPPE
Bill Hohenstein, OPPE
David Doniger, OAR
Sharon Saile, OAR

DOE
Linda Silverman
Abe Haspel
Rick Bradley
Debbie Stowell
Bill Breed

USDA
Carol Whitman

DOD
Roy Salomon
Chris Weaver

USAID
Jeff Seabright
Leslie Cordes

Treasury
GEF expert – to be named

Justice
Jim Rubin

NOAA
Dan Albritton or Tom Karl

Department of Labor
Bill Samuels or Ed Montgomery

Executive Assistant/Special Assistant Staff

Department of State
Peter Bass, Economic Affairs
Jim Desler, Special Asst. to E (possibly also Carolyn Keene)
Rodrigo Prudencio, Global Affairs
Barbara DeRosa-Joynt, OES (also, see logistics)
Victoria Greenfield, Economic and Business
Mark Lambert, East Asia Pacific Bureau
Jack Schick, Intelligence and Research
Bob Boynton, Am. Embassy-Beijing

Department of Treasury
John Gruber

U.S. United Nations
Burgess Laird

U.S. Initiative on Joint Implementation (USIJI)
Bob Dixon
Paul Schwengels

Management of Outside Constituencies

Department of State
Susan Gordon, OES (Front Office)
Susan Povenmire, OES (Press Relations)
Arthur Green (Foreign Press Relations; on loan from USIA)
Peter Yeo, Legislative Affairs
Julie Norton, Legislative Affairs
Linda Strachan, OES (Congressional Relations)

Logistical Support Team

Department of State
Barbara DeRosa-Joynt, OES
Charles Parish, OES
Franz Wuerfmannsdobler, OES
Angela Barber-Wilson, OES
(3 staff from conference coordination)

Senior Policy Advisors

David Gardiner, EPA
Jeffrey Hunker, Commerce
David Hales, USAID
Mark Mazur, DOE (may not be final decision)
Bob Boorstin, Treasury
Charlie Rawls, USDA

Please note that this list does not include the official USIA/USIS staff, nor the staff of the American Embassy in Tokyo and the Consulate in Osaka.

Biography

Stuart E. Eizenstat
Under Secretary of State for Economic, Business and Agricultural Affairs

On June 6, 1997, Stuart E. Eizenstat was sworn in as Under Secretary of State for Economic, Business and Agricultural Affairs. The Under Secretary serves as the senior economic official at the Department of State. He advises the Secretary on international economic policy and leads the work of the Department on issues ranging from trade and aviation negotiations to bilateral relations with major partners such as Japan and the European Union. Ambassador Eizenstat retains his title and responsibilities as Special Envoy for Property Claims in Central and Eastern Europe.

From April 5, 1996 to June 6, 1997, Ambassador Eizenstat was Under Secretary of Commerce for International Trade. At Commerce, Under Secretary, Eizenstat led the U.S. Department of Commerce's International Trade Administration, which has responsibility for promoting U.S. exports, assisting American business efforts abroad, enforcing laws against unfair trade practices and developing trade policy.

Eizenstat served as the U.S. Representative to the European Union (The United States Senate confirmed the nomination on July 30, 1993 and the Ambassador presented his credentials in Brussels on September 23, 1993). At the time of his nomination, he was Partner and Vice Chairman of the law firm, and Chairman of the Washington office, of Powell, Goldstein, Frazer & Murphy, where he had been since 1981. He concurrently served as Adjunct Lecturer at the John F. Kennedy School of Government at Harvard University, Cambridge, Massachusetts, and was a Guest Scholar at the Brookings Institution in Washington.

From 1977 to 1981, Mr. Eizenstat served as President Carter's Assistant for Domestic Affairs and Policy and Executive Director of the Domestic Policy staff at the White House. In 1976, he had joined the Carter Presidential campaign full-time as Director of Issues and Policy; after the election, he became the Carter-Mondale Transition Planning Group's Director for Policy, Planning and Analysis.

From 1968 to 1970, Mr. Eizenstat worked in Atlanta as law clerk to U.S. District Court Judge Newell Edenfield, Northern District of Georgia, and, from 1970 to 1976, as attorney and partner, Powell, Goldstein, Frazer & Murphy. Ambassador Eizenstat has written extensively in leading newspapers, magazines, and legal publications, and co-edited a book, *The American Agenda.*

At the time of his nomination as Ambassador, Eizenstat sat on the boards of such non- profit organizations as the Weizmann Institute of Science, The Jerusalem Foundation, Brandeis University, Council on Foreign Relations, Council for Excellence in Government Center for National Policy, Overseas Development Council, International Management and Development Institute (Jerusalem), American Jewish Committee, and the UJA Federation of Greater Washington, and was chairman of the Feinberg Graduate School of the Weizmann Institute. He also was on the Board of Directors of Hercules Incorporated, PSI Energy, Inc., and the Israel Discount Bank of New York.

In 1996, at the conclusion of his service as U.S. Ambassador to the European Union, Ambassador Eizenstat received from Secretary of State Warren Christopher the highest award which can be given to a non-career Ambassador, the Foreign Affairs Award for Public Service.

Stuart Eizenstat was born in Chicago in 1943. He is an honors graduate in political science of the University of North Carolina at Chapel Hill and received his law degree from Harvard University in 1967. His distinguished career in government began during his university years, when he spent three summers (1963, 1964, and 1966) working as an intern for both the legislative and the executive branches of the Federal Government. In 1967-68, he served as a staff aide in the Johnson White House and in 1968 as Research Director for Vice President Hubert Humphrey's Presidential Campaign.

His biography appears in Who's Who in America, Who's Who in American Lawyers, Who's Who in American Jewry, Who's Who in World Jewry, who's Who Among Intellectuals, Who's Who in American Politics, and Who's Who in the World. He has received numerous awards throughout his years in public service, including the Export Enhancement Award, U.S. Coalition for Employment Through Exports, 1993; Israel Bond Award, 1992; Jewish Leadership Award, the Academy of Jewish Religion, 1989; Man of the Year Award from the National Capital Association of B'nai B'rith Lodges, 1982; U.S. Department of Labor Award for Special Contributions to Youth Employment, 1980; Award from the Washington International Business Council, 1978; and Young Man of the Year Award for Leadership, American Association for Jewish Education, 1973-74.

Ambassador Eizenstat is married to Frances Carol Eizenstat and is the father of two sons, Jay and Brian.

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Biography

Melinda L. Kimble
Acting Assistant Secretary of State,
Oceans and International Environmental and Scientific Affairs (OES)

Melinda Kimble assumed responsibilities as Acting Assistant Secretary on August 18, 1997. She also serves as the Principal Deputy Assistant Secretary for Oceans, International Environmental and Scientific Affairs (OES) since in August 1997. OES develops and implements U.S. policy on international science and technology, fisheries, oceans, and global environmental issues.

Previously, Ms. Kimble served as Deputy Assistant Secretary in the Bureau of International Organization Affairs, where she oversaw U.S. policy toward a wide range of economic and social issues in the United Nations. In this capacity, she developed the U.S. negotiating strategies for recent UN conferences, including Cairo, Copenhagen, and Beijing.

Kimble is a career Foreign Service Officer, joining the Department of State in January 1971. She was promoted to the Senior Foreign Service in 1989, and promoted to the rank of Minister Counselor in 1993. Before assuming her current position, Kimble was the Director of the Office of Egyptian Affairs in the Near East and South Asia Bureau. From 1987 to 1989 she served as the Deputy and Acting Director of the Office of Monetary Affairs in the Economic and Business Bureau. She has also served in Tunisia, Egypt, and Cote d'Ivoire as well as in the Africa Bureau in Washington.

Kimble has bachelor's and master's degrees in economics from the University of Denver and a master's from Harvard. She is a recipient of the Department of State's Meritorious and Superior Honor Awards, senior performance pay, a Presidential Performance Award, an award from the Global Alliance for Women's Health, and an International Honor Award from the U.S. Department of Agriculture. Her foreign languages are Arabic and French. She is married to James R. Phippard, a former career AID official, and has four grown stepchildren.

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RAFE POMERANCE
BIOGRAPHICAL NOTE

Mr. Pomerance was appointed as Deputy Assistant Secretary of State for Environment and Development in June 1993. In that capacity, he serves as a senior policy advisor to the Department on matters related to global climate change, ecology and pollution. He currently heads the US delegation to negotiations on Climate Change and to the Biodiversity Convention and oversees State Department's effort on a number of environmental issues.

Prior to his appointment to the Department, Mr. Pomerance served as a Senior Associate at the World Resources Institute from 1986 to 1993. While at WRI, his work focused on the scientific and policy issues associated with global climate change and ozone depletion. Mr. Pomerance participated in the negotiations of the Montreal Protocol on Substances that Deplete the Ozone Layer and in the work of the Intergovernmental Panel on Climate Change, and the International Negotiating Committee on Climate Change which developed the climate change convention signed at the Rio Summit.

Prior to joining WRI, Mr. Pomerance was President of Friends of the Earth, where he created a partnership between U.S. and Canadian NGOs working on acid rain. During the 1970's, Mr. Pomerance was the coordinator of the Urban Environment Conference, a coalition of environmental, labor and minority organizations, and coordinator of the National Clean Air Coalition. Mr. Pomerance graduated from Cornell University in 1968 with a BA in History. Upon graduation, Mr. Pomerance served as a VISTA volunteer. Mr. Pomerance is married to Lenore Markwett Pomerance and has three children: Benjamin Cooley, 23; Lilah Pomerance, 18; and Ethan Pomerance, 14.

Biographic Information on
Ambassador Mark G. Hambley,
U.S. Special Representative to the
UN Commission on Sustainable Development
and Special Negotiator on Climate Change

A native of the State of Idaho, Mr. Hambley was raised in Canada and the Midwest before undertaking his university education at The American University, the University of California (Los Angeles), and Columbia University. He also studied at New York University and the American University of Beirut. He entered the Foreign Service in 1971 and has been a member of the Senior Foreign Service since 1989.

Following duties in Saigon, Mr. Hambley specialized in Middle Eastern affairs and was posted to Beirut, Amman, Sanaa, Tunis, Tripoli, Jeddah, Cairo, and Alexandria. Assignments in the Department of State have included stints in the Near Eastern Bureau and the Bureau of Public Affairs, in addition to his current duties with the Bureau of Oceans and International Environmental and Scientific Affairs. He served as Consul General at both Alexandria and Jeddah. He was the U.S. Ambassador to the State of Qatar during the Gulf war and later served as the U.S. Ambassador to Lebanon. He assumed his current position as Special Representative to the UN Commission on Sustainable Development in February 1995 and joined the negotiating team on climate change the following June.

Ambassador Hambley has been the recipient of several governmental and civic awards from both the U.S. and from countries where he has served. These include two Meritorious Honor Awards, the Director General's Award for Reporting, and the U.S. Navy's Superior Public Service Medal. He is a Life Member of the National Geographic Society and a Fellow of the Royal Geographical Society, in addition to membership in other professional associations. His languages are Arabic and French. He is married and currently resides in Washington, D.C., although he maintains a permanent residence in California.

February 1997

Kyoto & the 3rd Conference of the Parties

UN Framework Convention on Climate Change

General Logistical Information

Top page
Total Index
Guide to Kyoto
Traveler's Information
Hotel List

KYOTO TAKARAGAIKE PRINCE HOTEL

PHOTO **TEL:** 075-712-1111 **FAX:** 075-712-7677

Access
5 min. walk from subway KOKUSAI KAIKAN Stn.
3 min. walk from Kyoto International Conference Hall(KICH)

Check-in 12:00
Check-out 12:00
Restaurants
Japanese, European and Chinese
Number of Rooms: 322
Single:None Twin:252 Double:42 Suite:28
Credit Card
JCB / UC / DINNERS / DC / MC / VISA / AMEX

Hotel Map Here!

Takaragaike Sakyo-ku, Kyoto

Top page
Total Index
Guide to Kyoto
Traveler's Information
Hotel List

ANA HOTEL KYOTO

PHOTO **TEL:** 075-231-1155 **FAX:** 075-231-5333

Access
15 min. by taxi from JR Kyoto Stn.
3 min. walk from subway NIJO-JO MAE Stn.
18 min. by subway (transfer at Karasuma Oike Stn.) from Kyoto International Conference Hall (KICH)

Check-in 13:00
Check-out 12:00
Restaurants
Japanese, European and Chinese
Number of Rooms: 303
Single:42 Twin:222 Double:30 Suite:6 Japanese:3
Credit Card
JCB / UC / DINNERS / DC/ MC / VISA / AMEX / NICS / BC etc.

Hotel Map Here!

Nijo-jo-mae, Horikawa, Nakagyo-ku, Kyoto

Top page
Total Index
Guide to Kyoto
Traveler's Information
Hotel List

INTERNATIONAL HOTEL KYOTO

PHOTO **TEL:** 075-222-1111 **FAX:** 075-231-9381

Access
15 min. by taxi from JR Kyoto Stn.
3 min. walk from subway NIJO-JO MAE Stn.
18 min. by subway (transfer at Karasuma Oike Stn.) from Kyoto International Conference Hall (KICH)

Check-in 13:00
Check-out 11:00
Restaurants
Japanese and European
Number of Rooms: 278
Single:39 Twin:198 Double:13 Suite:11
Japanese Style:19
Credit Card
JCB / UC / DINNERS / DC / MC / VISA / NICS / BC etc.

Hotel Map Here!

Nijo-jo-mae, Horikawa, Nakagyo-ku, Kyoto

Top page
Total Index
Guide to Kyoto
Traveler's Information
Hotel List

HOLIDAY INN KYOTO

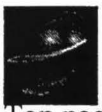
PHOTO **TEL:** 075-721-3131 **FAX:** 075-781-6178

Access
20 min. by taxi from Kyoto Stn.
10 min. by taxi from Kyoto International Conference Hall (KICH)

Check-in 14:00
Check-out 12:00
Restaurants
Japanese, European and Chinese
Number of Rooms: 270
Single:51 Twin:219
Credit Card
JCB / UC / DINNERS / DC / MC / VISA / AMEX / NICS etc.

Hotel Map Here!

Takano Nishihiraki-cho, Sakyo-ku, Kyoto



Direct Flights To KANSAI International Airport (KIX)

Top page
Total index
Traveler's Information

***FROM KIX ONLY**

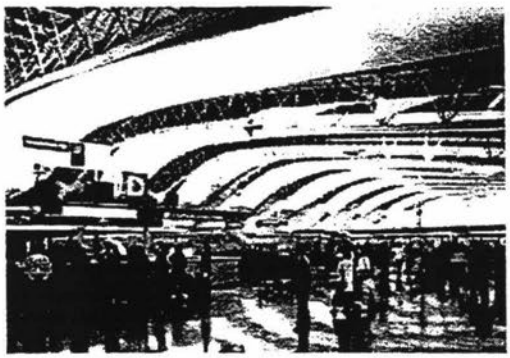
AMERICA

FROM	CARRIER	FLIGHTS/WEEK
CHICAGO(ORD)	NW	7
DENVER(DEN)	UA	7
DETROIT(DTW)	NW	7
HONOLULU(HNL)	UA	7
HONOLULU(HNL)	NW	14
HONOLULU(HNL)	JL	14
LOS ANGELES(LAX)	TG	3
LOS ANGELES(LAX)	NW	7
LOS ANGELES(LAX)	UA	7
LOS ANGELES(LAX)	JL	7
LOS ANGELES(LAX)	VP	2
MEMPHIS(MEM)	NW	7
MINNEAPOLIS(MSP)	NW	7
NEW YORK(JFK)	UA	7
NEW YORK(LGA)	NW	7
NEW YORK(LGA)	UA	7
SAN FRNCISCO(SFO)	UA	7
SAO PAULO(GRU)	VP	2
SEATTLE(SEA)	NW	7
TORONTO(YYZ)	AC	3
VANCOUVER(YVR)	AC/NH	7
WASHINGTON D.C(DCA)	NW	*

Transport

The five-storied pagoda of Toji Temple, a symbol of the city, and Kyoto Tower (right)

Kyoto has many modern hotels with accommodations for up to 20,000 visitors. Located near the center of Japan, it is readily accessible by land and air. The high-speed Shinkansen (bullet train) links Tokyo with Kyoto in 2 hours and 15 minutes. Overseas visitors arriving at Kansai International Airport have a comfortable 75-minute ride by the Haruka Express train to Kyoto Station.
Kyoto has a well-developed public transportation system of trains, subways and buses. Extensions to the Kyoto subway system will provide a direct link from Kyoto Station to the Kyoto International Conference Hall in the near future. Travel within the city will become even more convenient with the completion of a new east-west subway line that is currently under construction.



Kansai International Airport, which opened in 1994, represents the latest in modern technology.

The Haruka Express, linking Kyoto with Kansai International Airport via Osaka in 75 minutes.

Information on Kyoto

Top page
Total Index
Guide to Kyoto

History Culture

The City of Kyoto was founded as "Heiankyo" in 794 A.D. It flourished as the capital of Japan for approximately 1,000 years and was the birth site of a broad variety of culture and tradition. Even after the transfer of the capital to Tokyo with the Meiji Restoration of 1868, Kyoto maintained its position as Japan's center for culture and tradition. It is the home of various national treasures worthy of global pride as well as many historical buildings and traditional arts and crafts. Kyoto is known as the "spiritual home of the Japanese," and it is often said that without knowing Kyoto, it is impossible to grasp the true essence of Japan. The number of universities, high schools, and research facilities is also comparatively high, and in addition to protecting tradition, the city is constantly nurturing new art and culture.

Geography

Kyoto Prefecture is long and narrow, stretching down towards the South. The City of Kyoto is located in the southern area of the prefecture and is surrounded by mountain ranges on three sides. The northern areas of Kyoto Prefecture are located on the Sea of Japan and often have quite a bit of snow in the winter. Both central Kyoto Prefecture, and southern Kyoto, including the City of Kyoto itself, are blessed with plentiful and beautiful nature.

Climate

Summary

The Japanese climate is clearly distinguishable into the four seasons of spring, summer, autumn and winter. There are two major climatic regions, the Pacific side, which features humid summers and dry winters, and the Japan Sea side which, due to heavy winter snows, has relatively high humidity all year round.

Spring
March-May

Cold weather continues through early March. April and May are generally very pleasant.

Summer
June-August

Summers are usually very hot and humid. June through July is the rainy season known in Japanese as "tsuyu."

Autumn
September-November

Starting late September, morning and nighttime temperatures begin to fall. From early October humidity levels generally drop and the weather is quite pleasant. Generally, heating is required from November.

Winter
December-February

This is the coldest time of the year, and even in the city, it snows several times a season.

Industry

The City of Kyoto, having garnered an indispensable position in the Keihanshin (Kyoto, Osaka, Kobe) economic block, is the home of a variety of industries from traditional crafts to ultra-modern businesses and maintains a very important position as the center for business and industry within Japan.

Population

Kyoto Prefecture has a population of 2.6 million people, approximately 1.45 million of which live within the city limits.

Kyoto's rich and colorful history, combined with its geographic and climatic factors, has created a city with a very unique blend of tradition, culture, and industry.

Kyoto was laid out in a grid design with the Imperial Palace located at its center. The city was modeled on Chang-an (modern-day Xian), the capital of the Tang Dynasty of China. The surrounding areas are named according to their relative positions, Rakuchu for central Kyoto, Kitayama for northern Kyoto, Higashiyama for eastern Kyoto, and Nishiyama for western Kyoto.

The Kamo River which flows from north-south through the middle of the city serves as a useful frame of reference point. The areas alongside the river bank have been developed into parks, walking trails, and playing fields. Thus, the riverside is a favorite spot of both citizens and visitors to relax within the city.

Divided by region, some of the most popular sites throughout Kyoto are as follows :

Rakuchu (Downtown)

In addition to the Imperial Palace, Nijo Castle is a famous site located in Rakuchu site. Built as the Kyoto residence of Shogun Tokugawa Ieyasu, Nijo Castle represents a beautiful example of Edo-period architecture. A unique attraction is the squeaking floors called gthe nightingale floors," which alerted the residents of unwanted intruders. The grounds of the castle are also well-maintained and provide a charming atmosphere to take a relaxing stroll.

Kitayama

Kinkakuji Temple, also known as The Golden Pavilion, is located north of the Imperial Palace in Kitayama. It was originally constructed in the 14th century. The present building is a reconstruction that represents a classic example of Muromachi-style architecture.

Higashiyama

Located in Higashiyama, Kiyomizu Temple provides a breathtaking view of the whole city and the mountains showing different beauties in each season. The temple, originally built in the 8th century, provides a classic example of Buddhist architecture in the Heian period. One of the most impressive aspects of the main building is its veranda, which is built over a steep cliff with a long drop. The area around Kiyomizu Temple is also known for its pottery dating back to the 8th century.

Nishiyama

Arashiyama, located in western Kyoto, is a picturesque and romantic place to visit in the Nishiyama area. You can enjoy a variety of temples, boat rides along the river and animals in their natural habitat.

Kyoto in December

Top page
Total Index
Guide to Kyoto

Overall Conditions

The first frost of the winter usually occurs in mid-November, and the first snowfall, one month later in mid-December. It is rare, however, for snow during this month to stay on the ground. With high atmospheric pressure and strong seasonal winds blowing from the northwest, it is often the case that we feel colder than it is. The air is dry at this time of the year, and the sun often shines during the day. In recent years, the temperture has become comparatively high.

Climate & Weather

The following figures, provided by the Japanese Government Weather Bureau, represent averages for the period of 1961 -1990.

Temperature

Average temperature in December: 6.5℃
Average daytime high: 11.3℃
Average nighttime low: 2.3℃

Precipitation

Average rainfall in December: 39.8 mm
Average rainfall in June (rainy season): 246.7 mm

Number of days with more than 1mm rainfall: 5.9
Number of days with more than 10mm rainfall: 1.5

Weather

Average weather conditions in December are as follows:
Sunny: 15 days
Cloudy: 7.3 days
Rainy: 7.7 days
Snowy: 1 day

Sunrise,Sunset

Sunrise: approx. 7 a.m.
Sunset: approx. 5 p.m.

As Kyoto City area is situated in the basin, surrounded by mountains on three sides, the time stated above slightly varies. The sun sometimes rises later, and the sun sets earlier, because it is located in the basin.

Living Conditions

During winter, atmospheric pressure is high, and there is a strong seasonal wind from the northwest. A thick coat, scarf and gloves are recommended. All hotels, restaurants and trains are heated, however, it is useful to bring light clothing that can be easily taken off when not needed. In addition, as the air is quite dry and influenza is often prevalent at this time of the year, the participants are advised to take care not to catch cold.

Other Important Information

Congressional Contacts

Lucia Wyman - White House, Legislative Affairs
456-6620

Julie Norton - Department of State, Legislative Affairs
647-8732

Linda Strachan - Department of State, OES, Legislative Affairs
647-3550

Press

UNFCCC Press Contact - Michael Williams (Conference Spokesperson). He is currently at the UN Framework Convention on Climate Change Secretariat in Bonn 011-41-22-979-9242. The UN Secretariat will begin operations on November 26th in Kyoto.

USIS Press Contact - Authur Green. He can now be reached at 202-647-4029 at the Department of State until November 13th. John Ohta, USIS, can then be reached at the same number from November 17th - 28th. They will be in Kyoto as of November 30th.

The Internet & Information

For official documents from the UNFCCC web site -
http://www.unfccc.de. Click on the circle (COP3, December, Kyoto).

For the official U.S. Government Kyoto Homepage -
http://www.usia.gov

For general information about Kyoto -
http://www.joho-kyoto.or.jp/~lsc-cop3/

For imformation from the Japanese Tourist Office -
http://www.jnto.go.jp

Japan: Country Profile

Office for Japanese Affairs U.S. Department of State, Washington, D.C. 20520

Japan is an archipelago consisting of more than 3,000 islands. The four principal islands, running from north to south, are Hokkaido, Honshu (the largest), Shikoku and Kyushu. Further south are the Ryukyu Islands, which include Okinawa. In terms of total land area, Japan is slightly smaller than California, though the country is divided into 47 prefectures, each governed by a popularly elected governor and legislature.

Japan's population is currently about 125 million, and the population growth rate is well under one percent. Education is compulsory through the ninth grade, and the literacy rate is estimated at 99 percent. Life expectancy is about 76 years for males, and 82 years for females.

Japan is a parliamentary democracy based on a 1947 constitution. Under this constitution, the Emperor is the symbol of state and has no executive authority. Executive power is exercised by a cabinet, composed of a prime minister and ministers of state, which is responsible to the Diet, Japan's bicameral parliament. Members of the Diet, elected by universal suffrage and secret ballot, designate the Prime Minister, who must be a member of that body. The judiciary is independent of the executive and legislative branches of government.

Japan's industrialized free market economy is the world's second largest. Japan is the world's largest foreign aid donor, a major source of world capital, and a technology leader in many fields. The economy is highly efficient and competitive in areas linked to international trade, and provides the Japanese with a high standard of living. After achieving one of the highest economic growth rates in the world during the 1970s and most of the 1980s, the economy slowed dramatically in the early 1990s. In recent years, the United States' economy has grown faster than Japan's.

Japan is the second largest trading partner of the United States, after Canada, and the largest market for U.S. agricultural products. However, Japan continues to have a large global current account surplus and a large trade surplus with the United States. U.S.-Japan relations have been complicated in recent years by Japan's slowness to remove barriers to the import of highly-competitive goods and services, although important progress has been made.

Politics and Government in Japan

Office for Japanese Affairs U.S. Department of State, Washington, D.C. 2050

Japan is a constitutional monarchy with a parliamentary government. The country's constitution took effect on May 3, 1947 during the American occupation of Japan following World War II. Under the constitution, Japan has universal adult suffrage with a secret ballot for all elective offices. The government consists of an executive branch responsible to the legislative branch and an independent judicial branch. Sovereignty, embodied in the emperor before World War II, is now vested in the Japanese people; the emperor defined as the symbol of the Japanese state.

The national parliament, or Diet, is composed of two houses: a House of Representatives (lower house) of 500 members and a House of Councillors (upper house) of 252 members. Executive power is vested in a cabinet composed of a prime minister and ministers of state, all of whom must be civilians. The prime minister must be a member of the Diet, usually the lower house, and is designated by his colleagues. The prime minister has the power to appoint and remove ministers, a majority of whom must be Diet members.

Japan's judicial system, which draws upon Western traditions of customary law, civil law and Anglo-American common law, consists of several levels of courts, and the Supreme Court is the final judicial authority. The constitution includes a bill of rights similar to the United States Bill of Rights, and the Supreme Court enjoys the right of judicial review. Japanese courts do not employ a jury system, and there are no administrative courts or claims courts. Court decisions are made in accordance with legal statutes; only Supreme Court decisions have any direct effect on later interpretations of the law.

Japan does not have a federal system, and, unlike U.S. states, its 47 prefectures are not sovereign entities. Most depend heavily on the central government for subsidies. Governors of prefectures, mayors of municipalities, and prefectural and municipal assembly members are popularly elected for four-year terms.

In the lower house of the national Diet, 300 members are elected in single-member districts and another 200 members are elected on proportional slates in 11 regions. Lower house members serve for four years, or until the prime minister dissolves the Diet, whichever comes first. In the upper house, 152 members are elected in prefectural districts, while 100 are elected in nation-wide proportional balloting. Upper house members serve for six years. The lower house is the more powerful of the two parliamentary houses. If the upper and lower houses differ on the choice of prime minister, the lower house takes

Environment in Japan

Office for Japanese Affairs U.S. Department of State, Washington, D.C. 2050

An island nation, modern Japan has proven to be one of the most resource-efficient countries in the world. A population of over 125 million people live on only 145,856 square miles of land, an area smaller than the state of California.

Japan possesses no significant energy or mineral deposits. It imports virtually all of its energy supplies, primarily from the Middle East, and is one of the most efficient users of energy among the world's advanced industrial nations. However, Japan remains a major producer of greenhouse gases, which cause the depletion of the ozone layer and global warming.

Most of Japan is mountainous and thus not suitable for agriculture or commercial forestry. As the world's largest importer of timber, Japan is primarily supplied by companies that harvest as far away as Central America. Overfishing of many local commercial species and increasing levels of coastal marine pollution have forced Japan's fishing fleet, the largest in the world, far afield in search of food. There is widespread international concern about Japan's policy of continued scientific whaling in the face of the conservation program of the International Whaling Commission.

The rapid industrialization and economic development of Japan during the 1950s and 1960s was accompanied by severe air pollution and marine degradation. Several environmental disasters, such as the outbreak of the Minamata disease, caused by chemical offshore dumping, resulted in public outrage, and in 1970, the parliament created the National Environment Agency. Japan currently has some of the strictest environmental regulations of any industrialized nation in the world, and the quality of Japan's environment has improved in recent decades.

Each year, Japan provides much support to environmental protection projects around the world through their international aid programs and non-governmental organizations. As demonstrated by its role as host of the December 1997 Conference on Global Climate Change in Kyoto, Japan has taken the lead in recent years in the area of climate control. Under the 1993 Common Agenda initiative, the United States and Japan formed the "Environment Policy Dialogue," through which the two nations consult regularly on global environmental issues.

Japanese Etiquette

Office for Japanese Affairs U.S. Department of State, Washington, D.C. 2050

Japanese attach much importance to proper behavior and etiquette, which have developed in order to allow relationships to be as smooth and free of tension as possible. Tradition, form and protocol are highly valued.

Greetings

Japanese customarily bow to each other rather than shake hands upon meeting. However, most Japanese accustomed to dealing with foreigners expect to shake hands with them and are rarely embarrassed when a foreigner offers his hand. A frequently used compromise is a handshake accompanied by a slight bow. Japanese do not mind being touched in impersonal situations like a subway car, but they seldom prefer anything more than a handshake in a personal situation.

Communication

Most Japanese are addressed by their last name. The title *san* is attached to all names, male and female. It is a sexless combination of Mr., Mrs., and Ms. Another title you may often hear used is *sensei* (sen-say) used for teachers, elders, artists, politicians or others in respected positions.

Japanese are generally very soft spoken; using a quiet tone while speaking will be appreciated. Japanese are at ease with long pauses in conversation, and tend to stand rather far apart during conversation. When Japanese try to make a point, they usually start around the edges and lead into the main point carefully. Americans, on the other hand, usually state their main point first and then back it up until they feel the point is made.

Name Cards

Proper handling of name cards, or *meishi*, is important in Japan. When offered a name card in a meeting, accept it with both hands, examine it for a few seconds, then place it on the table or desk. The name card should be kept out for the entire meeting, for it is considered rude to ignore name cards.

Tips

Tips are rarely expected in Japan. You should not tip in taxis, restaurants or hotels; in fact, Japanese frequently refuse to accept tips even when offered. Hotel and restaurant bills generally include a 10-15 percent service charge.

Shoes

You may wear your street shoes into all Western-style restaurants and office buildings. However, at traditional Japanese restaurants, private homes, and many temples and other tourist sites, you will be expected to remove your shoes before stepping inside.

Dining

The place of honor in a traditional Japanese dinner party is directly in front of the *tokonoma*, an elevated alcove which usually contains a scroll hanging on the wall and an ornament or flower arrangement on the floor. At the beginning of the dinner, the host will raise his cup in a toast (*kampai*) to all present.

Useful Phrases

Japanese is spoken almost without stress or emphasis on syllables or words.

Good Morning	*Ohio-go-zye-mas*
Good Day	*Con-nee-chee-wa*
Good Evening	*Com-ban-wa*
My name is...	*Wa-ta-she-wa...*
What is your name?	*O-na-my-wa?*
Pleased to meet you	*Do-zo-yo-ro-she-koo*
How are you?	*O-gen-key-des-ka?*
Fine, thanks	*Gen-key-des*
Thank you	*A-ree-ga-tow-go-zai-mas*
You're welcome	*Do-ee-ta-she-mash-tay*
Good Bye	*Sa-yo-na-ra*
Yes ('I hear you,' *not* necessarily 'I agree')	*High*
No	*Ee-yeh*

U.S.-Japan Security Relationship

Office for Japanese Affairs U.S. Department of State, Washington, D.C. 20520

The United States and Japan have maintained a strong security relationship for nearly half a century. During the American occupation of Japan from 1945 to 1952, the U.S. assumed full responsibility for Japan's defense, stationing thousands of military personnel in Japan and taking control of all Japanese land, sea and air bases.

On January 19, 1960, the two governments signed the Treaty of Mutual Cooperation and Security, which provides the basis for a close relationship between the two governments and their defense establishments. There are approximately 100,000 U.S. military personnel deployed in the Asia-Pacific region today, and over 40,000 are in Japan, including about 28,000 in Okinawa. Under the terms of the Security Treaty, these troops contribute to the defense of Japan and to the maintenance of international peace and security in the region.

Japan's Self Defense Forces (SDF) have gradually expanded capabilities and assumed primary responsibility for immediate conventional national defense. The SDF mission, which the United States supports, is to defend Japan's homeland, territorial seas and skies. As a matter of policy, Japan has forsworn nuclear armaments and forbids arms sales abroad. A bilateral agreement signed in 1983, however, allows the export of Japanese defense and dual-use technology to the United States.

Despite changes in the post-Cold War strategic landscape, the U.S.-Japan alliance continues to be based on shared vital interests: stability in the Asia-Pacific region; the preservation and promotion of political and economic freedoms; support for human rights and democratic institutions; and the securing of prosperity for our two peoples and the other peoples of the region.

The security relationship between the two countries covers a broad range of cooperation, including close and frequent consultations by senior officials on key security issues; the development and production of defense equipment and armaments; Japan's Host Nation Support, which helps defray the costs of maintaining U.S. forces in Japan; and bilateral planning, training, and exercises. In order to minimize the impact of the activities of U.S. forces on Okinawa, Japan and the U.S. are working through the Special Action Committee on Okinawa, established in 1995, to return land, adjust training and operational procedures, and implement noise reduction initiatives.

Clinton Presidential Records
Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a tabbed divider. Given our digitization capabilities, we are sometimes unable to adequately scan such dividers. The title from the original document is indicated below.

Divider Title: **D**

1961 to 1997 - memories of Diana - Princess of Wales

News From the 50 St
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National Section: news, background and Web resources on the topics of national interest.

National Breaking News: 24-hour-a-day updates in the Today's Top News section.

All National stories from this morning's Washington Post.

Consensus Emerges Earth Is Warming -- Now What?

By Joby Warrick
Washington Post Staff Writer
Wednesday, November 12, 1997; Page A01
The Washington Post

SANBORN, N.D.—First of four articles

The latest projections call for 100 years of warming in this wind-whipped prairie town -- a forecast that goes down easy in a place where snow drifts can halt mail delivery for weeks at a time. If the greenhouse effect means fewer frozen fingers and frozen cows, townsfolk here say bring it on.

"Even a little warming would be nice," said Postmaster Karen Aus, whose domain includes a grain mill, a few dozen clapboard houses and 270 souls. In fact, some government computers are predicting a lot of warming -- steadily milder temperatures that could lengthen the growing season and very gradually bring new opportunities for farmers in the frigid Northern Plains.

But the same computers warn of other possible effects that would be anything but mild. Towns such as Sanborn could eventually see even bigger blizzards and worse floods -- possibly separated by searing droughts, the projections show. Some townspeople believe they've already witnessed the future after a year that set an all-time record for snowfall -- 112 inches in Sanborn's Barnes County -- followed by catastrophic floods that put Red River Valley cities under water.

"I'm convinced it's global warming -- but I don't know exactly what it's supposed to mean," retired farmer Henrik Voldal said of the recent turns in the weather. "I just know it sure as hell has been strange."

The enormous range of possible outcomes -- from modest boon in some spots to total

disaster in others -- is one reason global warming continues to spark heated debates in Sanborn and other towns and cities around the world. Despite major improvements in computer models, scientists can't yet say how quickly the Earth will warm or how severe the impacts in any given region would be.

But overlying the uncertainty is a broad scientific consensus on the fundamentals of the warming forecast. Global warming is real, a large majority of scientists agree -- and to assume the effects will be mild or even beneficial is a gamble, at best. On balance, a rapid change in the Earth's climate is likely to do far more harm than good, according to many of the nation's most prominent atmospheric scientists.

"There's a better scientific consensus on this than on any issue I know -- except maybe Newton's second law of dynamics," said D. James Baker, administrator of the U.S. National Oceanic and Atmospheric Administration. "Man has reached the point where his impact on the climate can be as significant as nature's."

In the decade since the global warming debate began in earnest, new technology and an enormous amount of new data have narrowed the disagreement on the most important questions surrounding the changing climate. Two years ago, a panel of more than 2,000 of the world's top climate scientists concluded that the Earth was indeed warming and that the "balance of evidence suggests a discernible human influence" on climate. Based on that assessment, the United States and more than 150 nations will gather next month in Kyoto, Japan, to try to reach an agreement on curbing the pollutants blamed for global warming.

The bulk of the recent evidence -- from rising sea levels and retreating glaciers to the recent freak storms in the Dakotas -- appears to be falling in line with scientists' predictions of what the effects of greenhouse warming would look like. No other theory can fully explain the range of changes being observed around the globe, say scientists at NOAA and other institutions at the cutting edge of climate research.

But major gaps in knowledge remain, and they continue to fuel scientific sparring in trade journals and on World Wide Web sites.

Scientists, for example, still can't produce a "smoking gun" that irrefutably links humans to global warming. The warming of the planet so far -- about 1 degree Fahrenheit in 100 years -- is still small enough to fall within the range of normal variability for a planet that has lurched in and out of ice ages for millions of years. A small part of that single degree of warming may have come from fluctuations in the sun's intensity, which can raise or lower the Earth's temperature in ways that are not fully understood.

Even the most powerful supercomputers models aren't yet sophisticated enough to predict local effects of warming. Nor can they fully account for clouds and other variables that might mitigate the effects or perhaps even amplify them.

Another decade of research is likely needed to solve some of global warming's most perplexing riddles. But as greenhouse gas concentrations soar to levels not seen since the dinosaurs, many scientists argue that the Earth's nations no longer can afford to wait around for answers.

"A major truth to retain here is that substantial change in fossil fuel emissions is required over the next half-century to keep atmospheric carbon dioxide from reaching a tripling over pre-industrial levels," said Jerry Mahlman, director of the Geophysical Fluid Dynamics Laboratory at Princeton University. "At even conservative estimates, a carbon-dioxide tripling would produce climate changes that are substantial by any measure."

There's nothing inherently sinister about greenhouse warming. You wouldn't be reading this sentence if it didn't exist.

In the atmosphere, water vapor, carbon dioxide, methane and other trace gases trap heat, functioning roughly the same way as glass panes in a commercial greenhouse. Without these "greenhouse gases," the Earth's average temperature would be an unlivable zero degrees Fahrenheit, instead of relatively balmy 60 degrees.

Collectively, these gases make up a small portion of the atmosphere. But their share is growing. Since the beginning of the industrial age, human-caused emissions of carbon dioxide have steadily increased in a pattern that

began with the cutting and burning of forests and accelerated with this century's explosion of automobiles, power plants and factories. Since 1750, the atmosphere's carbon component is up 30 percent. Greenhouse gases continue to rise by about 1 percentage point each year, with about a quarter of the gases coming from the United States alone.

How the Earth's climate responds to the additional carbon is complex, but the basic physics are well understood. "If you add these chemicals they will trap heat -- that's pretty hard to argue against," said David Rind of NASA's Goddard Institute for Space Studies in New York. "That fact by itself goes a long way toward convincing people that this is real."

Even at current levels, concentrations of greenhouses gases in the atmosphere are far higher than at any time since the appearance of modern humans on Earth. By the end of the next century -- as the human population doubles again to 11 billion or even more -- there will be two to three times as much carbon in the air as 250 years ago if emissions continue to rise at current rates.

In 1995, the more than 2,000 international scientists of the U.N.-sponsored Intergovernmental Panel of Climate Change predicted that the changes in the atmosphere will raise the global average temperature between 1.8 and 6.3 degrees Fahrenheit by the year 2100 -- an extraordinarily rapid increase by geological standards. By comparison, the average global temperature was only 9 degrees cooler at the height of the last ice age, when a half-mile of ice covered much of what is now the northern United States.

"Under business as usual, we'll reach carbon dioxide concentrations that haven't been seen on this planet in the last 50 million years," Harvard University professor and Nobel Laureate John Holdren told a recent White House conference on global warming. "We will have achieved that in the geological blink of an eye, exposing, as we do it, natural systems to a rate of temperature change faster than at any time in the last 10,000 years."

Scientists know that adding greenhouse gases to the atmosphere will eventually cause the planet to warm. The big questions are how -- how much, how fast, and how the warmth will be distributed.

Possible clues are being found in implausible places. Scientists from NOAA and other agencies are mining Antarctic ice sheets, mountain glaciers, ocean sediments and ancient coral reefs for chemical evidence of temperature and atmospheric conditions from tens of thousands of years ago. The research is yielding a steady flow of data that reflects the climate's sensitivity to past fluctuations in carbon dioxide.

Other clues are found in places such as Moon Lake, a popular fishing spot near Sanborn that was created by a retreating glacier more than 12,000 years ago. Scientists dug deep into the black mud of the lake bed and discovered a well-preserved geological record dating to the last ice age. The silicate remains of microscopic creatures, deposited in layer after layer, act as a crude precipitation index, distinguishing relatively wet periods from drier ones.

In telling the story of the lake, the microbes offer a glimpse into previous warm-weather patterns in the past 2,000 years. One finding, according to Queens University ecologist Kathleen R. Laird, was that warmer periods coincided with droughts more profound than any seen in the region's recorded history. Some dry spells lasted more than a century.

"The droughts were more extreme -- with more intensity than the Dust Bowl -- and they were more frequent," Laird said.

Several studies have predicted that crop yields would remain stable or possibly increase in the Northern Hemisphere. Many formerly frozen areas would become arable, and higher levels of carbon dioxide -- a necessary plant nutrient -- could stimulate the growth of crops. But the Moon Lake record supports computer projections that show dryer patterns emerging in America's breadbasket. One computer model predicts a loss of soil moisture of more than 20 percent in the Great Plains and southeastern United States if carbon dioxide levels double. Under quadrupled carbon dioxide, soil moisture losses climb to 50 percent and even higher.

Other parts of the globe could experience different, but equally disruptive effects, scientists say. In some regions, changes may already be underway.

A few scientists maintain that increased precipitation at the poles would lead to larger ice sheets and subsequently lower sea levels. But most models forecast further melting of glaciers and Arctic ice, which could raise the sea level anywhere from a few inches to several feet. Already, sea level is four to nine inches higher than a century ago. If it climbs by another meter, as some computers predict, thousands of square miles of coastal Florida and Louisiana could be swallowed up, as well as large chunks of Bangladesh and many island nations. Increased water vapor in the atmosphere could cause an increase in severe storms, computer projections show. Records compiled at NOAA's National Climate Data Center in Asheville, N.C., show a 10 percent increase in precipitation in the United States since 1910, with much of it coming in large doses: downpours and blizzards.

Warmer weather would surely mean fewer deaths from cold and ice. On the other hand, there likely would be more killer heat waves such as the one that killed 465 people in Chicago in 1995. A rapid change in climate could also place unusual stresses on animal and plant ecosystems, hastening the extinction of rare species. Insects and microorganisms generally thrive in warmer climates, and could spread to new areas. Most of the predicted changes would occur in the latter half of the next century, a time when the human population will be twice what it is now.

"If you double the number of people, you stress the resources even more," said NOAA's Baker. "Add global warming on top of that, and there will lots more losers than winners."

Accurately predicting even one day's weather can be a daunting task, as any TV weathercaster knows. To make the kinds of long-term projections needed to forecast climate change requires truly extraordinary computing power. And still it may not be enough.

At NOAA's Geophysical Fluid Dynamics Lab at Princeton, the technological muscle is provided by a Cray C90 Supercomputer, a liquid-cooled, aluminum-encased, battlestar of a machine that contains two dozen processors and row after row of hard drives. The C90 has as much processing memory as 256 top-of-the-line personal computers and can

perform 15 billion operations in a single second.

Using computer models that simulate atmospheric processes, machines such as the C90 can reliably forecast major climatic events, such as an El Nino~. They accurately predicted the global cooling that occurred after the Mount Pinatubo volcano erupted in 1991, spewing ash into the upper atmosphere. These are the same models that are used to predict the effects of warming, and they're getting better all the time.

"These are not Johnny-come-lately calculations," said Daniel L. Albritton, director of NOAA's Aeronomy Laboratory in Boulder, Colo. "These models are two decades old, and they've been constantly improved and modified. And they consistently give the same answers."

But even today's most advanced computers still cannot match the complexity of the Earth's climate. Humans don't yet fully understand -- nor can computers simulate -- how clouds form in the atmosphere. That's important, because scientists believe warmer temperatures will increase cloud cover throughout the world. More clouds would reflect more of the sun's rays and may offset some of the warming.

A similar mystery surrounds tiny aerosols, or bits of dust and man-made soot that create haze in cities. Some of these particles can also reflect solar radiation so that, in effect, human pollution ends up heating and cooling the planet at the same time.

Many climate scientists believe that aerosols have masked some of the warming that computer models predict should have occurred by now. Princeton's Mahlman believes the slow-but-sure increase in greenhouse gases is now beginning to overwhelm the aerosol effect in a kind of tortoise-and-hare race.

But another natural process may also have helped keep warming in check. About half of the carbon dioxide people emit each year doesn't end up in the atmosphere but simply disappears, apparently absorbed by the oceans, microbes and plants in ways that aren't fully understood.

This vanishing act has caused some scientists to suspect that nature is more forgiving of

human excesses than previously believed -- at least to a point. These scientists are part of a small but persistent minority that remains skeptical of claims that humans have already caused the planet to warm. They point to 20 years of satellite measurements that so far do not show the kind of temperature increases that land-based thermometers have recorded.

NASA's Roy Spencer believes the traditional, land-based measurements have been skewed by city buildings and concrete that absorb heat and make temperatures artificially high. He also questions the reliability of temperature data that come from sea-bound ships and developing countries which, he says, "have a rather poor reputation for providing information of sufficient quality."

Other scientists argue that the satellite record could also be flawed -- it is based, after all, on a relatively small amount of data from two satellites -- and it may be misleading as well. "The satellites don't measure the same thing. They sense temperatures two to five miles above the Earth's surface," Albritton said. "You'd expect the result to be different."

Albritton and other prominent climate experts are even more derisive of claims that tiny changes in the sun's intensity may account for a significant share of the temperature change in the last century. Mahlman dismisses that theory -- which House Speaker Newt Gingrich (R-Ga.) recently invoked in criticizing President Clinton's climate change policy -- as "nutty science."

"There is no evidence -- no measurements whatsoever," Mahlman said. "Implicit . . . is the assertion that the Earth is extraordinarily sensitive to tiny variations in solar radiation -- Miracle No. 1 -- and also extraordinarily insensitive to much greater changes in the infrared [greenhouse] balance -- Miracle No. 2. . . . A grand jury would throw it out in 20 minutes."

To Albritton, the continuing debate over satellite measurements and possible solar influence makes for interesting discussions in scientific journals but may not even be relevant in the long run. The search for conclusive proof of a human link to global warming in the past century is "somewhat of a distraction -- looking for a one-degree needle in a hay stack."

"What's more important are the potential consequences," he said. "We're going to double the amount of carbon dioxide in the atmosphere -- it's just a matter of when. And the consequences of doubling is more than a mere half-degree Celsius."

He added: "Once that stuff is in the atmosphere, there's no way to get it back."

ABOUT THE SERIES

* TODAY - What Science Knows: While there is broad scientific consensus that the Earth is warming, and human behavior is at least partly to blame, important questions remain, including the precise impact of climate change.

* THURSDAY - Calculating the Costs: Automakers, utilities and other industries argue that drastic greenhouse gas emission reductions would have devastating economic effects. Environmentalists say it can be done with little economic pain. The truth, economists say, probably lies somewhere in the middle.

* FRIDAY - Resisting Change: Reducing greenhouse gases to counter global warming could require individuals to change the way they live in many ways. But changing behavior on a large scale has always been difficult, especially when the potential gain is long term.

* SATURDAY - Global Disagreements: Getting the nations of the world to agree on anything is never easy. Getting countries to agree to a coordinated response to global warming presents a unique set of challenges. Each nation brings its own economic, political and environmental perspectives to the issue.

A MOVEMENT SLOWLY HEATS UP

In the 1970s, revelations about rising concentrations of carbon dioxide in the atmosphere prompted a new interest in global warming among scientists and environmentalists. Since then, several significant developments and events have led up to next month's climate conference in Kyoto, Japan.

1988

The United Nations and World Meteorological Organization appoint a group of international

scientists -- the Intergovernmental Panel on Climate Change (IPCC) -- to investigate global warming.

1990

The first IPCC report forecasts a doubling of carbon dioxide levels and predicts an increase in temperatures of 1.5 to 4.5 degrees Celsius over 100 years. The report warns of a possible rise in the sea level as well as extreme floods and droughts that could threaten food and water supplies.

1992

Nations gather in Rio de Janeiro for the first Earth Summit and agree to set goals for reducing emissions of greenhouse gases. The United Nations Framework Convention on Climate Change rejects mandatory cuts and calls for nations to voluntarily reduce pollution to 1990 levels by the year 2000.

1993

President Clinton, in an Earth Day speech, embraces the goal of reducing U.S. greenhouse gas emissions as promised in Rio. But it soon becomes clear that the United States, like many other industrialized countries, will fall far short of the mark. Economic growth, consumer apathy and cheap gasoline prices cause U.S. emissions to rise sharply.

1995

A second IPCC report concludes that global warming has already begun -- and humans appear to be at least partly to blame. The 2,000 scientists predict a wide range of environmental and health effects unless aggressive steps are taken to reduce heat-trapping gases.

1996

More than 120 nations meet in Geneva to endorse the IPCC report and to call for accelerated talks on a legally binding treaty on cutting greenhouse gases. Four more rounds of negotiations are held in Geneva and Bonn, Germany, over the following year.

1997

June: A second U.N. Earth Summit in New

York fails to produce additional commitments on climate change. Clinton, in a speech, acknowledges the seriousness of the problem but refuses to accept a European Union proposal for aggressive cuts in heat-trapping gases. The EU calls for reducing emissions to 15 percent below 1990 levels by the year 2010, with trade sanctions and other penalties against countries that fail to comply.

Oct. 6: Japan proposes a more cautious plan that would roll back emissions to 5 percent below 1990 levels by 2012. European governments are critical of the proposal, but the United States voices cautious support.

Oct. 21: A group of 77 developing countries offers an aggressive proposal that seeks even deeper cuts from industrialized nations. Their plan would limit emissions at 35 percent below 1990 levels by 2020 -- restrictions that would not apply in their own countries.

Oct. 22: Clinton outlines the U.S. position on global warming, calling for relatively modest but legally binding cuts in pollution as well as incentives and tax breaks to encourage companies to reduce emissions early. The administration seeks to cap pollution at 1990 levels by 2012, with further, unspecified cuts to follow. Clinton insists that developing countries play a significant role in fighting global warming, a position opposed by many European and Third World governments.

Dec. 1-10: Diplomats to meet in Kyoto in hopes of signing the world's first international accord setting mandatory limits on greenhouse gases.

GLOBAL PERILS

The Earth will heat up by between 1.8 and 6.3 degrees Fahrenheit over the next century, according to an international panel of scientists. But exactly how global warming will affect people and wildlife in any given area is still highly uncertain. Here are some of the latest projections by the United Nations' Intergovernmental Panel on Climate Change.

THE WEATHER

Warmer and wetter -- but not everywhere. Scientists say higher temperatures could intensify the global hydrological cycle, leading to heavier rainfall and more frequent flooding

in some areas. Other regions could be plagued by chronic droughts as weather patterns change. Most of the planet could see an increase in the number of extremely hot summer days, although the greatest warming would occur in northern latitudes during winter.

SEA LEVEL

Heat causes water to expand, a fact that could account for a significant rise in sea levels over the next century. And if glaciers and polar ice sheets continue to melt, the oceans could claim an even bigger share of coastal real estate. The increase could be as little as six inches or as much as three feet -- a jump that would swamp large chunks of coastal Florida and Louisiana and displace 70 million people in Bangladesh.

WILDLIFE

Some species confronted by rapidly changing climates may be forced to move to new habitats, but others would likely be lost. In North America, for example, warmer weather could dry up prairie "pothole" wetlands that support 50 percent of the continent's waterfowl.

HUMAN HEALTH

Winter cold could be less lethal, but heat-related deaths and illnesses could increase in the summer months. So could respiratory problems from urban air pollution. Public health officials are worried that warmer weather could allow the spread of infectious and insect-borne diseases into new areas. One study predicts as many as 80 million additional cases of malaria worldwide each year.

AGRICULTURE

Despite greater rainfall totals in some areas, higher summer temperatures could result in a sharp drop in soil moisture. The losses could be most severe in continental interiors, such as America's Great Plains. But warming in the northern latitudes could also open new areas to agricultural production and make up for deficits elsewhere.

FORESTS

A third of the Earth's forests would likely undergo major changes, and in some regions

entire types of forests may disappear. Tree species can adapt to gradual changes in climate over time by colonizing new areas, but if the temperatures rise rapidly some species may be unable to keep up.

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Cures That Involve a World of Pain

By Martha M. Hamilton and Clay Chandler
Washington Post Staff Writers
Thursday, November 13, 1997; Page A01
The Washington Post

LAFOURCHE PARISH, La.—Second of four articles

Danny Duet, a fishing guide here, can point out the damage that rising waters inflict on a receding coastline. As he pilots his boat through a marsh, Duet gestures to the dead roots of the plants that once anchored the land, providing protection for fisheries, cities, oil and gas pipelines and hurricane evacuation routes.

Over the years, a combination of natural forces and man-made changes in the local environment has caused the water level to rise, wiping out more than 1,000 square miles of Louisiana land.

Over the past 40 years the water level has risen a few inches. But by some estimates, global warming could raise the sea level another six to 37 inches by the year 2100 as a warmer ocean expands and glacial melting increases. At the high end of that estimate, the city of New Orleans could be swamped.

That's one kind of bad news here, but there's another. If, to combat global warming, the United States joins other governments in agreeing to reduce the use of oil and gas, Louisiana's oil-based economy could be bruised. Jobs could be lost. Businesses could disappear.

Louisiana's predicament summarizes the many difficult environmental and economic trade-offs that representatives from industrial nations will confront when they meet next month in Kyoto, Japan, to seek a common response to the threat of global warming.

Failure by the Kyoto conferees to agree to reduce greenhouse gas emissions could be disastrous for the world economy, according to one group of participants in a raging debate over what to do about global warming. A coalition of environmentalists, scientists and political leaders argues that failure to take action to reverse the sharp rise in carbon dioxide emission levels will cause dangerous changes in the world's climate, ultimately wiping out major resources -- such as the valuable wheat-growing areas of the American Midwest, for example -- and not just a fishing camp or two in Louisiana.

On the other side of the argument, some business and labor interests ridicule the environmentalists as ill-informed doomsayers, and insist that even modest efforts to combat this threat could be economically devastating, particularly in the United States. They predict reductions in U.S. economic growth that would bring an abrupt end to current good times in this country.

Emission Controls Versus Growth

So far, the members of the European Union have been the hawks on carbon dioxide emissions, recommending that the Kyoto conference agree to reduce industrial nations' emissions to 15 percent below 1990 levels by 2010. Japan, host of the conference and eager to find a compromise, suggests a goal of reducing industrial nations' emissions to 5 percent below the 1990 level by 2012. President Clinton has proposed that the industrial nations restrict carbon dioxide to 1990 levels by 2012.

Opponents of controls -- led by an alliance of utilities, oil producers, auto manufacturers, labor groups and conservative think tanks -- argue that even Clinton's lower targets would drive energy costs up and do severe damage to the U.S. economy. They also say the science of global warming is too imprecise to justify such pain.

Recent analyses by three of the nation's best-known economic forecasting firms -- WEFA Inc., DRI/McGraw Hill Inc. and Charles Rivers Associates -- assert that by 2010, meeting Clinton's proposed targets could depress annual U.S. economic output as much as 3 percent, or roughly $250 billion a year;

add tens of billions of dollars to the nation's trade deficit; increase gasoline prices by as much as 50 cents a gallon; nearly double average electricity rates; and cost more than a million U.S. jobs.

Coal mining towns would be wiped out, energy-intensive industries would be forced to relocate to other countries, small businesses and residential consumers would have to cope with higher energy bills and U.S. exports would be more expensive, according to critics of proposed emissions controls.

Many academic economists charge the forecasters with twisting the assumptions of their models to suit the biases of the business groups and labor unions that commissioned the studies and that have a huge stake in the argument. Several of them, including the United Mine Workers, Ford Motor Co., the airline industry trade association and the American Petroleum Institute, have launched a multimillion-dollar ad campaign to warn of dire consequences if emissions are controlled.

Detractors fault the studies for failing to compare the costs of emission reduction measures with the economic costs of doing nothing to slow global warming. They also complain that the studies understate the extent to which the negative effects of higher energy prices could be softened by lower interest rates and relatively modest changes in tax and budget policies.

All hypothetical forecasts have to make assumptions, of course, which is why so few predictions ever come true. The United States made huge adjustments to the oil shocks of the late 1970s that temporarily transformed patterns of energy consumption in ways that were not foreseen. Some engineers and other scientists say similar results could occur again if new controls on emissions are imposed.

One analysis by Resources for the Future, an independent think tank specializing in energy and environmental issues, forecast that capping U.S. carbon dioxide emissions at 1990 levels could boost the energy costs of an average U.S. household by about 25 percent, including a 30 cents-per-gallon increase in gasoline prices. The average U.S. household spends about $2,571 a year on energy, according to the most recent government figures available.

The think tank's study concluded that such caps would probably curtail the nation's total economic output as much as 1 percent, and a worst-case outcome would be a decline of 2 percent.

So meeting Clinton's targets "wouldn't be disaster, but it would hurt," said Ray Kopp, a senior fellow at Resources for the Future. "The goal is doable, but we shouldn't kid ourselves: Reaching it will have a price."

Clinton administration officials are counting heavily on new technologies to keep the economic costs of reduced emissions to a minimum. The president has proposed spending $5 billion on tax incentives and direct investment to encourage research and development of new technology.

"Our goal is to have it both ways," said Energy Secretary Federico Pen~a, who said the government wants to save energy and control emissions without making consumers give up luxuries such as four-wheel-drive sport-utility vehicles.

A study by five national laboratories funded by the Department of Energy concluded that the nation could reduce emissions of greenhouse gases through technology without incurring huge costs or requiring major changes in the American lifestyle. The report said the costs of research and development of technology to reduce greenhouse gas emissions could be paid for -- in part or full -- by energy savings.

For example, if all the nation's buildings used the most energy-efficient windows, that could save the energy equivalent of a year's worth of oil production from Alaska's Prudhoe Bay, according to the study.

The study noted that between 1973 and 1986, when oil prices were high, the nation's economy grew by 35 percent with no increase in energy consumption, largely because businesses and households changed their habits and used new energy-saving technologies.

But when energy prices started falling again, many Americans forsook energy conservation. As of 1995, per capita energy consumption in the United States was 335.11 million Btus, or British thermal units, a standard energy measure. That's nearly double the 171.08 million Btus consumed per capita in Japan and

more than double the 140.02 million Btus per capita used in Western Europe.

It's the political -- not the economic -- consequences of increasing energy prices that scare U.S. policymakers, in the European view. "America is the land of the gas-guzzling `sport-utility vehicle' (this year's trendy car for the young and old alike), of washing machines that use four times more water than their European equivalents, of the `big is better' mind-set: all possible only because cheap energy is everybody's entitlement," wrote the London-based magazine The Economist last month.

However, a worker in a petrochemical plant on the Houston Ship Channel might see things differently. Increasing energy efficiency could offset some of the costs of meeting controls, but energy-intensive industries could still be hurt by the price increases that would accompany emissions controls.

One study estimated that U.S. chemical exports could decline as much as 7.2 percent -- or $22.3 billion a year -- if a global climate change treaty doubled U.S. energy prices. Who would gain? Chemical producers in Europe (where energy price increases are expected to be smaller) and in developing nations would be the beneficiaries, according to the Economic Strategy Institute, a Washington-based think tank funded by corporations, labor unions and foundations.

How the delegates in Kyoto will sort out the competing claims and projections remains to be seen. The fact that all participants are talking about plans with deadlines that are at least a dozen years off means that few of the political leaders at the meeting will be around to deal with the full consequences of an agreement.

Reducing Carbon Dioxide

Since the Industrial Revolution, U.S. economic growth and the use of fossil fuel have been intertwined. Until the 1973-74 Arab oil embargo forced Americans to take conservation seriously, the nation's gross domestic product and its use of electricity grew in tandem. From 1975 to 1995, the amount of energy used to produce each dollar of economic growth was reduced by nearly a third. Recently, however, falling oil prices and

a booming economy have helped push Americans' overall fuel consumption to record levels, offsetting efficiency gains. This consumption puts more carbon dioxide into the air, potentially contributing to global warming.

As a result, the United States is now the source of 25 percent of the world's carbon dioxide emissions. Just yesterday, the Energy Department forecast that U.S. energy use will rise 27 percent by 2020 because of strong economic growth and low electricity prices. That means U.S. carbon dioxide emissions will increase by 45 percent from 1990 levels if policies are unchanged, the department said.

So how to stop that from happening? Many participants in the debate believe economic incentives offer the best way to control greenhouse gases, and they cite past gains in energy efficiency that came in response to rising energy prices. One way to encourage wiser use of energy would be to make it more expensive with a carbon tax, they contend. The Clinton administration tried this approach in 1993 with its proposed "Btu tax" on all forms of fossil-fuel energy, but the idea went nowhere in Congress.

Now the administration is urging a system of internationally tradable carbon dioxide emissions permits modeled on a method used by U.S. electric utilities to reduce pollution as required by the Clean Air Act. In essence, the system would set an overall cap on carbon dioxide emissions, and sell or grant companies permits to release a fixed amount of carbon dioxide into the air.

Such an approach is based on the fact that some companies can reduce their emissions more cheaply than others. For example, a manufacturer that can switch easily from oil to natural gas might be able to meet a new emissions reduction target so easily that it did not need to use all the carbon dioxide permits it had bought or been allocated.

That company might then sell some of its authorized pollution rights to a utility company that found it cheaper to buy those rights than to invest in technology to reduce its own production of carbon dioxide. The net result is a savings for the utility, a profit for the manufacturing firm and the same overall emissions reduction -- at a lower cost than if both companies were compelled to meet an

ironclad target for reduced emissions.

This idea was incorporated into the 1990 Clean Air Act, which created salable emissions allowances for sulfur dioxide, the pollutant that contributes to acid rain. During debate on the bill, industry warned that reducing sulfur dioxide emissions could cost as much as $1,500 a ton. But several years after the act took effect, emissions allowances were trading at about $150 a ton. Businesses found new, cheaper ways to reduce emissions once they were given a compelling economic incentive to do so.

The more nations that participate in a system of tradable carbon dioxide permits, the more the costs of emissions controls would likely decline.

Here's why: In the rich, developed countries, reducing carbon dioxide emissions will be relatively expensive, because these countries tend to use modern technologies that are already quite energy-efficient. But poor, developing countries, because they still use antiquated technologies that burn energy inefficiently and create relatively big carbon dioxide emissions, can improve their situation dramatically with investments in up-to-date technologies.

To put it another way, a heavily polluting, old-fashioned steel plant in Russia could reduce carbon dioxide emissions much faster, and much more cheaply, than a modern steel producer in Japan that already uses the latest energy-saving technologies. So the Japanese firm might find it cheaper to help its Russian counterpart modernize in return for carbon dioxide emissions permits than to try to further reduce its own emissions in Japan.

However, managing and enforcing a global system of permit sales would be a daunting enterprise. For instance, the United States has gone to great lengths to try to get China to comply with international copyright and patent protections, with only modest success.

With or without carbon dioxide permits, the relative cost of any agreement reached at Kyoto will depend on its time frame. Gradual implementation, all sides agree, will give firms and consumers a chance to replace expensive equipment and appliances, such as factories, cars and refrigerators, as they wear out, which

would be less expensive than doing it prematurely.

The rich countries all favor plans with deadlines of 2010 or after. All of them fear that imposing stiff controls faster than that would create many more difficulties for their own economies.

Which Countries?

More than 150 nations will participate in the deliberations at Kyoto, including many developing nations that may not be included in any agreement reached there.

Even if negotiators agree on targets and timing, they will have a difficult time finding consensus on which countries a pact should cover. China, the biggest developing country, is one of many that argue that this first round of global controls should only apply to the rich nations. But many experts fear that a pact that ignores the developing nations won't meaningfully reduce greenhouse gases.

This is because the fast-developing poor countries -- China, India, Indonesia, Brazil and others -- are doing everything they can to achieve the economic growth that will result in burning more fossil fuel every year between now and 2010. By 2050, carbon dioxide emissions in China alone could approach the level of today's worldwide emissions, according to an estimate by Alan Manne, professor emeritus at Stanford University, and Richard Richels, an analyst at the Electric Power Research Institute, a utility-supported organization.

So increased fossil fuel consumption in the developing world could easily outstrip conservation in the rich countries. By 2010, developing nations are expected to be producing more greenhouse gases than rich nations.

"If [China] won't play ball, we should just pack it in. Forget it," said Joseph Goffman, of the Environmental Defense Fund, who concedes that the industrial countries have few tools for ensuring Chinese participation in a worldwide global warming agreement.

But the poorer countries argue it would be unfair to force them to curb emissions if this would mean slowing the economic growth they

need to lift living standards. In effect, developing countries say they are being asked to help pick up the tab for reckless economic development by rich countries in the past.

Allowing developing countries to opt out of a Kyoto agreement could create huge incentives for energy-intensive industries to relocate production to countries that aren't bound by it. Many U.S. firms might find the cheapest way to meet the Clinton emission targets would be to shift operations overseas. And since a ton of carbon dioxide emitted in Malaysia does the same damage to the atmosphere as a ton emitted in Maryland, the move would do nothing to slow global warming.

For this reason, congressional Republicans have vowed to reject any international global warming treaty excluding developing countries.

The View From Louisiana

While the debate continues at the policymaking level, its crosscurrents are also apparent closer to sea level. On the watery Louisiana coast, it's not just people who, like Danny Duet, depend on fishing who have a lot to lose from global warming. Erosion could also endanger miles of pipeline and expose gas wellheads and inland oil rigs to open seas.

On the other hand, control measures that hurt the oil and gas industry also could hurt state efforts to stop shoreline erosion. Funding for those efforts comes from oil, gas and gasoline taxes.

Does the prospect of global warming worry Duet? "It concerns us a lot," he said. "I don't know how to solve it, but I know it's a problem."

ABOUT THE SERIES

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Environmentalists say it can be done with little economic pain. The truth, economists say, probably lies somewhere in the middle.

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AT WHAT COST?

How much would it cost Americans to cap U.S. greenhouse gas emissions at 1990 levels? Economists' answers to that question vary widely depending on their assumptions: whether the emissions reductions would be phased in slowly or right away; whether energy-saving technologies would be developed quickly, slowly or not at all; whether U.S. economic growth would be strong or weak; whether developing nations, industrial nations or just the United States must try to reduce emissions.

Here are ranges of estimates showing the potential impact in 2010 of capping greenhouse gases at 1990 levels:*

Gross domestic product

Optimistic: No impact

Pessimistic: Reduction of growth by as much as 3 percent (or roughly $250 billion)

Jobs

Optimistic: No impact

Pessimistic: Loss of as many as 1.8 million

Gasoline prices

Optimistic: No change

Pessimistic: Increase of as much as 50 cents per gallon. (Current national average price is

about $1.24 a gallon.)

Electricity rates

Optimistic: No change

Pessimistic: Increase of as much as 2 cents per kilowatt hour. (The current average cost is 8 cents.)

* Assumes a 10-year adjustment period, moderate economic growth, minimal technological innovation, that U.S. efforts to curb emissions don't extend beyond its borders.

THE GREENHOUSE EFFECT

49% of the incoming energy of sunlight is absorbed by the Earth's surface and converted to heat.

Nearly all that heat is radiated upward and trapped in the lower atmosphere by water vapor and greenhouse gases -- which send it back to the Earth's surface.

Greenhouse gases: carbon dioxide, halocarbons, methane, nitrous oxide.

DEMANDING ENERGY

Lower U.S. energy prices in real terms have helped stimulate consumption bolstering the U.S.'s big lead in energy consumption:

Per capita energy consumption, in millions of British thermal units, 1995

U.S. 335.1

Japan 171.1

England 169.1

France 162.6

Brazil 33.4

Thailand 33.0

*One quad equals a quadrillion Btus (British thermal units)

SOURCE: Energy Information Administration

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The 60-Watt Mind-Set

Human Factors Hold Off Energy Efficiency

By Clay Chandler
Washington Post Staff Writer
Friday, November 14, 1997; Page A01
The Washington Post

Third of four articles

While leading a global warming symposium at Georgetown University last month, President Clinton let slip this small confession.

Sometimes, while reading in his White House living room late at night, he is "plagued by the example" of a single, energy-efficient light bulb. Just looking at the tiny globe above his head, apparently, is enough to remind the president that he should be doing more to protect the giant globe beneath his feet.

"Why am I so irresponsible that I have not put this in" every White House lighting fixture, Clinton said he wonders.

The question is more complex than it might seem, and goes to very heart of the president's chances of enlisting the rest of us in his effort to save the Earth from global warming. Implicit in his query is the idea that the solutions to the problem can be painless, and even beneficial.

However, that attitude makes many behavioral analysts cringe. The president, they say, is peddling a "feel good" solution that defies much of what we know about human nature -- that people are reluctant to trade away immediate benefits for fuzzy future gains, and are actually quite sophisticated in calculating their self-interest.

The light that pricked the president's conscience is a "compact fluorescent" and can be purchased at most major hardware stores. It

costs many times more than a standard, incandescent bulb, but burns 10 times longer and eats up far less power. A typical compact fluorescent can save as much as $50 in electricity costs over its lifetime compared with a 60-watt soft-white bulb, and consume the equivalent of 200 pounds less coal. That means the compact fluorescent generates less of the carbon dioxide that many scientists believe contributes to global warming. And yet, compact fluorescents are used in fewer than 2 percent of all the nation's residential light fixtures.

If every household in the country converted to compact fluorescents, Clinton admonished his Georgetown audience, "we'd pay more upfront, [but] we'd save money in the long run and we'd use a lot less carbon. And why don't we do it? Why do we have any other kind of light bulbs in our homes?"

As it turns out, there are myriad reasons we stick with power-hungry bulbs.

At the most basic level, the problem may be sheer inertia. An energy-hogging light bulb poses no immediate threat to our well-being. Even if every reputable expert had endorsed the theory of global warming and certified that its consequences will be catastrophic, the potential dangers would loom far off in the next millennium.

Environmental Defense Fund Executive Director Fred Krupp contends that, as homo sapiens, we aren't genetically programmed to deal with long-term challenges such as global warming -- despite our capacity for complex thought.

"The whole human defense mechanism is based on immediate threat," he argues. "As a species, we have grown so powerful that we . . . are changing the atmospheric chemistry enough to warm the Earth. And yet, as individuals, we aren't equipped to detect that -- especially if it comes at us in the form of hundred-page reports published by a committee of 2,500 scientists."

The complexity of the global warming threat presents a further hurdle.

Clinton has proposed that the United States and other developed nations help slow global warming by scaling back their greenhouse gas

emissions to 1990 levels over the next 13 years. For the United States, that target would require cutting back annual output of carbon dioxide, the dominant source of increased greenhouse gas emissions, by as much as 30 percent. Clinton's target implies a big reduction in Americans' consumption of three commodities that are the lifeblood of their economy: oil, coal and natural gas.

Even Americans who think of themselves as pro-environment may balk at such reductions in the absence of concrete signs that global warming is a problem.

"What people respond to are things that are directly in front of them -- things they can see and touch and smell," observes Democratic pollster Peter Hart. "Air pollution you can see. Garbage you can touch. Bad water you can smell. But global warming? It's so . . . abstract."

A series of focus groups conducted in San Francisco, Cleveland and Washington this year by analysts at the Alliance to Save Energy (ASE) lends credence to that view. The group, a nonprofit organization established to promote energy efficiency, found that most consumers lack even a rudimentary grasp of the science of global warming. Many confuse it with the depletion of the ozone layer. And few could distinguish between carbon dioxide emissions and sulfur dioxide emissions, which dirty the air but do not significantly contribute to the greenhouse effect.

Thus, ASE found it wasn't difficult for focus group members to accept the notion that cars, with their messy gas tanks and smelly exhaust pipes, might be adding to global warming. But few participants made the connection to their homes, even though the average house is responsible for more than twice the level of carbon dioxide emissions than the average car.

"It shocks people," said ASE Executive Vice President Mark Hopkins. "They say, `How can that be? My house doesn't give off smoke.' "

Perhaps not, but the utility companies supplying it with gas and electricity do.

Consider the case of Andrea Dean, a Northwest Washington resident who rails against gas-guzzling sport-utility vehicles and, ever since the D.C. government discontinued its

recycling program, dutifully trucks her old newspapers to a friend's driveway in Bethesda for pickup there. "The thought of all those papers dumped in a landfill somewhere -- I don't know, it just upsets me," she explains.

And yet, a quick tour of Dean's well-kept home reveals an uninsulated attic, drafty windows and a 20-year-old washer and dryer that guzzle power. ASE efficiency expert Bill Prindle, after an inspection, calculates that Dean's home needlessly dumps 11 tons of carbon into the atmosphere each year.

Of course, some people shrug off the prospect of a hotter planet because they doubt the science. Hart, in a poll conducted for the Wall Street Journal and NBC, found that only 28 percent of Americans regard global warming as a serious problem requiring an immediate response, while 9 percent said concern is unwarranted and a majority -- 59 percent -- said more research is necessary before taking any action.

The `Win-Win' Remedy

But even if Americans understood the theoretical connection between fossil fuels and global warming and acknowledged a potential threat, getting them to change their lifestyles would not be easy.

Like Jimmy Carter, who donned a cardigan sweater and urged Americans to turn down their thermostats, some die-hards in the global warming debate still preach austerity. The World Wildlife Fund's Web site on climate change, for example, features a "lifestyle test" that docks points for owning more than one car, using a dryer, taking long showers and even eating meat.

But Clinton and his allies are trying a different tack. Their mantra is energy "efficiency," not energy "conservation." Forget "sacrifice": The new buzz is about "win-win" solutions. Picking up on the projections of a contingent of upbeat engineers, Clinton has argued that, by taking full advantage of fuel-saving technologies and making a few modest adjustments to daily routines, Americans should be able to curb their appetite for carbon without substantial pain.

A study released by the Department of Energy in September would seem to support that view.

It found that the cost of developing the technologies necessary to reduce carbon dioxide emissions to 1990 levels by the year 2010 is "likely to be more than balanced by savings in energy bills."

But Harvard University economist Robert Stavins contends that the DOE study is "misleading" because it "says nothing about how you get these technologies onto the menu of things that firms and households can actually buy."

Stavins is among many economists, psychologists, marketing executives and political scientists who believe Americans can't realistically be expected to burn less carbon unless they are given new incentives: higher energy prices, new taxes or stricter laws.

Think about the way we drive. Thanks to new technology, our car and truck engines are far more fuel-efficient than their 1970s predecessors. And yet fuel consumption by motor vehicles is soaring. The reason? A gallon of gasoline now costs as little as a gallon of bottled water. And with no sign of future price increases, we demand engines that are fuel-efficient but also have extra horsepower. Then we put those engines in bigger vehicles that get fewer miles to the gallon, and we drive more miles than ever.

"We are not going to introduce these wondrous technological miracles unless people face higher energy prices," declared Yale University economist William Nordhaus at the Georgetown session. "Energy is too cheap to get us out of our utility vans, too cheap to make us look at all our systems. When will we change the light bulb? When it is economically imperative to do so."

Clinton scoffs at such pessimists, calling them "lemon suckers." And many engineers and efficiency experts complain that economists are blind to the fact that the market is made up of real people who sometimes fail to take advantage of genuine opportunities for savings.

"How many economists does it take to screw in a compact fluorescent lamp?" goes a favorite joke told by Amory Lovins, an Colorado-based efficiency expert. The punch line: "None, of course -- they assume the free market will take care of it."

Wary About Technology

The case of the president's reading light illustrates how sometimes these newfangled technologies are not all they are cracked up to be. Unlike the standard incandescent bulb, which costs as little as 69 cents, compact fluorescents typically cost about $12 -- and as much as $29 in some stores. And for all that money, compact fluorescents give off a pallid glow that many homeowners find disconcerting. They generally can't be used with dimmers. Even more annoying, the lights often take a second or two just to warm up.

In the early 1990s, officials at Potomac Electric Power Co. mailed out discount coupons entitling consumers in the District and Maryland to purchase compact fluorescents for as little as $2 each. At the lower price, the lights could easily have paid for themselves within a few months. But in a service area with nearly 7 million meters, only about 900,000 coupons were redeemed.

Many people and businesses are reluctant to spend a lot on energy efficiency, even when the long-term gains seem clear.

Jim Bosch, environment manager for Minneapolis-based Target Stores, remembers having a "very serious discussion with my builder" about installing a more a fuel-efficient heater in his new home.

"He was really focused on my getting a less expensive heater," Bosch recalls. "He said, `Do it your way and it's going to take you at least five years to get that money back.' I said, `Yep, and I intend to be here for 10.' There's an awful lot of that kind bird-in-the-hand kind of thinking out there."

Ellen J. Langer, a professor of psychology at Harvard University, argues that bird-in-the-hand thinking is often more sensible than it might seem. "We live in a culture that changes rapidly," she said. "Anything we do for the long term is subject to much greater risk. Future benefits, or dangers, may not occur as promised."

Langer, for example, still regrets her attempt years ago to cut costs by buying discount stockings in bulk at a military PX. It seemed a shrewd investment -- until a few months later, when nylons hit the market.

The calculus is similar for Andrea Dean. The ASE's "energy audit" indicates that she could reduce her annual utility bill by $1,029, or 31 percent, by insulating that attic, installing reflective windows and making other changes. But there's a catch: She'd have to spend thousands of dollars on those improvements, and would not fully recoup her investment for at least a decade. In the interim, lots could happen: She might move, she might find some more pressing use for all that money -- or she might discover that even newer technologies had made her actions obsolete.

Businesses often are more willing than consumers to tolerate high upfront expenses that are likely to result in long-term energy savings. Marriott Corp. has saved millions of dollars by switching to compact fluorescents in its hotels. But in an era of low energy prices, even the most cost-conscious businesses tend to shy away from energy-saving technologies without the prospect of quick payback.

"At a lot of big industrial firms, the attitude is, `We're looking for our investment back in about a two- to three-year range,' " said Brad Whitehead, who heads the North American environmental practice of McKinsey & Co., the big consulting firm. "It's not that these guys are stupid. With energy, you're talking about big decisions involving their core assets. Even a little bit of uncertainty is enough to make them wary."

University of Maryland economist Thomas C. Schelling (the Bethesda resident whose driveway is the destination of Dean's newspapers) urges a simple thought experiment to illustrate the difficulties of environmental planning for the far-distant future. Since global warming isn't expected to become a serious problem for another 75 years, Schelling proposes that we look 75 years into the past and attempt to imagine what would have been deemed the leading environmental problem by our ancestors in the 1920s. The answer, he suggests, probably would be mud.

"This was the era of muddy roads and narrow tires," Schelling writes in a forthcoming article about global warming in Foreign Affairs. "One might have thought, `If things get wetter or dryer, the mud problem will get worse or better.' It might not have occurred to us that by the 1990s most of the country would be paved

solid."

ABOUT THE SERIES

WEDNESDAY - What Science Knows: While there is broad scientific consensus that the Earth is warming, and human behavior is at least partly to blame, important questions remain, including the precise impact of climate change.

YESTERDAY - Calculating the Costs: Automakers, utilities and other industries argue that drastic greenhouse gas emission reductions would have devastating economic effects. Environmentalists say it can be done with little economic pain. The truth, economists say, probably lies somewhere in the middle.

TODAY - Resisting Change: Reducing greenhouse gases to counter global warming could require people to change the way they live in many ways. But changing behavior on a large scale has always been difficult, especially when the potential gain is long term.

SATURDAY - Global Disagreements: Getting the nations of the world to agree on anything is never easy. Getting them to agree to a coordinated response to global warming presents unique challenges. Each nation brings its own economic, political and environmental perspectives to the issue.

ENERGY-SAVING TIPS FOR THE HOME

Use compact fluorescent bulbs instead of incandescent light bulbs; turn off lights you don't need.

Don't block vents, heating units or dehumidifiers with furniture or drapes.

In summer, set your ceiling fan so that it pulls warm air up to the ceiling, away from you. In the winter, reverse it.

Close unnecessary openings when the air conditioner or heater is running -- windows, doors and fireplace dampers; close unused rooms and partially close vents.

Use weather-stripping, caulking and other energy-saving devices around outside doors and windows; install proper insulation for ceilings, floors, walls and heating ducts.

Inspect and maintain all heating and cooling systems; clean air filters, fresh air intakes, supply vents and return grilles.

Insulate your attic to save heating and cooling costs; make sure it has proper ventilation as well.

If you have a microwave, use it for reheating and cooking small quantities of food.

When buying a new appliance, choose one that saves the most energy. Unplug appliances during extended absences.

In winter, set thermostat at 68 degrees or lower, and at 55 degrees at night; in summer, set it at 78 or higher; consider installing clock thermostats to change settings automatically during the day.

Set your water heater thermostat to 120 degrees, or 140 degrees if you have a dishwasher.

Open refrigerator only when necessary and keep the coils clean.

Wait till you have a full load to operate your washer, dryer or dishwasher.

Turn off your furnace pilot light when the heating season is over.

Install water-saving devices in the shower, toilet, faucet.

Install white roofs to reduce the need for air conditioning.

SOURCES: Consumer Guide to Home Energy Savings, Pepco, Wisconsin Power and Light, California Energy Commission.

FUEL-EFFICIENT ... BUT BARELY SELLING

The 10 most fuel-efficient vehicles in the country, with generally small engines, account for only 0.7 percent of all vehicle sales, while the best-selling vehicles, many of which are light trucks with big engines, are on average much less fuel-efficient.

Average miles per gallon, highway

10 most fuel-efficient vehicles 41.3

10 top-selling vehicles* 25.7

Most fuel-efficient cars

Make/ Model

Geo/ Metro**

Volkswagen/ Golf

Volkswagen/ Jetta

Suzuki/ Swift

Volkswagen/ Passat

Volkswagen/ Passat wagon

Honda/ Civic**

Ford/ Aspire

*Ford F-Series, Chevrolet C/K Pickup, Toyota Camry, Ford Explorer, Ford Taurus, Honda Accord, Honda Civic, Chevy Cavalier, Dodge Ram Pickup, Ford Ranger.

**Two models of Geo Metro and Honda Civic are included in top 10.

SOURCES: Environmental Protection Agency, J.D. Power and Associates, Coalition for Vehicle Choice, Auto Facts International

A GALLON AROUND THE GLOBE

Gasoline costs in the United States are less likely to deter consumers from buying and driving big, fuel-hungry cars.

COST OF A GALLON OF PREMIUM GASOLINE*

In U.S. dollars, as of Oct. 13

Britain $3.80

The Netherlands $3.80

Italy $3.74

Belgium $3.69

France $3.62

Germany $3.57

Japan $3.20**

United States $1.39

*Includes taxes

** Price for regular gasoline (premium price not available)

SOURCE: Energy Information Administration

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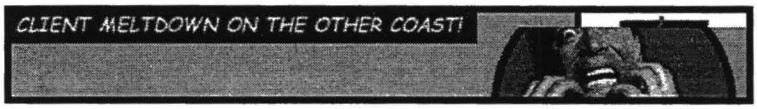

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All National stories from this morning's Washington Post.

The Challenge: Incorporating Many Nations' Needs Into One Treaty

By Kevin Sullivan and Mary Jordan
Washington Post Foreign Service
Saturday, November 15, 1997; Page A01
The Washington Post

BLAIR ATHOL, Australia—Last of four articles

Cranes with buckets big enough to hold a Ford Explorer scrape away at a wall of black coal at the bottom of Australia's biggest strip mine. Over and over, they fill trucks that look like Gulliver's playthings, with 170-ton payloads and tires that stand 10 feet tall.

Hundreds of times a day, the trucks grind their way out of the 250-foot-deep pit, dumping their coal into machinery that crushes and loads it onto trains, which haul it to ships bound for Japan. There, the coal fires a dozen power plants that provide electricity to millions of homes and offices.

Eleven million tons of coal a year are blasted out of this three-square-mile gash in the hot, red dirt of the Australian Outback. And this mine is just one of scores that make Australia the world's largest exporter of coal, with $6.5 billion a year in export earnings.

Australia's dependence on coal for money and jobs, and similar bottom-line realities around the globe -- from China's sprint to develop its heavy industry, to the hundreds of millions of gasoline-burning cars that roll off factory lines in the United States and Japan, to Brazilian and Indonesian farmers who clear land by torching vast timberlands -- are why it will be so difficult, some say impossible, to get the world to agree to a meaningful treaty at the upcoming United Nations "Climate Summit" in Japan.

More than 160 nations will meet in Kyoto next month to try to agree on measures to slow the

effects of carbon dioxide and other greenhouse gases, which scientists say are contributing to global warming that could eventually lead to rising sea levels, flooding, droughts and other dangerous changes in world weather.

Getting countries as diverse as industrial Ukraine and the tiny South Pacific island nation of Tuvalu to agree on any issue would be difficult. Getting them to agree to expensive, concrete solutions to a problem that is often difficult to see, hear, smell or touch will be a mammoth undertaking.

The issue is far more complex than a simple show of hands about who believes in saving the planet. Everyone wants clean air; no one wants to destroy the Earth. But each country brings to Kyoto its own economic, environmental and political conditions -- differences that so far have made deciding what is fair for all the countries impossible.

Developing countries such as China, Brazil and India are demanding a pass at this summit, saying richer nations that produce most of the world's greenhouse emissions must take the first steps to clean up. The United States and Australia say it is not fair or smart to exclude developing countries.

The European Union has proposed the most extensive cuts, reducing emissions by 15 percent from their 1990 levels by 2010. The United States and Japan have staked out positions in the middle, calling for a return to 1990 levels or slightly below over the next 15 years.

Economy vs. Environment

Nowhere is the economy vs. environment debate drawn in larger letters than in Australia. Although it is one of the world's most environmentally conscious nations, Australia's dependence on coal exports has placed it on the most conservative end of the spectrum, arguing that it is such a special case that it should be allowed to increase its emissions.

Australians have long been leaders in the anti-nuclear and anti-whaling movements, leaders in protection of the ozone layer and preservation of the Antarctic. The nation scrupulously guards its Outback and its unique wildlife, from koalas to the hairy-nosed wombat. It has extensive programs to protect

the Great Barrier Reef and its dazzling underwater world of 1,500 species of fish and 400 kinds of corals. Schoolchildren learn about the environment as part of their curriculum. "Eco-tourism," in which tourists learn to protect and understand the environment they are visiting, has become a multibillion-dollar business.

But Prime Minister John Howard has rejected all calls for binding targets for emissions reductions. He has argued vigorously that each nation's needs must be considered individually. Mandatory emissions cuts would immediately cost billions of dollars in lost revenue and tens of thousands of jobs, Howard says. He has also warned against huge price increases for gasoline, natural gas and electricity.

"The magnitude of the task that Australia would face would be grossly disproportionate to that faced by others," Howard said.

In addition to coal, Australia is also the world's leading exporter of alumina, diamonds, lead and zinc and the second-largest exporter of iron ore, aluminum and gold. Eighty percent of Australia exports involve products that contribute to global warming, including coal, oil, gasoline and iron ore. So Howard's most pressing concern is his nation's export market. If the world reduces its consumption of coal, iron or other emissions-intensive materials, Australia's economy would suffer.

Australia is also worried about the greenhouse gases it produces at home, even though it is responsible for only about 1.4 percent of the world's carbon dioxide emissions. The government has already taken steps to make domestic industry more efficient -- more than 50 major companies are participating in a government-backed program to reduce their emissions.

But Australia has had trouble selling its climate position to the rest of the world -- or even to its neighbors. Australia and 15 small Pacific island nations make up the South Pacific Forum, which faced its first truly divisive moment in its 27-year history when it took up global warming at its meeting in September. Many of the island nations, tiny places such as Kiribati and Tuvalu, where islanders earn their living mainly by fishing and gathering coconuts, rest less than six feet above sea level. Their residents worry that they

will eventually be swallowed by the rising sea; they say they already see the effects of melting glaciers causing seas to swell.

Environmentalists are enraged by Howard's position, saying that he is simply protecting rich, established industries and ignoring the potential economic benefits of investing in solar power or other more energy-efficient technologies.

"The current government would like to see Australia continue to be a big coal mine and a big sheep station," said Erwin Jackson of Greenpeace. A recent study by the Canadian organization Environmental Monitor showed that 72 percent of Australians feel that the environment must be given priority over economic growth.

"This country is bitterly divided," said Phillip Adams, a prominent columnist and radio talk-show host in Sydney.

There has been perhaps the least division in Europe, which has adopted the most "green" position of any participant in Kyoto. The European Union has proposed including all its member nations together in a "bubble" position for Kyoto, calling for a 15 percent reduction from 1990 levels by the year 2010. But some European countries would be allowed to increase their emissions; Portugal would go up 40 percent and Spain 17 percent. The bulk of the cuts would come from Germany and Great Britain, which would cut 25 percent to 30 percent each.

A Money-Making Industry

Germany stands out in the environmental debate. Protecting the environment is popular, and it is supported by all mainstream parties and a strong majority of voters. It has also turned into a money-maker for German companies, who now control about 20 percent of a global export market for environment-friendly technologies worth an estimated $3 billion a year.

Germans already bear a heavy burden in keeping emissions in line through high energy taxes that raise gasoline prices to more than $5 a gallon at the pumps -- more than four times what Americans pay.

However, Germany may also have the easiest

time looking like a leader at Kyoto. In 1990, the selected benchmark year for emissions levels, Germany had just absorbed the dirty Soviet-style factories of East Germany. The air was so filthy then that cleaning up significantly was relatively easy. Germany's carbon dioxide emissions dropped nearly 10 percent from 1990 to 1993. The same situation is true for England, which relied mainly on coal for heat in 1990 and since has switched largely to cleaner natural gas. Its emissions fell 3 percent in the same period.

Russia and the former Soviet republics are in much the same situation. Russian officials say that because their industrial production has shrunk significantly since the fall of the Soviet Union, their carbon dioxide emissions are now 30 percent lower than they were in 1990.

Russia has not announced its proposals for Kyoto, but officials say they may support a system of emissions credit-trading. One scheme being proposed would allow countries that are already below their 1990 emissions to sell credits for that difference to countries with emissions over the 1990 limit.

Japan comes to the negotiating table with the opposite problem. By 1990, it had already done more than most nations to clear up excessive carbon dioxide. Worried about its enormous dependence on Middle East oil, Japan in the late 1970s and '80s became a world leader in energy-efficiency technology. It shifted much of its energy production to nuclear plants, which produce no greenhouse gas. So Japanese leaders say cuts now are more painful. Their analogy: It's easier for a fat person to lose weight than a skinny one.

But environmentalists argue that as the world's second-richest country, Japan can afford to be a leader on the climate problem. They claim the government has taken away industry's incentive to create more innovations in energy-efficiency technology. Japan has become more complacent about its energy use and lost its technological edge to the Germans and other European countries.

As host of the conference, Japan does not want the meeting to end in a stalemate; it sees that end as damaging to its credibility as a world leader with enough clout to sway other leaders.

As Japan sends emissaries around the globe for

last-minute negotiations hoping to find common ground before the conference opens, places like Brazil, Latin America's biggest developing nation and caretaker of the Amazon Rain Forest, raise a different set of problems.

Environmentalists there say they gained ground after the 1992 Earth Summit in Rio, but that things have recently worsened. They say the number of acres burned to turn rain forest into agricultural land has increased by 50 percent in five years.

Emissions from Brazil's factories and cars make it the world's 19th-largest emitter of greenhouse gases. But factor in the smoke from rain-forest burning, scientists say, and Brazil jumps to fifth place.

Because Brazil is designated as a developing nation, it probably will not have to agree to any reduction in Kyoto. In negotiations leading up to the meeting, the majority of countries agreed that the most practical and fair approach was to have the richest nations, who are to blame for most of the problem, take the first steps.

The United States and Australia want developing countries to agree to emissions controls, too. But there has been strong resistance from China and other developing nations. They argue that it is only fair that rich countries who have caused most of the problem should clean up their mess while the developing nations are still struggling to rid themselves of poverty and shed their third-world status.

To prevent a stalemate at Kyoto because of the split between the developing and developed countries, behind-the-scenes negotiators are hoping to at least get major developing countries to proclaim at Kyoto that at a certain later time they will tackle the emissions problem.

OPEC's Objections

Also complicating the debate in Kyoto will be the fears of major oil-producing nations. Officials from the Organization of Petroleum Exporting Countries (OPEC), which accounts for 40 percent of the world's crude oil production, have predicted that OPEC member nations collectively could lose $20 billion a year if strict emissions reductions are adopted at Kyoto.

If the conference adopts cuts that result in a lower global demand for oil, OPEC officials have said they might seek compensation for lost revenue. The convention adopted in Bonn this year says nations whose economies are heavily dependent on the production or export of fossil fuels could be entitled to compensation.

OPEC also is not ready to accept that human beings are having any significant affect on global climate. "The scientific foundation on which all this rests is, to say the least, shaky," OPEC Secretary General Rilwanu Lukman said last month.

There are also complex questions of responsibility. Japan howls when acid rain and pollution from China drift across the sea into Japan. But some of the companies in China are partly owned by Japanese. Much of Japan's greenhouse gas emissions comes from burning Australian coal. Does Australia bear some responsibility?

Also, the Blair Athol mine company is about 12 percent owned by Japanese companies and one-third owned by a subsidiary of Atlantic Richfield Co., the American oil giant. How much responsibility do the Americans and Japanese bear for emissions caused by burning Blair Athol coal?

The issues are far more basic in the baking moonscape of Blair Athol. In the remote plains of central Queensland, coal means life. In the nearby town of Clermont, the mine company has built 260 homes, a kindergarten, a football stadium, swimming pools, roads and businesses in a place that has bet its future on coal.

The land is rugged and the life is not easy. Summer heat regularly tops 110 degrees, drought is chronic. There are far more animals than people in the area, and nearly every car is fitted with a "roo bar," a steel bar fitted to the front bumper that prevents damage to the car in the inevitable road collisions with kangaroos.

Debbie Miller, a geologist at the mine, stood deep in the heart of the pit, her boots black from coal, and said those who favor sharp emissions cuts have not thought the issue through. "The reality is that people need power," she said. "And the only alternative

energy source that is going to sustain our current living standard is nuclear. Is that any better?"

Now is a difficult time for change in Australia, with unemployment running almost nine percent. Markets for beef and wool, two of Australia's main export products, have declined, and that has led a great number of people to worry more about jobs than .

"Unemployment," said Adams, the columnist, "knocks the stuffing out of idealism and ethics."

Correspondents William Drozdiak in Berlin, David Hoffman in Moscow and Anthony Faiola in Buenos Aires contributed to this report.

POSITIONS ON EMISSIONS

UNITED STATES

1971: 1,318

1993: 1,617

Calls for return to 1990 emissions levels by 2010.

Energy use from coal or oil: 62 percent

69 percent say protecting the environment should be given priority over economic growth.

1993 CO2 emissions*

Per capita 6.27

Per GDP 317

AUSTRALIA

Rejects binding targets; wants requirements decided on a country-by-country basis and wants to be allowed to increase emissions.

Energy use from coal or oil: 77 percent

72 percent say protecting the environment should be given priority over economic growth.

CO2 emissions, 1993

Per capita

4.91

Per GDP 358

1971: 51

1993: 86

GERMANY

Calls for 15 percent reduction from 1990 emissions levels by 2010. Some EU countries would be allowed increases, but Germany would cut 25 to 30 percent.

Energy use from coal or oil: 69 percent

71 percent say protecting the environment should be given priority over economic growth.

CO2 emissions, 1993

Per capita 3.35

Per GDP 185

1971: 298

1993: 270

CHINA

Wants developing countries excused from first steps to reduce emissions.

Energy use from coal or oil: 78 percent

47 percent say protecting the environment should be given priority over economic growth.

CO2 emissions, 1993

Per capita 0.64

Per GDP 185

1971: 247

1993: 751

JAPAN

Calls for 5 percent reduction from 1990

emissions levels by 2012, with no immediate binding limits for developing countries.

Energy use from coal or oil: 72 percent

60 percent say protecting the environment should be given priority over economic growth.

CO2 emissions, 1993

Per capita 2.80

Per GDP 117

1971: 245

1993: 348

CO2 EMISSIONS IN MILLIONS OF CUBIC TONS

*Energy demand data is from 1994; CO2 emission data from 1993. Per capita C02 emission measured in cubic tons per person; per GDP data measure in tons of oil equivalents per million dollars.

SOURCES: EDMC Handbook of Energy and Economic Statistics in Japan, Environics International's "Environmental Monitor"

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THURSDAY - Calculating the Costs: Automakers, utilities and other industries argue that drastic greenhouse gas emission reductions would have devastating economic effects. Environmentalists say it can be done with little economic pain. The truth, economists say, probably lies somewhere in the middle.

YESTERDAY - Resisting Change: Reducing greenhouse gases to counter global warming could require people to change the way they live in many ways. But changing behavior on a large scale has always been difficult, especially when the potential gain is long term.

TODAY - Global Disagreements: Getting the

nations of the world to agree on anything is never easy. Getting them to agree to a coordinated response to global warming presents unique challenges. Each nation brings its own economic, political and environmental perspectives to the issue.

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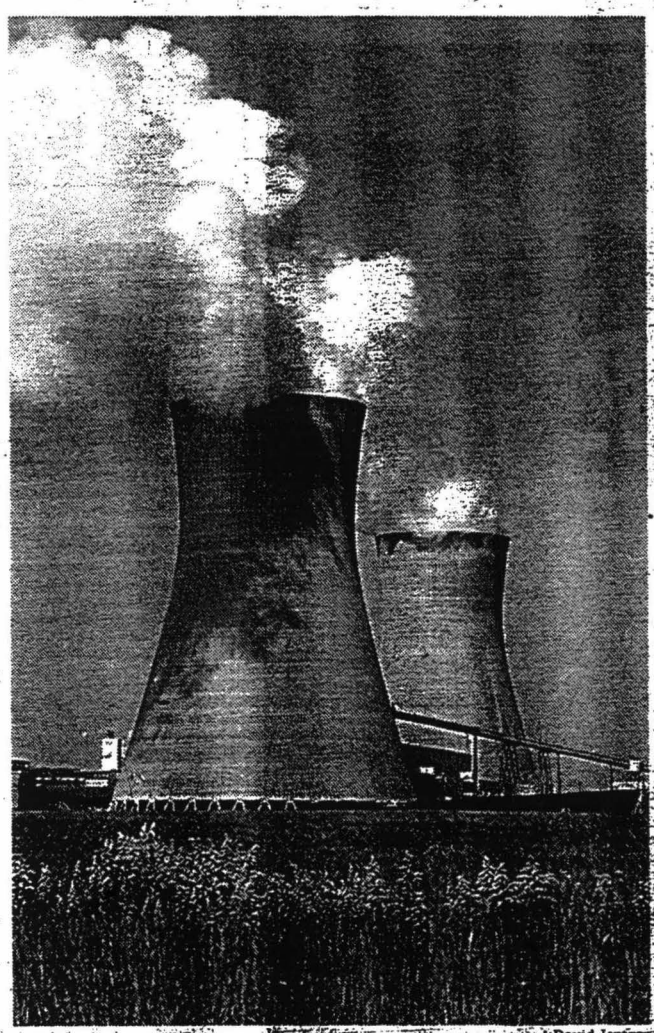
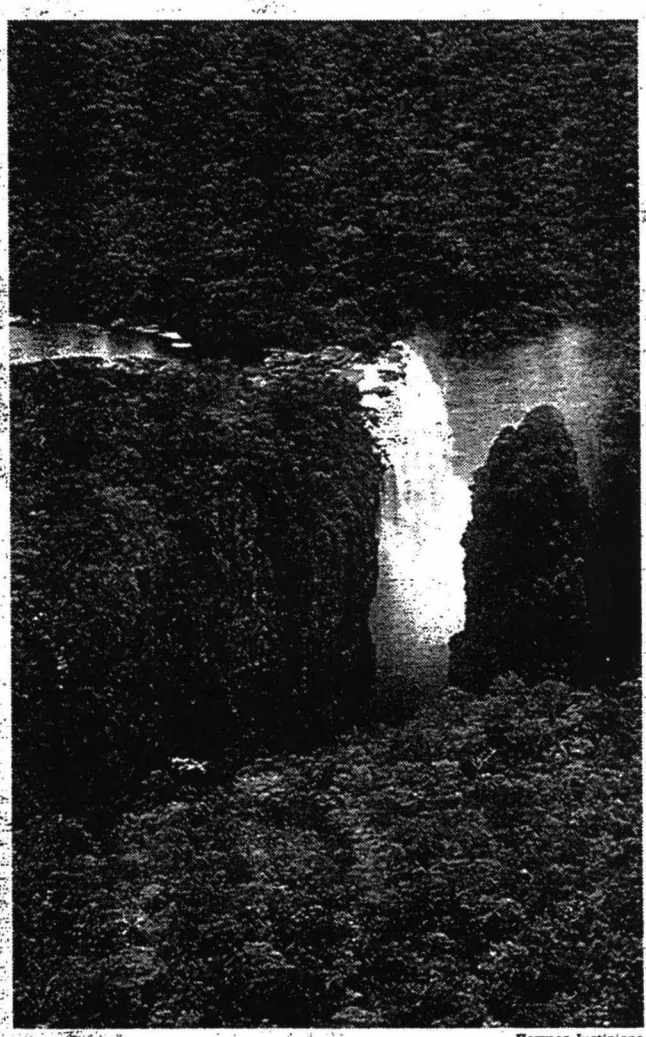
Trading on the Pollution Exchange

Global Warming Plan Would Make Emissions a Commodity



David Jentgen

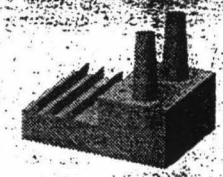


Hermes Justiniano

American Electric Power, which owns a coal-burning operation in Rockport, Ind., left, is working on a pilot project with Pacificorp and British Petroleum to spare five million acres of Bolivian forests from logging. The forest absorbs carbon dioxide, effectively storing millions of tons of carbon that would otherwise end up in the atmosphere.

Meeting the Goal on Greenhouse Gases

A Clinton Administration plan to reduce the amount of heat-trapping gases in the atmosphere to 1990 levels would allow companies several options to meet that goal. Here is how it would work.



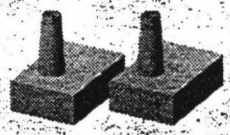
A factory could try to reduce its emissions by upgrading its equipment or using cleaner fuel sources. If it did not succeed, it could...

OPTION 1

...Buy the right to emit more heat-trapping gases from a company that has reduced its emissions below its target level.

OPTION 2

...Pay to preserve forests. Because plants absorb carbon dioxide, the most prevalent heat-trapping gas, preservation of trees increases the amount of carbon dioxide the planet can handle.



OPTION 3

...Pay to modernize a plant in a developing country and reduce its heat-trapping gas emissions.

By PETER PASSELL

If President Clinton has his way, rights to spew carbon dioxide into the atmosphere will eventually be traded by energy producers, utilities and even investors on exchanges the way pork bellies, German marks and interest rate futures change hands today.

While the Administration's plan for curtailing greenhouse gases — announced Wednesday in preparation for the world climate change talks in Kyoto, Japan, in December — demands no immediate action by businesses, it confirms that a system of tradable emissions permits will figure prominently in any long-term effort to control pollutants. Such a system, already being used under the Clean Air Act of 1990 to cut sulfur emissions, would allow companies that voluntarily reduce emissions below a certain level to sell the difference to others as unused "rights" to pollute.

The reliance on free markets in reducing carbon emissions to 1990 levels has been greeted with enthusiasm by specialists who have long argued that managing the task with traditional regulation would be hugely wasteful.

"An approach that promises to reduce the cost of containment by 90 percent is certainly worth a try," said Richard Richels of the Electric Power Research Institute in California.

But many economists caution that emissions trading is no panacea. They emphasize the desirability of bringing developing countries into the trading systems as soon as possible and the need for care in designing the control mechanisms that will redirect billions or even trillions of dollars in pollution-control investments worldwide.

"At this point, the learning is more important than the doing," suggested Robert Hahn of the American Enterprise Institute, a research group in Washington.

The Administration's plan has been criticized by many foreign governments that will also attend the Kyoto conference, where the participants will try to work out a global climate treaty. The critics say the American plan is not aggressive enough because it would not roll back emissions to 1990 levels until sometime between 2008 and 2012. Whatever happens in Kyoto, Mr. Clinton seems committed to emissions trading.

It is no secret why: It costs less and keeps Big Brother in the background.

To date, the most ambitious use of tradable permits has been in containing the sulfur emissions from power plants that contribute to acid rain. Under the Clean Air Act, total sulfur emissions were capped by giving electric utilities rights to emit sulfur roughly in proportion to their lower, 1980 emissions levels. Companies that reduce emissions below their allowance by closing plants, switching fuels or attaching chemical scrubbers to their smokestacks are free to sell their surplus pollution

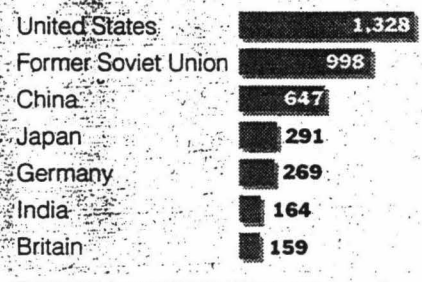
Continued on Page 4

Who Emits Most

The United States produces more heat-trapping gases than other countries, but it reaps a bigger economic benefit. Figures are for 1993.

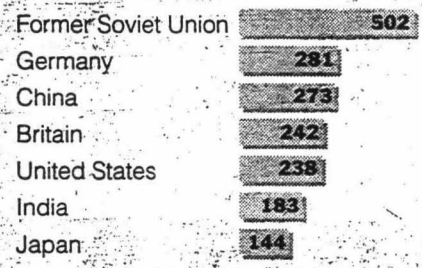
EMISSIONS OF CARBON GASES FROM ENERGY PRODUCTION

In millions of metric tons



CARBON EMISSIONS RELATIVE TO ECONOMIC ACTIVITY

*Metric tons of carbon emitted for each million dollars of gross domestic product**



*Gross domestic product figures are converted to dollars at rates that equalize purchasing power.

Source: Center for Clean Air Policy

NYT 10/24/97

Plan Would Treat Emissions Like Commodities

Continued From First Business Page

rights, while others are free to exceed their limits by buying those rights.

The market for sulfur emissions has flourished as utilities with low-cost sources of clean fuel have found it profitable to operate within the Government standards and sell part of their allotments to pollute. Last year, the market price of sulfur allowances averaged just more than $100 a ton.

"Emissions have been reduced at a cost far lower than the most optimistic forecasts," said Richard Sandor, the chief executive of Centre Financial Products and vice chairman of the Chicago Board of Trade.

Some economists are confident that similar serendipities await a trading system for carbon dioxide and perhaps other greenhouse gases. Global warming occurs when such gases accumulate in the atmosphere, trapping heat.

"Since none of the effect is localized, carbon is a perfect pollutant for emissions trading," argued Dan Dudek, an economist at the Environmental Defense Fund who was instrumental in pushing through the sulfur program in 1990.

But many a slip is possible between cup and lip. For one thing, the scale would be much larger. A few hundred utilities with a few thousand power plants emit most of the sulfur regulated under the Clean Air Act. Carbon dioxide, however, comes not only from power plants but also from hundreds of millions of boilers and vehicles, which could not possibly be monitored like electric utilities,

That suggests the need for a different approach, says Robert Stavins, an economist at Harvard University's Kennedy School of Government. He suggests that producers of coal, oil and natural gas be required to obtain emissions permits equal to the carbon content of their products rather than putting the burden on fuel consumers.

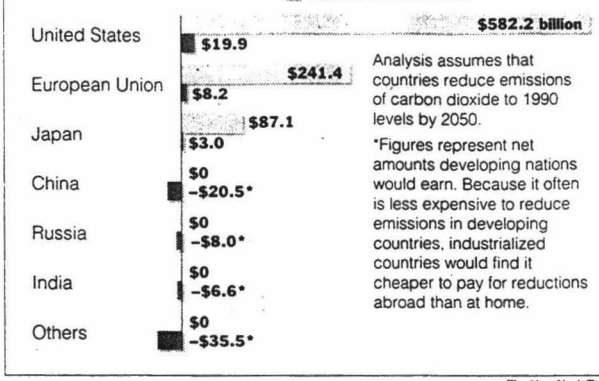
Limits on volumes that could be sold would raise the competitive price of all carbon fuels. But because coal emits more carbon dioxide for every unit of heat than natural gas, the price of coal would rise far more than the price of gas. That would give utilities an incentive to abandon coal.

Under the sulfur trading system, electric utilities receive roughly $1 billion (at current trading prices) worth of permits free each year — a large but not overwhelming benefit to a $100 billion industry. And because utilities are regulated by the states, virtually all of the saving is passed on to rate payers. By contrast, if fossil-fuel producers received free carbon permits, there is no reason to think that the windfall, which could measure in the tens of billions of dollars annually, would go to consumers.

The Government would, in theory, have the option of auctioning carbon emissions permits rather than giving

Benefit of Trading Pollution Rights

A study by William Nordhaus, an economics professor at Yale University, suggests that allowing companies and countries to buy and sell the right to emit heat-trapping gases could significantly curtail the cost of reducing overall emissions.



Analysis assumes that countries reduce emissions of carbon dioxide to 1990 levels by 2050.

*Figures represent net amounts developing nations would earn. Because it often is less expensive to reduce emissions in developing countries, industrialized countries would find it cheaper to pay for reductions abroad than at home.

The New York Times

1990 levels, for example, would almost certainly require phasing out coal as a boiler fuel within a few decades. Thus, while economists see merit in auctioning permits and using the proceeds to cut other taxes, coal producers and their unions would most likely work aggressively to block legislation that did not give them a big piece of the action.

The potential gains from international trading of carbon emissions permits are even greater than from domestic trading. While the industrialized world has a multitrillion-dollar investment in boilers and engines that would have to be scrapped rapidly to reach 1990 emissions levels, the third world has opportunities ga-

> No panacea, but a cheaper way to control greenhouse gases.

lore for easy carbon conservation.

Buildings have not been insulated; industrial boilers have not been retrofitted with efficient combustion systems. Most important, rapidly growing economies — notably China — have yet to sink huge sums in modern coal-fired boilers or fuel-hogging vehicles.

Opportunities to weaken the link between economic growth and carbon emissions are complemented by opportunities to preserve natural carbon "sinks" — vast inventories of carbon stored in trees. Two big utilities, **American Electric Power** and **Pacificorp**, along with **British Petroleum**, are experimenting with a program to spare five million acres of

ton of carbon this way is just 37 cents, less than 1 percent of the cost of many emissions-reducing industrial projects contemplated for Europe and North America.

The intuition that the greatest opportunities are in poor countries is borne out by computer simulations. William Nordhaus of Yale University estimates that the cost of meeting the developed world's commitment to getting back to 1990 emissions levels would be cut by at least 85 percent if the containment largely consisted of paying developing countries to adopt a carbon-lean growth strategy.

A strategy that used international trading to focus on containing carbon emissions in developing countries would also pay local dividends, such as reducing urban pollution. "Increasing fuel efficiency and switching to natural gas would incidentally mean lower levels of smog, which now threatens health in virtually all the big cities," notes Mr. Dudek of the Environmental Defense Fund.

Unfortunately, the difficulties in creating and enforcing a trading system that crosses borders are formidable, beginning with the problem of apportioning the initial obligations to contain carbon.

The European Community wants to start from a 1990 emissions base line, which would cost it little because Europe would receive credit for the conversion of Britain and eastern Germany from coal to natural gas in the 1990's. Meanwhile, Brazil, China, India, Indonesia and most of the rest of the third world want controls to kick in only when their per capita emissions have reached parity with the West — a formula for doing nothing until the middle of the next century.

Thomas Schelling, an economist at the University of Maryland's School of Public Policy, emphasizes the dis-

I cannot seriously envision national representatives sitting down to divide up rights in perpetuity worth a trillion dollars."

That explains why President Clinton, who on Wednesday reaffirmed that "developing countries must participate in meeting the challenge of climate change," seems willing to fudge the issue for a while by encouraging voluntary investment of American cash and technology in third world efforts to contain emissions.

The American Electric Power-British Petroleum forest preservation project in Bolivia fits the model well. And Mr. Clinton is apparently planning to bolster such voluntary efforts by guaranteeing participants credits against mandatory emissions limitations highly likely to be imposed after 2008.

But Mr. Stavins of Harvard argues that monitoring such deals is bound to be problematic. Apart from the practical issues of insuring compliance in countries with inadequate infrastructure, corrupt governments and courts unwilling to enforce contracts, he is concerned that in agreements between companies, "both parties will have powerful incentives to exaggerate the gains."

American policy makers thus face some difficult issues. Market-based strategies to contain global warming promise far more bang for a buck than traditional regulation. But carrying out such efforts poses new problems that engender skepticism, even among free-market advocates. "We just have not thought through the mechanics of international trading," argued Mr. Nordhaus of Yale.

That is why many economists and some environmentalists are quietly pleased with the part of the Administration's plan that would delay mandatory market-based limitations for another decade.

"If it's worth doing," argued Paul Portney, president of Resources for the Future in Washington, "surely it's worth waiting long enough to do the job right."

The Washington Times

Pentagon seeks exemption to cuts in fossil-fuel use

EU official concedes defense priority

By Patrice Hill
THE WASHINGTON TIMES

The United States wants to exempt defense operations from any global warming treaty because the Pentagon has warned that big cuts in fuel use by troops and weapon systems would jeopardize national security.

U.S. representatives discussed the exemption for defense and peacekeeping operations with European negotiators yesterday as the two sides tried to work out an agreement to cut fuel-burning emissions, and they got a sympathetic response.

"I can't imagine that being a problem," said Jorgen Henningsen, a European Union director, after meeting with the lead negotiator for the United States, Undersecretary of State Timothy Wirth.

"I can't imagine any country would let climate change take precedence over national security. Peacekeeping operations are not going to be held down because of climate change," he said.

The Defense Department, which is by far the biggest energy user in the government, had warned in an internal memo that national security would be "seriously threatened" by the global warming treaty unless President Clinton insisted on an exemption.

Even a 10 percent cut in fuel use by U.S. troops, tanks, planes and aircraft carriers would jeopardize the military's readiness to "perform a wide range of military missions," said Sherri Goodman, deputy undersecretary of defense for environmental security, in a Sept. 7 memo.

"Because, as history has taught us, the need for military operations in support of national security or humanitarian concerns will continue to arise suddenly and unpredictably, it will be nearly impossible for [the Defense Department] to consistently meet a set target to reduce its greenhouse gas emissions," she said.

"Some countries may avoid participation in the United Nations peacekeeping, humanitarian and other missions if their efforts will be counted against their national greenhouse gas emission budgets," she added. "It is unwise to put national security goals into conflict with international environmental obligations."

While Europeans were open to the exemption from fuel cuts for the military yesterday, the United States, Europe and other nations still were a long way from agreement on how much to cut carbon dioxide and other so-called greenhouse gases overall and how to achieve those cuts, participants and observers said.

The United States has proposed cutting emissions by one-third to 1990 levels by 2012, while the European Union and 134 developing countries have endorsed a much stricter cut of 15 percent below 1990 levels by 2010. The U.N.-sponsored negotiations are scheduled to go into a final round in Kyoto, Japan, next month.

"The time frame is short. The U.S. and Europeans are committed to an agreement, [but] clearly we are not going to get an agreement unless there is much, much broader ground between the U.S. and the EU," said Mr. Wirth.

Michael Meacher, environment minister of the United Kingdom, was optimistic about getting an agreement, saying Europe is open to a "progressive tightening" of emissions controls over time, as Mr. Clinton has proposed.

Europeans also are warming to some of the administration's proposals to give businesses flexibility in carrying out the agreement, he said, but getting developing countries to sign onto the treaty by 2005, as the United States has proposed, will be more "difficult."

The Senate, which must ratify the treaty, voted 95 to 0 against signing a treaty that does not require participation by Third World countries.

Ritt Bjerregaard, European commissioner for the environment, said Europe wants the agreement to be "as ambitious as possible" to stave off the flooding of small islands and coastal areas that could occur as the atmosphere heats and melts the polar ice caps.

November 1, 1997

Talks on Global Warming End on Pessimistic Note

By WILLIAM K. STEVENS

BONN, Germany -- Delegates from 143 countries ended their preliminary talks on global warming Friday with no agreement on key issues and growing concern about the prospect for success at the concluding meeting, to be held in Kyoto, Japan, in early December.

The United States' long-awaited proposal for cutting emissions of heat-trapping greenhouse gases has been scornfully attacked as too weak by delegates and environmentalists from around the world.

And there is no sign that U.S. negotiators are about to yield. Still, the Americans themselves said there was more than a little cause for hope, and they have been lobbying their counterparts, urging them to take a closer look at the U.S. proposal.

Meanwhile, several small-scale but higher-level meetings will be held between now and Dec. 1, when the Kyoto conference begins. The goal of the conference is to revise the climate treaty negotiated in Rio de Janeiro, Brazil, in 1992, which set voluntary limits on emissions.

"There are enough ideas out there to have an agreement," a senior State Department official said in Bonn, speaking on condition of anonymity. "We just don't see all the kinds of coalescence that you need yet" for that to happen.

On the surface, the U.S. proposal looks like the weakest on the table. The proposal would require industrialized countries to reduce their emissions of greenhouse gases to 1990 levels in the period 2008 to 2012. By contrast, the European Union wants to cut emissions 15 percent below 1990 levels by 2010.

But the American official said that the U.S. plan compares more favorably with other countries' positions once the details are inspected, and that it is superior to a major alternative plan advanced by Japan. Japan calls for a 2.5 percent to 5 percent reduction in emissions by about 2010.

Other U.S. officials here Friday released an analysis by the Department of Energy and the Environmental Protection Agency which suggests that the U.S. position actually occupies a middle ground between those of Japan and the European Union.

The contention is based mainly on the fact that under the United States' proposal, emissions of a full array of six different greenhouse gases would be controlled. The other proposals would control only three.

Some critics said the U.S. estimate that its plan occupies the middle ground was based on uncertain projections of future emissions of the less abundant gases. The

administration countered that even if the projections of future emissions are cut in half, the basic conclusion still holds.

The conclusion is "a valid point," said Dr. Daniel Lashof, a scientist with the Natural Resources Defense Council, an environmental group. "I think the U.S. proposal is stronger than the Japanese position, but it still falls short" of the European position.

With the Bonn phase of the talks over, key players must "review their options so that they can come to Kyoto with more flexible positions," said Michael Zammit Cutajar, the executive director of a 1992 climate treaty under which the discussions are proceeding.

The State Department official, however, said that "before we start perhaps working toward any compromises, we want to be sure that people understand" the full scope of the Clinton administration's position.

It may be, said Zammit Cutajar, that the Kyoto session will produce "an agreement based not on a single target, but on different targets for each country." The individual targets for emissions cuts would be based on an array of economic and social characteristics. The possibility of differentiated targets received much attention here over the last few days.

Talks between now and the Kyoto conference are to take place in a number of forums and through a number of channels, some of them at higher levels, between now and the start of the Kyoto conference on Dec. 1. Among the forums coming up is a meeting in Tokyo, Nov. 8 through 10, involving ministers from key countries. The U.S. official said there was "great scope" for resolving many issues before the Kyoto talks begin.

Aside from the question of what cuts in emissions industrialized countries will make, and when, the biggest outstanding issue is the role of developing countries.

While the 1992 Rio climate treaty generally requires them to control their emissions, it does not bind them to any specific commitments. The rationale is that since the richer countries are responsible for most of the greenhouse-gas emissions so far, they should take the lead in reducing them. The negotiators in Bonn had no authority to consider new commitments for the developing world.

But the Kyoto meeting involves a higher-level conference of parties to the 1992 treaty, and it can take up the issue. The United States has insisted it will sign no agreement in Kyoto that does not include "meaningful" participation by the developing countries.

Everyone agrees that eventually the poorer nations will have to take on specific commitments if greenhouse gases are to be controlled, since their emissions are expected to surpass those of the industrialized world in the early decades of the next century.

"If all the industrialized countries shut down their economies, it wouldn't solve the problem," said Bert Metz, a prominent European negotiator from the Netherlands.

But the issue of the developing countries' future role has proved intractable so far. In part, that is because these countries argue that the industrialized countries have become rich through a century of increasing emission of greenhouse gases. They argue that initially, the rich countries should bear most of the burden of preventing climate change.

The U.S. diplomat here said that since the issue is so difficult, it may be possible to resolve only part of it in Kyoto, with negotiations continuing beyond that.

The Clinton administration says that under its proposal to include all six greenhouse gases, total greenhouse emissions in the United States would be reduced by some 30 percent from what they would otherwise be around 2010.

The most important of the six heat-trapping gases is carbon dioxide, which is produced by the burning of fossil fuels like coal, oil and natural gas. The others are methane, which forms in landfills and is emitted in part as waste natural gas, and nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexachloride, which are produced by a variety of industrial processes and have a variety of uses.

The last three gases, while less abundant, are more powerful heat trappers and last longer in the atmosphere. They are not included in other countries' reduction proposals, including those of the European Union, Japan and the developing-country caucus that calls itself the Group of 77 Plus China. The developing countries' proposal is similar to the Europeans'

Nor do the other proposals include another feature of the U.S. plan in which countries would receive credit for emissions reductions if they created "sinks," or biological resources that absorb carbon dioxide from the air. Trees soak up the gas, and reforestation would be the chief means of creating these sinks.

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Los Angeles Times
November 14, 1997
Part A, Page 29; 672 words

NEW STUDIES PAINT GRIM GLOBAL WARMING PICTURE ENVIRONMENT: ONE CITES MORE EVIDENCE OF THE ROLE POLLUTION IS PLAYING IN BOOSTING TEMPERATURES. THE SECOND REPORT SEES SHARP INCREASES IN GREENHOUSE GAS EMISSIONS.

by JAMES GERSTENZANG, TIMES STAFF WRITER

(dateline Washington)

With diplomats deadlocked over complex efforts to reach an international agreement to curtail global warming, the findings of a 10-year study of the Arctic released Thursday provided new evidence that pollution is playing a significant role in increasing temperatures.

The scientific report followed by a day the U.S. government's disclosure that so-called greenhouse gas emissions are likely to increase over the next 12 years at a rate nearly 25% greater than previously thought.

Taken together, the studies provide support for those raising the greatest concerns about the climate phenomenon and pressing for the most dramatic measures to counter it.

As a result of the Arctic study, Jonathan Overpeck, one of the project researchers, said, "we have a firmer scientific foundation to say global warming is happening. It's for real. Let's be careful what we do next."

"I'm worried about this. I fear what the consequences will be," added Ray Bradley, head of the geosciences department at the University of Massachusetts and, with Overpeck, one of the authors of the Arctic study, being published today in Science magazine.

With scientists predicting that the level of greenhouse gases in the atmosphere will reach a concentration twice their known highest level ever, Bradley dropped customary scientific caution and said: "Our ecosystem will change. I don't know how we'll cope with that."

The reports were issued as negotiators from the United States, Europe, Japan and Russia, among others, are trying to find their way out of an impasse over what steps they will be willing to take to reduce their emissions of carbon

dioxide and other gases widely believed responsible for increasing global temperatures.

Some scientists question whether the increase is taking place and why. But many believe that--unless the richer nations, and increasingly the developing nations, reduce their reliance on oil, gasoline and coal to provide electricity and fuel their transportation networks--the ecological damage will be dramatic. Such extreme weather disruptions as floods and drought, higher sea levels fed by melting glaciers and tropical disease are likely to reach into now-temperate regions, they said.

The negotiators are working against a deadline of Dec. 10 for completing a United Nations-sponsored global warming pact in Kyoto, Japan.

Representatives of the European Union and the United States, including Vice President Al Gore and other senior U.S. officials, were unable to bridge a wide gap between their negotiating positions when they met informally in Washington last week. Nor was a high-level meeting in Tokyo last weekend able to make measurable progress.

President Clinton has proposed that by a four-year period beginning in 2008, the developed nations reduce to 1990 levels their emissions of the six major greenhouse gases, which are so named because, once in the atmosphere, they create a greenhouse-like shield that traps the Earth's heat.

The European Union would include only carbon dioxide and two other gases, and would set a target for 2010 of 15% below the 1990 level.

The report issued Thursday, encompassing the work of Canadian and U.S. scientists, including a team from the National Oceanic and Atmospheric Administration, studied temperatures in the Arctic, collecting data not only from the polar icecap but also from northern Canada, Scandinavia and Siberia.

While some temperature increases noted by the study reflected greater energy from the sun and other natural events, "exponentially increasing atmospheric trace-gas concentrations probably played an increasingly dominant role," the team wrote in Science.

The researchers used ice core samples, changes in the size of rings in slices taken from trees and studies of pond sediment to trace temperature changes over 4 centuries.

"In the Arctic, we're seeing a dramatic response to greenhouse warming after the 1950s," said Overpeck, of NOAA's National Geophysical Data Center in Boulder, Colo.

THE WASHINGTON TIMES

November 1, 1997
Pg. C1, 593 words

EMISSIONS RIFT STALLS TALKS ON WARMING

by Patrice Hill

Stark differences among the United States, Europe and the Third World over how sharply to cut greenhouse gases led to a standoff in an intermediate round of talks on the global warming treaty that ended in Bonn yesterday.

Observers said all sides dug in and the 2-week-old negotiations got increasingly bitter as Europe and 134 developing countries insisted that the U.S. agree to almost double the cuts in carbon dioxide emissions from cars, power plants and factories proposed by President Clinton.

The United States, which says its goal of 1990 emissions levels by 2012 amounts to a 30 percent cut, has opposed taking more drastic action because it would require sharply higher energy prices and endanger economic growth around the world.

But with no allies and sympathizers other than Japan, Canada and Australia in the United Nations negotiations, the United States was portrayed by most delegates in Bonn as dragging its feet and the main obstacle to getting a treaty.

With virtually every major issue unresolved, environmental and business groups said the likelihood of a successful conclusion of the negotiations in Kyoto, Japan, in early December has diminished significantly.

"From the standpoint of the rest of the world, the U.S. has basically no credibility. It is the largest per capita polluter in the world," said Kelly Symms of the environmental group Ozone Action.

"The Europeans have a mandate to come back with something very strong, so they're not willing to give in at all. On the flip side, the U.S. has said, 'Until the developing countries agree to participate meaningfully, we aren't going to negotiate either.' They've literally flounced out of rooms," she said.

While most Third World nations have endorsed Europe's strict goal of reducing greenhouse emissions by 15 percent below 1990 levels by 2010, they refuse to commit themselves to that goal, insisting that the United States and other industrialized nations move first.

The United States, with strong backing from the Senate and public opinion, agrees that industrialized nations should move first but insists that all nations be signed onto the agreement by 2005.

"What they have not thought through is that their position is just not acceptable to the rest of the world," said Miss Symms. "If they want an agreement, they're going to have to change their position."

Business groups were pleased that the United States stood fast behind President Clinton's call for universal action and moderate emissions cuts, which would come mostly by adopting energy-efficient technologies and through voluntary actions by businesses in the next 10 years.

"We're hoping the president sticks with his position," said John Novak, environmental director of the Edison Electric Institute.

Some observers said the United States might agree to compromise with the Europeans on imposing stricter targets in Kyoto, in exchange for the Europeans adopting the U.S.'s more flexible methods for carrying out the agreement, with the details to be fleshed out later on.

But Mr. Novak said that would be a mistake.

The cost to industry and the economy could be severe unless the treaty ensures businesses have flexibility to help developing countries reduce emissions through joint projects and to bargain with other businesses through an emissions trading scheme, he said.

Mr. Novak questioned whether the Europeans are sincere in proposing deep emissions reductions which could hurt not only their economies but plunge the world into a recession.

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The Washington Times

97-1000 ENR

CRS Report for Congress

Global Climate Change Treaty: Negotiations and Related Issues

November 7, 1997

Susan R. Fletcher
Senior Analyst in International Environmental Policy
Environment and Natural Resources Policy Division

CRS

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OPINION ANALYSIS

USIA

U.S. INFORMATION AGENCY, WASHINGTON DC 20547

OFFICE OF RESEARCH AND MEDIA REACTION

November 19, 1997

M-193-97

International Public Opinion on the Environment

For the Kyoto Conference

Key Findings:

- Publics all over the world are concerned about environmental problems and the related health effects. Air and water pollution tend to be considered more serious than global warming, ozone depletion or other environmental concerns.

- For majorities in most countries, protecting the environment is, in principle, more important then economic development.

- Publics generally give their governments poor marks on governmental efforts to deal with environmental problems. Only in the U.S., China and the Netherlands do more rate governmental efforts favorably than unfavorably.

- Half or more of the public around the world are willing to cede authority on major environmental issues to an international agency. Those most critical of their government's efforts are also most willing to cede authority. Americans are more opposed than any other public.

- Most publics express a sense of urgency about tackling global climate issues. By contrast, Americans are more inclined than other publics to support further research before undertaking major actions.

EU Publics Concerned and Willing to do Something About Environment

Eight in ten or better in most EU countries[1] are fairly or very concerned about environmental problems in general and with respect to environmental health effects. Publics in southern Europe (Spain and Italy) are more sharply concerned about the health effects of environmental pollution. Local air pollution is named most frequently, followed by water pollution and global issues (ozone depletion, global warming, nuclear waste and nuclear accidents), as the issue which concerns these publics most.

Publics in EU countries are inclined to favor environmental protection "even at the risk of slowing down economic growth." Further, by substantial margins, European publics would also sacrifice some of their own income if they could be assured that the revenues would be contributed to environmental cleanup. Consistent with the hope that the economy and the environment can both be fostered, majorities throughout Europe agree the cleanup and protection of the environment will contribute to the growth of their respective economies. West Europeans are somewhat more inclined to hold industrialized countries most responsible for environmental problems, rather than the developing world. However, significant percentages believe both share responsibility.

[1]The European Union publics surveyed were Finland, France, Germany, Great Britain, Italy, the Netherlands and Spain.

This report is based in part on the 1997 International Environment Monitor -- a joint venture of several international polling firms with surveys conducted between January and March 1997 — and on results from USIA-commissioned surveys in several countries conducted between August 1996 and October 1997. Prepared by Office of Research and Media Reaction staff.

Most west Europeans tend to be unhappy with government efforts to deal with environmental problems. Only in the Netherlands are people more inclined to rate the efforts of their government positively than negatively. Perceptions of the private sector's record on the environment are not much better. Although Germans and the British tend to agree by a small margin that "companies and industries are now working very hard to make sure we have a clean environment," other EU publics disagree.

Perhaps because of their disappointment with governmental and private sector efforts on environmental cleanup, EU publics would be willing to give an international agency the authority to affect environmental policy. Europeans also support immediate action to reduce human impacts on the global climate, rather than delaying action until more is known about global climate shifts.

Urban Chinese Public Highly Concerned about Local Environmental Problems

With major Chinese cities among the most polluted in the world, nearly all urban Chinese say they are personally concerned about environmental problems and believe that these problems now affect their own health. Given the immediacy of the issue, the public's environmental concerns tend to focus more on the local community than on the nation or the world, and a plurality say that air pollution is the environmental issue that troubles them most.

Half of the urban public in China think that environmental protection should take precedence over economic growth, while a third think the two are equally important. Only one in five says that economic growth alone should have top priority. While half think that their own government is doing a good job in addressing these problems, as many would be willing to give an international agency authority to affect their government's policies in environmentally important areas. In addition, three-quarters would be willing to give part of their own income if they could be sure that the money would be used to prevent pollution. Asked who is to blame for today's environmental problems, just under six in ten feel that the developed and developing worlds are equally responsible. Of those urban Chinese who offer an opinion, a third think that major action is necessary now in order to reduce human impacts on global climate changes, while 14 percent think it is better to delay such action.

Japanese Concerned about Environment, Many Cautious in Supporting a Response

Most Japanese are personally concerned about environmental problems in general and about global climate issues in particular. Seven in ten believe the quality of the environment in Japan is currently poor, and about half believe their own health is affected by environmental problems. There is a somewhat greater public focus on the global effects of pollution rather than the national or local effects. Half blame today's environmental problems on the industrialized world, while only a few blame developing countries and a third blame both equally. Among the Japanese, air pollution is mentioned most often as the top environmental concern requiring immediate attention followed closely by ozone depletion and global warming.

As a matter of principle, seven in ten believe that we need to take "major action now" to reduce human impacts on the global climate, and six in ten believe it is important to protect the environment, even if it slows economic growth. Yet, while most Japanese express concern about the effects of global warming, only half support "*major action by Japan and other countries to decrease the emission of carbon dioxide and other gases to prevent global warming even if it has*

a negative affect on the economy." Four in ten favor a more cautious approach to avoid harming the economy. There is also disagreement concerning the cost of environmental protection: a small majority oppose paying higher taxes to clean up the environment while four in ten are supportive. Three in four feel their government's efforts to deal with environmental problems have been poor or very poor. Perhaps as a reflection of this dissatisfaction, seven in ten would favor giving an international agency authority to influence Japan's environmental policies.

Many Indians Attribute Environmental Problems to Overpopulation

In India, rapid industrialization and increasing urbanization have contributed to major environmental problems. Urban Indians are increasingly aware of the environment as a serious problem. Seven in ten call their environment a *very* serious problem, compared to only half saying this in 1992. Yet USIA data indicate that concern for the environment is generally eclipsed by the immediate problems of day-to-day economic survival. Only one percent names the environment as India's most important problem, while two-thirds cite a problem related to the economy. Six in ten favor taking action now on global climate change.

The urban public most widely links India's environmental woes to overpopulation, though majorities also blame business and industry, wasteful consumption and lack of education. Air pollution heads the list of issues urban Indians name as their country's single most important environmental concern, followed by poor water quality and inadequate waste disposal. Interestingly, while they most widely blame the population explosion for *causing* India's environmental difficulties, only 10 percent see overpopulation as the country's chief environmental *problem.*

Somewhat surprisingly, the urban Indian public widely opts for saving the environment over promoting economic growth, with about a fifth wanting both growth and environmental protection. But views are mixed about whether the government or citizens should have primary responsibility for protecting the environment. Most, though, want the government involved in population control and in making laws to protect the environment. Six in ten urban Indians favor giving an international agency control over environmental problems in India.

Environment an Important Concern in Russia and Kazakhstan

Surveys reveal widespread concern about the environment in Russia. Three-quarters of the Russian public express at least a fair amount of concern about environmental problems in general, and a comparable proportion are worried that environmental problems adversely affect their health. Russians more often say that they are troubled by water pollution than by air pollution or other environmental problems. When asked to rate various foreign-policy objectives, a 1997 USIA survey found that nearly all Russian adults say that improving the global environment is important and that cleaning up environmental pollution is an important task for their government. At the same time, however, an overwhelming majority feel that their government has been doing a poor job of combating pollution. Perhaps because of this dissatisfaction with government efforts, half in Russia are also willing to favor granting an international agency the authority to affect their government's policy in "environmentally important areas."

Nearly half the Russian public would give priority to environmental protection, even at the risk of slowing down economic growth. At the same time, just half say they would give part of their own income if they were certain it would be used to prevent pollution. Many Russians tend to be uncertain about whether action should be taken now to reduce human impacts on climate. Among

those who voice an opinion, somewhat more favor taking action than not. [Note: Russian public opinion specifically on global warming will be reported in late November.]

Although Kazakhstan has serious environmental problems, the public tends to be more concerned about the economy. Yet when asked directly, six in ten Kazakhstanis believe protecting the environment should come first even if it slows the economic growth of the country. Seven in ten say they would give part of their income if they were certain the money would be used to prevent environmental pollution. Three-quarters believe their government is doing a poor job cleaning up environmental pollution. These views are probably not deeply held given the low salience of environmental problems in the public's mind.

Latin American Publics Believe Environmental Cleanup Will Help Economic Development

During the past year, urban publics in Latin America (three-quarters or more) have expressed concern about environmental problems, calling them immediate rather than future problems. Two-thirds in Argentina and Venezuela express concern specifically about global warming. Majorities in Argentina, Brazil and Venezuela consider environmental pollution a very serious problem, though not as salient as unemployment, narcotics trafficking or corruption. Of considerable importance, half in Brazil and majorities elsewhere in the region consistently say the environment should be protected even if it slows the development of their economies.

Eight in ten or more of the urban public in Mexico, Chile and Peru believe environmental problems now affect their own health and will affect the health of future generations. These publics vary in the issues that most concern them: water pollution (Mexico); garbage/waste (Peru); air pollution (Chile). Majorities in Mexico and Peru think that their own government is doing a poor job in addressing environmental problems, while urban Chileans are divided on this score. Small majorities in all three countries think that companies and industries are not working very hard toward a clean environment.

Many in Latin America feel that cleaning up and protecting the environment will contribute significantly to economic growth. To varying degrees (half in Mexico to eight in ten in Peru), they are willing to contribute some of their own income if they were sure the money would be used to prevent pollution. With respect to the source of the problem, majorities in Mexico and Chile blame both the developed and developing worlds equally for the current environmental situation, while Peruvians blame the industrialized nations. Throughout the region, half to two-thirds would be willing to give an international agency authority to affect their government's policies in environmentally important areas. Many (a majority in Venezuela and pluralities in Brazil and Argentina) have a positive opinion of U.S. policies to promote environmental protection in Latin America.

U.S. Public Divided on Urgency of Environmental Concerns

The American public expresses widespread concern about the environment. Nine in ten are concerned at least a fair amount about environmental problems. Equal proportions of the U.S. public name water and air pollution as the specific environmental issue that most concerns them (about a fifth each). One in ten mention both industrial/household pollution and waste disposal and conservation of natural resources. Americans are divided on the immediacy of environmental problems. Nearly half support taking "major action now" to reduce human impacts on the global climate, but just as many think further study is needed before committing resources. The American

public is less inclined than any of the other 18 publics surveyed to see global climate changes as urgent.

By the public's account, environmental concerns should be given priority even over economic growth. When asked to prioritize the environment and economic growth, two-thirds of Americans prefer that higher priority be given to "protecting the environment, even at the risk of slowing economic growth" than to economic growth. A majority say they would be willing to give part of their income if they were certain it would be used to help control pollution.

Six in ten Americans hold both industrialized and developing countries responsible for current environmental problems, while three in ten name industrialized countries alone. Few place sole responsibility on developing countries. When asked about their own government's efforts in addressing environmental problems, a slim majority say it has done a good job. Many also approve of private industry efforts: a narrow majority agree that "companies and industries are now working very hard to make sure we have a clean environment," though roughly four in ten disagree. Americans are the least willing to cede authority on major environmental issues to an international agency, such as the UN.

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KYOTO CLIMATE CHANGE SUMMIT: U.S. SHOULD LEAD BY EXAMPLE

Although some foreign observers took heart from indications that developed nations are seeking a compromise on curbing greenhouse gas emissions in time for the Kyoto summit on climate change, many worried that the December 1-10 gathering will produce just so much "hot air." The majority have remained critical of the U.S. stand on global warming as set out by President Clinton Oct. 22. They saw it as adding to the disunity among the developed nations that should be setting the pace for Kyoto. The scant progress--some baldly said "failure"--of these governments to reconcile clashing stands on global warming at preliminary meetings in Tokyo and Bonn prompted a few papers, including Tokyo's top-circulation, moderate Yomiuri, to call on host nation Japan to "show some real leadership" on this issue. Most, however, persisted in reminding the U.S. that, as the leading power and the nation responsible for 25 percent of the damaging emissions, it should be the one to set an example. Mr. Clinton, said the largest circulation, moderately conservative Bangkok Post, should "project a...vision" for saving the earth's atmosphere. The U.S., the paper added, "could take the opportunity to demonstrate its technological prowess by developing renewable energy sources and clean technology." Buenos Aires's leading Clarin sided with this argument, noting that the greatest polluters also have economies that can "invest in new technologies" that would promote growth without damaging the environment. These were other highlights in commentary:

EUROPE--Some of the harshest criticism of the U.S. continued to come from this region, with many analysts denouncing the U.S. for "betraying" their hopes of timely action to forestall global warming and charging that the U.S. is "doing its utmost to make Kyoto a failure." There were some exceptions to this trend. Ottawa's liberal Citizen held that the U.S.' "market-based plan" for reducing airborne carbon dioxide and other pollutants would be more effective than Canada's proposal for new taxes on polluters. Left-of-center Le Monde of Paris gave its blessing to Mr. Clinton's proposal on tradable emission permits and urged France to support it.

ASIA--In Indonesia, site of catastrophic forest fires which blanketed the region with a toxic haze in early fall, one pundit welcomed that government's announcement that it would establish a research center on "climate forecasts and disaster mitigation." Australian dailies divided on their country's opposition to mandatory cuts in greenhouse emissions. The liberal Sydney Morning Herald rejoiced that the U.S.' position "sits comfortably with what Australia has long been saying." The liberal Age denounced Australia's stance as "breathtakingly selfish." Indian journalists engaged in a similar debate. In Kyoto, the right-of-center Indian Express warned, New Delhi should not agree to "unreasonable emission curtailments" that could "jeopardize" development. The centrist Hindu, on the other hand, stressed that it was time for New Delhi to consider how air pollution "impinges" on the health and well-being of all Indians.

LATIN AMERICA--A Brazilian commentator chose to upbraid the "rich countries" which, except for Germany, allegedly have not kept their promise of financial aid to the Third World to help stop deforestation and other environmental ravages.

This survey is based on 41 reports from 17 countries, Oct. 25-Nov. 14.

EDITOR: Mildred Sola Neely

EAST ASIA AND PACIFIC

JAPAN: "Delegates At Tokyo Meeting Agree On Need To Reach Kyoto Accord"

According to top-circulation, moderate Yomiuri (11/10), "Delegates at an unofficial ministerial meeting in Tokyo agreed on Sunday on the need to reach an accord at the Kyoto...meeting in December. It was confirmed at the (two-day) meeting that participating countries are already seeking a compromise aimed at reaching the accord in Kyoto. Although differences remained at the conference over proposals for reducing greenhouse gas emissions, EU delegates showed signs of flexibility, creating the mood that a final compromise could be reached. Japan, as chair of the Kyoto conference, is eager to narrow differences between the United States and the EU and adopt a unified goal for greenhouse gas reductions at the Kyoto conference."

"Japan, U.S. And EU Move Toward Compromise"

Liberal Asahi said (11/10), "With only three weeks left before the opening of the Kyoto...conference, the United States made a concession on obligations for emission reductions by developing nations at the informal ministerial meeting in Tokyo. Prime Minister Hashimoto also indicated (during a visit to Saudi Arabia on Sunday) that Japan will be flexible about revising Japan's gas reduction proposal. Signs of compromise are also evident among EU countries.... Despite such progress, the United States and the EU remain far apart in their proposals."

"Success At Global Warming Talks Needed"

An editorial in top-circulation, moderate Yomiuri held (11/4), "Preliminary talks in Bonn in late October ended without reaching a consensus on a target to reduce greenhouse gas emissions. This leaves much to be done to make the Kyoto conference a success. A sense of helplessness prevailed among delegates at the Bonn meeting. Undoubtedly, it will be difficult for working-level officials to end the current impasse arising from the 'zero reduction' U.S. proposal, which was presented by President Clinton.

"Prior to the Bonn meeting, the U.S. president telephoned Prime Minister Hashimoto to explain his country's proposal. The prime minister reportedly told Mr. Clinton that Japan expects the United States to increase efforts to reduce greenhouse gas emissions. Hashimoto also sent letters to EU leaders conveying a similar message. The prime minister should also send similar messages to the leaders of other nations to ensure that the Kyoto conference will be successful."

AUSTRALIA: "U.S. Position Sits Comfortably With Australia's"

The liberal Sydney Morning Herald (10/28), observing that the Commonwealth Heads of Government Meeting's declaration on global warning conformed with Australia's own position, judged, "For Australia, it is important that the U.S.' position on greenhouse emission reduction targets sits comfortably with what Australia has long been saying. But it is even more important now for Australia to have regard to what else Mr. Clinton said last week. That is, his powerful commitment to encouraging new and creative ways of reducing 'greenhouse gas emissions' through tax incentives, investment in research and development and other measures aimed at encouraging energy efficiency and cleaner use of energy resources. That is where the Howard government, too long all too quiet, should now be talking positively."

"Nothing Angelic About Australia's Proposals"

In an editorial critical of Prime Minister Howard's greenhouse gas policies, the liberal Melbourne Age (10/27) insisted, "There is nothing angelic about Australia's greenhouse

proposals, which are breathtakingly selfish: This country is alone among the nations of the world in opposing mandatory cuts in greenhouse emissions.... President Clinton is being accused of jeopardizing the Earth Summit's achievements through trying to placate his domestic critics. But at least the president acknowledges that the goal must be a global standard. Mr. Howard, unfortunately, cannot even bend that far."

INDONESIA: "Possessing Know-How To Understand Climate Is Urgent"

Leading, independent Kompas's editorial under the headline above discussed an international conference on Science and Technology for the Assessment of Global Environmental Change and Its Impact on the Indonesian Maritime, held in Jakarta recently. It said (11/12): "Bearing in mind that matters of the earth like climate are co-related...Indonesia is encouraged, as State Minister for Research and Technology Prof. Habibie pointed out, to establish a center for international research on subjects related to climate forecasts, research, and disaster mitigation. This particular idea requires transparency among the countries involved in the scheme. Indeed, for security reasons, Indonesia has never before disclosed data about its maritime activities. Now the president has affirmed before the conference that Indonesia will gladly be a primary study base from which to undertake regional research about the land, ocean, atmosphere, climate and the environment."

THAILAND: "Can Clinton Equal JFK's Vision?"

Wasant Techawongtham commented in the largest circulation, moderately conservative, English-language Bangkok Post (10/30), "President Bill Clinton's announcement last Wednesday on the U.S.' commitment to reduce greenhouse gas emissions was not just a disappointment, it showed a lack of confidence in its ability to lead in the field of environmental protection and technology.... His latest proposal to reduce greenhouse gas emissions to 1990 levels between 2008-2012 is a retreat which could lead to the collapse of the Kyoto talks.... The United States, which alone emits a quarter of the global greenhouse gases, could lead the world in the battle against global warming, but instead it chooses to hold up the rear. It could take the opportunity to demonstrate its technological prowess by developing renewable energy sources and clean technology, and gain the world's confidence in its know-how, which could translate into vast economic gain. But Mr. Clinton will let it slip. Mr. Clinton likes to project himself as another John F. Kennedy. But when President Kennedy announced a program to put man on the moon in a decade, the United States did it and gained the world's respect. Can Mr. Clinton project a comparable vision?"

"Japan Should Take Lead On Global Warming"

An editorial in the independent, English-language Nation declared (10/26), "The world can forget about turning to the United States for leadership. On Wednesday, President Bill Clinton ruled out cuts in U.S. greenhouse gas emissions from its 1990 levels. This, in a perverse sense, makes Tokyo's offer look good.... The root of the problem lies in industrialized countries. With only 20 percent of the global population, they are responsible for over 90 percent of total emissions over the past 100 years. At present, Third World countries are too poor to be included in the global warming equation--unless, of course, they, too, become filthy rich and mimic the profligate consumption in the West. But given the current global economic system, that day will be a long way away, if it ever does come.... But that is not to say that the Third World should do nothing....

"There's indeed no need for Japan to follow the U.S.' footsteps, especially when Washington is so out of step with global opinion. Only last month, the United States, along with a number of pariah nations, was alone in rejecting the landmine ban treaty. Now it is standing alone on global warming. The choice for Hashimoto is clear--take back your five percent and show the world, and the United States, some real leadership."

EUROPE

GERMANY: "Arrogant U.S. Advice?"

Werner Adam concluded in an editorial in right-of-center Frankfurter Allgemeine (11/1), "A good measure of impudence is necessary to warn against a failure of an enterprise which oneself is arrogantly blocking. But Washington has done exactly this with its call to the developing nations to save the climate conference in December from failure. The fact that on the same day a preparatory meeting in Bonn ended with more than a meager result because the U.S. government did not want to agree on a timetable for the reduction of greenhouse gases that was adopted by the majority must really cause a general shaking of heads. By doing so, Washington is strengthening the developing countries in their suspicion that the industrialized nations want to load up burdens on them without making their own contribution to protecting the climate. In this situation, it is up to the United States to do something, since more carbon dioxide is emitted in the United States than anywhere else in the world. But Bill Clinton is not even willing to second the moderate view of the Europeans.... Washington should not be surprised if its advice is considered arrogant."

"Bonn Effort Failed"

Lutz Warkalla observed in an editorial in centrist General-Anzeiger of Bonn (11/1), "The preparatory meeting in Bonn was supposed to agree on the future course for a tightening of the Climate Framework Convention, but this effort failed.... Now at least fronts are clear: The United States, Japan and Australia are the ones who want to slow down this process against the EU and the rest of the world.... Even at the Berlin Climate Conference in 1995, a failure of the negotiations could be avoided only because the signatories agreed on the mandate for Kyoto where all states wanted to lay down tougher rules for the protection of the climate and binding goals to reduce (the emission of pollutants). But such a move cannot be repeated if the states do not want to damage their credibility even more. This is why there is only one alternative for Kyoto: Either the ones who slow down the process are convinced that they must join the bandwagon of climate protectors or the EU goes it alone. This would be a miracle."

"Democratic Nations Susceptible To Pressure"

Centrist Koelner Stadt-Anzeiger (11/1) remarked: "It may be possible that the positive experience is exerting greater pressure on the ones who slow down a turnabout for a better climate--mainly the United States and Japan--than general hypocrisy. These economic nations in particular, with their classic views on economic growth, have great difficulties accepting internationally endorsed reductions of carbon dioxide emissions because they are afraid of adverse competitive effects. But both nations are also sound democracies, and could therefore be susceptible to a change of course on the basis of arguments stemming from society. The fight against the greenhouse effect is a litmus test for which policy will turn things to the better: a policy that is predicting a disaster or a policy of hopes."

"Depressing"

An editorial in left-of-center weekly Die Zeit of Hamburg (10/30) concluded under the headline above, "Measured against President Clinton's words before the UN General Assembly, his course for the Kyoto Climate Conference is, to put it mildly, schizophrenic. He wants to allow the Americans until the year 2010 to reduce the emission of their pollutants to the 1990 level. But this target is already laid down...in the climate convention, an internationally binding agreement, and should be achieved in the year 2000. There are additional, embarrassing facts: While citizens of the industrialized nations would not have to speed things up, the developing nations have to reduce their emissions of carbon dioxide quickly. But it is not persuasive to demand from others what oneself is unwilling to do. And what is even worse: Clinton acts despite better knowledge....

"The allegedly most powerful man in the world is obviously no longer master of his own house. He has become the victim of his inactivity. His power was not even big enough for a moderate increase in the fuel tax.... No wonder that the Americans are today even greater climate sinners than they were seven years ago. And it is also not surprising that the energy companies are defending their alleged privileges even more grimly than in the past. This confirms the old principle that a weak start can hardly be corrected later. For the Kyoto conference, however, this awakening comes too late."

"It Will Be Cold In Kyoto"

The headline above introduced Wolfgang Roth's argument in an editorial in centrist Sueddeutsche Zeitung of Munich (10/25), "When the signatories of the UN Climate Convention meet for their third conference in Kyoto in December, they will give evidence of the naivete of the global community. They will demonstrate that international politics is able to increase wealth in one part in the world but that it is blind towards the global implications of this model of prosperity. The positions are more or less clear since President Clinton...has now also made clear that the United States not even wants to stick to the rules that were agreed upon at the founding meeting in Rio....

"If we take a sober point of view the refusal to embark on the right path also reveals elementary human traits: the inability to orient politics, which only thinks in legislative terms, to laws of nature whose effects become visible only after several generations; the misleading view that these laws of nature could be 'outsmarted;' the defense of the comparably pleasant way of living at the expense of other people; the denial of unpleasant truths, as long as these truths are only likely to become reality and cannot be proven 100 percent."

BRITAIN: "Little Sign Of Any Break In U.S.-EU Deadlock"

The independent Financial Times noted from Washington (11/5): "A huge gap between European Union and U.S.' attitudes to the issue of climate change was underlined yesterday when senior EU officials put to their American counterparts the argument for tough action to limit greenhouse emissions. With less than a month before the international conference on global warming in Kyoto, there was little sign of any break in the deadlock over how much the developing countries should be required to do."

FRANCE: "France, Europe Must Not Reject U.S. Proposal"

Olivier Godard, research director at the CNRS, wrote in left-of-center Le Monde (10/25): "On the French side there is the tendency to refuse, categorically, the U.S. proposal of negotiable permits, as if it were just a maneuver by country which refuses to change.... It would be really ironic if the irritation one feels at the U.S. attitude, even if justified, led to a rejection of the only flexible means of dealing with a difficult situation: the international exchange of emission quotas.... What is more important, refusing to play ball with the United States, or preserving the nation's margin for strategic choices? France and Europe must not reject the U.S. proposal for negotiable permits, which offers a certain amount of strategic flexibility.... The United States knows well that if the rules of the game are not negotiated, what will prevail will be U.S. rules."

"Hope For Compromise In Kyoto"

Left-of-center Le Monde's editorial (10/25) commented, "The United States has taken a step forward and opened the way for negotiations in Kyoto.... The idea of negotiable permits could lose some of its negative connotations if it is conceived within a global framework of emission reduction. With a certain degree of optimism from everyone, there is the possibility of a compromise in Kyoto."

RUSSIA: "U.S. Won't Hear Of Combatting Greenhouse Effect"

Reformist, youth-oriented Komsomolskaya Pravda (11/5) carried an article by Maksim Chizhikov: "The danger of a global greenhouse effect is so great that it has prompted world leaders to call for an emergency conference. It seems as though the time has come to sound the alarm. In 20 years, we'll face a choice between choking and drowning. The Americans won't hear of combatting the greenhouse effect. The head of the Ford Corporation, Alex Trotman, has offered a reward to anyone who will dispel 'the stupid myth' about global warming causing ice melting in the Antarctic. The Americans' stand is amazing, indeed. Their hardheadedness recently resulted in a meeting of experts on the greenhouse effect ending in nothing. Delegates from 142 countries failed to agree on reductions in poisonous emissions into the atmosphere--the Americans were against them being too quick."

BELGIUM: "U.S.: Guilty Of Culpable Neglect"

Foreign affairs writer Roger Huisman said in conservative Catholic Het Belang van Limburg (11/4), "At the end of last week, the preparatory consultations in Bonn for the Climate Conference in Kyoto in December ended in total failure.... The United States, which, with five percent of the world's population, produces 20 percent of the greenhouse gases, is doing its utmost to make Kyoto a failure. Washington does not respect earlier vows and postpones the reduction of greenhouse gases. President Clinton and his green Vice President Al Gore have succumbed to the pressure from U.S. automobile and coal lobbies, and from trade unions who are afraid that jobs will be lost. If Gore wants to succeed his boss a few years from now in the White House, he will need the support of those extremely powerful lobbies.

"Basically, the U.S. attitude is one of culpable neglect for which future generations will have to pay a price. Belgium has shown that, as a small country, it can be great in the diplomatic field. Earlier this year, Foreign Minister Derycke succeeded in persuading more than 100 nations to sign a ban on land mines. Can that diplomatic machine be deployed to prevent Kyoto from becoming a total failure?"

CANADA: "How About Nuclear Energy?"

French-language, liberal La Presse argued (11/7), "Industrialized countries are still very far from a common vision which would allow the conclusion of an agreement based on concrete objectives. At present, Americans are too realistic to adopt a really active policy, and the Europeans are too ambitious to be realists.... The Japanese, who organize the conference, are therefore scared that it will finish up in the air.... Where the conference risks missing the boat is in concentrating solely on the cases of today's big carbon dioxide gas producers--the industrialized countries.... The problem exists much more at the level of underdeveloped countries, like China and India, which enter a development phase.... There is only nuclear energy that stands as a realist solution."

"Ottawa: Forming Global Warming Strategy The Worst Possible Way"

Columnist Jeffrey Simpson wrote in the leading Globe and Mail (10/31), "The Kyoto summit has been on the international agenda for a long time.... Now policy is being made, and in the worst possible fashion. Mr. Chretien has dictated that Canada's position should be slightly beyond that outlined for the United States last week by President Bill Clinton.... Lacking a consensus on policy grounds, the government has now been ordered by the prime minister to beat Clinton. Figuring out how to accomplish 'Beat Clinton' is now what government policy making has become."

"U.S. On Right Track, Not Canada"

In the view of the liberal Citizen (10/31), "Non-scientists find it difficult to evaluate the science

of global warming.... Deciding how to go about reducing the amount of carbon dioxide and other pollutants released into the air is much easier. The United States and Canada are considering different approaches: In their case a market-based plan, in ours, the possibility of a new tax regime. The Americans, not us, are on the right track."

DENMARK: "U.S. Cannot Continue To Bury Its Head In The Sand"

An editorial in center-left Aktuelt (10/25) criticized the United States for its "weak" position on climate warming: "Only a few months ago, Denmark honored the U.S. President Bill Clinton when he delivered a speech in Copenhagen.... Everybody was impressed by the president's moving speech...but it is doubtful whether he would receive the same reception today. He has not lived up to our expectations, and he has betrayed our hopes. On Wednesday Clinton presented his visions for the climate conference.... A huge burden of responsibility rests with the United States. It is extremely sad that the world's richest country is not able to live up to this responsibility and take the lead in this area.... Such has been the disappointment and frustration regarding the U.S. presentation that it has been suggested that the climate conference should be canceled. We would like to emphasize the fact that we do not think this would be a good idea. Even though nothing dramatic appears to be happening, it is important that the countries should meet to exchange ideas. In addition, it may be possible for them to exert some pressure on the U.S. government so that it can alter American public opinion at home....

"The United States cannot continue to bury its head in the sand. The environmental situation is important even in the `promised land.' If the powerful American lobby, which is currently investing a lot of money in a campaign against Co2 reductions, does not understand any other language than that of the market, consumers will have to show them what they mean.... Reactions planned by environmental organizations ought to be supported. Americans must understand that the time we have left to solve climate problems should not be measured in centuries but decades."

HUNGARY: "Doubts About Kyoto"

Readers of literary weekly Elet es Irodalom saw this (11/14), "There is only a very little hope that the Kyoto summit agrees with the American position, as the EU urges much stricter steps. It is also in question whether the developing countries can be persuaded to take mandatory steps. But there have been some favorable developments to report as well. Leading car manufacturers now are working on new, energy-saving technologies. I still don't quite understand why this key issue of global warming receives such a limited attention. It is not a chemical experiment carried out in a test-tube with a negative or a positive result. Humankind has come to a crossroad now and either manages to sustain development or is running toward a catastrophe."

"Disappointment"

Conservative Magyar Nemzet carried this op-ed piece (10/25), "As expected, the president aims to balance the environment and the growth of industry. But the issue is more complicated than that: The current situation cannot be simply described as the classic industry-vs.-environment issue, as several corporations are in favor of alternative energies and support the plan. Oil companies and car manufacturers are running their several million-dollar ad campaigns on how much the gas and energy bills, as well as unemployment would go up if the plan was approved. The overall view in the United States now is that, instead of a warm welcome, the plan met with disappointment."

SPAIN: "No Need To Look Beyond The Mediterranean"

Independent El Mundo opined (11/14): "Years ago the UN warned that the Mediterranean was

turning into a sewer...[so], there is nothing new in yesterday's [report by Greenpeace]. Climate change will only speed the deterioration of [this] ecologically rich, but vulnerable, basin.... The leaders [meeting in Kyoto] next month would be well reminded that: 'The planet is not an inheritance from our parents, rather a loan from our children.'"

SOUTH ASIA

INDIA: "Tokyo Will Not Be All Hot Air"

Tokyo correspondent F.J. Khergamvala filed for the centrist Hindu (11/12), "India and China were among the total of 21 countries (including the European Union as an entity) invited (to Tokyo) but stayed away, partly because the primary purpose of the meeting was to narrow down differences only among the developed countries before they reach binding commitments to reduce global warming at the Kyoto conference.... India's absence from the meeting in Tokyo may have been due to apprehensions that any attendance would diffuse the focus of Kyoto from a meeting designed to set targets for the developed to responsibilities of the developing.... Japan and the United States are formulating inducements to attract a voluntary commitment by some of the bigger developing nations that after Kyoto they too will begin implementing verifiable measures on reducing greenhouse gas emissions, but will not be asked at all to make any commitments at Kyoto....

"A feature of the just-concluded Tokyo meeting...was the United States' privately toning down its insistence on the Kyoto protocol, including commitments from the developing nations as well and instead sent feelers of inducements to get them aboard at some date.... It appears that the chief U.S. negotiator, Timothy Wirth, did not condition U.S. commitments to demands by the Senate that its ratification of any treaty in Kyoto would in turn be conditioned by the developing nations making binding commitments.... Broadly, the main gain of the meeting was summed up by the Japanese state secretary for foreign affairs: "No agreement was made. But countries understood other countries' positions and they also understood what others expect of them." In other words the major polluters, the United States, Japan and the EU seem to have kept some thing up their sleeves for the inevitable brinkmanship in Kyoto but by and large made clear where they could not compromise and where they might negotiate. They seem to have reduced the political rhetoric and got into technicalities.... Now it looks that Kyoto will have a compromise and it will not be all hot air."

"India Must Hold Firm"

An analysis in the right-of-center Indian Express (11/11) pointed out: "From all reports, the negotiations leading up to the Third Conference of the Parties to the Framework Convention on Climate Change to be held in Kyoto next month have hit stormy weather.... The specter that has been haunting the process is the lack of unanimity, even among the industrialized nations, on the schedules to be followed. The USA and Australia, in sharp contrast to the others, say they are only prepared to stabilize emissions to 1990 levels by 2008-2012.... Clinton...recently said that the United States will not agree to binding obligations unless key developing countries (read China and India) meaningfully participate in the effort. For the head of a nation which with less than five percent of the world's population contributes over 25 percent of the global greenhouse gas emissions to say this, amounts to sheer effrontery....

"So what should India's response to the Kyoto negotiations be?... While it remains committed to the spirit of the Montreal Protocol, it must at the same time desist from signing away the future of its people by agreeing to unreasonable emission curtailments that could seriously jeopardize its future development."

"What India Should Consider"

The centrist Hindu's correspondent Kalpana Sharma wrote (11/7): "While the developing

countries have a point in the international context in stressing that their relatively minor contribution to the problem should not form part of any discussion on climate change, the last few years have shown that internally these countries have to think again about their economies and the state of the environment. India, for instance, along with China, is singled out as being a potential polluter of a size equivalent to many of the smaller industrialized countries. While internationally India's position has been on the side of the angels--or of the devil depending on your perspective--domestically, it has failed miserably to think through the issue of greenhouse gas emissions as it impinges on the health and well-being of its own people.... As the Kyoto meeting approaches, India has to consider whether its international position on the climate change issue will be diluted if it takes tough measures to curb air pollution in our cities, particularly from the automobile exhaust."

BANGLADESH: "A Go-Slow Policy That Will Also Rebound On Developed Nations"

Conservative, Bangla-language Ittefaq (11/1) said in an editorial, "The Bonn meeting expressed concern that the people of the islands like Maldives...will have to search for high land if the sea level rises by one meter.... In spite of scientists' warning that the entire world will more or less be affected owing to the greenhouse effect of global warming, not to speak of the United States, other industrial nations are also not taking effective measures to control emissions or production of greenhouse gases.... It is now clear that the industrial nations, including the United States, have adopted a go-slow policy, which is very unfortunate. It would be wrong for the industrial powers to think that global warming only affects small island nations. The untimely flooding in Europe and in the United States demonstrates that. Policy makers of the developed nations must prepare a short-term schedule to reduce emissions of greenhouse gases considering natural calamities in their own countries also."

LATIN AMERICA

ARGENTINA: "The Most Responsible Should Assume Commitment"

An editorial in leading Clarin (11/3) opined, "No action can be undertaken against the 'greenhouse effect' if those countries that are responsible for the greatest polluting gas emissions do not assume a true commitment to reduce it in a short term. In this sense, the reluctance of the United States, undeniable leader of the world economy, to take concrete and immediate measures is not encouraging.... All the countries must join to avoid pollution. But, paradoxically, those whose developed economies are the largest polluters are those which are in a better condition to invest in new technologies that would lead to a harm-free environmental growth."

"A Matter Of Universal Significance"

An editorial in daily-of-record La Nacion (10/28) recalled, "During President Clinton's visit to our country, a declaration was signed confirming the role played by developed nations in the fulfillment of their obligations, also stating that the developing nations must have a significant participation in this global regime, including the treatment of the limitation of harmful gas emissions. (Argentina) supports the American position, but points out the (agreement's) different degree of commitment, in the sense that some have 'obligations' and others must 'participate significantly.'

"The environmental issue does not run out with the greenhouse effect.... In any case, the risks of global warming, with its potential effects on the climate, the rise in water levels, the effect of solar radiation on human health, and other consequences, turn it into a matter of universal significance and great priority. For this reason, the Kyoto meeting should generate true and realistic commitments that can be easily fulfilled."

BRAZIL: "On What Authority?"

In an editorial, liberal Jornal do Brasil (11/3) detemined, "The rich countries are those most responsible for carbon dioxide emissions, from their factories, cars and planes, in addition to the gases used in their fridges and air conditioners, which destroy the protective ozone layer. They admitted this during Rio-92 and promised to reduce emissions by half by 2005. Five years later, the meeting in Manaus...served to prove that the rich countries continue to shirk their responsibility for planetary pollution. Except for Germany, no member of the G-7 kept its promise of financial aid to the Third World...and the 130 NGOs meeting in parallel turned their guns exclusively on Brazil....

"One of the difficulties of Brazil's EPA in fighting the devastation of our forests is the lack of resources promised by the rich countries. If these countries continue to distance themselves from the poorer ones...what moral authority do the NGOs tied to them have to pin on the less developed ones, like Brazil, the exclusive responsibility for filtering the atmosphere?"

"Pray Kyoto Does Not Repeat Rio-'92's Fiasco"

Brasilia's center-right, pro-government Correio Braziliense and Rio's regional Jornal do Commercio ran this editorial (10/26), "Environmental problems all over the world have become worse...since the Rio UN conference in 1992.... The truth is that the commitments and good intentions expressed there were not acted upon.... Despite this apocalyptic state of affairs, the United States announced that it can reduce gas emissions to 1990 levels only by 2008-2012. This is undoubtedly a concession to the large industrial conglomerates, which do not want to pay for more environment-friendly equipment. The bad part is that the greenhouse effect results, to a considerable extent--approximately 25 percent--from the gas emissions of American industries.... One hopes that the [Kyoto] climate summit does not repeat Rio-92's fiasco."

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The Boston Globe

November 7, 1997
Pg. A17, 726 words

WARNING ISSUED ON FOSSIL-FUEL BURNING

By Richard Saltus, Globe Staff

Deaths from the fine particles in air pollutants, which are generated mainly by coal-fired power plants, may reach 700,000 a year by 2020 unless controls are enacted, an international scientific group is projecting.

Reducing such pollution, which is emitted from fossil-fuel combustion along with carbon dioxide and other "greenhouse gases," could prevent a total of 8 million deaths from 2000 to 2020, as well as slow global warming, the group says in a paper published today in the medical journal The Lancet.

The findings should provide compelling reasons to adopt limits on fossil-fuel burning in countries that are resisting proposals they feel would hurt their economies, said authors of the report.

"What's forgotten here is that fossil-fuel combustion is where air pollution comes from," said Joel Schwartz, an environmental health specialist at the Harvard School of Public Health.

"The health benefits from lower pollution accrue to your country" even if the long-term climate benefits are global, he said.

The report in Lancet comes from the Working Group on Public Health and Fossil-Fuel Combustion, which includes specialists from the World Health Organization, the US Environmental Protection Agency, and the nonprofit World Resources Institute in Washington.

Devra Lee Davis, an environmental scientist with the World Resources Institute, said she will present the findings at the United Nations conference in Kyoto, Japan, next month where a climate change treaty is to be signed.

"Our message is quite simple," she said in a telephone interview. "These health benefits have been uncounted in the whole equation of reducing" carbon dioxide, she said.

Richard Wilson, a Harvard physicist and contributor to the report, said, "If you want to effect global climate change, the only way is to reduce fossil-fuel burning, particularly coal, and that will reduce air pollution." One important

strategy is to switch to natural gas for much energy use, he said, and another is to increase the use of nuclear power, a stance that many environmentalists oppose.

The group's analysis compared two projections of energy use and generation.

One, termed "business as usual," was based on expected energy consumption and associated emissions of carbon dioxide.

The other scenario assumed that developed countries would reduce carbon dioxide emissions by 15 percent below their 1990 levels by the year 2010, and developing countries would reduce their emissions 10 percent below their levels now forecast for 2010.

Emissions from burning fossil fuels create, in addition to carbon dioxide and other gases, a host of pollutants including fine particles that are often coated with traces of metals. Schwartz, the Harvard epidemiologist, said most scientists now agree that fine particles inhaled deeply into the breathing passages and lungs cause numerous heart and pulmonary diseases. These include cardiac arrhythmias, heart attacks, bronchitis, and pneumonia.

The current estimate is that 70,000 premature deaths occur each year in the United States from such pollution, he said. Worldwide figures were not given. Recent changes to clean air regulations do not require control of particulates in this country until 14 years from now, said Schwartz.

In the global climate debate, said Schwartz, some developed countries are arguing that the real problem is in the developing countries where economic growth encourages massive increases in power generation, much of it by burning fossil fuels.

But many in those countries argue that their need for economic development is greater than in the developed countries and therefore they should be allowed to catch up - in energy and carbon dioxide emissions.

"The answer from this study is that you don't want to catch up," said Schwartz.

"There are good reasons to do things in a more energy-efficient way," he added. "The Chinese have astronomical bronchitis rates, and it's going to get worse if they build 300 coal-fired power plants."

By the same token, the report's authors said, it would be in the US interest to cut carbon dioxide emissions sharply: In the United States alone the number of avoidable deaths from particulate exposure in the year 2020 could equal the

33,000 deaths associated with immunodeficiency diseases like AIDS that occurred in the nation in 1995.

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Global Climate Change Treaty: Negotiations and Related Issues

Background

There is broad scientific consensus that greenhouse gases--primarily carbon dioxide (CO2) emitted in the burning of wood and hydrocarbons such as oil, coal, and gas, but also including a number of other gases such as methane--are increasing in the atmosphere due to human activities, and that the temperature of the Earth has warmed by about 0.9 degrees F over the past 110 years. Emissions have a cumulative effect, as most greenhouse gases remain in the atmosphere for long periods--hundreds of years in the case of carbon dioxide, and thousands of years for some. What is still a matter of contention is the accuracy of models that predict future consequences such as the timing, rate, and magnitude of prospective climate changes, and where and how these impacts might be felt. This uncertainty about future changes has generated a continuing debate over what is appropriate in terms of policy measures to reduce or limit greenhouse gases. (See CRS Report IB89005, *Global Climate Change*, for more detailed discussion of scientific and other aspects of this issue).

Negotiations began in 1989 under United Nations auspices to formulate an international treaty on global climate change and resulted in the 1992 Framework Convention on Climate Change (FCCC). The Climate Change Convention was opened for signature at the Earth Summit in Rio de Janeiro in 1992. In this treaty, which the United States was one of the first to ratify, nations acknowledged that human activity may be changing the world's climate systems and pledged that industrialized countries would aim to stabilize emissions of human-generated "greenhouse gases" at 1990 levels by the year 2000. However, no legally binding targets or timetables for such reductions were agreed upon, and actions to control emissions were sought primarily from countries listed in an Annex ("Annex I countries") that included only the more advanced industrialized (developed) countries, and the former communist countries now referred to as "economies/countries in transition."

Most developed nations agreed to the non-binding goal of scaling back their emissions to 1990 amounts by the year 2000, but it now appears that most nations will fail to meet this goal. U.S. emissions of greenhouse gases are about 13% above 1990 levels, and at current rates would grow to some 30% above 1990 levels by 2010. The FCCC does not deal with the post-2000 time frame, which is the focus of current negotiations.

Since 1992, the Convention has entered into force and two meetings of the Parties have been held, resulting in the negotiations currently underway on a legally binding protocol on specific provisions to reduce, limit and/or stabilize greenhouse gas emissions in the post-2000 period. These negotiations are expected to conclude in a December 1997 Conference of the Parties (COP-3) in Kyoto, Japan. However, given the continuing differences among the Parties, and the failure to resolve major issues to date, some believe that agreement will be difficult to achieve by December of this year.

Negotiations Leading to the Kyoto Conference of the Parties

Major points of contention in current negotiations include significant differences among the industrialized/developed countries and between developed and developing countries over the extent of specific reductions, how flexible the means to reach these reductions should be, and other elements. Another contentious issue is what should be expected of developing countries, which are exempted under the terms of current negotiations from assuming "new commitments." Developing countries argue they are emitting far fewer greenhouse gases, both in absolute and per capita terms, than developed nations, and that increasing their use of energy is critical to their economic development. Further, they argue that the developed countries have caused the problem by emitting most of the greenhouse gases to date (although it is expected that within the next two decades, greenhouse gases from major developing countries will exceed those of the current "developed" countries).

In 1995, at the First Meeting of the Conference of the Parties (COP-1) in Berlin, Germany, the "Berlin mandate" was agreed upon to begin analysis and assessment of the need for a binding protocol on emissions limits. The 1996 COP-2 meeting resulted in a ministerial agreement that called for accelerated negotiations on a protocol or other legal instrument that would result in limiting greenhouse gases. Negotiators have met eight times as the "Ad hoc Group on the Berlin Mandate" (AGBM) to try to find agreement on elements of a protocol which they aim to bring to the third meeting of the parties (COP-3) for agreement and signature. (For detailed discussion and a copy of the Berlin Mandate, see CRS Report 96-699 SPR, *Climate Change: The U.N. Framework Convention's Second Conference of Parties and the Ministerial Declaration).*

Few major issues were resolved at the seventh meeting of the negotiators in Bonn, Germany, July 27-August 8, 1997 (AGBM-7). Four working groups were established to work on: (1) targets and timetables, (2) policies and measures needed to achieve goals that may be agreed upon, (3) developing country commitments, and (4) institutional and legal frameworks to concentrate on major concerns yet to be resolved.

The October 17-31 negotiating session (AGBM-8) considered a consolidated negotiating text, and had three major proposals that vary significantly before it--from one the European Union, one from Japan, and an October 23 proposal announced by the United States. However, the most difficult issues eluded a resolution at the Bonn meeting. Few major decisions seem likely to be concluded prior to the Kyoto meeting, although numerous informal meetings are continuing discussions between the AGBM-8 meeting and the December 1-10 COP-3 meeting. It now appears to

some observers and participants that the prospect of reaching a final agreement by December 1997 in Kyoto at the third meeting of the parties will be difficult, at best. Others feel that a compromise might be reached that involves some initial commitments on emissions by developed countries, with commitments from developing countries to commence further negotiations on binding emission limits for themselves.

Current Negotiations

Additional meetings scheduled in the weeks leading up to the Kyoto meeting, include a ministerial level meeting in Japan. High level efforts are being made to find accommodation and resolution of the various proposals on the table. The AGBM, instead of being disbanded at the end of the Bonn meeting, will have final sessions on November 30 and the morning of December 1, to attempt to resolve some of the outstanding issues--and to incorporate any areas of agreement that have been reached in the intersessional meetings around the world in the weeks preceding the meeting.

U.S. Proposals and Positions

In 1996, the United States reversed its position against emissions reduction targets and called for legally binding, quantitative emissions limitation and reduction objectives for the period beyond year 2000. At the 1997 "Earth Summit Plus Five" Special Session of the United Nations General Assembly, held in June to assess progress since the 1992 Rio Earth Summit,[1] the United States faced strong criticism for failing to take leadership in setting specific targets and timetables for limiting greenhouse gas emissions. President Clinton addressed this meeting, but declined to declare a specific numerical emissions reduction target for greenhouse gas emissions on behalf of the United States. Instead, he pledged: (1) to hold a White House Conference on climate change (later scheduled for October 6) to bring together the various contending interests, including industry, scientists, economists, environmental groups, etc., to discuss needed policies; (2) to make $1 billion available over the next 5 years in foreign assistance targeted to climate change prevention; and (3) to encourage installation of one million solar roofs--to heat and cool buildings without greenhouse gas emissions--over the next 5 years. Other actions would include an environmental technology initiative to bring developing countries on board, and requirements for best environmental practices as criteria for international lending.

Interests in the United States are pushing in two directions. Some industry spokespersons urge the United States not to make commitments that would too quickly limit use of fossil energy and other greenhouse gas sources, which they argue would create problems for them and for the economy. On the other hand, environmental groups are concerned that the United States will be reluctant to take leadership in making specific commitments to limit greenhouse gases, thereby delaying what they regard as important, and even overdue, action both domestically and internationally to stave off consequences of climate change.

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[1] See CRS Report 97-577 ENR, *Earth Summit + 5: The United Nations General Assembly Special Session on Environment and Development.*

A major influence on the process in the United States and at the international level has been views and actions of the U.S. Congress. Some Members of Congress have warned U.S. negotiators that consent would be difficult to achieve for any new protocol or other legal instrument that proposes new commitments for the post-2000 period, if those commitments were not uniform and binding for all parties, whether they are industrialized countries, in transition (former communist countries), or developing countries. S.Res. 98, introduced by Senators Byrd and Hagel, along with 64 co-sponsors, passed the Senate by a vote of 95-0 on July 25, 1997. The resolution expressed the sense of the Senate that the United States not be a signatory to any agreement in Kyoto in December 1997, "unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period," or if it would "result in serious harm to the economy of the United States."

The United States and some other countries have stood firmly against the imposition of "common and coordinated measures," expressing the position that climate protection goals should be differentiated from country to country according to their situations and based upon what makes the best economic sense for them, individually.

Following the October 6 White House Conference on Climate Change, Administration officials engaged in intensive and reportedly difficult interagency debates, delaying announcement of an official U.S. position on targets and timetables until after the beginning of the October AGBM negotiations in Bonn.

U.S. negotiating position announced. On October 22, President Clinton announced the long-awaited United States position on global climate change in a speech at the National Geographic Society in Washington, D.C. The U.S. position proposed legally binding targets for developed countries that renew their commitment to reduce emissions of six major greenhouse gases to 1990 levels, this time by 2008-2012, together with measures to be taken in the United States to encourage actions before the mandatory date, and commitments by developing countries to participate in a meaningful way in greenhouse gas limitations. The major elements of the U.S. proposal are:

-- Binding targets for greenhouse gases to reach 1990 emission levels by between 2008 and 2012, with unspecified reductions below 1990 levels in the following 5-year period. The United States argues that this is a reduction of 23% to 30% below what emissions would otherwise be.

-- A $5 billion package of tax cuts and spending on research and development over 5 years to encourage energy efficiency and development of new lower emission technologies.

-- Early credit for industries that adopt near-term actions to cut emissions, based on industry-by-industry consultations to encourage preparation of plans over the next 9 months on reduction of emissions.

-- Domestic and international emissions trading systems to be implemented after a decade of experience has accumulated in developing new

5

technologies, creating early credit, focusing federal procurement on energy efficient and lower emission technologies, electric utility restructuring, and other measures.

-- Participation of developing countries, with specific commitments to be developed; the United States will spearhead joint implementation projects, in which firms in one country receive credit for emissions reductions in other countries where investments might achieve greater reductions than in the home country.

The United States supported its proposal with fact sheets on a variety of approaches, such as international emissions trading and joint implementation, federal procurement, electricity restructuring and other issues. In addition, these materials underlined the importance of the participation of developing countries, requiring "every nation" to take "meaningful actions to limit emissions." Above all, the U.S. materials emphasize that the U.S. proposal is "realistic, flexible and achievable." The Administration further contends that domestic implementation could be achieved through tax incentives, joint implementation for credit and other measures that would avoid the need for taxes or onerous regulations.

The U.S. proposal was criticized by some nations and environmental groups as at best a weak compromise that would not require immediate action to reduce greenhouse gas emissions. Others accepted the proposal as realistic, going as far as was politically possible. Still others felt the proposal failed to make explicit commitments by developing countries and would not be acceptable in light of S.Res. 98. Some commentators have noted that when positions are announced by the head of state, a country then has less leeway for adjusting its position.

In the period since the June 1997 "Earth Summit Plus Five" meeting of the U.N. General Assembly, President Clinton has reportedly been deeply involved in decision making and has engaged widely in discussions with other heads of state about climate change and the negotiations leading up to the Kyoto meeting. This has already had some effect in elevating the issue politically in many countries and focusing high-level attention on these negotiations.

Other Nations' Positions

In addition to the U.S. position, there are two competing proposals that are receiving the most attention--from the European Union and from Japan, both proposing emissions reductions below 1990 levels by various dates.

European Union. The European Union made an early proposal during the summer, urging that developed countries make a commitment to reduce three major greenhouse gas emissions 15% below 1990 levels by the year 2010, with an interim target of 7.5% by the year 2005. They propose using a "bubble" approach that would group all the European nations together and call for emissions reductions that would be cumulative across all countries in the European Union. The Europeans strongly urged the United States to adopt this position at the June 1997 Earth Summit Plus Five meeting. The United States was accused at that meeting of failing to take

leadership on the climate change issue because it did not articulate specific numerical targets and timetables for greenhouse gas emission reductions.

However, some observers note that European emissions--taken as a whole--have already dropped significantly since 1990, with the addition of East Germany and Eastern European nations, where highly polluting plants have been closed or retrofitted. These observers note that this makes adoption of this position easier for Europe than for other regions. In addition, use of the bubble approach means that several countries in the European Union would be allowed actual increases, some sizable, in greenhouse gas emissions, and the EU as a whole would still meet the targets. Another difference between the United States and European nations is that the European position does not favor including specific additional requirements for developing countries in the protocol under negotiation.

Japan.: On October 6, the government of Japan announced its proposal, for a 5% reduction below 1990 levels for three greenhouse gases--carbon dioxide, methane, and nitrous oxide--over a "budget" period from 2008 to 2012. The proposal also calls for flexibility for measures that best suit a country's needs to be used. Targets for individual countries would be differentiated using several factors: emissions per gross domestic product (GDP), emissions per capita, and population.

The Japanese proposal also called for banking, borrowing, emissions trading, and joint implementation, and stated that emissions for the second budget period should not exceed those for the first budget period. According to various estimates, using the differentiation method and the factors in Japan's proposal for computing actual reductions, Japan's actual target would end up being between 2.5% and 1.5% below its 1990 levels of emissions.

Japan takes very seriously its responsibility as host of the Kyoto COP-3 and thus as president-designate of the meeting. Its proposal was intended to be realistic, and does not call for any requirements for developing countries in the agreement considered at Kyoto, although it would encourage voluntary commitments from more advanced developing countries. However, significant dissatisfaction was expressed by other parties in the ruling coalition in the Japanese parliament, who said they were not consulted before this proposal was announced; they called for more stringent requirements to deal with "the perilous state of the global environment." Some press reports in Japan stated that the Japanese Prime Minister subsequently indicated there might be some room for changes in its proposal.

Developing Countries. Most developing countries continue to resist making commitments to emissions reductions in this round of negotiations. There have been exceptions, notably a formal statement issued by President Menem of Argentina during President Clinton's visit to that country, in which the joint Presidential Declaration of Bariloche was issued. In this declaration, the two countries agreed that given the global nature of the problem of climate change, "...Developed countries must meet their obligations, and developing countries must participate meaningfully in this global regime, including by addressing emission limits for developing countries."

However, for the most part, the "G77 and China," as the bloc of developing countries is called, continue to argue that it is the responsibility of

6

developed/industrialized nations--who have produced most of the current load of additional greenhouse gases during their development--to take the first meaningful steps and lead the way on greenhouse gas emissions, and that developing countries must also receive economic assistance in the course of making changes to mitigate and adjust to climate change.

The G77 and China made a formal proposal at the Bonn meeting that developed countries should stabilize their emissions of greenhouse gases at 1990 levels by 2000, then reduce them by 15 percent by 2010, with further reductions of 20 percent by 2020--a total of 35 percent reduction in greenhouse gases by 2020 below 1990 levels.

Impacts of Emissions Reductions

If binding emissions limits or reductions of greenhouse gases are agreed upon in Kyoto, there are varying estimates on what the impacts would be--on atmospheric concentrations of these gases, on how much actual reduction each proposal would actually achieve, and on the likely amount of climate change or warming that might occur.

Atmospheric concentrations. Attention has focused on when a doubling of greenhouse gases in the atmosphere would occur, with the consequent possibility of a rise in the Earth's surface temperature of 3 to 8 degrees fahrenheit, causing increased sea level rise and disruption of current climate and hydrological cycles. (It is estimated that the world has warmed some 5 to 9 degrees over the past 18,000 to 22,000 thousand years since the last ice age.) Atmospheric concentrations of carbon dioxide have risen over the past 100 to 200 years from approximately 280 parts per million in the pre-industrial period to 360 parts per million today--an increase of just over one-third.

It now seems likely that even with implementation of the somewhat modest reductions in greenhouse gases that might be achieved by proposals taken up at Kyoto, the atmospheric concentration of these gases is likely to double within the next century--to 550 parts per million.[2] A key question is how much beyond a doubling might these concentrations go, and if significant climate disruption is caused by a doubling, how severe the eventual consequences might be of even greater increases. Some argue that strong steps now could keep atmospheric levels below 550, but others do not agree.

Impacts of proposals on emission reductions. Although the three major proposals on the table for Kyoto--from the European Union, the United States and Japan--appear very different, some analysis of how they would work in practice indicate they may be closer together than they appear at first. A recent Environmental Protection Agency analysis, not yet published, disaggregated the elements of each proposal, and concluded that in terms of all greenhouse gases, the actual percentage change from 1990 levels would be as follows:

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[2] See discussion in "Experts Doubt a Greenhouse Gas Can Be Curbed," New York times, November 3, 1997, p. 1.

-- The U.S. proposal would be 0% change--stabilization at 1990 levels;
-- The European proposal would result in 5.2% reduction below 1990 levels;
-- The Japanese proposals would result in increases above 1990 levels of 5.4% to 7.9%.

The differences are because the U.S. proposal, EPA argues, includes all major gases, and accounts for removal by greenhouse gas "sinks"--through which gases are removed from the atmosphere. By contrast, the EU proposal and the Japanese proposals, although described as a 15% reduction or 5% reduction respectively, make commitments to reduce only three of the six major greenhouse gases, and do not account for sinks.

These elements of differences, and the degree to which the differing parties can agree on convergence among their treatment of these differences, will undoubtedly be major factors in the discussions among parties in the period leading up to the December meeting and in Kyoto.

Issues for Congress

Issues for Congress related to a possible climate change protocol or amendment fall into three categories: oversight, Senate advice and consent on ratification, and consideration of implementing legislation.

Oversight. Extensive hearings have been held by several committees in both the House and the Senate, considering a wide range of issues connected to U.S. negotiations on binding commitments in a climate change agreement. Major issues have included assessments of the status of scientific knowledge, oversight of proposals being negotiated, and economic impacts of U.S. measures to implement an agreement.

Discussions of economic impacts of an agreement have been inconclusive, since the content of an agreement is not yet known; the Administration had agreed to conduct an interagency review of economic impacts of various possible measures, but the task is not yet completed, and has proven to be internally contentious. The Administration has argued that the U.S. proposal, if accepted in negotiations, is structured in such a way that taxes and onerous regulation can be avoided. Some commentators have doubts that the 20-30% reductions by 2008-2012 in all six greenhouse gases proposed by the United States could be achieved domestically without a tax.

Both the House of Representatives and the Senate are planning to send sizable delegations of Members as observers to the Kyoto meeting in December.

Ratification. If the Kyoto negotiations produce an international protocol or amendment to the Framework Convention on Climate Change, and the United States signs the agreement, Senate approval would be required for U.S. ratification. The Byrd-Hagel resolution (discussed above) in the Senate put the Administration on notice that such approval would be lacking if Members did not find requirements

7

made of developing countries sufficient, or if they regarded the proposal to be potentially damaging to the U.S. economy. If the agreement in Kyoto involves follow-on negotiations to bring developing countries sufficiently into the process at a later date, it is unclear whether the Administration would submit the agreement to the Senate until after satisfactory agreement has been reached with developing countries.

Implementing legislation. President Clinton's proposal on climate change includes a number of domestic actions to promote energy efficiency, create tax credits for industries, and other measures that would lead to reduction of greenhouse gas emissions. Such measures would require congressional action. Some of these measures may be proposed in Congress even before U.S. approval of a Kyoto agreement. Other measures to meet the binding obligations in the U.S. proposal would not necessarily be required until closer to the 2008-2012 period in which limitations would have to be achieved.

Contents

Background 1
Negotiations Leading to the Kyoto Conference of the Parties 2

Current Negotiations 3
U.S. Proposals and Positions 3
U.S. negotiating position announced 4
Other Nations' Positions 5
European Union 5
Japan 6
Developing Countries 6
Impacts of Emissions Reductions 7
Atmospheric concentrations 7
Impacts of proposals on emission reductions 7

Issues for Congress 8
Oversight 8
Ratification 8
Implementing legislation 9

Global Climate Change Treaty: Negotiations and Related Issues

Summary

The United States and other parties to the 1992 Climate Change Convention signed at the Earth Summit in Rio de Janeiro will meet December 1-12 in Kyoto, Japan, to conclude year-long negotiations on a legally binding protocol or amendment to reduce or stabilize emissions of greenhouse gas emissions. The U.S. proposal to reduce emissions of carbon dioxide and five other greenhouse gases to 1990 levels between 2008-2012 is less ambitious than environmentalists and many other treaty Parties urge, but represents a commitment that others, including many in business, fear could damage the economy. A key aspect of the negotiations also is what should be expected of developing nations, whose current emissions of greenhouse gases are relatively small, but are expected to increase rapidly over the next decade with economic development. A sense of the Senate resolution calls for all countries to meet scheduled reductions, and would agree to U.S. participation only if harm to the domestic economy is avoided. If agreement is reached in Kyoto, Senate approval would be required for U.S. ratification, and legislation to implement commitments would also likely be necessary.

The Intergovernmental Panel on Climate Change (IPCC)

UNEP
For Life on Earth

About the IPCC

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess the available scientific, technical, and socio-economic information in the field of climate change. The IPCC is organised into three working groups: Working Group I concentrates on the climate system, Working Group II on impacts and response options, and Working Group III on economic and social dimensions. The IPCC released its Second Assessment Report in 1995 and continues to produce Technical Papers and develop methodologies (e.g. national greenhouse gas inventories) for use by Parties to the Climate Change Convention. The Third Assessment Report will be completed issued around the year 2000.

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GLOBAL WARMING

Climate Negotiations Calendar of Events

In 1992, negotiators from over 150 nations agreed to attempt to reduce their emissions of so-called greenhouse gases -- produced in large part by the burning of fossil fuels -- in order to curb the threat of global warming. Since that time, however, emissions of greenhouse gases have continued to climb largely unabated. Recognizing that the voluntary commitments made in Rio are inadequate to protect the climate, negotiators are now working toward legally-binding emission limits, to be agreed upon at the December climate change conference in Kyoto, Japan. Here, a description of important events, past, present and future, leading up to the Kyoto meeting.

JUNE, 1992
Earth Summit: *Rio de Janeiro, Brazil*

Officially termed the United Nations Conference on Environment and Development (UNCED), the Earth Summit brought together more heads of state than ever before to address the world's most pressing environmental problems. The most important agreement to come out of the Earth Summit was the Framework Convention on Climate Change. The Convention's objective is to curb human-induced climate change; as a preliminary step towards that end it called upon the most industrialized countries to voluntarily return their emissions of greenhouse gases to 1990 levels by the year 2000.

MARCH, 1995
First Conference of the Parties to the Climate Treaty: *Berlin, Germany*

In Berlin, negotiators reviewed the progress made toward meeting the goals set by the 1992 treaty; they concluded that the voluntary approach had been unsuccessful. The conference resulted in the Berlin Mandate, which called upon the most industrialized nations to set stronger, more specific reduction targets for themselves. This process was scheduled to be completed in 1997.

MAY 19, 1997
Climate Change Speech by Group Chief Executive of British Petroleum: *Stanford*

In a speech which vaulted BP into the lead as the most progressive among oil companies on the global warming front, John Browne, BP's Group Chief Executive, outlined his company's views on the subject. Regarding the science provided by the Intergovernmental Panel on Climate Change, Browne stated, "It would be unwise and potentially dangerous to ignore the mounting concern." Browne went on to say that, "As a company, our contribution is small, and our actions alone could not resolve the problem. But that does not mean we should do nothing."

JUNE 20-22, 1997

JUNE 20-22, 1997
G8 Summit: *Denver, Colorado*

Leaders of the eight largest economic powers (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States), which together account for about half of global carbon dioxide emissions from energy consumption, committed to forging "a strong agreement that...contains quantified and legally-binding emission targets" by this December's climate conference in Kyoto. Britain's Tony Blair and Germany's Helmut Kohl severely criticized President Clinton for not having advanced a specific target for emission reductions. The European Union has called for a 15 percent reduction below 1990 levels by 2010, with an interim target of 7.5 percent by 2005.

JUNE 26, 1997
President Clinton's Address to the Earth Summit II: *New York, NY*

In his most strongly-worded speech to date on these issues, Clinton stated that the scientific evidence on global warming is "clear and compelling," and he committed the United States to strong leadership on climate change. The President also promised to engage the American people and Congress in a dialogue to explain the real and imminent threats from climate change, the economic costs and benefits involved, and the opportunities that American technology and innovation can provide. Environmentalists were encouraged by the President's strong stance, feeling that it had elevated global warming from a "Gore issue" to a "Clinton issue." But the environmental community expressed disappointment that the Administration had still failed to specify numerical objectives for reducing emissions in line with other nations involved in the planning of the upcoming Kyoto meeting.

JULY 24, 1997
White House Roundtable on Climate Change Science: *Washington, D.C.*

President Clinton and Vice President Gore met with seven leading climate scientists -- including Nobel laureates Henry Kendall, Mario Molina, and Sherwood Rowland -- to discuss the current status of scientific understanding of global climate change. The scientists presented a unified message of grave concern over the projected effects of global warming, and stressed that the scientific consensus on climate change warranted immediate and decisive action on the part of the United States as the world's largest consumer nation.

JULY 31 - AUGUST 7, 1997
Negotiations on a Climate Change Protocol: *Bonn, Germany*

Officials, diplomats, and observers from 130+ countries spent five days in the second to last set of formal talks on a protocol to be adopted in Kyoto in December. The purpose of the Bonn talks was to facilitate the transition from a voluntary emissions reduction standard (as laid out in 1992's Framework Convention) to a legally-binding international protocol mandating specific emissions limitations. Key issues included: targets and timetables for emissions reductions; the degree of flexibility nations will have in achieving them; and the extent to which nations may have differing targets.

AUGUST - SEPTEMBER, 1997
U.S. Regional Meetings

The White House held a series of meetings around the United States featuring Cabinet members and other top Administration officials discussing global warming. The goal: To bring the issue home to the American public so that the Administration can show support for adopting the standards set at Kyoto. Without widespread public support, President Clinton says, his Administration will not be able to overcome the objections of industry to adopting any legally-binding protocol.

SEPTEMBER 21-28, 1997
Thirteenth Session of Intergovernmental Panel on Climate Change: *Maldives*

The IPCC, a collection of the world's foremost climate change scientists working in conjunction under the umbrella of the United Nations, met to update their assessment of human-induced global warming and its impacts on ecosystems, property and human health worldwide. Protocol negotiators consider the findings of the IPCC to be the best available science on which to base policy decisions.

OCTOBER 1, 1997
White House Event for Weather Forecasters: *Washington, D.C.*

President Clinton and Vice President Gore invited 100 television weather forecasters from around the country to a briefing on scientific predictions of the consequences of global climate change.

OCTOBER 6, 1997
White House Conference on Climate Change: *Washington, D.C.*

President Clinton and Vice President Gore hosted a full day meeting to discuss how the U.S. can reduce greenhouse gas emissions without harming the economy. Leading scientists, environmentalists, business, labor, and civic leaders participated in the event, which was broadcast via satellite to over 30 locations across the country. Following the conference, the Administration is expected to make a final decision on its position regarding targets and timetables for reductions. Other nations which are party to the Kyoto protocol will be watching carefully to see if the United States joins them in supporting specific emissions reduction levels.
PRESIDENT'S INTRODUCTORY REMARKS | PRESIDENT'S REMARKS DURING PRESENTATION

OCTOBER 22, 1997
President Clinton Announces U.S. Position: *Washington, D.C.*

President Clinton made his long-awaited announcement of the U.S. negotiating position. The proposal called for industrialized nations to stabilize emissions at 1990 levels by 2008-2012, with reductions below 1990 levels to follow in later years, and was unenthusiastically received by parties on both sides of the global warming debate. The plan also included tax breaks and other incentives intended to mollify both business and environmental groups and to speed reductions. These include an emissions trading program, $5 billion in tax breaks for energy efficiency and other new technologies, and credits for industries making early reductions.

OCTOBER 22-31, 1997
Negotiations on a Climate Change Protocol: *Bonn, Germany*

International negotiators left the final formal preparatory meeting before Kyoto

without settling any of the key issues. President Clinton's announcement of the U.S. position came just as the talks were getting underway. Delegates from European Union and developing countries held fast to their own, more aggressive positions, and continued to pressure the U.S. to accept reductions *below* 1990 levels as part of the Kyoto deal. In addition to the schedule of specific emission limits, other key issues still to be decided include whether Russia and Eastern European countries can sell emission credits based on pollution reductions that have already occurred; whether countries can offset part of their emissions from fossil fuel combustion by preserving forests or planting trees; and whether developing countries will agree to a framework for reducing emissions in their own countries once industrialized countries have begun reducing their emissions. AGENDA

DECEMBER 1-10, 1997
Conference of the Parties, Climate Change Convention: *Kyoto, Japan*

The 166 nations that have joined the Convention will try to adopt a protocol to establish the first legally-binding commitments to reduce greenhouse gas emissions. U.S. participation is key to the success of any such protocol, and will hinge on the Clinton Administration's findings leading up the meetings.

For more information on global warming:
Countdown to Kyoto

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http://www.nrdc.org/bkgrd/gwcal.html
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GLOSSARY OF TERMS

Absorption of Radiation The uptake of radiation by a solid body, liquid or gas. The absorbed energy may be transferred or re-emitted.

Acid Rain Also known as "acid deposition." Acidic aerosols in the atmosphere are removed from the atmosphere by wet deposition (rain, snow, fog) or dry deposition (particles sticking to vegetation). Acidic aerosols are present in the atmosphere primarily due to discharges of gaseous sulfur oxides (sulfur dioxide) and nitrogen oxides from both anthropogenic and natural sources. In the atmosphere these gases combine with water to form acids.

Aerosols Particles of matter, solid or liquid, larger than a molecule but small enough to remain suspended in the atmosphere. Natural sources include salt particles from sea spray and clay particles as a result of weathering of rocks, both of which are carried upward by the wind. Aerosols can also originate as a result of human activities and in this case are often considered pollutants. See also Sulfate Aerosols.

Albedo The ratio of reflected to incident light; albedo can be expressed as either a percentage or a fraction of 1. Snow covered areas have a high albedo (up to about 0.9 or 90%) due to their white color, while vegetation has a low albedo (generally about 0.1 or 10%) due to the dark color and light absorbed for photosynthesis. Clouds have an intermediate albedo and are the most important contributor to the Earth's albedo. The Earth's aggregate albedo is approximately 0.3.

Alliance of Small Island States (AOSIS) The group of Pacific and Caribbean nations who call for relatively fast action by developed nations to reduce greenhouse gas emissions. The AOSIS countries fear the effects of rising sea levels and increased storm activity predicted to accompany global warming. Its plan is to hold Annex I Parties to a 20 percent reduction in carbon dioxide emissions by the year 2005.

Annex I Parties Industrialized countries that, as parties to the Framework Convention on Climate Change, have pledged to reduce their greenhouse gas emissions by the year 2000 to 1990 levels. Annex I Parties consist of countries belonging to the Organization for Economic Cooperation and Development (OECD) and countries designated as Economies-in-Transition.

Anthropogenic Derived from human activities.

Atmosphere The mixture of gases surrounding the Earth. The Earth's atmosphere consists of about 79.1% nitrogen (by volume), 20.9% oxygen, 0.036% carbon dioxide and trace amounts of other gases. The atmosphere can be divided into a number of layers according to its mixing or chemical characteristics, generally determined by its thermal properties (temperature). The layer nearest the Earth is the troposphere, which reaches up to an altitude of about 8 km (about 5 miles) in the polar regions and up to 17 km (nearly 11 miles) above the equator. The stratosphere, which reaches to an altitude of about 50 km (31 miles) lies atop the troposphere. The mesosphere which extends up to 80-90 km is atop the stratosphere, and finally, the thermosphere, or ionosphere, gradually diminishes and forms a fuzzy border with outer space. There is relatively little mixing of gases between layers.

Banking and borrowing If a country reduces more than or less than the required emissions, it can "bank" or "borrow" without being in non-compliance. Such amounts would be credited or subtracted from subsequent emissions budget period.

Base Year The UNFCCC called for voluntary actions by developed countries to stabilize their GHG emissions at 1990 levels by 2000. This voluntary target was not achieved. For this reason, however, many countries continue to advocate the base year of any new agreement should remain 1990. Although some countries have advocated a later base year or a multi-year average, the likelihood is that 1990 will remain the base year against which developed countries will be asked to measure their emission reductions.

Baseline Emissions The emissions that would occur without policy intervention (in a business-as-usual scenario). Baseline estimates are needed to determine the effectiveness of emissions reduction programs (often called mitigation strategies).

Berlin Mandate A ruling negotiated at the first Conference of the Parties (CoP 1), which took place in March, 1995, concluding that the present commitments under the Framework Convention on Climate Change are not adequate. Under the Framework Convention, developed countries pledged to take measures aimed at returning their greenhouse gas emissions to 1990 levels by the year 2000. The Berlin Mandate establishes a process that would enable the Parties to take appropriate action for the period beyond 2000, including a strengthening of developed country commitments, through the adoption of a protocol or other legal instruments.

Biogeochemical Cycle The chemical interactions that take place among the atmosphere, biosphere, hydrosphere, and geosphere.

Biomass Organic nonfossil material of biological origin. For example, trees and plants are biomass.

Biomass Energy Energy produced by combusting renewable biomass materials such as wood. The carbon dioxide emitted from burning biomass will not increase total atmospheric carbon dioxide if this consumption is done on a sustainable basis (i.e., if in a given period of time, regrowth of biomass takes up as much carbon dioxide as is released from biomass combustion). Biomass energy is often suggested as a replacement for fossil fuel combustion which has large greenhouse gas emissions.

Biosphere The region on land, in the oceans, and in the atmosphere inhabited by living organisms.

Borehole Any exploratory hole drilled into the Earth or ice to gather geophysical data. Climate researchers often take ice core samples, a type of borehole, to predict atmospheric composition in earlier years.

Budget Period The set period of time during which aggregate greenhouse gas emissions will be measured as defined by international agreement. The U.S. has proposed multi-year budgeting, believing that emissions budgets must cover a number of years as economic activity will vary from year to year and the impact of policy actions is likely to accelerate overtime. Budget periods also allow timing of reductions to be spread out over time, helping to reduce implementation costs. Thus, it is reasonable to measure progress over a multi-year period. This concept has wide acceptance.

CarbonCycle The global scale exchange of carbon among its reservoirs, namely the atmosphere, oceans, vegetation, soils, and geologic deposits and minerals. This involves components in food chains, in the atmosphere as carbon dioxide, in the hydrosphere and in the geosphere.

Carbon Dioxide(CO_2) The greenhouse gas whose concentration is being most affected directly by human activities. CO_2 also serves as the reference to compare all other greenhouse gases (see carbon dioxide equivalents). The major source of CO_2 emissions is fossil fuel combustion. CO_2 emissions are also a product of forest clearing, biomass burning, and non-energy production processes such as cement production. Atmospheric concentrations of CO_2 have been increasing at a rate of about 0.5% per year and are now about 30% above preindustrial levels.

Carbon Dioxide Equivalent (CDE) A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). Carbon dioxide equivalents are commonly expressed as "million metric tons of carbon dioxide equivalents (MMTCDE)" or "million short tons of carbon dioxide equivalents (MSTCDE)" The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP.

most intense in the Pacific region, these changes can disrupt weather patterns throughout the tropics and can extend to higher latitudes, especially in Central and North America. The relationship between these events and global weather patterns are currently the subject of much research in order to enhance prediction of seasonal to interannual fluctuations in the climate.

Emission The release of a substance (usually a gas when referring to the subject of climate change) into the atmosphere.

Emissions trading To the extent we can use market mechanisms to advance a regulatory objective, we will lower costs and promote efficiency. This is the goal behind the U.S. proposal of emissions trading. The mechanism either allows firms to buy "permits to emit" through an auction process or assigns a fixed number of permits to firms that are already producing GHG emissions. This latter mechanism is termed "grandfathering". When the process works correctly, firms must choose between paying the price to emit or reducing their emissions. In the short term they will pay; in the longer term, however, more firms will be encouraged to invest in cleaner operations. These permits, even if grandfathered, will acquire a market value and be traded among individual firms. The U.S. experience with trading sulphur dioxide permits illustrates how market-based policies can provide incentives for private firms to act and lower the costs of regulation. Incorporating the U.S. proposals into the protocol will do much to limit the costs of global action. We have made significant progress in explaining trading and Japan, Russia and New Zealand are now active supporters of this approach.

Much thought is being given to how to construct a global emissions trading regime. One way of approaching this problem would be to permit government-to-government trading among Annex I (developed) countries and then firms would have access to permits within their country. Details of any emissions trading regime will be part of follow-on negotiations, if the principle of trading is accepted.

Evapotranspiration. Water carried upward from the Earth's surface by plants and released to the atmosphere (transpired) by vegetation.

Enhanced Greenhouse Effect The natural greenhouse effect has been enhanced by anthropogenic emissions of greenhouse gases. Increased concentrations of carbon dioxide, methane, and nitrous oxide, CFCs, HFCs, PFCs, SF6, NF3, and other photochemically important gases caused by human activities such as fossil fuel consumption and adding waste to landfills, trap more infra-red radiation, thereby exerting a warming influence on the climate. See Climate Change and Global Warming.

Evapotranspiration The sum of evaporation and plant transpiration. Potential evapotranspiration is the amount of water that could be evaporated or transpired at a given temperature and humidity, if there was plenty of water available. Actual evapotranspiration can not be any greater than precipitation, and will usually be less because some water will run off in rivers and flow to the oceans. If potential evapotranspiration is greater than actual precipitation, then soils are extremely dry during at least a major part of the year.

Feedback Mechanisms A mechanism that connects one aspect of a system to another. The connection can be either amplifying (positive feedback) or moderating (negative feedback). See also Climate Feedback.

Carbon Dioxide Fertilization An expression (sometimes reduced to 'fertilization') used to denote increased plant growth due to a higher carbon dioxide concentration.

Fertilization A term used to denote efforts to enhance plant growth by increased application of nitrogen-based fertilizer or increased deposition of nitrates in precipitation.

Fluorocarbons Carbon-fluorine compounds that often contain other elements such as hydrogen, chlorine, or bromine. Common fluorocarbons include chlorofluorocarbons and related compounds (also known as ozone depleting substances), hydrofluorocarbons (HFCs), and perfluorcarbons (PFCs).

Forcing Mechanism A process that alters the energy balance of the climate system, i.e. changes the relative balance between incoming solar radiation and outgoing infrared radiation from Earth. Such mechanisms include changes in solar irradiance, volcanic eruptions, and enhancement of the natural greenhouse effect by emission of carbon dioxide. See also Radiative Forcing.

Fossil Fuel A general term for combustible geologic deposits of carbon in reduced (organic) form and of biological origin, including coal, oil, natural gas, oil shales, and tar sands. A major concern is that they emit carbon dioxide into the atmosphere when burnt, thus significantly contributing to the enhanced greenhouse effect.

Fossil Fuel Combustion Burning of coal, oil (including gasoline), or natural gas. This burning, usually to generate energy, releases carbon dioxide, as well as combustion byproducts that can include unburned hydrocarbons, methane, and carbon monoxide. Carbon monoxide, methane, and many of the unburned hydrocarbons slowly oxidize into carbon dioxide in the atmosphere. Common sources of fossil fuel combustion include cars and electric utilities.

Framework Convention on Climate Change (FCCC) The landmark international treaty unveiled at the United Nations Conference on Environment and Development (UNCED, also known as the "Rio Summit"), in June 1992. The FCCC commits signatory countries to stabilize anthropogenic (i.e., human-induced) greenhouse gas emissions to 'levels that would prevent dangerous anthropogenic interference with the climate system'. The FCCC also requires that all signatory parties develop and update national inventories of anthropogenic emissions of all greenhouse gases not otherwise controlled by the Montreal Protocol. Out of 155 countries that have ratified this accord, the U.S. was the first industrialized nation to do so.

General Circulation Model (GCM) A global, three-dimensional computer model of the climate system which can be used to simulate human-induced climate change. GCMs are highly complex and they represent the effects of such factors as reflective and absorptive properties of atmospheric water vapor, greenhouse gas concentrations, clouds, annual and daily solar heating, ocean temperatures and ice boundaries. The most recent GCMs include global representations of the atmosphere, oceans, and land surface.

Geosphere The soils, sediments, and rock layers of the Earth's crust, both continental and beneath the ocean floors.

Global Warming An increase in the near surface temperature of the Earth. Global warming has occurred in the distant past as the result of natural influences, but the term is most often used to refer to the warming predicted to occur as a result of increased emissions of greenhouse gases. Scientists generally agree that the Earth's surface has warmed by about 1 degree Fahrenheit in the past 140 years. The Intergovernmental Panel on Climate Change (IPCC) recently concluded that increased concentrations of greenhouse gases are causing an increase in the Earth's surface temperature and that increased concentrations of sulfate aerosols have led to relative cooling in some regions, generally over and downwind of heavily industrialized areas. See also Climate Change and Enhanced Greenhouse Effect

Global Warming Potential (GWP) The index used to translate the level of emissions of various gases into a common measure in order to compare the relative radiative forcing of different gases without directly calculating the changes in atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emissions of one kilogram of a greenhouse gas to that from emission of one kilogram of carbon dioxide over a period of time (usually 100 years). Gases involved in complex atmospheric chemical processes have not been assigned GWPs due to complications that arise.

MMTCDE= (million metric tons of a gas) x (GWP of the gas)

For example, the GWP for methane is 24.5. This means that emissions of one million metric tons of methane is equivalent to emissions of 24.5 million metric tons of carbon dioxide. Carbon may also be used as the reference and other greenhouse gases may be converted to carbon equivalents. To convert carbon to carbon dioxide, multiply the carbon by 44/12 (the ratio of the molecular weight of carbon dioxide to carbon).

Carbon Equivalent (CE) A metric measure used to compare the emissions of the different greenhouse gases based upon their global warming potential (GWP). Greenhouse gas emissions in the U.S. are most commonly expressed as "million metric tons of carbon equivalents" (MMTCE). Global warming potentials are used to convert greenhouse gases to carbon dioxide equivalents. Carbon dioxide equivalents can then be converted to carbon equivalents by multiplying the carbon dioxide equivalents by 12/44 (the ratio of the molecular weight of carbon to carbon dioxide). Thus, the formula to derive carbon equivalents is:

MMTCE = (million metric tons of a gas) x (GWP of the gas) x (12/44)

Carbon Sequestration The uptake and storage of carbon. Trees and plants, for example, absorb carbon dioxide, release the oxygen and store the carbon. Fossil fuels were at one time biomass and continue to store the carbon until burned.

Carbon Sinks Carbon reservoirs and conditions that take in and store more carbon (carbon sequestration) than they release. Carbon sinks can serve to partially offset greenhouse gas emissions. Forests and oceans are common carbon sinks.

Chlorofluorocarbons and Related Compounds This family of anthropogenic compounds includes chlorofluorcarbons (CFCs), bromofluorcarbons (halons), methyl chloroform, carbon tetrachloride, methyl bromide, and hydrochlorofluorcarbons (HCFCs). These compounds have been shown to deplete stratospheric ozone, and therefore are typically referred to as ozone depleting substances. The most ozone-depleting of these compounds are being phased out under the Montreal Protocol.

Climate The average weather (usually taken over a 30-year time period) for a particular region and time period. Climate is not the same as weather, but rather, it is the average pattern of weather for a particular region. Weather describes the short-term state of the atmosphere. Climatic elements include precipitation, temperature, humidity, sunshine, wind velocity, phenomena such as fog, frost, and hail storms, and other measures of the weather.

Climate Change (also referred to as 'global climate change') The term 'climate change' is sometimes used to refer to all forms of climatic inconsistency, but because the Earth's climate is never static, the term is more properly used to imply a significant change from one climatic condition to another. In some cases, 'climate change' has been used synonymously with the term, 'global warming'; scientists however, tend to use the term in the wider sense to also include natural changes in climate. See also Enhanced Greenhouse Effect.

Climate Change Action Plan Unveiled in October, 1993 by President Clinton, the CCAP is the U.S. plan for meeting its pledge to reduce greenhouse gas emissions under the terms of the Framework Convention on Climate Change (FCCC). The goal of the CCAP is to reduce U.S. emissions of anthropogenic greenhouse gases to 1990 levels by the year 2000. The CCAP, which consists of some 50 voluntary federal programs that span all sectors of the economy, uses a win-win approach by helping program partners save energy, save money, and gain access to clean technology while also reducing greenhouse gas emissions.

Climate Feedback An atmospheric, oceanic, terrestrial, or other process that is activated by the direct climate change induced by changes in radiative forcing. Climate feedbacks may increase (positive feedback) or diminish (negative feedback) the magnitude of the direct climate change.

Climate Lag The delay that occurs in climate change as a result of some factor that changes only very slowly. For example, the effects of releasing more carbon dioxide into the atmosphere may not be known for some time because a large fraction is dissolved in the ocean and only released to the atmosphere many years later.

Climate Model A quantitative way of representing the interactions of the atmosphere, oceans, land surface, and ice. Models can range from relatively simple to quite comprehensive. See also General Circulation Model.

Climate Modeling The simulation of the climate using computer-based models. See also General Circulation Model.

Climate Sensitivity The equilibrium response of the climate to a change in radiative forcing; for example, a doubling of the carbon dioxide concentration.

Climate System (or Earth System) The atmosphere, the oceans, the biosphere, the cryosphere, and the geosphere, together make up the climate system.

Cogeneration The process by which two different and useful forms of energy are produced at the same time. For example, while boiling water to generate electricity, the leftover steam can be sold for industrial processes or space heating.

Compost Decayed organic matter that can be used as a fertilizer or soil additive.

Conference of the Parties (CoP) The CoP is the collection of nations which have ratified the Framework Convention on Climate Change (FCCC), currently over 150 strong, and about 50 Observer States. The primary role of the CoP is to keep the implementation of the Convention under review and to take the decisions necessary for the effective implementation of the Convention. The first CoP (CoP 1) took place in Berlin from March 28th to April 7th, 1995, and was attended by over 1000 observers and 2000 media representatives.

Cryosphere The frozen part of the Earth's surface. The cryosphere includes the polar ice caps, continental ice sheets, mountain glaciers, sea ice, snow cover, lake and river ice, and permafrost.

Deforestation Those practices or processes that result in the change of forested lands to non-forest uses. This is often cited as one of the major causes of the enhanced greenhouse effect for two reasons: 1) the burning or decomposition of the wood releases carbon dioxide; and 2) trees that once removed carbon dioxide from the atmosphere in the process of photosynthesis are no longer present and contributing to carbon storage.

Desertification The progressive destruction or degradation of existing vegetative cover to form desert. This can occur due to overgrazing, deforestation, drought, and the burning of extensive areas. Once formed, deserts can only support a sparse range of vegetation. Climatic effects associated with this phenomenon include increased albedo, reduced atmospheric humidity, and greater atmospheric dust (aerosol) loading.

El Niño A climatic phenomenon occurring irregularly, but generally every 3 to 5 years. El Niños often first become evident during the Christmas season (El Niño means Christ child) in the surface oceans of the eastern tropical Pacific Ocean. The phenomenon involves seasonal changes in the direction of the tropical winds over the Pacific and abnormally warm surface ocean temperatures. The changes in the tropics are

Greenhouse gases are expressed in terms of Carbon Dioxide Equivalent. The International Panel on Climate Change (IPCC) has presented these GWPs and regularly updates them in new assessments. The chart below shows the original GWPs (assigned in 1990) and the most recent GWPs (assigned in 1996) for the most important greenhouse gases.

Gas	GWP 1990	GWP 1996
Carbon Dioxide	1	1
Methane	22	24.5
Nitrous Oxide	270	320
HFC-134a	1200	1300
HFC-23	10000	12100
HFC-152a	150	140
HFC-125	*	3200
PFCs	5400	9400
SF_6	*	24900

* GWP was not yet estimated for this gas

Greenhouse Effect The effect produced as greenhouse gases allow incoming solar radiation to pass through the Earth's atmosphere, but prevent most of the outgoing infra-red radiation from the surface and lower atmosphere from escaping into outer space. This process occurs naturally and has kept the Earth's temperature about 59 degrees F warmer than it would otherwise be. Current life on Earth could not be sustained without the natural greenhouse effect.

Greenhouse Gases Natural greenhouse gases (GHG) include water vapor, carbon dioxide, ozone and other trace gases. Human activity produces carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride. All these gases absorb outgoing infrared radiation. Moreover, these gases build up or "concentrate" in the atmosphere. Variability in climate and weather patterns is believed to be effected by increased concentrations. At present GHG concentrations in the atmosphere are about 380 PPM (parts per million metric tons). This is about 100 PPM higher than the pre-industrial level. This level of concentrations could rise to twice or three times (or more) pre-industrial levels in the next century. In order to stabilize atmospheric concentrations of GHG in the atmosphere, we must ultimately reduce emissions of GHG. Scientific climate studies indicate that it is the increased concentrations of these gases that trap infrared radiation from the sun within the earth's atmosphere that cause the "warming" or "greenhouse" effect.

What human activities contribute to increased concentrations of atmospheric GHG? Human activities that raise atmospheric concentrations of greenhouse gases include industrial processes where such gases are a byproduct of energy used in the process such as steel and cement production; electricity generation from hydrocarbon sources, especially coal; and use of internal combustion engines in the transportation sector. Although the growth of plants normally removes carbon dioxide from the atmosphere, some agricultural operations -- e.g. paddy rice and feedlots add significant amounts of methane, another important greenhouse gas, to the atmosphere. As these activities permeate most modem industrial economies -- and many emerging ones, actions that substantially reduce GHG emissions have significant implications for any economy. Moreover, the rapidly growing economies of Asia and Latin America are also rapidly increasing their greenhouse gas emissions as a by product of their industrial transformation and changing their hydrocarbon use patterns will have implications for their future growth.

Halocarbons Chemicals consisting of carbon, sometimes hydrogen, and either chlorine, fluorine bromine or iodine.

Halons These man-made substances (also known as bromofluorocarbons) are chlorofluorocarbons that contain bromine. See also Chlorofluorocarbons and Related Compounds.

Hydrocarbons Substances containing only hydrogen and carbon. Fossil fuels are made up of hydrocarbons. Some hydrocarbon compounds are major air pollutants.

Hydrofluorocarbons (HFCs) These chemicals (along with perfluorocarbons) were introduced as alternatives to ozone depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are powerful greenhouse gases with global warming potentials ranging from 140 (HFC-152a) to 12,100 (HFC-23).

Hydrosphere The part of the Earth composed of water including clouds, oceans, seas, ice caps, glaciers, lakes, rivers, underground water supplies, and atmospheric water vapor.

Ice Core A cylindrical section of ice removed from a glacier or an ice sheet in order to study climate patterns of the past. By performing chemical analyses on the air trapped in the ice, scientists can estimate the percentage of carbon dioxide and other trace gases in the atmosphere at that time.

Infrared Radiation The heat energy that is emitted from all solids, liquids, and gases. In the context of the greenhouse issue, the term refers to the heat energy emitted by the Earth's surface and its atmosphere. Greenhouse gases strongly absorb this radiation in the Earth's atmosphere, and reradiate some back towards the surface, creating the greenhouse effect.

Intergovernmental Panel on Climate Change(IPCC) The IPCC was established jointly by the United Nations Environment Programme and the World Meteorological Organization in 1988. The purpose of the IPCC is to assess information in the scientific and technical literature related to all significant components of the issue of climate change. The IPCC draws upon hundreds of the world's expert scientists as authors and thousands as expert reviewers. Leading experts on climate change and environmental, social, and economic sciences from some 60 nations have helped the IPCC to prepare periodic assessments of the scientific underpinnings for understanding global climate change and its consequences. With its capacity for reporting on climate change, its consequences, and the viability of adaptation and mitigation measures, the IPCC is also looked to as the official advisory body to the world's governments on the state of the science of the climate change issue. For example, the IPCC organized the development of internationally accepted methods for conducting national greenhouse gas emission inventories.

Joint Implementation Projects that allow firms in industrialized countries to offset their GHG emissions in developed countries by taking advantage of lower emissions reduction costs in developing countries. Environmentally-sensitive investments in developing countries also accelerate the transfer of environmental technology. Joint implementation with credit would offer developed countries or private firms the option of gaining "credit" through aid projects or qualifying investments in developing countries that could be used to offset a portfolio of their GHG emissions. The COP established a trial period for joint implementation through the year 2000 which is termed "Activities Implemented Jointly" or AIJ. Projects might include energy efficiency actions (e.g. co-generation), clean energy (e.g. scrubbers for industrial plants or coal gasification) or alternative energies (wind, biomass). Alternatively, investments may be made in protecting "carbon sinks" (e.g. forests which use or "sequester" atmospheric carbon dioxide as they grow). Recent investments in tropical forest preserves are an example of a qualifying investment. No credit however, will be given during this trial period. We have active pilot projects underway in many countries, but this proposal has received the most support from Central America. AID also has a number of activities in Brazil and India. Although China recently agreed to the opening of a U.S. office in Beijing to work on pilot projects that DOE and EPA have developed there, neither China, India nor Brazil have agreed to formal inclusion of this concept.

Lifetime (Atmospheric) The lifetime of a greenhouse gas refers to the approximate amount of time it would take for the anthropogenic increment to an atmospheric pollutant concentration to return to its natural level (assuming emissions cease) as a result of either being converted to another chemical compound or being taken out of the atmosphere via a sink. This time depends on the pollutant's sources and sinks as well as its reactivity. The lifetime of a pollutant is often considered in conjunction with the mixing of pollutants in the atmosphere; a long lifetime will allow the pollutant to mix throughout the atmosphere. Average lifetimes can vary from about a week (sulfate aerosols) to more than a century (CFCs, carbon dioxide).

Mauna Loa A volcano on the island of Hawaii where scientists have maintained the longest continuous collection of reliable daily atmospheric records.

Meteorology The science of weather-related phenomena.

Methane (CH_4) A hydrocarbon that is a greenhouse gas with a global warming potential most recently estimated at 24.5. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and oil, coal production , and incomplete fossil fuel combustion. The atmospheric concentration of methane has been shown to be increasing at a rate of about 0.6% per year and the concentration of about 1.7 parts per million by volume (ppmv) is more than twice its preindustrial value. However, the rate of increase of methane in the atmosphere may be stabilizing.

Metric Ton Common international measurement for the quantity of greenhouse gas emissions. A metric ton is equal to 2205 lbs or 1.1 short tons.

Mount Pinatubo A volcano in the Philippine Islands that erupted in 1991. The eruption of Mount Pinatubo ejected enough particulate and sulfate aerosol matter into the atmosphere to block some of the incoming solar radiation from reaching Earth's atmosphere. This effectively cooled the planet from 1992 to 1994, masking the warming that had been occurring for most of the 1980s and 1990s.

Nitrogen Oxides (NOx) Gases consisting of one molecule of nitrogen and varying numbers of oxygen molecules. Nitrogen oxides are produced in the emissions of vehicle exhausts and from power stations. In the atmosphere, nitrogen oxides can contribute to formation of photochemical ozone (smog), can impair visibility, and have health consequences; they are thus considered pollutants.

Nitrous Oxide (N_2O) A powerful greenhouse gas with a global warming potential of 320. Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.

Ozone (O_3) Ozone consists of three atoms of oxygen bonded together in contrast to normal atmospheric oxygen which consists of two atoms of oxygen. Ozone is an important greenhouse gas found in both the stratosphere (about 90% of the total atmospheric loading) and the troposphere (about 10%). Ozone has other effects beyond acting as a greenhouse gas. In the stratosphere, ozone provides a protective layer shielding the Earth from ultraviolet radiation and subsequent harmful health effect on humans and the environment. In the troposphere, oxygen molecules in ozone combine with other chemicals and gases (oxidization) to cause smog.

Particulates Tiny pieces of solid or liquid matter, such as soot, dust, fumes, or mist.

Perfluorocarbons (PFCs) A group of human-made chemicals composed of carbon and fluorine only: CF_4 and C_2F_6. These chemicals, specifically CF_4 and C_2F_6, (along with hydrofluorocarbons) were introduced as alternatives to the ozone depleting substances. In addition, they are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are

powerful greenhouse gases: CF_4 has a global warming potential (GWP) of 6,300 and C_2F_6 has a GWP of 12,500.

Photosynthesis The process by which green plants use light to synthesize organic compounds from carbon dioxide and water. In the process oxygen and water are released. Increased levels of carbon dioxide can increase net photosynthesis in some plants. Plants create a very important reservoir for carbon dioxide.

Pollutant Strictly, too much of any substance in the wrong place or at the wrong time is a pollutant. More specifically, atmospheric pollution may be defined as the presence of substances in the atmosphere, resulting from man-made activities or from natural processes that cause adverse effects to human health, property, and the environment.

Precautionary Approach The approach promoted under the Framework Convention of Climate Change to help achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system.

Precession The tendency of the Earth's axis to wobble in space over a period of 23,000 years. The Earth's precession is one of the factors that results in the planet receiving different amounts of solar energy over extended periods of time.

Radiation Energy emitted in the form of electromagnetic waves. Radiation has differing characteristics depending upon the wavelength. Because the radiation from the Sun is relatively energetic, it has a short wavelength (ultra-violet, visible, and near infra-red) while energy re-radiated from the Earth's surface and the atmosphere has a longer wavelength (infra-red radiation) because the Earth is cooler than the Sun.

Radiative Forcing A change in the balance between incoming solar radiation and outgoing infrared radiation. Without any radiative forcing, solar radiation coming to the Earth would continue to be approximately equal to the infra-red radiation emitted from the Earth. The addition of greenhouse gases traps and increased fraction of the infra-red radiation, re-radiating it back toward the surface and creating a warming influence (i.e., positive radiative forcing because incoming solar radiation will exceed outgoing infra-red radiation).

Residence Time The average time spent in a reservoir by an individual atom or molecule. Also, the age of a molecule when it leaves the reservoir. With respect to greenhouse gases, residence time usually refers to how long a particular molecule remains in the atmosphere.

Respiration The process by which animals use up stored foods (by combustion with oxygen) to produce energy.

Short Ton Common measurement for a ton in the United States. A short ton is equal to 2,000 lbs or 0.907 metric tons.

Sink A reservoir that uptakes a pollutant from another part of its cycle. Soil and trees tend to act as natural sinks for carbon.

Solar Radiation Energy from the Sun. Also referred to as short-wave radiation. Of importance to the climate system, solar radiation includes ultra-violet radiation, visible radiation, and infrared radiation.

Stratosphere The part of the atmosphere directly above the troposphere. See Atmosphere.

Sulfate Aerosols Particulate matter that consists of compounds of sulfur formed by the interaction of sulfur dioxide and sulfur trioxide with other compounds in the atmosphere. Sulfate aerosols are injected into the atmosphere from the combustion of fossil fuels and the eruption of volcanoes like Mt. Pinatubo. Recent theory suggests that sulfate aerosols may lower the earth's temperature by reflecting away solar

radiation (negative radiative forcing). Global Climate Models which incorporate the effects of sulfate aerosols more accurately predict global temperature variations.

Sulfur Dioxide (SO_2) A compound composed of one sulfur and two oxygen molecules. Sulfur dioxide emitted into the atmosphere through natural and anthropogenic processes is changed in a complex series of chemical reactions in the atmosphere to sulfate aerosols. These aerosols result in negative radiative forcing (i.e., tending to cool the Earth's surface) .

Sulfur Hexafluoride (SF_6) A very powerful greenhouse gas used primarily in electrical transmission and distribution systems. SF_6 has a global warming potential of 24,900.

Trace Gas Any one of the less common gases found in the Earth's atmosphere. Nitrogen, oxygen, and argon make up more than 99 percent of the Earth's atmosphere. Other gases, such as carbon dioxide, water vapor, methane, oxides of nitrogen, ozone, and ammonia, are considered trace gases. Although relatively unimportant in terms of their absolute volume, they have significant effects on the Earth's weather and climate.

Troposphere The lowest layer of the atmosphere. The troposphere extends from the Earth's surface up to about 10-15 km. See also Atmosphere.

Tropospheric Ozone (O_3) Ozone that is located in the troposphere and plays a significant role in the greenhouse gas effect and urban smog. See Ozone for more details.

Tropospheric Ozone Precursors Gases that influence the rate at which ozone is created and destroyed in the atmosphere. Such gases include: carbon monoxide (CO), >nitrogen oxides (NOx), and nonmethane volatile organic compounds (NMVOCs).

Water Vapor The most abundant greenhouse gas, it is the water present in the atmosphere in gaseous form. Water vapor is an important part of the natural greenhouse effect. While humans are not significantly increasing its concentration, it contributes to the enhanced greenhouse effect because the warming influence of greenhouse gases leads to a positive water vapor feedback. In addition to its role as a natural greenhouse gas, water vapor plays an important role in regulating the temperature of the planet because clouds form when excess water vapor in the atmosphere condenses to form ice and water droplets and precipitation.

Weather Weather is the specific condition of the atmosphere at a particular place and time. It is measured in terms of such things as wind, temperature, humidity, atmospheric pressure, cloudiness, and precipitation. In most places, weather can change from hour-to-hour, day-to-day, and season-to-season. Climate is the average of weather over time and space. A simple way of remembering the difference is that 'climate' is what you expect (e.g., cold winters) and 'weather' is what you get (e.g., a blizzard).

Conference Structure

Plenary sessions — Plenary sessions constitute the gathering of all delegates for the opening and closing of the conference. At these sessions every head of delegation delivers the main delegation speech to the conference. After the general debate speeches in the plenary of the United Nations General Assembly, other substantive agenda items are discussed. In many other conferences, however, the real work of the conference is done only in the committees. A plenary session is required, before the conference is over, to approve or reject the various committee reports which are passed to it for action.

Most major conferences are designed to open with a fanfare. Depending upon the size, the number of countries participating, and the subject, the plenary session of the conference may be opened by the head of state, the prime minister, the foreign minister, or the minister of the host country responsible for the particular topic to be discussed. If it is a major conference, other heads of state may also speak and messages may be delivered on behalf of heads of state. Seats are at a premium at the opening session. The press, radio, and television are in evidence, and a general air of confusion characterizes the opening. Once the officers are elected and the agenda is adopted, the conference participants usually settle down to work.

When a conference finally ends, a spate of speeches at the closing plenary session serves to thank the president, the secretariat, the interpreters, translators, etc., for their assistance in making the conference a success. Usually one or two delegates from each of the five geographical regions will speak on behalf of their group. The United States may or may not choose to speak, separately, as appropriate.

Committees — Many conferences will have only one or two committees. They have their own elected officers and sometimes their own rules of procedure. The United Nations General Assembly has seven standing committees open to all members. Most of the substantive items of the conference are debated, discussed, and concluded in committee. The committee's report containing the resolutions it has approved is then passed to the plenary session for adoption. A committee has the authority to establish its own subcommittees.

Credentials committee — This small committee (nine countries in the case of the United Nations) reviews the credentials submitted by member states to ensure that they are accurate and consistent with the rules of procedure dealing with membership. Because many countries are remiss in submitting their credentials in a timely fashion, the credentials committee report is often adopted during the final plenary session. This is where many political issues arise that require particular expertise.

Bureau — The bureau is established by the rules of procedure and is made up of the officers of the conference, which usually include the chairpersons of the main committees. Its purpose is to guide the progress of the conference and ensure that the meeting ends on schedule. However, the bureau usually plays only a modest role in the conference.

Drafting committees — Normally the president is empowered to establish drafting committees, which are designed to focus on specific issues and thereby save the time of the entire conference. Ideally, the drafting committee is made up of a half dozen representatives designated by the president who are knowledgeable and interested in the subject. If the issues to be considered by the drafting committee are too political, the president may announce the formation of an open-ended drafting committee. This means that any delegation can send representatives. This is a useful out, because, in practice, since the drafting committees often have night sessions, only truly dedicated delegates attend.

Working party or working group — This is another name for a drafting committee. It can be open ended or have designated representatives, but a

working party is more informal and will probably not have interpreters or secretariat support.

Presidential contact group or friends of the president — This group which is outside of the formal structure mentioned in the rules of procedure, is usually called together by the president and consists of the heads of delegations of the leading countries involved in that particular conference. It will normally vary in size from ten to fifteen members, usually works incredibly late hours, and does the hard negotiation required during the last forty-five hours of the conference. This group will determine the success or failure of the conference.

Friends of the rapporteur — This is also outside the formal rules of procedure, but for major meetings is designed to ensure that the rapporteur brings the required balance to the conference report. Usually each of the five regional groups has two representatives who meet collectively with the rapporteur (sometimes called the rapporteur general) and the secretariat to develop the final conference report.

Importance of conference structure — The right conference structure is often critical to the ultimate success of the conference. Careful attention should be given to the timing of the creation of drafting committees, working parties, and particularly the creation of the presidential contact group. I remember one conference at which success was achieved only when the 26-nation conference turned itself into an informal working group, with no records kept and no secretariat present. This meant no public posturing through formal speeches. After three weeks in this mode, a treaty emerged.

Rules of Procedure

Many international organizations have developed their rules of procedure over the years, and these rules are published in a document or a special brochure. As soon as you know you are going to be on a delegation, you should get a set of the rules of procedure for that organization from the Department of State, Office of International Conferences. Familiarize yourself with the rules because at some conferences this may be the most referenced document. You should

also realize that rules of procedure will vary among organizations. I found that at the International Labor Organization (ILO) for example, mastery of the rules of procedure became almost an art.

For special conferences, the rules of procedure are drafted in advance by the secretariat. They are reviewed by an intergovernmental preparatory group before the conference and then are adopted by the conference immediately after the conference opens and the president is elected. The following rules are the most frequently used.

Quorum — The president can declare a meeting open when one-third of the members are present, but no decision can be taken until a majority of members are present.

Point of order—A delegate may rise to a point of order (which usually deals with procedure) at any time, but may not speak to the substance of the matter under discussion. The president must decide the point immediately.

Right of reply — If another delegation slurs the United States, you should request the right of reply after the speech is over. Often the president will ask that rights of reply be made at the end of the conference day. If this is the case, the secretariat should be notified in advance that you wish to speak. If the insult against the United States is virulent, you should rise to a point of order in the middle of the other delegate's statement. Check your political guidance beforehand if you believe an issue of this nature may arise.

Voting — Most issues are decided by a majority of those members present and voting. In some fora "important questions," like peace and security, require a two-thirds majority of the members present and voting. However, don't forget that a vote has to be called for by a delegation that wants to take a vote.

Voting on amendments — If you formally propose an amendment to a resolution, the amendment is voted first. If there is an amendment to your amendment, the later text is voted first.

Explanation of vote — Normally delegates wishing to explain their votes do so after the vote. Sometimes the president may ask for the explanation to be given before the vote.

Consensus—Don't forget to use consensus. In my experience anytime you go to a vote in the UN, you lose. This is because only a very few Security Council Resolutions have the power of law. All other resolutions are recommendatory in nature and depend upon the moral responsibility of Member States to implement the content of the Resolutions. If a State votes against a Resolution you know they will not carry out its provisions. A Resolution adopted by consensus says, in effect, that all members are equally bound to carry out the provisions of the Resolution, even though they do not agree with every nuance.

If the Conference Chairperson does not hear a request for a vote, they will say, "Hearing no call for a vote I herewith announce that this Resolution is adopted by consensus." At that point a delegate can still make an explanation of vote—stating that this is what they would have said, if a vote had been taken. Seventy percent of the Resolutions adopted by the General Assembly of the United Nations, are adopted by consensus.

List of speakers — Soon after the opening of debate on any item, the president will normally announce a date for the closing of the list of speakers. If you wish to speak on the subject, you have to go to the secretariat and ask to be put on the list of speakers.

Negotiations

Informal Negotiations

Negotiations are carried out in many ways and in many places. Negotiation is basically the exchange of ideas and points of view between persons. Formal negotiations, of course, take place at the conference table and sometimes may be quite stereotyped and inhibiting. Informal negotiations often can be more productive, particularly if they are carried out one on one or in small groups, over coffee, in the corridors, at breakfast, lunch, or dinner, or over drinks. An agreement worked out in an informal atmosphere can then be put forward at the formal conference table.

Negotiating Resolutions

Resolutions are the instruments for change, and most conferences will eventually generate resolutions calling for action of one kind or another. The successful negotiation of resolutions will often make or break a conference.

First draft—A well-prepared delegation will have done its homework before the conference begins and will have prepared draft resolutions on subjects that it considers important. It is often true that the first delegation to present a resolution on a particular subject has an advantage over other delegations in the negotiating process that follows.

Co-sponsors — You are always in a stronger position if you have co-sponsors for your resolution. If you are operating in a geographical group system, you should discuss the draft resolution with key members of your group and obtain their support before you seek the support of the full group. Ideally, you should have at least one co-sponsor from each of the geographic regions represented at the conference. If it is not possible to obtain co-sponsors, you still may present the draft as a U.S. resolution.

Informal working group—It is often helpful—in obtaining co-sponsors and support for your draft resolution — to organize an informal working group, i.e., without interpretation but with the president's approval, and discuss textual change in your draft that would make it more acceptable to other delegations. At a large conference carry with you a paper that can be signed by members of those delegations that have agreed to co-sponsor your resolution. In this way, the record is clear.

Submission of a draft— The secretariat usually sets a deadline for the submission of draft resolutions. Be sure to meet the deadline but also try to obtain co-sponsors up until the last minute. The secretariat is responsible for translating, reproducing, numbering, and circulating your draft as a conference document.

Introduction — When the formal draft resolution you have submitted is circulated as a conference document, the president will ask you to introduce the resolution with a brief explanation of its intent.

Amendments — Since this is the first time that some delegations see the draft resolution, you should make an effort, within your instructions, to accept amendments offered by other delegations, either informally or from the floor. You may also accept co-sponsors.

Consensus — Because this is a U.S. draft, you would like to achieve the widest possible support for the text to ensure its support and implementation after the conference is over, so push for consensus. Working for consensus, however, is often more difficult and time consuming than going to a vote. Yet I have found,

over the long run, that the most effective resolutions, in terms of future implementation, are those adopted by consensus.

Budget — The United States normally does not support resolutions that approve the expenditure of funds that are in addition to the secretariat's current budget levels. To ensure that your resolution (or any other resolution, for that matter) does not violate this U.S. requirement, you must ask the secretariat to estimate the financial cost of the resolution. The secretariat is required to respond to this question before the resolution is voted upon. If additional costs are involved and you can't negotiate them away, or get the State Department to change its instructions, then you would normally withdraw your own resolution from consideration.

Reacting to a vote — Sometimes a resolution will go to a formal vote and be accepted or rejected by the conference. It is not appropriate to respond publicly to the outcome at this point, whether you have won or lost.

Negotiating Decisions

Some conferences will take decisions as well as adopt resolutions. Decisions tend to be related to procedural or administrative matters. In negotiating decisions, follow the same general guidelines as in negotiating resolutions.

Negotiating a Plan of Action

All of the United Nations single-item-agenda global conferences, beginning with the 1972 Conference on Environment in Stockholm, as well as some other mega-conferences and a few agenda items of the General Assembly, have generated a document called a "Plan of Action." This is usually a 30- to 50-page paper that sets out various goals and objectives and contains individual recommendations for action at the national, regional, inter-regional, and global levels. Different procedures are followed at different conferences, with parts or sections of the plan of action being considered by separate committees or sub-committees. The document is finally put together by the secretariat and

brought to the last plenary session, where it is adopted as a whole. The negotiating guidelines mentioned earlier apply here as well.

Glossary of Terms

Ad Hoc Committee. This is a special-purpose committee that is supposed to be temporary in nature, but sometimes lasts for years, such as the Ad Hoc Committee on the Drafting of an International Convention Against Apartheid in Sports or the Ad Hoc Committee on the Indian Ocean.

Advisory Committee. At the United Nations, this type of inter-governmental committee is usually small in size (23 or 24 countries). It is established for a particular purpose and dissolved when that purpose is achieved. For example, the Advisory Committee for the International Year of Disabled Persons met four times in preparation for that special year and then ceased to exist once the work in connection with the year ended.

Assessed Contribution. This refers to the financial contributions by a government to the regular budget of an international organization to which it belongs. These contributions are really membership dues and can vary considerably in size. For example, the United States contributes about two thirds of the budget of the Organization of American States, but only 4.6 percent of the budget of the World Tourism Organization.

Biennium. In budget terms, this is a two-year budget cycle.

Center. In the United Nations context, this refers to a secretariat unit of about twenty professionals, such as the Center on Human Rights or the Center for Science and Technology for Development.

CERDS. Charter of Economic Rights and Duties of States. This charter or resolution, was adopted over the strong opposition of the United States and some Western European countries at the General Assembly in 1974.

Charter. In the United Nations context, a charter has more force than a resolution, but in fact, a charter has the same legal status as a resolution, i.e., the Charter of Economic Rights and Duties of States.

Commission. In the United Nations context, a commission is an intergovernmental body, varying in size from 28 to 36 members, that meets once a year or every 2 years and deals with a particular subject area such as the Human Rights Commission, Population Commission, etc.

Committee. A committee is an intergovernmental group, charged with responsibility for a particular subject area of a conference. The size of a committee varies with the function. It is usually smaller than the conference as a whole (although there are committees of the whole). Committees may operate under separate rules, and the rules of procedure should be reviewed with this in mind. In the United Nations context, there are dozens of standing or permanent committees, such as the Committee for Program and Coordination, the Committee on Information, the Committee on Natural Resources, etc.

Convention. A convention is an international instrument, like a treaty. It is ratified by member states and is legally binding (e.g., the Paris Convention for the Protection of Industrial Property).

Councils. At the United Nations, the most important councils are the Security Council, the Economic and Social Council, and the Trusteeship Council. Councils are usually smaller than committees and are elected bodies of intergovernmental representatives.

Covenant. This is a legally binding instrument, like a treaty, and must be ratified by member states. The International Covenant on Civil and Political Rights is an example.

Daily Journal. This is the document issued by the secretariat each day of a conference. It contains the schedule of conference events for that day.

Days. The United Nations has officially designated some 20 days to honor particular events or issues, such as United Nations Day, October 24; Day of Peace (the opening day of the United Nations General Assembly); International Women's Day, March 8; and World Food Day, October 16.

Decades. The United Nations General Assembly has designated eight different subjects for attention over a 10-year period. The most well-known decades are:

1976–85—United Nations Decade for Women
1981–90—International Drinking Water Supply and Sanitation Decade
1981–90—Third United Nations Development Decade
1983–92—United Nations Decade of Disabled Persons

Declaration. A declaration is a formal statement that has no legal authority. In the United Nations context, a declaration is given more weight than a resolution. One of the best known is the Universal Declaration of Human Rights.

Decisions. In the United Nations context, a decision is taken by an intergovernmental body. It is usually much shorter than a resolution, has no preambular paragraphs, and usually is used to note a report or deal with administrative or procedural matters, such as deferring an agenda item or setting a conference date.

EU. European Union, formerly the EC or the EEC—European Economic Community.

Fund-in-Trust or Trust Fund. In the United Nations context, the secretariat establishes a fund-in-trust on the receipt of a financial contribution designated for a particular identifiable purpose, such as the Trust Fund for the World Assembly on Aging.

G-77. This stands for the Group of 77. In 1964 the 77 developing countries attending UNCTAD 1 grouped themselves together for greater political clout. Now, some 150 developing countries (from Asia, Africa, and Latin America) are involved, but they still refer to themselves as the G—77.

Interpreters. Usually you cannot see the interpreters because they are in small booths on the floor above you. As an essential part of the machinery of any conference, interpreters simultaneously translate your spoken words into another language. (See also Translators.)

LDC. This term is a U.S. acronym for less developed countries. It is also a G-77 acronym for the less developed countries but is not used very much any more.

LLDC. This term is a U.S. acronym for least developed among the less developed countries. It normally refers to the United Nations General Assembly's approved list of the 34 poorest developing countries.

Medium-Term Plan. This program document usually covers a 4- or 5-year period.

NATO. North Atlantic Treaty Organization. The secretariat is based in Brussels and consists of the following countries: Belgium. Canada, Denmark, France, the Federal Republic of Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Turkey, the United Kingdom, and the United States.

NIEO. New International Economic Order. This United Nations General Assembly Resolution was approved by consensus at the Sixth Special Session of the United Nations in September 1974.

NWIO. New World Information Order. The NWIO was launched by UNESCO in Paris in 1978.

OECD. Organization for Economic Cooperation and Development. This organization grew out of the Marshall Plan and the OEEC (Organization for European Economic Cooperation) and is headquartered in Paris. Its members

are: Australia, Austria, Belgium. Canada, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

Plan of Action or Program of Action. Normally a 30- to 50-page document coming out of a global United Nations conference, the plan of action or program of action contains a number of recommendations for action at national, regional, inter-regional, and global levels.

Protocol. A protocol is a supplementary international agreement or an annex to a treaty, such as the 1966 Protocol relating to the Status of Refugees.

Regional Groups. In 1963 the United Nations General Assembly Resolution creating UNCTAD divided the world into four regional groups. In the context of UNCTAD and UNIDO, regional groups mean the following:

Group A	Asia and Africa	Group C	Latin America
Group B	OECD countries	Group D	Eastern Europe

Resolution. Resolutions reflect agreements reached at international conferences. They don't have the force of law and are only recommendations to act on the resolution. In the case of the United Nations Security Council, that 15-member body may pass a resolution dealing with sanctions against a member state (Article 41 of the Charter), which does have the force of law.

Scale of Assessments. Every international organization has its own scale, formula, or rationale for assessing membership dues. This is called the scale of assessments.

Translators. Translation is another important part of the behind-the-scenes machinery of the conference. Translators deal with the written word and translate documentation into the languages used by the conference. The United Nations operates in English, French, Spanish, Russian, Chinese, and Arabic. (See also Interpreters.)

Treaty. A formal, binding, legal instrument between governments that comes into effect when it is ratified by a certain number of the respective parliaments of the countries signing it.

Voluntary Contribution. No government, because of membership in the organization, is required to make a financial contribution to that organization's budget. Financial contributions are voluntary, as opposed to assessed, and may vary in size from year to year. The UNDP, UNICEF, and UNFPA, for example, are funded totally by voluntary contributions.

Warsaw Pact. This was Eastern Europe's Defense Alliance. Its secretariat was in Warsaw. It consisted of the following members: Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and the U.S.S.R.

Weeks. The United Nations has designated at least three special weeks to honor such issues as the Week of Solidarity with the People of Namibia.

WEOG. This acronym stands for Western Europe and Others Group. This is basically the same group of countries as in Group B (see Regional Groups) and the OECD. The difference is that under UNCTAD and UNIDO rules, each group has a spokesperson who speaks on behalf of the group. This does not happen in other conferences; and so, at the United Nations in New York, for example, the term WEOG is used.

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Divider Title: **E**

FACT SHEET ON U.S. CLIMATE CHANGE PROPOSAL

January 17, 1997

In July, 1996 the United States outlined a broad framework for negotiation of next steps under the Framework Convention on Climate Change. In December, 1996 the U.S. further elaborated its ideas by describing the key elements that should be discussed for inclusion in a protocol to guide greenhouse gas emissions reduction efforts in the post-2000 period. The attached document represents further elaboration of the proposed framework. Today, the United States will present to the Convention's Secretariat draft text for consideration in international negotiations that will occur throughout 1997. Consistent with previous U.S. statements and proposals, the U.S. submission addresses the following key topics:

EMISSIONS TARGETS

- A new concept is set forth to guide the establishment of developed country emissions targets. Building on the concept of cumulative and averaged emissions, the U.S. proposes creation of an "emissions budget". Multiple emissions budget periods are proposed, including a second period in which emissions are equal to or less than the first period, thus assuring continued progress toward achievement of the Convention's objective.

  -- For a given period, each developed country Party would be allocated an emissions budget.

  -- The submission does not identify either the size of the budgets or the duration of the periods.

  -- Parties would be allowed to "bank" for future use emissions not used during a given period; to "borrow" a limited amount of emissions (with a penalty) from a subsequent period; and to trade emissions.

  -- A new category is proposed to encourage rapidly developing countries to voluntarily adopt emissions budgets.

REPORTING AND COMPLIANCE

- The proposal establishes procedures to ensure adequate reporting, measurement, review and compliance.

  -- Countries would have to set national systems for measuring emissions accurately, achieving compliance and ensuring enforcement.

  -- Annual reports on measurement, compliance and enforcement efforts for the relevant budget period would be required and made available to the public.

-- Implementation efforts would be reviewed under the Convention by expert teams and discussed at appropriate meetings of the Parties.

-- The Parties would be assigned responsibility for determining the consequences of non-compliance, for example: denial of emissions trading/joint implementation rights; loss of voting and other decision-making rights.

ADVANCING DEVELOPING COUNTRY EFFORTS

- The proposal advances implementation of developing country commitments under the Convention by:

  -- Requiring developing countries to identify and adopt "no-regrets" measures to mitigate net greenhouse gas emissions.

  -- Requiring developing countries to prepare annual emissions inventories and report on steps taken to reduce emissions.

  -- Establishing a process for reviewing developing country reports and improving emissions reduction strategies.

EMISSIONS TRADING AND JOINT IMPLEMENTATION

- The U.S. submission provides for full emissions trading among countries with emissions budgets (provided they are in compliance with all obligations under the agreement); it also provides for "joint implementation", through which countries without emissions budgets could create and transfer emissions reduction credits achieved by qualified projects.

LONG-TERM EFFORTS UNDER THE CONVENTION

- The proposal calls for periodic review of the agreement as scientific knowledge and information grow; it also requires the Parties to seek establishment of a long-term goal for atmospheric greenhouse gas concentrations.

- The proposal calls for establishment of a date certain for negotiation of emissions obligations for all Parties, and calls for development of graduation mechanisms to strengthen the obligations of developing nations.

1/17/97

U.S. DRAFT PROTOCOL FRAMEWORK
(submitted without prejudice to ultimate form of agreement)

The Parties to this Protocol,

Have agreed as follows:

Article 1
Definitions

For purposes of this Protocol:

1. "The Convention" means the United Nations Framework Convention on Climate Change done at New York on 9 May 1992.

2. "Party" means Party to this Protocol.

3. "Greenhouse gas" means any greenhouse gas for which a global warming potential is set forth in Annex C of this Protocol.

4. "Tonne of carbon equivalent" means one metric tonne of carbon, or a quantity of one or more other greenhouse gases equivalent to one metric tonne based on the global warming potentials set forth in Annex C of this Protocol.

5. "Net anthropogenic emissions" of greenhouse gases is the calculated difference between emissions by sources and removals by sinks.

6. [other definitions to be developed or cross-referenced to the Convention as necessary]

Article 2
Emissions Budgets

1. Each Annex A and Annex B Party shall ensure that its net anthropogenic emissions of greenhouse gases do not exceed its emissions budget for any applicable budget period, as specified in this Article.

2. For each Annex A and Annex B Party, its emissions budget shall be denominated in tonnes of carbon equivalent emissions allowed and shall equal:

   (a) the tonnes of carbon equivalent emissions it is allowed under paragraph 3 or 4 below, plus

(b) any tonnes of carbon equivalent emissions allowed that are carried over from a prior budget period under paragraph 5 below, plus

(c) up to [__ percent] of the tonnes of carbon equivalent emissions allowed under paragraph 3 or 4 below, such as may be borrowed from the subsequent budget period under paragraph 6 below, plus

(d) any tonnes of carbon equivalent emissions allowed that are acquired from another Party under Article 6 (International Emissions Trading) or Article 7 (Joint Implementation), minus

(e) any tonnes of carbon equivalent emissions allowed that are transferred to another Party under Article 6 (International Emissions Trading).

3. (a) For the first budget period, [20__ through 20__], each Annex A Party shall have a number of tonnes of carbon equivalent allowed equal to [a percentage of] its net anthropogenic emissions of tonnes of carbon equivalent in 1990, multiplied by [the number of years in this budget period].

(b) For the second budget period, [20__ through 20__], each Annex A Party shall have a number of tonnes of carbon equivalent emissions allowed equal to [a percentage equal to or less than the percentage in subparagraph 3(a)] of its net anthropogenic emissions of tonnes of carbon equivalent in 1990, multiplied by [the number of years in this budget period].

(c) [possible subsequent budget period(s)]

4. For the budget period [20__ through 20__], each Annex B Party (see Annex B for States included) shall have a number of tonnes of carbon equivalent emissions allowed equal to [options for Annex B Parties include: budget periods, baseyears, and/or percentages different from those applicable to Annex A Parties].

5. At the end of a budget period applicable to a Party, any amount by which the Party's emissions of tonnes of carbon equivalent is under its emissions budget for that period may be carried over and added to its emissions budget for the next budget period.

6. At the end of a budget period applicable to a Party, any amount of tonnes of carbon equivalent emissions allowed that is borrowed from the subsequent budget period shall be subtracted at a rate of [1.2:1] from the subsequent budget period.

7. [Provision requiring control of greenhouse gases not listed in Annex C.]

8. Any State not listed in Annex A may, in its instrument of ratification, acceptance, approval or accession, or at any time thereafter, notify the Depositary that it intends to be bound by obligations of Annex A Parties. It will then be an Annex A Party. The Depositary shall inform the other signatories and Parties of any such notification.

9. Any State not listed in Annex A may, in its instrument of ratification, acceptance, approval, or accession, or at any time thereafter, notify the Depositary that it intends to be bound by obligations of Annex B Parties. It will then be an Annex B Party. The Depositary shall inform the other signatories and Parties of any such notification.

Article 3
Measurement and Reporting

1. Each Annex A and Annex B Party shall have in place by [the first year of its first budget period] a national system for the accurate measurement of anthropogenic emissions by sources, and removals by sinks, of greenhouse gases.

2. For the purposes of implementing paragraph 1 and promoting comparability, consistency, and transparency, the Parties shall, not later than their second Meeting, decide on minimum standards for the measurement of anthropogenic emissions by sources, and removals by sinks, of greenhouse gases.

3. Each Annex A and Annex B Party shall put in place, if it has not already done so, national compliance and enforcement programs relevant to its implementation of the obligations under this Protocol.

4. Each Annex A and Annex B Party shall submit to the Secretariat, as part of its communication under Article 12 of the Convention, information on its implementation of this Protocol, including policies and measures it is taking to meet its obligations in Article 2. Such submission shall be in accordance with guidelines which the Parties adopt at their first Meeting, taking into account any relevant guidelines adopted by the Parties to the Convention. Such submission shall also contain the following information:

   (a) once the obligation in paragraph 1 above becomes effective, a description of the national measurement system that it has in place;

(b) once the obligation in paragraph 1 above becomes effective, the results of its national measurement system;

(c) a quantitative projection of its net anthropogenic emissions of greenhouse gases through the budget periods; and

(d) a description of relevant national compliance and enforcement programs it has in place pursuant to paragraph 3 above, as well as a description of their effectiveness, including actions taken in cases of non-compliance with national law.

5. In addition to the information required to be submitted under paragraph 4, each Annex A and Annex B Party shall submit to the Secretariat, on an annual basis and in accordance with the guidelines referred to in paragraph 4, its current calculation corresponding to each of the subparagraphs in Article 2.2 and its remaining emissions budget for that budget period. With respect to any tonnes of carbon equivalent emissions allowed that are acquired or transferred under Articles 6 or 7, the Party shall specify the quantity, Party of origin or destination, and the relevant budget period.

6. The first of the submissions referred to in paragraph 5 shall be part of a Party's first communication that is due after the Protocol has been in force for that Party for two years. The frequency of subsequent submissions shall be determined by the Parties.

7. Information communicated by Parties under this Article shall be transmitted by the secretariat as soon as possible to the Parties and to any subsidiary bodies concerned.

8. Without prejudice to the ability of any Party to make public its communication at any time, the secretariat shall make information communicated by Parties under this Article publicly available at the time it is submitted to the Parties.

Article 4
Review and Compliance Process

1. In addition to the review of communications conducted under Article 10.2(b) of the Convention, the Meeting of the Parties shall consider the information submitted by Annex A and Annex B Parties under Article 3 in order to assess those Parties' implementation of their obligations.

2. Reviews will be conducted by expert review teams, which will be coordinated by the secretariat and composed of experts selected from those nominated by Parties and, as appropriate, by intergovernmental organizations.

3. Reviews will be in accordance with guidelines to be adopted by the Meeting of the Parties. These guidelines shall, inter alia, provide for how information will be made available to the public and define mechanisms by which observers and the public may provide comments, supplemental data or other information to facilitate and improve reviews. The guidelines shall be periodically reviewed by the Parties for appropriate revision.

4. Review teams will review all aspects of a Party's implementation of this Protocol, including the likelihood that a Party will achieve its emissions budgets obligations. They will prepare a report assessing a Party's implementation of its obligations, identifying any areas of apparent non-compliance, as well as potential problems in achieving obligations. Reports will be provided to a Meeting of the Parties.

5. Based on such reports, a Meeting of the Parties may make recommendations to a Party. In such case, the Party shall review its implementation, take appropriate action, and report back to the next Meeting of the Parties on its action.

6. There would also be provisions setting forth various consequences for non-compliance with obligations, as determined by a Meeting of the Parties. Consequences would correspond to the type, degree, and frequency of non-compliance. Some would be automatic, while others might be discretionary. Examples of consequences could include, e.g.:

   (a) denial of the opportunity to sell tonnes of carbon equivalent emissions allowed through international emissions trading and/or joint implementation;

   (b) loss of voting rights and/or other opportunities to participate in processes under the Protocol.

Article 5
Advancement of the Implementation of Article 4.1 of the Convention

Recognizing the progress that has been made to date in implementing commitments under Article 4.1 of the Convention:

1. The Parties reaffirm their commitments under Article 4.1 of the Convention and the need to continue to advance the implementation of such commitments.

2. Each Party shall strengthen its legal and institutional framework to advance the implementation of its commitments under Article 4.1 of the Convention.

3. Each Party shall take measures to facilitate investment in climate-friendly technologies.

4. Each Party shall report, as part of its communication under the Convention, on how it is promoting public education and participation in the development of climate change policy.

5. Each Party that is neither in Annex A nor Annex B shall identify and implement "no-regrets" measures for mitigating net anthropogenic emissions of greenhouse gases, including any identified through the review process under paragraph 7 below. In this regard, each such Party shall also:

   (a) quantify the effects of the measures it implements;

   (b) evaluate barriers to the adoption of potential measures; and

   (c) report to the Secretariat, as part of its communication under the Convention, on the measures it has implemented, plans to implement, and barriers to the adoption of potential measures.

6. Each Party that is neither in Annex A nor Annex B shall submit to the Secretariat, on an annual basis, its inventory of greenhouse gas emissions. Such inventory shall be consistent with any guidelines adopted by the Parties.

7. The Parties shall establish a process for reviewing communications received under the Convention from the Parties identified in paragraphs 5 and 6. The process shall be designed to:

   (a) enable the review of the effects of individual measures described in paragraph 5;

   (b) assist such Parties in identifying and implementing "no-regrets" measures for mitigating net anthropogenic emissions of greenhouse gases;

   (c) seek to identify key sectors and technological options within them;

(d) consider possibilities for promoting voluntary arrangements with industry aimed at identifying and encouraging implementation of "no regrets" measures; and

(e) explore various means through which such Parties could obtain both the know-how and the technology needed to implement options identified.

Article 6
International Emissions Trading

1. An Annex A or Annex B Party that is in compliance with its obligations under Article 3 (Measurement and Reporting) and that has in place a national mechanism for certification and verification of trades, may transfer to, or receive from, any Annex A or Annex B Party, any of its tonnes of carbon equivalent emissions allowed for a budget period, for the purpose of meeting its obligations under Article 2.

2. A Party may authorize any domestic entity (e.g., government agencies, private firms, non-governmental organizations, individuals) to participate in actions leading to transfer and receipt under paragraph 1 of tonnes of carbon equivalent emissions allowed.

3. A Meeting of the Parties may further elaborate guidelines to facilitate the reporting of emissions trading information.

Article 7
Joint Implementation

1. Any Party that is neither in Annex A nor B may generate tonnes of carbon equivalent emissions allowed through projects that meet the criteria set forth in paragraph 2.

2. In addition to any criteria adopted by the Parties to this Protocol, the following criteria shall apply to projects:

(a) Projects must be compatible with and supportive of national environment and development priorities and strategies, as well as contribute to cost-effectiveness in achieving global benefits;

(b) Projects must provide a reduction in emissions that is additional to any that would otherwise occur.

3. [Additional provisions to be added on calculation, measurement, monitoring, verification, review, reporting]

4. Any Party that generates tonnes of carbon equivalent emissions allowed consistent with this Article may:

   (a) hold such tonnes of carbon equivalent emissions allowed; or

   (b) transfer any portion thereof to any Party.

5. An Annex A or Annex B Party may acquire tonnes of carbon equivalent emissions allowed under this Article for the purpose of meeting its obligations under Article 2, provided it is in compliance with its obligations under Article 3 (Measurement and Reporting).

6. A Party may authorize any domestic entity (e.g., government agencies, private firms, non-governmental organizations, individuals) to participate in actions leading to generation, transfer and receipt under this Article of tonnes of carbon equivalent emissions.

7. Any Party that is neither in Annex A nor Annex B that generates or acquires tonnes of carbon equivalent emissions allowed under this Article shall notify the Secretariat annually of the quantity, origin, and destination of such tonnes.

Article 8
Science

The Parties shall periodically review this Protocol, and guidelines established thereunder, in light of evolving scientific knowledge related to climate change.

Article 9
Progress Toward Long-Term Goal

The Parties shall cooperate in the establishment of a long-term goal with respect to atmospheric concentrations of greenhouse gases.

Article 10
Meetings of the Parties

1. The Parties shall hold meetings at regular intervals. The secretariat shall convene the first meeting of the Parties not later than one year after the date of the entry into force of this Protocol and in conjunction with a meeting of the Conference of the Parties to the Convention.

2. Subsequent meetings of the Parties shall be held, unless the Parties decide otherwise, in conjunction with meetings of the Conference of the Parties to the Convention. Extraordinary meetings of the Parties shall be held at such other times as may be deemed necessary by a meeting of the Parties, or at the written request of a Party, provided that within six months of such a request being communicated to them by the secretariat, it is supported by at least one third of the Parties.

3. The Parties, at their first meeting, shall:

   (a) adopt, by consensus, rules of procedure for their meetings;

   (b) [other].

4. The functions of the meetings of the Parties shall be to:

   (a) review the implementation of this Protocol, including the information submitted in accordance with Article 3;

   (b) periodically review the adequacy of this Protocol;

   (c) [other].

5. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not party to this Protocol, may be represented at meetings of the Parties as observers. Any body or agency, whether national or international, governmental or non-governmental, qualified in fields relating to climate change which has informed the secretariat of its wish to be represented at a meeting of the Parties as an observer may be admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Parties.

Article 11
Secretariat

1. In accordance with Article 8.2(g) of the Convention, the secretariat of this Protocol shall be the secretariat of the Convention.

2. The functions of the secretariat shall be:

   (a) ...

Article 12
Subsidiary Body for Scientific and Technological Advice

1. The Subsidiary Body for Scientific and Technological Advice of the Convention shall serve as the Subsidiary Body for Scientific and Technological Advice of the Protocol.

2. When the Subsidiary Body for Scientific and Technological Advice exercises its functions with regard to matters concerning the Protocol, decisions shall be taken only by those of its members that are, at the same time, Parties to the Protocol.

3. When the Subsidiary Body for Scientific and Technological Advice exercises its functions with regard to matters concerning the Protocol, any member of the bureau of the Subsidiary Body for Scientific and Technological Advice representing a Party to the Convention, but, at the same time, not a Party to the Protocol, shall be substituted by an additional member to be elected by and from the Parties to the Protocol.

Article 13
Subsidiary Body for Implementation

1. The Subsidiary Body for Implementation of the Convention shall serve as the Subsidiary Body for Implementation of the Protocol.

2. When the Subsidiary Body for Implementation exercises its functions with regard to matters concerning the Protocol, decisions shall be taken only by those of its members that are, at the same time, Parties to the Protocol.

3. When the Subsidiary Body for Implementation exercises its functions with regard to matters concerning the Protocol, any member of the bureau of the Subsidiary Body for Implementation representing a Party to the Convention, but, at the same time, not a Party to the Protocol, shall be substituted by an additional member to be elected by and from the Parties to the Protocol.

Article 14
Multilateral Consultative Process

[The Parties, at their first Meeting or as soon as practicable thereafter, shall consider the establishment of a multilateral consultative process to promote effective implementation of the Convention.]

Article 15
Dispute Settlement

[silence, with the result that Article 14 of the Convention would apply to this Protocol.]

[in addition, mandatory, binding dispute settlement [with specific consequences flowing from a violation] among Annex A and Annex B Parties, as well as against other Parties as appropriate (e.g., host countries under Article 7)]

Note: this process would be without prejudice to the review and compliance process under Article 4

Article 16
Evolution

The Parties shall adopt, by [2005], binding provisions so that all Parties have quantitative greenhouse gas emissions obligations and so that there is a mechanism for automatic application of progressive greenhouse gas emissions obligations to Parties, based upon agreed criteria.

Views on Certain Final Clauses

Adoption and Amendments of Annexes

Depending upon what type of material is eventually included in annexes, it may not be appropriate to restrict the content of all annexes to "lists, forms and any other material of a descriptive nature that is of a scientific, technical, procedural or administrative character." For any substantive annex, it may not be appropriate to provide for tacit adoption/amendment.

Signature

This provision should state that only Parties to the Convention may be Parties to the Protocol.

Entry into Force

To ensure effective implementation, as well as to minimize the potential "free rider" problem, this provision may need to stipulate an entry into force trigger that requires ratification by States that account for a particular percentage of global emissions of greenhouse gases.

Annex A

This Annex would include the same States as those listed in Annex I of the Convention, plus those that join subsequently pursuant to Article 2.

Annex B

This Annex would include those States not listed in Annex A that indicate before adoption of the protocol that they want to be included in this Annex, plus those that join subsequently pursuant to Article 2.

Annex C

This Annex would list greenhouse gases not covered by the Montreal Protocol, with the exception of gases, or particular sources and sinks, for which there is insufficient knowledge of the GWP or inability to accurately measure emissions or removals. GWPs would be those developed by the IPCC.

FACT SHEET ON SUPPLEMENTAL U.S. CLIMATE CHANGE PROPOSALS

June 1997

In January 1997 the United States submitted a draft text for a legal instrument to address next steps under the United Nations Framework Convention on Climate Change. Several technical elements left undefined in the January submission (principally those relating to compliance issues, and to which gases should be included in an agreement) have been further developed in the attached text; they are described below. The revised U.S. draft protocol proposal containing these new elements will form the basis for the U.S. position in the next session of the Ad Hoc Group on the Berlin Mandate (scheduled to meet in late July). Please call Jonathan Pershing (647-4069) or Linda Strachan (647-3550) of the State Department with any questions.

COMPLIANCE

- The January text created "emissions budgets", with targets based on the total emissions over a period of several years; this revision provides for a penalty to be assessed should a Party exceed its allowed budget.

- The January text created a review process; this revision calls for the review process to build on the existing Convention review mechanism, authorizes the review of any pertinent information, allows for consultations with both the Party and others in the course of a review, calls for the circulation of the completed review to all Parties, and requests the Secretariat to identify any report that requires further consideration.

- The January text provided an option for Parties with budgets to trade emissions; this text limits trading to Parties that have met all obligations pertaining to measurement and reporting of budgets, and that have in place national mechanisms for certification and verification of trades. With respect to a given budget period, it also precludes a Party from trading if it has exceeded its budget, and provisionally limits a Party's ability to trade if its compliance has been called into question.

- The January text provided for Meetings of the Parties; this text also calls for periodic review by the Parties of protocol implementation (including of the review process), requires Parties to implement an appropriate non-compliance regime (including through the development of an indicative list of consequences for non-compliance), and allows the Parties to establish an implementation committee to assist them in carrying out these duties.

ANNEX C: WHICH GASES ARE INCLUDED

- The January text suggested that all gases for which monitoring and measurement procedures are available should be included in the agreement; this revision maintains the broad inclusion of all greenhouse gases, sources, sinks and sectors, and calls upon the Parties to decide on best available methods for measurement, and to propose adjustments to the measurements in cases where best available methods are not used. The revision also calls for periodic updating of measurement methods.

as of June . 1997

U.S. DRAFT PROTOCOL FRAMEWORK
(submitted without prejudice to ultimate form of agreement)

The Parties to this Protocol,

Have agreed as follows:

Article 1
Definitions

For purposes of this Protocol:

1. "The Convention" means the United Nations Framework Convention on Climate Change done at New York on 9 May 1992.

2. "Party" means Party to this Protocol.

3. "Greenhouse gas" means any greenhouse gas covered in Annex C of this Protocol.

4. "Tonne of carbon equivalent" means one metric tonne of carbon, or a quantity of one or more other greenhouse gases equivalent to one metric tonne based on the global warming potentials decided by the Parties in accordance with Annex C of this Protocol.

5. "Net anthropogenic emissions" of greenhouse gases is the calculated difference between emissions by sources and removals by sinks.

6. [other definitions to be developed or cross-referenced to the Convention as necessary]

Article 2
Emissions Budgets

1. Each Annex A and Annex B Party shall ensure that its net anthropogenic emissions of greenhouse gases do not exceed its emissions budget for any applicable budget period, as specified in this Article.

2. For each Annex A and Annex B Party, its emissions budget shall be denominated in tonnes of carbon equivalent emissions allowed and shall equal:

   (a) the tonnes of carbon equivalent emissions it is allowed under paragraph 3 or 4 below, plus

(b) any tonnes of carbon equivalent emissions allowed that are carried over from a prior budget period under paragraph 5 below, plus

(c) up to [__ percent] of the tonnes of carbon equivalent emissions allowed under paragraph 3 or 4 below, such as may be borrowed from the subsequent budget period under paragraph 6 below, plus

(d) any tonnes of carbon equivalent emissions allowed that are acquired from another Party under Article 6 (International Emissions Trading) or Article 7 (Joint Implementation), minus

(e) any tonnes of carbon equivalent emissions allowed that are transferred to another Party under Article 6 (International Emissions Trading).

3. (a) For the first budget period, [20__ through 20__], each Annex A Party shall have a number of tonnes of carbon equivalent allowed equal to [a percentage of] its net anthropogenic emissions of tonnes of carbon equivalent in 1990, multiplied by [the number of years in this budget period].

(b) For the second budget period, [20__ through 20__], each Annex A Party shall have a number of tonnes of carbon equivalent emissions allowed equal to [a percentage equal to or less than the percentage in subparagraph 3(a)] of its net anthropogenic emissions of tonnes of carbon equivalent in 1990, multiplied by [the number of years in this budget period].

(c) [possible subsequent budget period(s)]

4. For the budget period [20__ through 20__], each Annex B Party (see Annex B for States included) shall have a number of tonnes of carbon equivalent emissions allowed equal to [options for Annex B Parties include: budget periods, baseyears, and/or percentages different from those applicable to Annex A Parties].

5. At the end of a budget period applicable to a Party, any amount by which the Party's emissions of tonnes of carbon equivalent is under its emissions budget for that period may be carried over and added to its emissions budget for the next budget period.

6. At the end of a budget period applicable to a Party, any amount of tonnes of carbon equivalent emissions allowed that is borrowed from the subsequent budget period shall be subtracted at a rate of [1.2:1] from the subsequent budget period.

6bis. At the end of a budget period applicable to a Party, any amount of tonnes of carbon equivalent emissions over its emissions budget shall be subtracted at a rate of [rate greater than that in paragraph 6] from the subsequent budget period.

7. Any State not listed in Annex A may, in its instrument of ratification, acceptance, approval or accession, or at any time thereafter, notify the Depositary that it intends to be bound by obligations of Annex A Parties. It will then be an Annex A Party. The Depositary shall inform the other signatories and Parties of any such notification.

8. Any State not listed in Annex A may, in its instrument of ratification, acceptance, approval, or accession, or at any time thereafter, notify the Depositary that it intends to be bound by obligations of Annex B Parties. It will then be an Annex B Party. The Depositary shall inform the other signatories and Parties of any such notification.

Article 3
Measurement and Reporting

1. Each Annex A and Annex B Party shall have in place by [the first year of its first budget period] a national system for the accurate measurement of anthropogenic emissions by sources, and removals by sinks, of greenhouse gases.

2. For the purposes of implementing paragraph 1 and promoting comparability, consistency, and transparency, the Parties shall, not later than their first Meeting, decide on agreed best available methods for the measurement by Parties of anthropogenic emissions by sources, and removals by sinks, of greenhouse gases, taking into account the best available methods determined by the IPCC and other expert bodies. They shall also decide on appropriate adjustments to measurements of emissions and removals where agreed best available methods have not been used. The Parties shall periodically update agreed best available methods and adjustments based on evolving scientific knowledge, including advice from the Subsidiary Body for Scientific and Technological Advice referred to in Article 12.

3. Each Annex A and Annex B Party shall put in place, if it has not already done so, national compliance and enforcement programs relevant to its implementation of the obligations under this Protocol.

4. Each Annex A and Annex B Party shall submit to the Secretariat, as part of its communication under Article 12 of the Convention, information on its implementation of this Protocol, including policies and measures it is taking to meet its obligations in Article 2. Such submission shall be in accordance with guidelines which the Parties adopt at their first Meeting, taking into account any relevant guidelines adopted by the Parties to the Convention. Such submission shall also contain the following information:

   (a) once the obligation in paragraph 1 above becomes effective, a description of the national measurement system that it has in place;

   (b) once the obligation in paragraph 1 above becomes effective, the results of its national measurement system;

   (c) a quantitative projection of its net anthropogenic emissions of greenhouse gases through the budget periods; and

   (d) a description of relevant national compliance and enforcement programs it has in place pursuant to paragraph 3 above, as well as a description of their effectiveness, including actions taken in cases of non-compliance with national law.

5. In addition to the information required to be submitted under paragraph 4, each Annex A and Annex B Party shall submit to the Secretariat, on an annual basis and in accordance with the guidelines referred to in paragraph 4, its current calculation corresponding to each of the subparagraphs in Article 2.2 and its remaining emissions budget for that budget period. With respect to any tonnes of carbon equivalent emissions allowed that are acquired or transferred under Articles 6 or 7, the Party shall specify the quantity, Party of origin or destination, and the relevant budget period.

6. The first of the submissions referred to in paragraph 5 shall be part of a Party's first communication that is due after the Protocol has been in force for that Party for two years. The frequency of subsequent submissions shall be determined by the Parties.

7. Information communicated by Parties under this Article shall be transmitted by the secretariat as soon as possible to the Parties and to any subsidiary bodies concerned.

8. Without prejudice to the ability of any Party to make public its communication at any time, the secretariat shall make information communicated by Parties under this Article publicly available at the time it is submitted to the Parties.

Article 4
Review and Compliance Process

1. In addition to the review of communications conducted under Article 10.2(b) of the Convention, the Meeting of the Parties shall consider the information submitted by Annex A and Annex B Parties under Article 3 in order to assess those Parties' implementation of their obligations.

2. Reviews will be conducted by expert review teams, which will be coordinated by the secretariat and composed of experts selected from those nominated by Parties and, as appropriate, by intergovernmental organizations.

3. Reviews will be in connection with the review of communications conducted under Article 10.2(b) of the Convention and will be in accordance with guidelines to be adopted by the Parties at a meeting. These guidelines shall, inter alia, provide for how information will be made available to the public and define mechanisms by which observers and the public may provide comments, supplemental data or other information to facilitate and improve reviews. The guidelines shall be periodically reviewed by the Parties for appropriate revision.

4. Review teams will review all aspects of a Party's implementation of this Protocol, including the likelihood that a Party will achieve its emissions budgets obligations. They will be authorized, inter alia, to review pertinent information and consult with the Party in question and others as necessary. They will prepare a report assessing a Party's implementation of its obligations, identifying any areas of apparent non-compliance, as well as potential problems in achieving obligations.

5. Such reports will be circulated by the Secretariat to all Parties. In addition, the Secretariat will identify for further consideration any report indicating a question of implementation.

Article 5
Advancement of the Implementation of Article 4.1 of the Convention

Recognizing the progress that has been made to date in implementing commitments under Article 4.1 of the Convention:

1. The Parties reaffirm their commitments under Article 4.1 of the Convention and the need to continue to advance the implementation of such commitments.

2. Each Party shall strengthen its legal and institutional framework to advance the implementation of its commitments under Article 4.1 of the Convention.

3. Each Party shall take measures to facilitate investment in climate-friendly technologies.

4. Each Party shall report, as part of its communication under the Convention, on how it is promoting public education and participation in the development of climate change policy.

5. Each Party that is neither in Annex A nor Annex B shall identify and implement "no-regrets" measures for mitigating net anthropogenic emissions of greenhouse gases, including any identified through the review process under paragraph 7 below. In this regard, each such Party shall also:

   (a) quantify the effects of the measures it implements;

   (b) evaluate barriers to the adoption of potential measures; and

   (c) report to the Secretariat, as part of its communication under the Convention, on the measures it has implemented, plans to implement, and barriers to the adoption of potential measures.

6. Each Party that is neither in Annex A nor Annex B shall submit to the Secretariat, on an annual basis, its inventory of greenhouse gas emissions. Such inventory shall be consistent with any guidelines adopted by the Parties.

7. The Parties shall establish a process for reviewing communications received under the Convention from the Parties identified in paragraphs 5 and 6. The process shall be designed to:

   (a) enable the review of the effects of individual measures described in paragraph 5;

(b) assist such Parties in identifying and implementing "no-regrets" measures for mitigating net anthropogenic emissions of greenhouse gases;

(c) seek to identify key sectors and technological options within them;

(d) consider possibilities for promoting voluntary arrangements with industry aimed at identifying and encouraging implementation of "no regrets" measures; and

(e) explore various means through which such Parties could obtain both the know-how and the technology needed to implement options identified.

Article 6
International Emissions Trading

1. Except as otherwise provided below, any Annex A or Annex B Party may transfer to, or acquire from, any Annex A or Annex B Party, any of its tonnes of carbon equivalent emissions allowed for a budget period, for the purpose of meeting its obligations under Article 2.

2. An Annex A or Annex B Party may not transfer or acquire any of its tonnes of carbon equivalent emissions allowed if it is not in compliance with its obligations under Article 3 (Measurement and Reporting) or if it does not have in place a national mechanism for certification and verification of trades.

3. An Annex A or Annex B Party may not transfer in a given budget period any of its tonnes of carbon equivalent emissions allowed if it has exceeded its emissions budget for that period.

4. If a question of a Party's implementation of the requirements referred to in paragraph 2 or 3 above is identified by either the review process under Article 4.5 or by the Secretariat under Article 11.2(b):

   -- transfers and acquisitions of tonnes allowed (in the case of paragraph 2) and transfers of tonnes allowed (in the case of paragraph 3) may continue to be made after the question has been identified, provided that any such tonnes may not be used by any Party to meet its obligations under Article 2 until any issue of compliance is resolved. Issues of compliance shall be resolved as expeditiously as possible.

5. A Party may authorize any domestic entity (e.g., government agencies, private firms, non-governmental organizations, individuals) to participate in actions leading to transfer and acquisition under paragraph 1 of tonnes of carbon equivalent emissions allowed.

6. The Parties, at a meeting, may further elaborate guidelines to facilitate the reporting of emissions trading information.

Article 7
Joint Implementation

1. Any Party that is neither in Annex A nor B may generate tonnes of carbon equivalent emissions allowed through projects that meet the criteria set forth in paragraph 2.

2. In addition to any criteria adopted by the Parties to this Protocol, the following criteria shall apply to projects:

   (a) Projects must be compatible with and supportive of national environment and development priorities and strategies, as well as contribute to cost-effectiveness in achieving global benefits;

   (b) Projects must provide a reduction in emissions that is additional to any that would otherwise occur.

3. [Additional provisions to be added on calculation, measurement, monitoring, verification, review, reporting]

4. Any Party that generates tonnes of carbon equivalent emissions allowed consistent with this Article may:

   (a) hold such tonnes of carbon equivalent emissions allowed; or

   (b) transfer any portion thereof to any Party.

5. An Annex A or Annex B Party may acquire tonnes of carbon equivalent emissions allowed under this Article for the purpose of meeting its obligations under Article 2, provided it is in compliance with its obligations under Article 3 (Measurement and Reporting).

6. Any Party that is neither in Annex A nor Annex B that generates or acquires tonnes of carbon equivalent emissions allowed under this Article shall notify the Secretariat annually of the quantity, origin, and destination of such tonnes.

Article 8
Science

The Parties shall periodically review this Protocol, and guidelines established thereunder, in light of evolving scientific knowledge related to climate change.

Article 9
Progress Toward Long-Term Goal

The Parties shall cooperate in the establishment of a long-term goal with respect to atmospheric concentrations of greenhouse gases.

Article 10
Meetings of the Parties

1. The Parties shall hold meetings at regular intervals. The secretariat shall convene the first meeting of the Parties not later than one year after the date of the entry into force of this Protocol and in conjunction with a meeting of the Conference of the Parties to the Convention.

2. Subsequent meetings of the Parties shall be held, unless the Parties decide otherwise, in conjunction with meetings of the Conference of the Parties to the Convention. Extraordinary meetings of the Parties shall be held at such other times as may be deemed necessary by a meeting of the Parties, or at the written request of a Party, provided that within six months of such a request being communicated to them by the secretariat, it is supported by at least one third of the Parties.

3. The Parties, at their first meeting, shall:

   (a) adopt, by consensus, rules of procedure for their meetings;

   (b) [other].

4. The Parties:

(a) shall periodically review the adequacy of this Protocol;

(b) shall review the implementation of this Protocol, including the information submitted in accordance with Articles 3 and 5, reports received from the review teams referred to in Article 4, and any other reports and recommendations received from processes under this Protocol;

(c) shall implement an appropriate regime to address cases of non-compliance with obligations under this Protocol, including through the development of an indicative list of consequences, taking into account the type, degree, and frequency of non-compliance;

(d) may establish an implementation committee consisting of a subset of Parties to assist them, including by making recommendations, in carrying out functions referred to in subparagraphs (b) and (c) above.

5. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not party to this Protocol, may be represented at meetings of the Parties as observers. Any body or agency, whether national or international, governmental or non-governmental, qualified in fields relating to climate change which has informed the secretariat of its wish to be represented at a meeting of the Parties as an observer may be admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Parties.

Article 11
Secretariat

1. In accordance with Article 8.2(g) of the Convention, the secretariat of this Protocol shall be the secretariat of the Convention.

2. The functions of the secretariat shall be:

(a) to maintain and administer records relating to the accounting of the emissions budgets of Annex A and Annex B Parties, including initial budget allocations, adjustments to budgets consistent with Articles 2, 6, and 7, annual emissions, and remaining budgets in a given budget period;

(b) to facilitate the review of implementation of this Protocol through, inter alia, coordinating the review of Annex A and Annex B implementation; coordinating the reviews under Article 5; identifying for the Parties questions of implementation, including whether individual reports are consistent with reporting criteria; and preparing an annual compilation and synthesis report that contains inventory and budget information, and notes any discrepancies in accounting.

(c) [other].

Article 12
Subsidiary Body for Scientific and Technological Advice

1. The Subsidiary Body for Scientific and Technological Advice of the Convention shall serve as the Subsidiary Body for Scientific and Technological Advice of the Protocol.

2. When the Subsidiary Body for Scientific and Technological Advice exercises its functions with regard to matters concerning the Protocol, decisions shall be taken only by those of its members that are, at the same time, Parties to the Protocol.

3. When the Subsidiary Body for Scientific and Technological Advice exercises its functions with regard to matters concerning the Protocol, any member of the bureau of the Subsidiary Body for Scientific and Technological Advice representing a Party to the Convention, but, at the same time, not a Party to the Protocol, shall be substituted by an additional member to be elected by and from the Parties to the Protocol.

Article 13
Subsidiary Body for Implementation

1. The Subsidiary Body for Implementation of the Convention shall serve as the Subsidiary Body for Implementation of the Protocol.

2. When the Subsidiary Body for Implementation exercises its functions with regard to matters concerning the Protocol, decisions shall be taken only by those of its members that are, at the same time, Parties to the Protocol.

3. When the Subsidiary Body for Implementation exercises its functions with regard to matters concerning the Protocol, any member of the bureau of the Subsidiary Body for Implementation representing a Party to the Convention, but, at the same time, not a Party to the Protocol, shall be substituted by an additional member to be elected by and from the Parties to the Protocol.

Article 14
Multilateral Consultative Process

[The Parties, at their first Meeting or as soon as practicable thereafter, shall consider the establishment of a multilateral consultative process to promote effective implementation of the Convention.]

Article 15
Dispute Settlement

[silence, with the result that Article 14 of the Convention would apply to this Protocol.]

[in addition, mandatory, binding dispute settlement [with specific consequences flowing from a violation] among Annex A and Annex B Parties, as well as against other Parties as appropriate (e.g., host countries under Article 7)]

Note: this process would be without prejudice to the review and compliance process under Article 4

Article 16
Evolution

The Parties shall adopt, by [2005], binding provisions so that all Parties have quantitative greenhouse gas emissions obligations and so that there is a mechanism for automatic application of progressive greenhouse gas emissions obligations to Parties, based upon agreed criteria.

Views on Certain Final Clauses

Adoption and Amendments of Annexes

Depending upon what type of material is eventually included in annexes, it may not be appropriate to restrict the content of all annexes to "lists, forms and any other material of a descriptive nature that is of a scientific, technical, procedural or administrative character." For any substantive annex, it may not be appropriate to provide for tacit adoption/amendment.

Signature

This provision should state that only Parties to the Convention may be Parties to the Protocol.

Entry into Force

To ensure effective implementation, as well as to minimize the potential "free rider" problem, this provision may need to stipulate an entry into force trigger that requires ratification by States that account for a particular percentage of global emissions of greenhouse gases.

Annex A

This Annex would include the same States as those listed in Annex I of the Convention, plus those that join subsequently pursuant to Article 2.

Annex B

This Annex would include those States not listed in Annex A that indicate before adoption of the protocol that they want to be included in this Annex, plus those that join subsequently pursuant to Article 2.

Annex C

All greenhouse gases, their sources and sinks, with global warming potentials as decided by the Parties at their first meeting (taking into account the IPCC's global warming potentials for 100-year time horizons) and as subsequently updated by the Parties to reflect evolving scientific knowledge.

Additional U.S. Proposals
(references are to the original U.S. submission)

Article 1 (Definitions)

- Replace definition 3 ("Greenhouse gas") with the following:

  "Greenhouse gas" means any greenhouse gas covered in Annex C of this Protocol."

- Replace definition 4 ("Tonne of carbon equivalent") with the following:

  "Tonne of carbon equivalent" means one metric tonne of carbon, or a quantity of one or more other greenhouse gases equivalent to one metric tonne based on the global warming potentials decided by the Parties in accordance with Annex C of this Protocol.

Article 2 (Emissions Budgets)

- Delete paragraph 7

Article 3 (Measurement and Reporting)

- Replace paragraph 2 with the following:

  For the purposes of implementing paragraph 1 and promoting comparability, consistency, and transparency, the Parties shall, not later than their first Meeting, decide on agreed best available methods for the measurement by Parties of anthropogenic emissions by sources, and removals by sinks, of greenhouse gases, taking into account the best available methods determined by the IPCC and other expert bodies. They shall also decide on appropriate adjustments to measurements of emissions and removals where agreed best available methods have not been used. The Parties shall periodically update agreed best available methods and adjustments based on evolving scientific knowledge, including advice from the Subsidiary Body for Scientific and Technological Advice referred to in Article 12.

Annex C

- Replace descriptive language with the following:

  All greenhouse gases, their sources and sinks, with global warming potentials as decided by the Parties at their first meeting (taking into account the IPCC's global warming potentials for 100-year time horizons) and as subsequently updated by the Parties to reflect evolving scientific knowledge.

Additional U.S. Proposals
(references are to the original U.S. submission)

In Article 2 of the U.S. proposal (Emissions Budgets), add a new paragraph 6.bis. as follows:

2.6.bis. At the end of a budget period applicable to a Party, any amount of tonnes of carbon equivalent emissions over its emissions budget shall be subtracted at a rate of [rate greater than that in paragraph 6] from the subsequent budget period.

In Article 4 of the U.S. proposal (Review and Compliance Process), substitute for paragraphs 3 to 6 the following text:

4.3 Reviews will be in connection with the review of communications conducted under Article 10.2(b) of the Convention and will be in accordance with guidelines to be adopted by the Parties at a meeting. These guidelines shall, inter alia, provide for how information will be made available to the public and define mechanisms by which observers and the public may provide comments, supplemental data or other information to facilitate and improve reviews. The guidelines shall be periodically reviewed by the Parties for appropriate revision.

4.4 Review teams will review all aspects of a Party's implementation of this Protocol, including the likelihood that a Party will achieve its emissions budgets obligations. They will be authorized, inter alia, to review pertinent information and consult with the Party in question and others as necessary. They will prepare a report assessing a Party's implementation of its obligations, identifying any areas of apparent non-compliance, as well as potential problems in achieving obligations.

4.5 Such reports will be circulated by the Secretariat to all Parties. In addition, the Secretariat will identify for further consideration any report indicating a question of implementation.

In Article 6 of the U.S. proposal (International Emissions Trading), substitute the following text:

6.1. Except as otherwise provided below, any Annex A or Annex B Party may transfer to, or acquire from, any Annex A or Annex B Party, any of its tonnes of carbon equivalent emissions allowed for a budget period, for the purpose of meeting its obligations under Article 2.

6.2 An Annex A or Annex B Party may not transfer or acquire any of its tonnes of carbon equivalent emissions allowed if it is not in compliance with its obligations under Article 3 (Measurement and Reporting) or if it does not have in place a national mechanism for certification and verification of trades.

6.3 An Annex A or Annex B Party may not transfer in a given budget period any of its tonnes of carbon equivalent emissions allowed if it has exceeded its emissions budget for that period.

6.4 If a question of a Party's implementation of the requirements referred to in paragraph 2 or 3 above is identified by either the review process under Article 4.5 or by the Secretariat under Article 11.2(b):

-- transfers and acquisitions of tonnes allowed (in the case of paragraph 2) and transfers of tonnes allowed (in the case of paragraph 3) may continue to be made after the question has been identified, provided that any such tonnes may not be used by any Party to meet its obligations under Article 2 until any issue of compliance is resolved. Issues of compliance shall be resolved as expeditiously as possible.

6.5 A Party may authorize any domestic entity (e.g., government agencies, private firms, non-governmental organizations, individuals) to participate in actions leading to transfer and acquisition under paragraph 1 of tonnes of carbon equivalent emissions allowed.

6.6 The Parties, at a meeting, may further elaborate guidelines to facilitate the reporting of emissions trading information.

In Article 10 of the U.S. proposal (Meetings of the Parties), for paragraph 4, substitute the following text:

10.4 The Parties:

(a) shall periodically review the adequacy of this Protocol;

(b) shall review the implementation of this Protocol, including the information submitted in accordance with Articles 3 and 5, reports received from the review teams referred to in Article 4, and any other reports and recommendations received from processes under this Protocol;

(c) shall implement an appropriate regime to address cases of non-compliance with obligations under this Protocol, including through the development of an indicative list of consequences, taking into account the type, degree, and frequency of non-compliance;

(d) may establish an implementation committee consisting of a subset of Parties to assist them, including by making recommendations, in carrying out functions referred to in subparagraphs (b) and (c) above.

In Article 11 of the U.S. proposal (Secretariat), for paragraph 2, substitute the following:

11.2 The functions of the secretariat shall be:

(a) to maintain and administer records relating to the accounting of the emissions budgets of Annex A and Annex B Parties, including initial budget allocations, adjustments to budgets consistent with Articles 2, 6, and 7, annual emissions, and remaining budgets in a given budget period;

(b) to facilitate the review of implementation of this Protocol through, inter alia, coordinating the review of Annex A and Annex B implementation; coordinating the reviews under Article 5; identifying for the Parties questions of implementation, including whether individual reports are consistent with reporting criteria; and preparing an annual compilation and synthesis report that contains inventory and budget information, and notes any discrepancies in accounting.

(c) [other].

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release October 22, 1997

REMARKS BY THE PRESIDENT
ON GLOBAL CLIMATE CHANGE

National Geographic Society
Washington, D.C.

2:57 P.M. EDT

THE PRESIDENT: Thank you very much. Mr. Murphy, Mr. Vice President, to all of you who are here. I thank especially the members of Congress who are here, the leaders of labor and business who are here, all the members of the administration, and especially the White House staff members that the Vice President mentioned and the Secretary of Energy, the Administrator of the EPA, and the others who have helped us to come to this moment.

On the way in here we were met by the leaders of the National Geographic, and I complimented them on their recent two-part series on the Roman Empire. It's a fascinating story of how the Empire rose, how it sustained itself for hundreds of years, why it fell, and speculations on what, if any, relevance it might have to the United States and, indeed, the West.

And one of the gentlemen said, well, you know, we got a lot of interesting comments on that, including a letter referencing a statue we had of the bust of Emperor Vespasian. And one of our readers said, why in the world did you put a statue of Gene Hackman in a piece on the Roman Empire? (Laughter.) And I say that basically to say, in some senses, the more things change, the more they remain the same. (Laughter.)

For what sustains any civilization, and now what will sustain all of our civilizations, is the constant effort at renewal, the ability to avoid denial and to proceed into the future in a way that is realistic and humane, but resolute. Six years ago tomorrow, not long after I started running for President, I went back to my alma mater at Georgetown and began a series of three speeches outlining my vision for America in the 21st century -- how we could keep the American Dream alive for all of our people, how we could maintain America's leadership for peace and freedom and prosperity, and how we could come together across the lines that divide us as one America.

And together, we've made a lot of progress in the last nearly five years now that the Vice President and I have been privileged to work at this task. At the threshold of a new century, our economy is thriving, our social fabric is mending, we've helped to lead the world toward greater peace and cooperation.

I think this has happened, in no small measure, in part because we had a different philosophy about the role of government. Today, it is smaller and more focused and more oriented toward giving people the tools and the conditions they need to solve their own problems and toward working in partnership with our citizens. More important, I believe it's happened because we made tough choices but not false choices.

On the economy, we made the choice to balance the budget and to invest in our people and our

On the economy, we made the choice to balance the budget and to invest in our people and our future. On crime, we made the choice to be tough and smart about prevention and changing the conditions in which crime occurs. On welfare, we made the choice to require work, but also to support the children of people who have been on welfare. On families, we made the choice to help parents find more and better jobs and to have the necessary time and

resources for their children. And on the environment, we made the choice to clean our air, water, and land, to improve our food supply, and to grow the economy.

This kind of commonsense approach, rooted in our most basic values and our enduring optimism about the capacity of free people to meet the challenges of every age must be brought to bear on the work that remains to pave the way for our people and for the world toward a new century and a new millenium.

- Today we have a clear responsibility and a golden opportunity to conquer one of the most important challenges of the 21st century -- the challenge of climate change -- with an environmentally sound and economically strong strategy, to achieve meaningful reductions in greenhouse gases in the United States and throughout the industrialized and the developing world. It is a strategy that, if properly implemented, will create a wealth of new opportunities for entrepreneurs at home, uphold our leadership abroad, and harness the power of free markets to free our planet from an unacceptable risk; a strategy as consistent with our commitment to reject false choices.

America can stand up for our national interest and stand up for the common interest of the international community. America can build on prosperity today and ensure a healthy planet for our children tomorrow.

In so many ways the problem of climate change reflects the new realities of the new century. Many previous threats could be met within our own borders, but global warming requires an international solution. Many previous threats came from single enemies, but global warming derives from millions of sources. Many previous threats posed clear and present danger; global warming is far more subtle, warning us not with roaring tanks or burning rivers but with invisible gases, slow changes in our surroundings, increasingly severe climatic disruptions that, thank God, have not yet hit home for most Americans. But make no mistake, the problem is real. And if we do not change our course now, the consequences sooner or later will be destructive for America and for the world.

The vast majority of the world's climate scientists have concluded that if the countries of the world do not work together to cut the emission of greenhouse gases, then temperatures will rise and will disrupt the climate. In fact, most scientists say the process has already begun. Disruptive weather events are increasing. Disease-bearing insects are moving to areas that used to be too cold for them. Average temperatures are rising. Glacial formations are receding.

Scientists don't yet know what the precise consequences will be. But we do know enough now to know that the Industrial Age has dramatically increased greenhouse gases in the atmosphere, where they take a century or more to dissipate; and that the process must be slowed, then stopped, then reduced if we want to continue our economic progress and preserve the quality of life in the United States and throughout our planet. We know what we have to do.

Greenhouse gas emissions are caused mostly by the inefficient burning of coal or oil for energy. Roughly a third of these emissions come from industry, a third from transportation, a third from residential and commercial buildings. In each case, the conversion of fuel to energy use is extremely inefficient and could be made much cleaner with existing technologies or those already on the horizon, in ways that will not weaken the economy but in fact will add to our strength in new businesses and new jobs. If we do this properly, we will not jeopardize our prosperity -- we will increase it.

With that principle in mind, I'm announcing the instruction I'm giving to our negotiators as they pursue a realistic and effective international climate change treaty. And I'm announcing a far-reaching proposal that provides flexible market-based and cost-effective ways to achieve meaningful reductions here in America. I want to emphasize that we cannot wait until the treaty is negotiated and ratified to act. The United States has less than 5 percent of the world's people, enjoys 22 percent of the world's wealth, but emits more than 25 percent of the world's greenhouse gases. We must begin now to take out our insurance policy on the future.

In the international climate negotiations, the United States will pursue a comprehensive framework that includes three elements, which, taken together, will enable us to build a strong and robust global agreement. First, the United States proposes at Kyoto that we commit to the binding and realistic target of returning to emissions of 1990 levels between 2008 and 2012. And we should not stop there. We should commit to reduce emissions below 1990 levels in the five-year period thereafter, and we must work toward further reductions in the years ahead.

The industrialized nations tried to reduce emissions to 1990 levels once before with a voluntary approach, but regrettably, most of us -- including especially the United States -- fell short. We must find new resolve to achieve these reductions, and to do that we simply must commit to binding limits.

Second, we will embrace flexible mechanisms for meeting these limits. We propose an innovative, joint implementation system that allows a firm in one country to invest in a project that reduces emissions in another country and receive credit for those reductions at home. And we propose an international system of emissions trading. These innovations will cut worldwide pollution, keep costs low, and help developing countries protect their environment, too, without sacrificing their economic growth.

Third, both industrialized and developing countries must participate in meeting the challenge of climate change. The industrialized world must lead, but developing countries also must be engaged. The United States will not assume binding obligations unless key developing nations meaningfully participate in this effort.

As President Carlos Menem stated forcefully last week when I visited him in Argentina, a global problem such as climate change requires a global answer. If the entire industrialized world reduces emissions over the next several decades, but emissions from the developing world continue to grow at their current pace, concentrations of greenhouse gasses in the atmosphere will continue to climb. Developing countries have an opportunity to chart a different energy future consistent with their growth potential and their legitimate economic aspirations.

What Argentina, with dramatic projected economic growth, recognizes is true for other countries as well: We can and we must work together on this problem in a way that benefits us all. Here at home, we must move forward by unleashing the full power of free markets and technological innovations to meet the challenge of climate change. I propose a sweeping plan to provide incentives and lift road blocks to help our companies and our citizens find new and creative ways of reducing greenhouse gas emissions.

First, we must enact tax cuts and make research and development investments worth up to $5 billion over the next five years -- targeted incentives to encourage energy efficiency and the use of cleaner energy sources.

Second, we must urge companies to take early actions to reduce emissions by ensuring that they receive appropriate credit for showing the way.

Third, we must create a market system for reducing emissions wherever they can be achieved most inexpensively, here or abroad; a system that will draw on our successful experience with

acid rain permit trading.

Fourth, we must reinvent how the federal government, the nation's largest energy consumer, buys and uses energy. Through new technology, renewable energy resources, innovative partnerships with private firms and assessments of greenhouse gas emissions from major federal projects, the federal government will play an important role in helping our nation to meet its goal. Today, as a down payment on our million solar roof initiative, I commit the federal government to have 20,000 systems on federal buildings by 2010.

Fifth, we must unleash competition in the electricity industry, to remove outdated regulations and save Americans billions of dollars. We must do it in a way that leads to even greater progress in cleaning our air and delivers a significant down payment in reducing greenhouse gas emissions. Today, two-thirds of the energy used to provide electricity is squandered in waste heat. We can do much, much better.

Sixth, we must continue to encourage key industry sectors to prepare their own greenhouse gas reduction plans. And we must, along with state and local government, remove the barriers to the most energy efficient usage possible. There are ways the federal government can help industry to achieve meaningful reductions voluntarily, and we will redouble our efforts to do so.

This plan is sensible and sound. Since it's a long-term problem requiring a long-term solution, it will be phased in over time. But we want to get moving now. We will start with our package of strong market incentives, tax cuts, and cooperative efforts with industry. We want to stimulate early action and encourage leadership. And as we reduce our emissions over the next decade with these efforts, we will perform regular reviews to see what works best for the environment, the economy, and our national security.

After we have accumulated a decade of experience, a decade of data, a decade of technological innovation, we will launch a broad emissions trading initiative to ensure that we hit our binding targets. At that time, if there are dislocations caused by the changing patterns of energy use in America, we have a moral obligation to respond to those to help the workers and the enterprises affected -- no less than we do today by any change in our economy which affects people through no fault of their own.

This plan plays to our strengths -- innovation, creativity, entrepreneurship. Our companies already are showing the way by developing tremendous environmental technologies and implementing commonsense conservation solutions.

Just yesterday, Secretary Pena announced a dramatic breakthrough in fuel cell technology, funded by the Department of Energy research -- a breakthrough that will clear the way toward developing cars that are twice as efficient as today's models and reduce pollution by 90 percent. The breakthrough was made possible by our path-breaking partnership with the auto industry to create a new generation of vehicles. A different design, producing similar results, has been developed by a project funded by the Defense Advanced Research Products Agency and the Commerce Department's National Institute of Science and Technology.

The Energy Department discovery is amazing in what it does. Today, gasoline is used very inefficiently in internal combustion engines -- about 80 percent of its energy capacity is lost. The DOE project announced yesterday by A.D. Little and Company uses 84 percent of the gasoline directly going into the fuel cell. That's increased efficiency of more than four times traditional engine usage.

And I might add, from the point of view of all the people that are involved in the present system, continuing to use gasoline means that you don't have to change any of the distribution systems that are out there. It's a very important, but by no means the only, discovery that's been made that points the way toward the future we have to embrace.

I also want to emphasize, however, that most of the technologies available for meeting this goal through market mechanisms are already out there -- we simply have to take advantage of them. For example, in the town of West Branch, Iowa, a science teacher named Hector Ibarra challenged his 6th graders to apply their classroom experiments to making their school more energy efficient. The class got a $14,000 loan from a local bank and put in place easily available solutions. The students cut the energy use in their school by 70 percent. Their savings were so impressive that the bank decided to upgrade its own energy efficiency. (Laughter.)

Following the lead of these 6th graders -- (laughter) -- other major companies in America have shown similar results. You have only to look at the proven results achieved by companies like Southwire, Dow Chemical, Dupont, Kraft, Interface Carpetmakers, and any number of others in every sector of our economy to see what can be done.

Our industries have produced a large group of efficient new refrigerators, computers, washer/dryers, and other appliances that use far less energy, save money, and cut pollution. The revolution in lighting alone is truly amazing. One compact fluorescent lamp, used by one person over its lifetime, can save nearly a ton of carbon dioxide emissions from the atmosphere, and save the consumer money.

If over the next 15 years everyone were to buy only those energy-efficient products marked in stores with EPA's distinctive "Energy Star" label, we could shrink our energy bills by a total of about $100 billion over the next 15 years and dramatically cut greenhouse gas emissions.

Despite these win-win innovations and commitments that are emerging literally every day, I know full well that some will criticize our targets and timetables as too ambitious. And, of course, others will say we haven't gone far enough. But before the debate begins in earnest, let's remember that over the past generation, we've produced tremendous environmental progress, including in the area of energy efficiency, at far less expense than anyone could have imagined. And in the process, whole new industries have been built.

In the past three decades, while our economy has grown, we have raised, not lowered, the standards for the water our children drink. While our factories have been expanding, we have required them to clean up their toxic waste. While we've had record numbers of new homes, our refrigerators save more energy and more money for our consumers.

In 1970, when smog was choking our cities, the federal government proposed new standards for tailpipe emissions. Many environmental leaders claim the standards would do little to head off catastrophe. Industry experts predicted the cost of compliance would

devastate the industry. It turned out both sides were wrong. Both underestimated the ingenuity of the American people. Auto makers comply with today's much stricter emissions standards for far less than half the cost predicted, and new cars emit on average only 5 percent of the pollutants of the cars built in 1970.

We've seen this pattern over and over and over again. We saw it when we joined together in the '70s to restrict the use of the carcinogen, vinyl chloride. Some in the plastics industry predicted massive bankruptcies, but chemists discovered more cost-effective substitutes and the industries thrived. We saw this when we phased out lead and gasoline. And we see it in our acid rain trading program -- now 40 percent ahead of schedule -- at costs less than 50 percent of even the most optimistic cost projections. We see it as the chlorofluorocarbons are being taken out of the atmosphere at virtually no cost in ways that apparently are beginning finally to show some thickening of the ozone layer again.

The lesson here is simple: Environmental initiatives, if sensibly designed, flexibly implemented, cost less than expected and provide unforseen economic opportunities. So while

we recognize that the challenge we take on today is larger than any environmental mission we have accepted in the past, climate change can bring us together around what America does best -- we innovate, we compete, we find solutions to problems, and we do it in a way that promotes entrepreneurship and strengthens the American economy.

If we do it right, protecting the climate will yield not costs, but profits; not burdens, but benefits; not sacrifice, but a higher standard of living. There is a huge body of business evidence now showing that energy savings give better service at lower cost with higher profit. We have to tear down barriers to successful markets and we have to create incentives to enter them. I call on American business to lead the way, but I call upon government at every level -- federal, state, and local -- to give business the tools they need to get the job done, and also to set an example in all our operations.

And let us remember that the challenge we face today is not simply about targets and timetables. It's about our most fundamental values and our deepest obligations.

Later today, I'm going to have the honor of meeting with Ecumenical Patriarch Bartholomew I, the spiritual leader of 300,000,000 Orthodox Christians -- a man who has always stressed the deep obligations inherent in God's gift to the natural world. He reminds us that the first part of the word "ecology" derives from the Greek word for house. In his words, in order to change the behavior toward the house we all share, we must rediscover spiritual linkages that may have been lost and reassert human values. Of course, he is right. It is our solemn obligation to move forward with courage and foresight to pass our home on to our children and future generations.

I hope you believe with me that this is just another challenge in America's long history, one that we can meet in the way we have met all past challenges. I hope that you believe with me that the evidence is clear that we can do it in a way that grows the economy, not with denial, but with a firm and glad embrace of yet another challenge of renewal. We should be glad that we are alive today to embrace this challenge, and we should do it secure in the knowledge that our children and grandchildren will thank us for the endeavor.

Thank you very much. (Applause.)

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WHITE HOUSE CLIMATE CHANGE CONFERENCE
October 6, 1997

Summary

On Monday, October 6, President Clinton addressed some 200 participants at the White House Conference on Climate Change: "The Challenge of Global Warming". The conference included discussions on the scientific, technological, international and economic aspects of climate change. Scientists, economists, corporate executives, environmental, civic and labor leaders, small business owners, members of Congress, and representatives of state and local governments attended the all-day conference at Georgetown.

The conference, which was simulcast to 32 locations across the country – as well as more broadly for a time on C-SPAN – consisted of opening speeches, panel discussions on the science of global warming and climate change, the role of technology and economic impacts, international cooperation to address the issue. The President, Vice President, and First Lady all made remarks. Panel discussions were led by the President and Vice President and featured Secretary of State Albright, Secretary of Energy Pena, and Deputy Secretary of the Treasury Summers.

The conference was part of a White House effort to build domestic support for an international agreement to set legally binding limits on greenhouse gas emissions (GHGs). The President stated at the conference that the United States will seek "meaningful, but equitable commitments" from all nations, but did not spell out in detail what the U.S. position would be in Kyoto in early December when negotiations on the issue are set to conclude. The President noted that some of his economic advisors doubted new technologies could adequately soften the economic blow of strict reductions of GHG emissions. However, the President also said that he was convinced that the science of climate change is real, as scientists at the conference confirmed that broad patterns of high temperatures over the last several years were consistent with computer model predictions of global warming.

Many speakers at the conference supported the idea that the United States and other countries must combat global warming, but economists differed on how swift and drastic action should be. The panel of economists offered widely divergent views on how best to fight global warming. One stated that a carbon tax to cut emissions, provided it came with offsetting tax cuts and market incentives such as emissions trading credit and credits for energy-saving projects in developing countries, offered great promise – while another said that boosting energy prices could produce an economic downturn, similar to that witnessed in the 1970's.

Based in part on the results of the conference, the President announced the United States Climate Change policy on October 22, which included the instructions he gave to U.S. climate change negotiators.