global war

Statement by the Press Secretary

THE CHIEF of STAFF has seen

DRAFT NEWS RELEASE
FOR
THE PRESIDENT'S WHITE HOUSE CONFERENCE
ON
SCIENCE AND ECONOMICS RESEARCH RELATED TO GLOBAL CHANGE
DRAFT 2/26/90

President Bush today has invited ~~the heads of state from seventeen~~ a number of countries, the European Community, and the OECD to send ~~ministerial level~~ official delegates to a White House Conference on Science and Economics Research Related to Global Change. The Conference will be held in Washington, D.C., April 17-18, 1990.

The President ~~He~~ announced his intention to host this Conference ~~both~~ during his ~~meeting~~ with President Gorbachev and ~~more~~ again recently in a speech to the United Nation's Intergovernmental Panel on Climate Change, ~~a meeting recently held here in Washington, D.C.~~. The Conference will be devoted to science and economics issues relevant to policy on global change, including climate. ~~The President stated that the White House Conference~~ It is designed as an important step towards substantially enhancing and broadening international understanding of the critical science and economic research issues, framing a strategy for implementing a joint international science and economics research effort, and linking that knowledge to the policy process both nationally and internationally". ~~The President said "I believe that by working together, we can enhance international cooperation in these vital areas". He further stated~~ the "~~this~~ Conference ~~is~~ a vital next step in a joint international approach to address changes in the global environment".

The Administration considers

~~The~~ Conference ~~will convene a delegation of three ministerial-level officials from a representative group of nations. The officials will represent three essential disciplines: science, economics, and the environment. The President's invitations were sent to:~~

participants have been invited to send delegations of ~~ministerial level~~ officials representing the areas of science, economics, and environment,

1. Australia
2. Brazil
3. Canada
4. Federal Republic of Germany
5. France
6. India
7. Indonesia
8. Italy
9. Japan
10. Mexico
11. Netherlands
12. Nigeria
13. Norway
14. Poland
15. Soviet Union
16. United Kingdom
17. Zaire
18. European Community

related to global change. The Conference will also assist in

19. OECD

The President has ~~appointed his Science Advisor and~~ designated the Director of the Office of Science and Technology Policy, Dr. D. Allan Bromley; the Chairman of the Council of Economic Advisers, Dr. Michael Boskin; and the Chairman of the Council on Environmental Quality, Mr. Michael R. Deland, to serve as Co-chairmen of this Conference.

End of Release (File=PRESS225.DFT)

Global Warming

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 18 1990

OFFICE OF
THE ADMINISTRATOR

MEMORANDUM

SUBJECT: IPCC Speech Material

FROM: Daniel C. Esty DCE
Special Assistant to the Administrator

TO: Robert E. Grady
Associate Director
Natural Resources, Energy and Science

Attached is a copy of the proposed Presidential speech outline, as revised through consultations with the Energy Department. Also attached are several sets of "raw material" to help flesh out the outline.

The draft speech outline has been sent to Dr. Bromley as a joint product of Secretary Watkins and Administrator Reilly. The State Department (Zoellick) has also reviewed the draft.

Let me know if you would like anything else.

Attachments

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01. Memo	From Daniel C. Esty to Robert Grady Re: Raw Input for Presidential Speech (3 pp.)	1/18/90	P/5	

Collection:

Record Group: Bush Presidential Records
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By _____ (NLGB) on 10/28/05

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Raw Input for Presidential Speech

U.S. Supports the IPCC Process

1. Congratulations to its sponsors, UNEP and WMO, and to Dr. Bolin (Sweden) its chairman.

- In May, 1987 the Tenth World Meteorological Congress asked the Executive Council of the World Meteorological Organization (WMO), in cooperation with the U.N. Environment Programme(UNEP) "to arrange appropriate mechanisms to undertake further developments of scientific and other aspects of greenhouse gases."

- In June 1987, the WMO Executive Council (which consists o representatives of WMO member countries) and the UNEP Governing Council (which is made up of representatives of essentially the same countries) responded by asking the Secretary-General of WMO, Professor Obasi, and the Executive Director of UNEP, Dr. Tolba to cooperate in the establishment of an intergovernmental mechanism to carry out the intentions of the Tenth Congress.

- The IPCC was established after subsequent discussions.

- The first session of the IPCC was held in Geneva, Switzerland, on November 9-11, 1988. It was attended by representatives of 30 countries and 18 international organizations.

- Dr. Bert Bolin of Sweden, a senior science advisor to the government of Sweden, was elected Chairman. Dr. Bolin is generally recognized as an outstanding chairman -- even handed, adroit, with an excellent, understated sense of humor.

2. U.S. saw a need for an orderly, intergovernmental process to assess scientific understanding, evaluate potential impacts and develop appropriate response strategies.

- The issue of global climate change began to emerge as an important public policy issue during early and mid nineteen eighties as the earth experienced some of the hottest years in the last century (5 of the 10 hottest years in the last 100 have occurred in the 1980s) and as evidence of a significant build-up in the atmosphere of certain "greenhouse gases" became more widely known.

NO

- During the early and mid 1980s, discussion of the issue took place largely in the context of a number of loosely resulted, albeit important conferences.

- As the implication of the issue became clearer, the U.S. and a number of the countries began to perceive the need to address the issue through an on-going, international process that spann the broad range of relevant issues and expertise.

- This led to the proposals by the Tenth World Meteorological Congress, the WMO Executive Council, and the UNEP Governing Council.

3. IPCC has filled that role.

- Participation in the IPCC has increased continuously and now includes over 50 nations, hundreds of scientists and policy makers, and many non-governmental and international organizations.

- The work of the IPCC is carried out through three major working groups:

  The Working Group on Science, chaired by the United Kingdom, is reviewing and assessing the existing scientific information on, and understanding of, global climate change.

  The Working Group on Impacts, chaired by the USSR, is assessing the potential environmental and socio-economic impacts of global climate change.

  The Response Strategies Working Group, chaired by the U.S., is identifying and assessing possible strategies for responding to global climate change -- both by limiting greenhouse gas emissions and adapting to climate change.

4. Welcome the IPCC reports due in August.

- The three working groups will complete their reports to the IPCC late this Spring. The overall IPCC report will be prepared during the Summer and considered by the full IPCC at a meeting in Stockholm at the end of August. It will then be forwarded to UNEP and WMO and considered by the U.N. General Assembly next Fall and at the Second World Climate Conference (SWCC) during the last week of October and first week of November.

5. U.S. is committed to playing a leadership role and supporting the IPCC as the best forum for global climate change policy development.

- The IPCC is the best forum for global climate change policy development because: (a) it is focused exclusively on the issue; (b) its program of work addresses the broad range of relevant issues, not just e.g. emission reduction; (c) it has successfully involved the broad range of necessary expertise; (d) it is not overly politicized; and (e) it is truly international, with over 50 countries currently involved and more becoming involved. Essentially, it has proved a productive and increasingly popular forum for international analysis and discussion of the issue.

- The President is committed to playing a leadership role in the international community's efforts to address global climate change. The U.S. is playing a major leadership role in the IPCC and has provided substantial financial and analytic support for all major IPCC activities.

6. Support the UK proposal at the UN to continue the IPCC

- In her speech on November 9, 1989, to the UN General Assembly, Prime Minister Thatcher proposed the continuation of the IPCC after it submits its interim report next Fall so that it can provide an authoritative scientific basis for the negotiation of protocols to a framework convention. We should strongly support this proposal and broaden its rationale to include the need for a sound analytical basis, broadly construed to include analysis of the administrative and technical feasibility, costs and economic consequences of future protocols. There will be a need for years to come to (a) continually improve and periodically assess our scientific understanding of global climate change and its impacts, and (b) develop and evaluate response measures.

No No No

Much softer commitment

RAW MATERIAL FOR A PRESIDENTIAL SPEECH TO THE IPCC

Section 5:

1. The Clean Air Act

I have submitted to Congress extensive revisions to the Clean Air Act which should result not only in cleaning the nation's air, but in reducing greenhouse gas emissions as well. Powerful incentives exist in our acid rain program for conserving energy. These will reduce carbon dioxide emissions from electric utilities by about 75 million tons. The alternative transportation fuels program in the bill also offers the potential for reductions in emissions, up to 60 million tons, depending on what fuels make it to the market.

2. Energy Conservation Program.

Since taking office, my Administration has proposed or promulgated energy efficiency standards for refrigerators, dishwashers, washing machines, and dryers. Together, these will reduce emissions by around 15 million tons. In addition, I have submitted a request to Congress to increase the size of DOE's Conservation Program by $150 million.

3. Alternative Energy Sources

to be provided by DOE

4. Reforestation

The U.S. is firmly committed to positive action in response to threats imposed by global climate change. One immediate and tangible action which I have called for is a major reforestation program within the U.S. I am calling upon all Americans to join in a twenty-year program to plant and maintain twenty billion trees. We expect to provide up to $175 million per year to support programs ranging from urban tree planting, to sharing the cost of large tree plantations, to enhancing the quality and ultimately the biological yield of existing timber stands.

Complimenting these public investments, I have called for a private, non-profit foundation called the "America the Beautiful Foundation", which would capitalize a fund of potentially billions of private dollars, the yield of which will be used to support tree planting and maintenance throughout the United States. The objectives of these tree planting programs will be to absorb from 5 to 10 percent of U.S. carbon dioxide emissions, as well as enhance water quality and wildlife habitat.

5. Chlorofluorocarbons (CFCs)

These currently account for 25% of the current U.S. contribution to global warming. In addition to possibly affecting the climate system, these substances also are responsible for the depletion of the ozone layer. I fully support the international efforts to fully phaseout production of these substances by the year 2000. In addition, the US is aggressively working with developing countries to assist them in making the transition to

substitute chemicals. For example, we are working with the refrigeration industry to facilitate CFC substitution in China and we are sending technical missions to Brazil, Egypt and Mexico.

6. State Initiatives

The States deserve significant credit for their contributions to reducing greenhouse gas emissions. Their efforts include programs to increase energy efficiency in homes, offices, and industries, to expand the use of alternative fuels in the transportation sector, and to plant trees. Several states have even mandated general greenhouse gas emissions reduction efforts. For example, the Governor of New Jersey recently signed an executive order requiring state agencies to implement measures designed to reduce energy and CFC use and to maximize the number of trees in New Jersey. The Oregon legislature has mandated that the state reduce emissions of greenhouse gases by 20% by 2005.

Almost every state has implemented energy efficiency programs. An example of a program that has successfully reduced energy consumption in industry is the Energy Advisory Service to Industry in New York. In 1988, CO_2 reductions attributable to this program were approximately 682,000 tons, while consumers saved more than $60 million in energy costs. In California, the South Coast Air Quality Management District is implementing stringent air quality standards that will eventually require substantial use of alternative fuels. (However, this plan calls for the use of methanol fuel, which, if derived from natural gas, is only slightly less carbon intensive than coal, and, if derived from coal, is 50-

75% more carbon intensive than coal.)

In addition to individual programs, a number of states are now undertaking "Least-Cost Utility Planning" which requires utilities to undertake the least cost alternative to providing power, which is also often the option with the lowest greenhouse gas emissions, i.e., energy efficiency. A few states, such as Wisconsin, New York and Oregon, are taking this a step further by applying an environmental weighting factor in competitive bidding procedures for private power supply options. This tends to encourage natural gas and non-fossil sources of energy.

States are also undertaking their own tree planting programs geared toward reducing carbon dioxide. The States of North Dakota and Missouri, for example, have established tree planting programs. The former has set a target of 100 million trees by 2000.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

DATE: 1-25-90

TO: Mark Lange

ADDRESS: Speechwriting

TELPHONE NUMBER: ~~1120~~ 2903

FAX NUMBER: 6218

FROM: Nancy Maynard

TELEPHONE NUMBER: (456) 6202

FAX NUMBER: (202) 395-[redacted]

NUMBER OF PAGES, INCLUDING COVER SHEET: 9

SPECIAL INSTRUCTION:

This is what we have...

Global Warming 9.

PRESS
DEPARTMENT OF STATE

PR NO. 11
January 30, 1989

REMARKS BY
THE HONORABLE JAMES A. BAKER III
SECRETARY OF STATE
BEFORE THE
RESPONSE STRATEGIES WORKING GROUP
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
DEPARTMENT OF STATE
JANUARY 30, 1989

Thank you Fred Bernthal, Professor Bolin, ladies and gentlemen. I am very pleased to have the opportunity to join you this morning, however briefly, and to welcome you to the Department of State. You are the first official group that I've had the pleasure of welcoming to the Department.

I would also like to welcome Bill Reilly, who is here with us this morning -- President of the World Wildlife Fund and the Conservation Foundation. Bill has let President Bush talk him into becoming the nominee for the post of Administrator of the United States Environmental Protection Agency, and it's my fervent hope, Bill, that nothing you hear at this conference this morning will cause you to change your mind.

The truth is, though, as I don't need to tell those of you who are here, we face some very difficult problems. It is also true, though, that we now recognize them to be problems, and in my experience in government that is at least half of the battle.

Some months ago President Bush said, "We face the prospect of being trapped on a boat that we have irreparably damaged -- not by the cataclysm of war, but by the slow neglect of a vessel we believed to be impervious to our abuse."

The establishment of the Intergovernment Panel on Climate Change and this meeting of the Panel's Response Strategies Working Group, I think, shows beyond a doubt that this is a transnational issue. We are all in the same boat. And as I put it in my testimony to the Senate recently, "The tides and the winds can spread environmental damages to continents and hemispheres far removed from the immediate disasters."

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02. Remarks	By James Baker re global climate changes ~~Margin notes redacted~~ (1 pp.)	1/30/89	~~P-5~~	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
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So, if I may borrow a phrase from the environmentalists, the political ecology is now ripe for action. We know that we need to act, and we also know that we need to act together. That is what this meeting is all about.

But I would take it even a step further. One of the big advantages of being Secretary of State is that because I am not a scientist, I am, therefore, not called upon to assess the evidence, especially on global climate change. Yet it is also clear, I think, that we face more than simply a scientific problem. It is also a diplomatic problem of when and how we take action. And here, if I might, I would like to make four points.

The first is that we can probably not afford to wait until all of the uncertainties have been resolved before we do act. Time will not make the problem go away.

The second is that while scientists refine the state of our knowledge, we should focus immediately on prudent steps that are already justified on grounds other than climate change. These include reducing CFC emissions, greater energy efficiency and reforestation.

The third is that whatever global solutions to global climate change are considered, they should be as specific and cost-effective as they can possibly be.

The fourth is that those solutions will be most effective if they transcend the great fault line of our times, the need to reconcile the transcendent requirements for both economic development and a safe environment.

Without in any way downgrading the difficulty of the task, I would conclude, ladies and gentlemen, by noting that progress generally results when common interests are joined to a common understanding. This meeting and others like it will play a crucial role in moving us all toward that common understanding of what we must do to protect and to preserve our environment.

Thank you very much for having me this morning, and Godspeed.

* * * *

30-50 yrs -- we have the sci -- we should do it right

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(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
03. Memo	From James Watkins to D. Allan Bromley Re: Presidential Speech at IPCC (7 pp.)	1/18/90	~~P-5~~	

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2

JAN 18 1990

MEMORANDUM

TO: **Dr. D. Allan Bromley**
Assistant to the President

FROM: Admiral James D. Watkins
Secretary of Energy

William K. Reilly
Administrator, Environmental Protection Agency

SUBJECT: Presidential Speech to the IPCC

The meeting of the Intergovernmental Panel on Climate Change during the first week of February offers the President an important opportunity to reaffirm his leadership on international environmental issues. Attached is the outline of a speech that he might give (Tab A).

We believe that it is a positive statement of: (1) his concern for the environment in general and about global warming in particular, (2) his commitment to lead international efforts in these areas, (3) the significant U.S. efforts to fulfill this commitment and (4) U.S. support for the IPCC as the proper forum for addressing the climate change issue. We also believe that the statement is fully consistent with existing Administration policy.

Also attached is an issue paper outlining options for carrying forward and expanding in the IPCC the cost and economic impact analysis of measures to limit greenhouse gas emissions (TAB B). Although not linked to the speech, the issue needs to be carefully considered. Such work must be continued in the IPCC or the international debate will continue to be based more on bold rhetoric than solid information.

We have shared this outline with the State Department and believe it is, in essence, supported by them. We would like to explore these ideas with you and our colleagues in the rest of the Administration. To this end, we would appreciate your circulating these documents in preparation for a discussion which you might lead. We would welcome your advice on how to move the inter-agency review process forward expeditiously given that the date of the speech is fast approaching.

Attachments

cc: Frederick M. Bernthal, Assistant Secretary,
Oceans & International Environmental & Scientific Affairs Bureau,
Department of State

Fri @ 11:30 IPCC Working Group

TAB A 3

Proposal for Presidential Speech before the Intergovernmental Panel on Climate Control (IPCC)

1. General statement of commitment to and concern for the global environment and economic development.

   -- Reiterate determination that the President will take active role in addressing concern about global climate change.

   -- Reiterate Secretary Baker's approach (spelled out in January 1989).

   -- Reiterate Noordwijk commitment to greenhouse gas stabilization as soon as possible, consistent with the requirement for global economic growth that can enhance the quality of life for people everywhere.

   -- Stress strong U.S. commitment to environment; e.g., domestic programs, leadership in forging international agreements on environment, assistance to and cooperative efforts with developing countries and current or former centrally planned economies.

2. U.S. Supports the IPCC Process

   -- Stress need for international cooperation.

   -- Congratulations to IPCC sponsors, the United Nations Environment Program (UNEP), the World Meteorological Organization (WMO) and to Dr. Bolin of Sweden, IPCC Chairman.

   -- Establishment of the IPCC has filled the need for an orderly, intergovernmental process to assess scientific understanding, evaluate potential impacts and develop appropriate response options.

   -- Welcome IPCC reports due in August.

   -- U.S. is committed to playing a leadership role through our chairmanship of the Response Strategies Working Group (RWSG) and supporting IPCC as best forum for global climate change policy development.

   -- Support for UK proposal at UN to continue IPCC.

4

3. Past and Ongoing U.S. Contributions and Views on Key Issues of Convention and Emissions-Limiting Agreements

-- Science

- o U.S. budget is the largest in the world and is rising, nearly $500 million in FY 1990 and to increase to almost $1 billion in FY 1991.

- o Importance of all countries, no matter what their level of development or economic system, contributing to understanding of the science. This cooperation needs to take several forms:

  - cooperation in assessment of state of the science; and

  - cooperation in monitoring and analysis of climate change.

- o Periodic international reassessment of the science at fixed intervals to aid in our decision making.

-- Technology Development

- o U.S. has active technology development programs to improve the efficiency of both supply and demand side technologies, and reduce greenhouse gas emissions.

  - More efficient fossil fuel generation technologies.

  - Renewable and energy efficiency technology initiative.

  - Conservation technology: end-use efficiency.

  - Nuclear: new generation with enhanced safety features under development.

- o Any framework convention should provide for regular assessments of the state of technology development to determine the availability and cost of technologies.

-- U.S. is sensitive to the need for technology transfer to other countries.

  - o Clean coal, renewable, conservation, end-use services for technology transfer, and nuclear.
  - o A.I.D. appropriation bill.
  - o EPA/Peace Corps agreement.
  - o Change in World Bank policy.
  - o EPA's IETTAB and DOE's CORECT program to examine technology transfer.
  - o Policy aid package.

-- Economics

  - o Follow-up on Administration commitment to develop real data on costs of various response strategies and assess new response measures.
  - o Challenge others to do the same.
  - o Offer technical support to those who need it.

-- Policy

  - o President should encourage consideration of truly innovative responses including:
    - comprehensive approach: all major greenhouse gases are included; and
    - trading of emission permits.
  - o President should define general criteria for future agreements to limit greenhouse gas emissions:
    - market mechanisms such as "integrated resource" planning and consistency with economic growth in all countries; and

- need to work with industry to ensure that response actions do not adversely affect economic growth around the world.

-- U.S. Clean Air Act Legislation

o Encourages emissions trading.

o Use of efficiency energy supplies; e.g., new clean coal technology and conservation technologies.

-- National Energy Strategy

o Comprehensive blueprint for addressing future energy needs with consideration to climate change and other environmental issues.

o As first step, take those steps which contribute to other goals, but also reduce greenhouse gas emissions; e.g., clean coal technology, DOE conservation programs.

-- Energy efficiency programs: lighting, appliance efficiency standards, model building codes, industrial process improvement, encouraging utilities to provide the service of electricity demand reduction, transportation research and development, etc.

-- Alternative energy sources are being developed.

o Renewables: hydro, solar, biomass, geothermal.

o Nuclear: new reactor design.

-- Reforestation: Trees for U.S.

-- Phase-out of CFCs by 2000 providing safe substitutes are available.

o U.S. contribution to: development of safe substitutes, assessments of needs by other countries.

4. Reiterate Malta Offer to Host Convention Negotiations when IPCC is Ready

-- Express commitment to finding global solutions.

7

-- Demonstrate U.S. willingness to facilitate the process.

-- To further the debate, U.S. will host international environmental meeting composed of senior science, economics and environmental officials from all nations.

Happen on ?

8

TAB B

Issue: How to carry forward and expand in the IPCC the cost and economic impact analysis of measures to limit greenhouse gas emissions?

Discussion: The IPCC's Response Strategies Working Group (RSWG) must conclude its work in the next couple of months for its report to be written on schedule. Consequently much of the cost and economic analysis that is beginning to emerge will not be included in the report. Without an ongoing analytical effort, the international discussion of emission targets and timetables will be dominated by the countries who are prepared to make substantial political commitments without much information on how they will fulfill those commitments.

To move the debate over commitments to limit greenhouse gas emissions away from bold rhetoric to a realistic assessment of what is possible over different timeframes, the IPCC's work on cost and economic impact analysis must be continued and expanded. Furthermore, because targets and timetables, especially for CO_2 are likely to be a major focus of attention at the fourth IPCC plenary next August and at the Second World Climate Conference (SWCC) next October-November, a means must be found for an ongoing effort over the next 5-7 months.

There are three major options for proceeding. The first is to request individual countries such as the U.S., Japan and the FRG to conduct studies and continue to provide results to the IPCC even after the conclusion of the RSWG's report. A second is to instruct the RSWG's Energy and Industry Subgroup (EIS) led by Japan to continue its analyses beyond the Spring and prepare a supplemental report. The third is for the U.S. to offer to lead, under the auspices of the RSWG and perhaps in collaboration with EIS, a special effort and produce a supplemental report in time for the fourth IPCC plenary. The latter option might entail a significant commitment of resources but may be most likely to result in substantive output. The latter option also offers the possibility of bringing a number of developing countries more fully into the process, because of a cooperative project already underway in ten developing countries.

Position: The U.S. should promote an ongoing effort to analyze the costs and economic impacts of a variety of targets and timetables for limiting greenhouse gas emissions. This should include the production of a supplemental report for consideration by the fourth IPCC plenary. The U.S. should favor a leadership role for EIS but be prepared to offer to lead the effort if discussions at the February IPCC meeting suggest it would be necessary to ensure meaningful output.

THE WHITE HOUSE
WASHINGTON

January 5, 1990

MEMORANDUM FOR GOVERNOR SUNUNU

FROM: ROGER B. PORTER RBP

SUBJECT: Global Climate Change Articles

Following your telephone call this morning, I asked our staff to look for any articles they could find in addition to the Warren Brookes piece in the Washington Times. They could not uncover any additional news accounts, but have pulled together the attached package of materials regarding memorandums between Assistant Attorney General Stewart's office and the White House.

If you need anything else on this, please let me know.

Attachments

U.S. Department of Justice

Land and Natural Resources Division

Office of the
Deputy Assistant Attorney General

Washington, D.C. 20530

January 5, 1990

MEMORANDUM

TO: Paul Roellig
Senior Policy Analyst
Office of Policy Development

FROM: Barry Hartman BH
Deputy Assistant Attorney General

SUBJECT: Memoranda on Global Climate Change

As requested, we are transmitting copies of the substantive memoranda on international approaches to global climate change sent by Assistant Attorney General Richard Stewart to Boyden Gray and Dr. Allan Bromley in the past weeks, and related items. Please find attached:

A - Memorandum of November 20, 1989 to Dr. Bromley, suggesting several areas of possible analysis on issues of global climate change.

B - Memorandum of December 14, 1989 to Boyden Gray, describing the issues and our proposed approaches in greatest detail.

C - Memorandum of December 18, 1989 to Dr. Bromley and Members of the DPC Working Group on Global Change, presenting materials on our proposed approaches.

D - Memorandum of December 18, 1989 to Boyden Gray, suggesting next steps to be taken on these issues.

E - December 29, 1989 final version of United States submissions to the Intergovernmental Panel on Climate Change (IPCC)

F - Article by Warren Brookes in the Washington Times, January 3, 1990, page F1.

Item B, the memorandum of December 14, sets forth in their fullest form our proposed approaches to international agreements on global climate change, and it is presumably the document referred to in the Brookes article.

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
04. Memo	From Richard Stewart to D. Allan Bromley Re: Analysis of Legal Frameworks for Institutional Responses to Global Change (4 pp.)	11/20/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
(Document Follows)
By JL (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
FOIA/SYS Case #:	1998-0004-F[1]	**Appeal Case #:**	
Re-review Case #:	2005-0426-S	**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
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P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
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(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

U.S. Department of Justice
Land and Natural Resources Division

Office of the Assistant Attorney General
Washington, D.C. 20530

November 20, 1989

MEMORANDUM

TO: The Hon. D. Allan Bromley
Assistant to the President
for Science and Technology
Chairman, Working Group on Global Change

FROM: Richard B. Stewart RBS
Assistant Attorney General

SUBJECT: Analysis of Legal Frameworks for Institutional Responses to Global Change

As requested, we have been examining the question of legal frameworks for institutional responses to global change, with particular reference to any contributions which the Department of Justice may be able to make to existing efforts.

We believe that the legal structures for addressing global climate change should seek to:

- include all of the factors which can affect change (including, for example, greenhouse gas sinks as well as sources) or mitigate its effects;
- encourage innovative private as well as public responses;
- achieve environmental goals at least cost; and
- retain flexibility to respond to new information, changing circumstances, and diverse local conditions.

In addition, these structures should be practical and enforceable. This is the approach reflected in the Administration's Clean Air Act proposals for acid rain. We propose the following steps to promote use of this approach in dealing with global climate change:

A. Review of Existing United States Agency Authorities and Alternatives.

An Executive Order could be issued to require each federal agency to review (on a programmatic rather than project-specific basis) which of its activities potentially affect climate change, and which, properly focussed or altered, has promising potential for reducing greenhouse gases, retaining and expanding sinks, or encouraging adaptive measures.[1] Such an effort could:

1. Provide a baseline analysis of current federal programs and their implications for contributing or adapting to climate change.

2. Assist the development of a broad portfolio of possible policy responses to climate change, both domestically and internationally.

3. Identify opportunities for specific administrative or legislative proposals to help prevent undesirable changes in global climate or mitigate its consequences.

This review should emphasize innovative market-based and other alternatives to existing command-and-control strategies. It should advance our ability to ascertain the costs and benefits of alternative policies, and focus future research initiatives on the areas of greatest need and promise, as identified by the Administration.

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[1]Precedent for such a programmatic, administration-wide review of environmental impacts can be found in Executive Orders dealing with wetlands and regulatory "takings" of private property. Such a review might be supervised by CEQ with the assistance of the Justice Department.

An alternative means of promoting such review would be reliance over time on the normal Environmental Impact Statement (EIS) process under the National Environmental Policy Act. CEQ is currently considering how EISs should address global warming issues. The EIS process, however, is project-specific. It would probably not be well suited for the relatively prompt, programmatic, administration-wide review proposed here. In addition, an assessment mandated by Executive Order would be formulated and implemented by the Administration as a matter of managerial discretion, whereas EISs would be challenged by private litigants and reviewed by the courts under the evolving law of NEPA.

B. Structure of International Agreements.

International agreements will be proposed to deal with the causes of climate change and perhaps also with adaptations to change. The Vienna Convention and the Montreal Protocol on ozone depletion have been frequently cited as relevant models. The problem of global climate change is, however, enormously more complex than that of CFCs and stratospheric ozone. The legal framework for dealing with global climate change and its consequences should, insofar as practicable, deal with all of the relevant factors -- including the various greenhouse gases, sinks, and adaptive measures -- in order to retain and encourage flexibility in private and public initiatives to address the matter. The following steps could be taken to develop such a framework:

1. Review and evaluate experience under the Montreal Protocol, other international conventions (e.g., the Sofia protocol and bilateral or regional agreements on transboundary air pollution), and the initiatives within the European Community, in order to determine in what respects they do or do not provide suitable models for dealing with global climate change.

2. Review and evaluate existing domestic experience with innovative approaches in dealing with environmental problems, including water pollution effluent charges and the trading program under the Clean Air Act, to identify similar approaches that might be suitable for dealing with climate change and its consequences.

3. Identify, on the basis of such reviews, potential international legal frameworks for dealing with climate change and its consequences that would accommodate and encourage innovative and flexible approaches.

C. Enforceability of International Agreements.

The issues of compliance monitoring and sanctions are being discussed by the parties to the Montreal Protocol on ozone depletion, and will be of concern in any future agreement on climate change. The United States has a well-developed structure of regulatory and administrative law to ensure that specific undertakings made by the government are actually carried out. The legal systems of some nations are similar to our own, but those of many other nations do not provide equivalent assurance. The Justice Department is familiar with this general problem in the context of state implementation and enforcement of federal environmental laws. The Department could:

1. Undertake a review of domestic environmental laws and enforcement mechanisms in selected nations who are likely to play a major role in any international agreements.

2. Participate in an international working group of environmental enforcement officials convened for the purpose of exchanging information and experience on enforcement of domestic pollution control laws and the means of implementing global climate agreements.

3. Review experience with state implementation of federal environmental laws, with specific attention to the special issues posed by market-based approaches such as air pollution offsets, in order to assist the development of implementation assurances in global climate change agreements.

4. On the basis of these efforts, advise our negotiators on the likely implementation by others of their commitments, and suggest methods for structuring an international agreement on climate change to include effective and efficient implementation assurances.

CC: C. Boyden Gray
Counsel to the President

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05a. Memo	From Richard Stewart to C. Boyden Gray Re: International Approaches to Global Climate Change (13 pp.)	12/14/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

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U.S. Department of Justice

Land and Natural Resources Division

Office of the Assistant Attorney General

Washington, D.C. 20530

December 14, 1989

MEMORANDUM

TO: C. Boyden Gray, Esq.
Counsel to the President

FROM: Richard B. Stewart
Assistant Attorney General

SUBJECT: International Approaches to Global Climate Change

As requested at the December 6, 1989 meeting in your office, an informal group of representatives of EPA, Justice and State have developed materials to promote discussion and adoption of a comprehensive, performance-based approach in international agreements dealing with global climate change. This memorandum is submitted to transmit these materials to you, and to highlight some of the issues raised by such an approach.

SUMMARY

Under a comprehensive, performance-based approach, all greenhouses gases, sources and sinks are addressed together. Each international legal instrument produced -- whether convention or protocol -- deals, to the maximum extent possible, with the entire array of gases, their sources and sinks.[1] This approach employs the concept of a "global warming potential index" to compare gases, their sources and sinks along a standardized spectrum, and the concept of "net emissions" to adopt performance targets that would not be limited to any one gas or source or sink, but would permit attainment of the target through policies aimed at all scientifically understood

[1]As explained below, limitations in data and scientific understanding may preclude use of a truly comprehensive approach, incorporating all sources and sinks, at the outset.

greenhouse causal factors. Such net emissions performance targets would be set, at least initially, for each nation, and would leave to each nation the choice of internal policies desired to attain the target. Thus, using the "global warming potential index," each nation could devise a set of policies that would reduce "net emissions," through restriction of sources or expansion of sinks or both.

Such an approach would provide maximum flexibility for developing diverse, innovative, cost-effective measures for dealing with global warming. It would encourage, but not require, internal use by participating nations of emissions reduction or contract credits and trading programs, on the model of the Administration's Clean Air Act proposal for acid rain.

In addition, international trades[2] (on a bilateral, regional or multilateral basis) could be authorized as a method for attaining national net emissions targets in order to achieve further environmental and economic benefits from the use of the trading principle.

This approach is reflected in the following attachments:

- Comments to be submitted for addition to the "Legal Measures" section of the most recent Report of the Intergovernmental Panel on Climate Change ("IPCC") Response Strategies Working Group ("RSWG"), due by January 1, 1990. (Tab A)

- A concept paper to be submitted for attachment as an Appendix to the "Legal Measures" section of the RSWG Report, due by January 1, 1990. (Tab B)

- A revised Draft Framework Convention embodying these approaches. This document is an internal State Department draft, not cleared through interagency review and not for distribution. (Tab C)

- An itinerary of significant upcoming meetings and deadlines. (Tab D)

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[2]The term "international emissions trading" is used throughout this memorandum in its general sense, to refer to trades across national borders without regard to whether the trade is conducted by governmental or private actors.

These materials contemplate the following actions in the international community:

- Proposal by the United States that the comprehensive, performance-based approach and a system of international emissions trading be analyzed and discussed by the RSWG and by the full IPCC.

- Inclusion of obligations in a "framework convention" on climate change requiring the parties to develop the comprehensive approach and the trading approach .

- Implementation, through a protocol to the framework convention, of the comprehensive approach for all scientifically understood greenhouse gases, their sources and sinks.

- Further authorization, either in the initial protocol or in subsequent documents, of international emissions trading.

- Protocol amendments to include additional greenhouse gases, their sources and sinks (or to exclude previously included items) as scientific understanding advances.

There is an important question whether international agreement on responses to global climate change should take the form of one or more than one legal instrument. We recommend flexibility on this question, permitting the use of more than one instrument, so long as each instrument incorporates the comprehensive, performance-based approach outlined here. The use of more than one legal instrument -- a framework convention, followed by one or more protocols -- is not itself inconsistent with our "comprehensive" and "trading" approaches. The pace of scientific research may require some time between the signing of a convention and the adoption of substantive protocols.[3] As discussed below, many nations may view our proposals -- particularly the proposal for a system of international trading -- with suspicion, and it may be to our advantage to propose a trading system in a later document after the comprehensive

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[3]The United States could propose that the international community continue to work on developing the scientific basis for the comprehensive, performance-based approach while the convention is being negotiated, with the possibility of signing the first protocol at the time the framework convention is signed, or as soon as possible thereafter.

approach has been adopted. Further, there is value in gaining signatories to the framework convention even if those nations do not all sign the subsequent protocols, because the framework convention includes participation in research and monitoring activities that will prove useful to those seeking the data base from which to make policy in the protocols and in national legislation. How far to attempt to tilt the framework convention toward our preferred approaches remains a difficult tactical question.

DISCUSSION

A. "Comprehensive" Approach.

A comprehensive performance-based approach stands in contrast to a piecemeal pollutant-by-pollutant approach, such as that proposed at the November 1989 conference in Noordwijk, Netherlands, which focused on adopting targets for one greenhouse gas, carbon dioxide (CO_2), alone.[4] The comprehensive approach would set a target for "net emissions" of greenhouse gases, for achievement by each nation or by multinational groups such as the European Community. This target could, for example, consist of a phased-in cap, possibly followed by subsequent reductions. The contributions of various sources and sinks to the achievement of this target would be measured by a "global warming potential index."[5]

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[4]The Noordwijk conference urged pollutant-by-pollutant control rules, starting with CO_2. It did suggest possible development of a method for comparing the effects of other gases to the effects of CO_2, similar to the "global warming potential index" recommended in this memorandum, but did not attempt to employ that concept in a collective approach to all greenhouse gases.

[5]The "global warming potential index" is a system for computing the contribution to total climate change of any alteration in the emissions of any particular greenhouse gas. It assigns a value to each greenhouse gas describing the contribution of each additional molecule of that gas to the total warming of the atmosphere. The value depends on variables such as the molecular composition of the gas, the lifetime of such molecules in the atmosphere, and the existing atmospheric concentration of the gas and related gases at the time the additional molecule reaches the atmosphere. All the greenhouse gases can then be characterized and compared by their "global warming potential index" values. This method is discussed further in the EPA's attached Concept Paper.

The advantages of this approach are several. First, it allows each nation to use that combination of source and sink controls and other measures that is best adapted to its economic and other circumstances, achieving greenhouse environmental protection at significantly lower cost than a pollutant-by-pollutant strategy. This approach maximizes the opportunity for and encourages the adoption of diverse, flexible, innovative, and cost-effective solutions to global warming.[6] The economic and social costs of dealing with global warming are likely to be great. It is thus particularly important in this case to use institutional strategies that will maximize the incentives and opportunities for development of new technologies and other innovative responses that will reduce these costs. Performance-based standards, a comprehensive approach, and net emissions trading will each contribute to achieving this goal.

Second, this approach reserves to each nation freedom to employ whatever institutional mechanisms it wishes to use to achieve its target objective. This flexibility takes account of the widely varying legal and cultural systems present in different nations, and avoids the obstacles to international agreement among sovereign states that would be raised by dictating to each nation how it must institutionally manage its climate-related policies and industries. A free market economy is not required to employ strict command and control regulations. By the same token, a centrally planned economy is not required to employ market measures.

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[6]For example, an approach that mandated specific percentage reductions in each gas -- such as a 20% reduction in CO2 and a 30% reduction in methane -- would be more costly than an approach that required a reduction in each nation's contribution to total warming (as measured by the "global warming potential index") and permitted each nation to adopt its least-cost mix of choices achieving the target overall. Some nations might be able to reduce CO2 emissions much more than 20% through substitution of non-fossil fuels, but be unable to reduce methane output (e.g., a nation importing oil and dependent on rice crops, but endowed with untapped solar power opportunities). Those nations would meet their net targets by reducing CO2 more rapidly than methane; reducing each the same amount would prove much more costly (perhaps in terms of higher taxes, or reduced rice production) and would leave available CO2 reductions unexploited. Other nations might find themselves in the opposite situation, able to reduce methane but not CO2. A similar analysis applies to approaches mandating specific changes in sources alone or sinks alone, rather than combining them in a "net emissions" requirement that leaves the domestic policy mix to each nation.

Third, dealing with all greenhouse gases, sources and sinks at once will achieve substantially better environmental protection. Past experience indicates that attempts to control one cause of an environmental problem while leaving others unregulated often results in shifting residuals or other forms of degradation to the unregulated mode. For example, attempts to reduce water pollution have induced industry to convert liquid pollutants into sludge, creating toxic waste disposal problems.[7] Similarly, attempts to regulate one greenhouse gas at a time might induce shifts to practices that create other greenhouse gases, possibly contributing more to climate change per unit of economic output than the ones they replace. A comprehensive approach is necessary to ensure proper protection of the environment.

Fourth, a comprehensive approach is more equitable, and greatly reduces the potential for nations to manipulate the design of international regulatory measures in order to achieve competitive or other economic advantage. An approach that set targets first for certain sources or sinks and progressed to others later would unfairly burden those nations whose economies are comparatively more burdened by the initial measure.[8] Moreover, a pollutant-by-pollutant command and control approach makes it more difficult to arrive at international consensus, because each nation will attempt to "game" the standard-setting agenda in its favor. Nations' efforts to "game" the design of international regulatory controls are also likely to distort trade and reduce global welfare as well as impede environmental improvement.

There are, however, possible drawbacks to a comprehensive approach that should be reviewed. First, there may be difficulties in arriving at "global warming potential index"

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[7]In the United States we have traditionally followed a medium-by-medium and pollutant-by-pollutant approach, recognizing many of its problems, but the EPA is now attempting to devise a more integrated strategy to address what have come to be "cross-media" defects in our system of environmental control. Although a "comprehensive" approach to greenhouse gases is focused on the single medium of atmospheric temperature change, it is a vast improvement over pollutant-by-pollutant control.

[8]For example, an approach that first mandated 20% reductions in CO_2 emissions would pose much greater burdens for those heavily committed to using fossil fuels, and for those whose economies depend on exports of fossil fuels; alternatively, an approach that first mandated 20% reductions in methane emissions would pose much greater burdens for those heavily dependent on rice crops and ruminant animal husbandry.

values. These difficulties include the scientific problem of determining consensus values,[9] the practical problem of assigning values sensitive enough to yield efficient environmental policy,[10] and the political implications of the fact that assigning different values to different gases will effectively alter the costs to different nations of achieving their performance targets. The committee conducting this work could be engaged in a highly politicized enterprise. It should therefore be staffed with the best scientists, and must produce a legitimate conclusion in the eyes of the world.

Second, the problem of the environmental "second-best" may persist even in our "comprehensive" approach, the adoption of a comprehensive agreement, which would not deal with the non-greenhouse environmental impacts of restricting greenhouse gases.[11] The IPCC or other appropriate body could be directed to monitor these problems and report back to the international community at regular intervals.

Third, the "comprehensive" approach might be branded a stalling tactic, because some nations believe that the best approach is to adopt protocols quickly for substances we can

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[9]As mentioned above, the index values depend on a variety of complex and sometimes interrelated variables. As described in the attached EPA Concept Paper, current efforts to define the index have reached different results. There are also likely to be differences of opinion as to the proper list of greenhouse gases. Further work will be necessary before consensus results are produced.

[10]The "global warming potential index" measures could be expressed as functions -- instead of constant values -- to incorporate the several variables on which they depend, such as ambient atmospheric concentrations of that gas and related gases, other atmospheric phenomena, expected lifetime of the gas in the atmosphere, and so forth. As sources and sinks are, in turn, assigned performance values for their contributions to total warming, those values must also be adjustable to take account of variables such as diverse combustion techniques, scrubbing methods, and the varying regional characteristics of forests, or else the value set will discourage investment in advances that could reduce net greenhouse gas emissions. The source and sink values must, furthermore, be flexible enough to take account of long-term investments in emissions-affecting policies, such as sink development, which may have inherently long lead times.

[11]For example, the generation of nuclear waste. An analog is the history of chlorofluorocarbons (CFCs): developed to replace highly toxic chemicals, they ultimately proved to have serious effects on the stratospheric ozone layer.

agree on now, and proceed to thornier issues as we go. Our approach might be seen as proceeding at the pace of the "slowest common denominator." We might respond that our approach will in fact proceed more quickly, because it raises the potential for broad consensus by eliminating the inequitable effects of single-pollutant protocols. In addition, we might answer that our approach will achieve better results (even if it takes slightly longer to achieve than the first single-pollutant protocol would take) because it will prevent cross-pollutant shifts.[12] In order to make our commitment to action credible to the international community, we might consider unilateral domestic initiatives, such as energy conservation, tree-planting programs, and the like to deal with global warming in advance of the adoption of a comprehensive agreement. A later agreement could give "credit" for such efforts through use of appropriate baselines.

Fourth, the comprehensive approach might not actually end up favoring U.S. interests. We might find ourselves party to a treaty restricting all of US industry instead of one allowing us to shift to other unrestricted fuels. We recommend that the relevant federal agencies be requested to prepare an economic analysis showing the likely impacts on the United States and the world[13] of several scenarios, including no action, adoption of a CO2 protocol alone, adoption of a comprehensive approach as described here, and other relevant possibilities, in order to provide the Administration with effective means for evaluating these options.

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[12]We might also attempt to blunt the "stalling" criticism by focusing efforts now on developing scientific consensus on the comprehensive approach, with an eye toward completing the first protocol at the same time as the convention, or soon thereafter. We might further blunt this criticism by considering including in the convention, depending on the status of development of the first protocol, a requirement that within a specified period after the convention enters into force the parties will agree on the scope and timetable for the first protocol. It may, on the other hand, be impractical to ask parties to bind themselves to future agreement; and specifying too early a date might hinder our efforts to gather all greenhouse gases, their sources and sinks into a comprehensive approach.

[13]The analysis might also estimate costs for other major nations and blocs in order to inform our negotiating strategy. This calculation should also include the cost to the United States and others of not regulating other greenhouse gases, i.e., the costs of consequent added global warming. And as discussed above, even under a comprehensive approach, the calculation of the global warming potential index values could have important implications for U.S. performance under the treaty.

Fifth, a multi-pollutant agreement complicates the task of monitoring compliance, because it covers many more gases and sinks which must be watched, lest countries assert reductions without actually achieving them. This concern points to the need to ensure a scientifically credible method of monitoring emissions of various sources, changes in sinks, and their effects on global climate. In this respect, a comprehensive approach reinforces our interest in basing response agreements on sound science and data. The effects of some gases, sources and sinks may not be sufficiently well understood to include them in an initial agreement limiting net emissions. The ideal of total comprehensiveness may thus be limited by gaps in knowledge. As scientific knowledge advances, however, additional gases, sources and sinks could be included in the basic agreement.

B. "International Trading."

The second approach emphasized in our submissions is the development of "international trading" in greenhouse gas emissions. As explained below, the trading concept is not well understood by many nations, who have viewed U.S. proposals for trading with considerable suspicion. It may therefore not be advisable to press for adoption of international trading at the outset, reserving it for a later protocol, after the comprehensive approach has been launched and more nations have used trading domestically. International trading in environmentally related commodities is already a feature of the world economy, with "debt-for-nature" swaps being perhaps the best known example. The Montreal Protocol on Substances Depleting the Ozone Layer contains "industrial rationalization" provisions allowing limited substance trading among the parties. Domestically, we have instituted trading in the new source "bubble" offset program and the lead phasedown program under the Clean Air Act, and the Administration has proposed a more ambitious trading program in the acid deposition reduction title of the Clean Air Act reauthorization. The concept of "trading" has already been placed before the RSWG by the United States, as part of the subgroup discussion of "Economic (Market) Measures."

The proposal discussed here is to expand the use of this approach by promoting a international trading program in net greenhouse gas emissions, for consideration by the "Legal Measures" subgroup of the RSWG.

In sum, one nation might find it less costly to exceed its net emissions target by N units and to purchase a commensurate N unit reduction from another nation -- the latter able to reduce further than its target at less cost than the price the first nation is paying it. The "purchase" might involve debt being forgiven in return for afforestation, or cash

paid for investments in energy efficiency, or for lower-warming potential fuels (such as Europe paying the Soviet Union to pipe in natural gas), or technological trade secrets offered in return for investments in scrubbing technology, or other similar and innovative techniques. There would be no requirement that every nation "take part" in the trading avenues permitted; those who see no economic need to engage in international trades, or who are philosophically opposed, could demur. Such trades could be arranged on a bilateral, regional, or multilateral basis.

The primary advantage of this approach is that it extends to the international arena all of the benefits which a comprehensive, performance-based approach affords domestically. These include maximum incentive and opportunity for diverse, flexible, innovative, least cost solutions to global warming. The economic advantage of trading may serve as an inducement or palliative to nations concerned about the cost of restricting their emissions. As with the Administration's acid rain proposal, the trading system would permit faster reductions in net emissions at lower cost, potentially easing the way to adoption of significant reduction targets.

There are, however, important concerns regarding an international trading system. First, it may be difficult to monitor the trades -- a problem distinct from the difficulty of monitoring compliance with the emissions targets actually set or arrived at through trades. There is a considerable question as to whether an international institution could keep track of who had traded what rights to whom. Possible options include a "World Climate Bank" to keep track of credit accounts, or even to make credit loans itself; or an annual auction of emissions credits. Existing institutions, such as the UNEP or the WMO, might undertake this monitoring function.

Second, international trading may be limited or distorted by various forms of market failures. For example, a large nation or power company might quickly purchase the rights to large quantities of land in a poor nation, with the goal of planting trees on the land to generate net emissions credits; if other bidders are not on the scene, the farmland may be sold at an undervalued price; and even with multiple bidders, there may be other relevant social concerns, such as the provision of food to the residents, that may not be incorporated in the price of the land. Some of these problems might be alleviated by allowing only nations to trade, by requiring nations to approve all trades made by their nationals, or by requiring a period for open bidding after each offer is made and announced. Such measures are, however, likely to reduce the extent of trading.

Third, some nations at the RSWG meetings have attacked trading ideas as evil "licenses to pollute," because nations

could pay others for permits to allow their own emissions to grow. We might respond that a single-pollutant approach is an even larger "license" because it begins by permitting unrestricted emissions of the as-yet-unregulated gases, which might increase even faster as industry shifts to systems producing them. Also, we could dispute the "license to pollute" philosophy. All regulation involves a "license to pollute;" trading is a morally superior form of regulation because it increases human welfare in both environmental and economic terms. The best responses may involve demonstrations that trading is not a "trick": it promises real benefits to all nations, with safeguards against coercive deals or cheating. Past experience indicates that considerable education may be required before some participants are persuaded of the value of a trading system. The conference of climate experts to be held in Washington next spring could provide an opportunity to showcase trading systems and share experience with their operation.

The concerns expressed by other nations over trading imply an important tactical decision for the United States: how closely to link the "comprehensive" approach to the "international trading" approach. If international sentiment is unswervingly opposed to international trading, it may be advisable to propose the two ideas in a way which treats them as conceptually separate (which in fact they are). On the other hand, combining the two approaches in one proposal may help demonstrate their respective attractive features, and might increase the chances of successful adoption of both ideas.

C. Additional Issues.

Of course, there are numerous other issues to be resolved in any international climate agreement, whether or not it is "comprehensive" and permits "trading." These issues are potentially serious and deserve careful consideration.

First, net emissions targets for each country must be arrived at through a process that is perceived as fair and that produces economically efficient and internationally and intergenerationally equitable outcomes. This process raises the questions of how high to set a global net emissions target, how to set national net emissions targets, timetables and baselines, and how to deal with the special concerns of developing nations, for example by permitting them to proceed on a deferred timetable, or giving them targets significantly above present levels.

The issues regarding setting national targets are not fundamentally different under a "comprehensive" as opposed to a piecemeal approach. Indeed, the expanded focus and greater flexibility of the "comprehensive" approach may make it easier to

deal with them. On the other hand, national standards may be complicated by the need to take account of nations' past activities reducing greenhouse gas emissions, such as planting trees, restricting CFC use, and developing nuclear energy generation.

Similarly, promoting the international emissions trading approach could ease adoption of national emissions targets by promising nations the flexibility of attaining their targets through cost-saving trades. On the other hand, such an approach could also complicate the setting of national emission targets by enabling or encouraging some nations to seek added resource transfers through trades by pressing to reduce the targets assigned to other nations.

Second, arrangements for financial assistance and technology transfer to developing economies must be addressed, in order to respond to developing countries' concerns that global warming measures will limit their economic growth, and proper arrangements for financing and technology transfer could alleviate some of those concerns. Financial arrangements and technology transfer are also central to the environmental objective of preventing undue global climate change. For example, financing may be important because some current developing nation debt is repaid through sink-destroying activities such as timber cutting and grazing of forest lands, because investments in new technology or in sustainable agriculture may require initial capital outlays, and because developing nations may lack the resources to undertake the requisite monitoring of their greenhouse gas sources and sinks. Similarly, technology transfer may be climate-related: it may assist developing nations in shifting to non-fossil fuel energy sources, in reducing greenhouse gas emissions from agricultural sources such as rice paddies, and in monitoring greenhouse gas emissions. Conceivably, financial assistance and technology transfers could be linked to an international trading system by giving donor nations credit for a percentage of the reductions in net greenhouse gas emissions achieved as a result, although any such proposal would likely receive a hostile response from many in the international community.

A third issue involves the structure of implementation assurances. Past environmental treaties have employed a variety of options, and possibilities include national reporting; periodic international auditing; routine international monitoring by an international agency; a standing body of representative experts to monitor and report noncompliance; reliance on non-governmental organizations; and national complaints followed by adjudication before an arbitrator, an advisory "conciliation commission," the International Court of Justice, or the U.N. Security Council. A climate treaty might employ one or more of these methods, or create new ones. One suggestion is to require

national or international monitoring of emissions, coupled with publication of the emissions information and the nation's performance target, and review of the result at an annual conference of signatory representatives. The vast array of sources and sinks of greenhouse gases will make monitoring compliance especially difficult, and may necessitate methods of assuring implementation that avoid resort to extended litigation.

A fourth general issue involves the identification of new or previously undiscovered greenhouse gases, new sources of greenhouse gases and sinks, and new routes of greenhouse gas sink destruction. International and national institutions and constant scientific vigilance will be required to prevent natural and technological loopholes from defeating the goals of a global climate agreement.

Fifth, there is the question of relating a climate agreement -- in particular a "comprehensive" approach to greenhouse gases -- to earlier international agreements covering specific gases, sources or sinks. For example, the Montreal Protocol on Substances Depleting the Ozone Layer regulates the production of chlorofluorocarbons (CFCs), which are also powerful greenhouse gases. Other agreements may affect other greenhouse gases, rates of deforestation, and the like. Questions may be raised -- especially by developing nations who have not needed to reduce emissions of substances used primarily in industrialized nations, such as CFCs -- about whether reductions achieved (or foregone) under other agreements may count toward compliance with greenhouse gas emissions targets.

Sixth, the issue of investments in adaptation to climate change has not been considered in our approaches to international agreements. Although the local effects of climate change are likely to vary and therefore to require local adaptation responses, there may be some adaptation techniques applicable to numerous locales or to an industry that spans many nations. In addition, some nations may require financial, technical and informational assistance in predicting climate impacts and developing effective adaptive responses. These kinds of problems and opportunities could be addressed in international contexts, but we do not expect them to play a central part in the international effort to limit climate change by reducing net emissions.[14]

---

[14]One possible area of overlap is suggested by the use of adaptation investments as "payment" for emissions credits under an international trading system; but this example is simply a particular instance of the general idea that anything of value, whether climate-related or not, could serve as currency for emissions credits.

Withdrawal/Redaction Sheet
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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05b. Paper	Tab "A": Comments on IPCC Response Strategies Working Group Legal Measures Paper (2 pp.)	12/14/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
(Document Follows)
By ___ (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
FOIA/SYS Case #:	1998-0004-F[1]	**Appeal Case #:**	
Re-review Case #:	2005-0426-S	**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

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Freedom of Information Act - [5 U.S.C. 552(b)]

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Comments on IPCC Response Strategies Working Group Legal Measures Paper

The U.S. proposal might be reflected in the IPCC Response Strategies Working Group Legal Measures Paper as follows:

1) Add the following ticks to section 1. (Preamble):

- Recognition of interrelationship among all greenhouse gases, their sources and sinks, and the consequent utility of treating them collectively

- Importance of developing response measures that operate in an equitable and economically efficient and effective manner, and that encourage innovation and diversity in the technological and institutional means of addressing global climate change

2) Add the following paragraph to section 3. (General Obligations):

- Development of a protocol, as soon as possible, addressing all adequately scientifically understood greenhouse gases, their sources and sinks, in a comprehensive approach to controlling net emissions of greenhouse gases through national performance targets, leaving to each country the choice of domestic policy responses to achieve its net greenhouse gas emissions target; development of equitable and economically efficient implementation measures, including a system of international emissions trading (see Economic Measures paper, section 5.2); keep under continuing review the set of greenhouse gases, their sources and sinks, and revise the set, according to evolving scientific understanding. (This approach is further elaborated in Appendix __.)

3) The second and third ticks on page 4 refer to "emission limitations/reductions". Either add "net" before "emission" in each of these ticks or repeat both these ticks with the word "net" before "emission".

4) Add the following ticks to section 11. (Annexes and Protocols):

- treat all greenhouse gases, their sources and sinks, comprehensively, in a single protocol

- international emissions trading

Withdrawal/Redaction Sheet
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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05c. Paper	Tab "B": U.S. Concept Paper, Comprehensive Greenhouse Gas Approach to a Framework Convention on Climate Change (5 pp.)	12/14/89	~~P-5~~	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

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By JP (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
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DRAFT

U.S. CONCEPT PAPER
COMPREHENSIVE GREENHOUSE GAS APPROACH TO A FRAMEWORK CONVENTION ON CLIMATE CHANGE

Proposal:

The RSWG should seriously: 1) consider the merits of combining a framework convention on climate change with one or more protocols that would treat greenhouse gases collectively on the basis of a warming potential index, and 2) evaluate alternative implementation procedures including international tradeable emission reduction credits.

Summary:

Global emissions of greenhouse gases (CO_2, CH_4, N_2O, CFCs, CO, and other trace gases) are currently increasing in every country because of man's activities. Addressing the problem requires a comprehensive and flexible approach that will enable countries to find economically efficient measures to stabilize or reduce emissions while achieving economic growth. The U.S. government believes that a framework convention on climate change should establish a process focusing on the collective warming potential of greenhouse gases rather than on individual greenhouse gases. Countries should be free to select between emission reduction or sink enhancement strategies and among gases as long as these are consistent with a negotiated "collective" greenhouse gas target. Trading emission reduction credits between countries could be an option in implementing this approach. Under this approach, the Convention would set forth a general goal of stabilizing or reducing greenhouse gas emissions at levels and dates to be established in a protocol or protocols to the convention to be developed as soon as possible.

Concepts and Definitions:

Greenhouse gases differ in both their ability to trap heat and their atmospheric lifetimes. For example, methane traps heat approximately 30-40 times more effectively than CO_2, but has a lifetime of 8-12 years, while CO_2 has an effective lifetime of several hundred years. The concept of a Global Warming Potential index has been proposed as a means of accounting for these differences. Recent papers by B. Assarsson and by Lashof and Ahuja propose two similar approaches for defining such an index. For example, the second paper suggests that the Global Warming Potential of methane relative to CO_2 is 3.7. In economic terms this suggests that one could spend up to 3.7 times for reducing methane emissions relative to CO_2 emissions.

The concept of having the government set broad national emission standards, but having flexibility to achieve the goals has been used in the U.S. For example, the trading of emission

reduction credits has been used as a means of achieving real emission reductions of lead in an economically efficient manner. Further, under the proposed Clean Air Act Amendments, a national SO_2 emission target has been identified and each utility company has the choice of achieving SO_2 reductions by either directly reducing emissions at its own facilities or by purchasing allowances from another company, whichever is more economical. The application of such a concept, while never attempted on a cross-pollutant or global scale, would enable each country to achieve emission targets using a least cost approach.

Advantages of the Proposed Approach:

The proposed approach has the following benefits:

- It would encourage economically efficient approaches within countries and possibly among countries. This is especially important for developing countries that are constrained economically.

- By addressing greenhouse gases collectively, it would reduce the number of separate protocols, thereby accelerating comprehensive international action.

- It may serve to facilitate the process of developing a convention even though uncertainties remain over the economic impacts of a protocol. Trading could act as a safety valve, if it turned out that reductions within a country were more expensive than anticipated.

- It provides flexibility to each country to manage emissions in a manner consistent with its own social and political needs. It allows tradeoffs between sources and sinks, to the extent feasible.

- It provides incentives to develop and use cost-effective, energy-efficient industrial and consumer products, emission control technologies, reforestation and agricultural practices.

- It may especially benefit developing countries where low cost emission reductions may be possible and where there is the greatest need for economic support.

Issues to be Addressed:

In developing a convention/protocol(s) along the lines suggested, the following factors would need to be considered:

- Defining an appropriate Global Warming Potential index. Initial consideration should be given to including at a minimum CO_2, CH_4, and CO. Also, the approach should allow

other gases to be added at a later date as new scientific information is developed. The issue of whether CFCs should be included must be addressed.

- Establishing global and equitable national targets in terms of the index. This will require estimating each country's emissions by major gas for a baseline year. It will also require careful consideration of when the treaty should enter into force and the need for interim objectives. Each country would be free to allocate current and future emissions in any manner.

- Evaluating whether and how credits should be given to national governments for actions taken prior to when the convention enters into force, e.g., nuclear power, reforestation, CFC reductions and others.

- Evaluating alternative administrative, implementation, and enforcement mechanisms, including possibly a system of international emissions trading. International emissions trading could leave the primary burden for arranging trades to the private sector, but national governments will have to provide guidance, monitoring and enforcement. In addition, an international tracking system will be needed to record data and assess trends as a complement to current UN efforts to compile fuel use and other data.

- Assessing the special needs of developing countries including their specific technological needs, financial requirements and the most appropriate manner for them to participate in such a convention.

- Evaluating the interrelationship of other complementary global initiatives such as the call to reforest 12 million hectares of forest land per year.

- Evaluating how to determine credits for sinks, such as reforestation and agricultural practices.

Withdrawal/Redaction Sheet
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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05d. Paper	Tab "D": Significant Upcoming Meetings/Deadlines (2 pp.)	12/14/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
(Document Follows)
By JP (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
FOIA/SYS Case #:	1998-0004-F[1]	**Appeal Case #:**	
Re-review Case #:	2005-0426-S	**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
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Significant Upcoming Meetings/Deadlines

Jan 1	Comments due on IPCC Response Stategies Working Group Paper on Implementation Mechanisms
Feb 2	IPCC Response Strategies Working Group meeting (officers only)
Feb 5-8	IPCC meeting hosted by U.S. in Washington
March 23-25	Preparatory meeting for July G-7 Economic Summit (tentative)
April 29-May2	U.S. Senate-sponsored Inter-parliamentary Conference on the Global Environment, Washington
[spring]	Meeting hosted by the President on the Environment
May	UN Environment Programme Governing Council Special Session, Nairobi (tentative)
May 8-16	ECE Ministerial Conference on the Environment, Bergen
May 18-20	Preparatory meeting for the July G-7 Economic Summit (tentative)
June 4-8	Meeting of IPCC Response Strategies Working Group to adopt its report, Geneva
June 11-23	World Meteorological Organization (WMO) Executive Committee, Geneva
June 15-17	Preparatory meeting for the July G-7 Economic Summit (tentative)
June 18-20	IPCC Report Drafting Committee meeting, Geneva
August 27-30	IPCC meeting to approve interim report
Oct.29-Nov.7	Second World Climate Conference, Geneva
post-November	U.S. has offered to host first negotiating session of framework climate change convention

U.S. Department of Justice
Land and Natural Resources Division

Office of the Assistant Attorney General
Washington, D.C. 20530

December 18, 1989

MEMORANDUM

TO: Hon. D. Allan Bromley
Assistant to the President
for Science and Technology
Chairman, Domestic Policy Council Working Group
on Global Change

Members of the Domestic Policy Council
Working Group on Global Change

FROM: Richard B. Stewart RS
Assistant Attorney General

SUBJECT: International Approaches to Global Climate Change

In an effort to develop a new approach to possible international agreement on global climate change, representatives of the Environmental Protection Agency, the State Department, and the Justice Department have met with each other and with the Counsel to the President. This memorandum transmits to you the materials produced by those meetings, and identifies certain issues to which the DPC Working Group may need to give special attention.

Timetable

In the first week of February 1990, the United States will host a meeting of the Response Strategies Working Group ("RSWG") of the Intergovernmental Panel on Climate Change ("IPCC"), followed by a plenary meeting of the IPCC. At its February meeting, the RSWG will consider additional submissions to its October, 1989 Report. Such submissions must be made by a deadline of January 1, 1990.

Withdrawal/Redaction Sheet
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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
06. Memo	From Richard Stewart to D. Allan Bromley Re: International Approaches to Global Climate Change ~~Paragraph on pg. 2 redacted; pg. 3 restricted~~ (2 pp.)	12/18/89	P/~~5~~	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
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By JP (NLGB) on 10/28/05

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Follow-up actions in the coming months include further deliberation by the RSWG and the full IPCC over the spring and summer, the President's spring conference on the science and economics aspects of global environmental change, the IPCC conference in the autumn, possible related activities by the United Nations Environment Programme ("UNEP"), and the international conference on a "framework convention" on climate change to be hosted in Washington, D.C. in the fall of 1990. These meetings and others are listed in the last attachment to the memorandum dated December 14, 1989, described below.

Materials Attached

Attached please find the following materials:

- Memorandum from Richard B. Stewart to C. Boyden Gray, dated December 14, 1989, describing and analyzing the proposed new approaches for international agreement. (Tab 1)

Related to this memorandum are the following attachments:

- Comments to be proposed for inclusion in the RSWG Report. The deadline for adding such comments is January 1, 1990. (Tab 2)

- "Concept Paper" briefly summarizing the proposed approaches for international agreement, to be submitted for inclusion in the RSWG Report, also by January 1, 1990. (Tab 3)

- List of significant meetings and conferences in the coming months. (Tab 4)

- Memorandum from Richard B. Stewart to C. Boyden Gray, dated December 18, 1989, outlining the next steps that should be taken to develop the proposed approaches. (Tab 5)

Issues for DPC Working Group Consideration

We respectfully suggest that the DPC Working Group on Global Change consider the proposed approaches contained in the above documents, and the discussion of the strategic questions, advantages and drawbacks related to our approaches contained in those documents. It should be noted that the impacts on the

United States of international adoption of the proposed approaches have not yet been analyzed in detail, and no quantitative predictions of such effects are yet available. Our recommendations are therefore tempered by the need for further research.

In particular, we recommend special attention to the following concerns:

1. Should the United States favor the traditional approach to environmental regulation when addressing potential global climate change, involving a framework convention followed by successive protocols each directing nations to limit their emissions of a separate specific pollutant? That approach has been employed, with some variations, by the Vienna Convention and the Montreal Protocol on Substances Depleting the Ozone Layer, and was proposed by other nations for dealing with global climate change at the Noordwijk Ministerial Conference on Atmospheric Pollution and Climate Change.

Or should the United States actively promote a "comprehensive" approach to collective treatment of all greenhouse gases, their sources and sinks, in which each nation must meet a national performance-based target, but is left to choose its mix of domestic policies to meet that target? This approach is described in the attached materials, and it is the one we recommend.

2. Assuming the United States Government adopts the approach we recommend, should the proposed approach outlined be presented to the RSWG and/or the IPCC as the official United States position, or should it be put forward more tentatively, as an issue for consideration by the RSWG and/or the IPCC?

3. Should the "international trading" approach, as described in the above materials, be proposed as an integral part of the United States submission, firmly linked to the "comprehensive" approach, or should it be treated as an important and useful idea which may nevertheless be deferred for further consideration? This question is discussed more fully in the memorandum dated December 14, 1989, listed above, particularly at pp. 3-4.

Withdrawal/Redaction Sheet
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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
07. Memo	From Richard Stewart to C. Boyden Gray Re: Next Steps on International Approaches to Global Climate Change (3 pp.)	12/18/89	P/5	

Collection:

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Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
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Re-review Case #:	2005-0426-S	**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
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C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

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U.S. Department of Justice

Land and Natural Resources Division

Office of the Assistant Attorney General

Washington, D.C. 20530

December 18, 1989

MEMORANDUM

TO: C. Boyden Gray
Counsel to the President

FROM: Richard B. Stewart RS
Assistant Attorney General

SUBJECT: Next Steps on International Approaches to Global Climate Change

As undertaken at this morning's meeting in your office, this memorandum outlines the steps that should be taken to develop further the proposed United States approach for international agreements dealing with global climate change. This list of steps represents the items considered significant by the representatives of EPA, Justice, State and your office in attendance this morning.

1. Clearance for new U.S. submissions to the RSWG. Clearance must be obtained in the next two weeks for the materials to be submitted to the Intergovernmental Panel on Climate Change ("IPCC") Response Strategies Working Group ("RSWG") for inclusion in the RSWG papers by the January 1, 1990 deadline. The proposed materials for submission to the RSWG -- a set of "Comments" on the RSWG "Legal Measures" paper, and a "Concept Paper" discussing the U.S. proposal -- were attached to the memorandum sent to you yesterday.

2. DPC review. The Domestic Policy Council's Working Group on Global Change, chaired by Dr. Bromley, should take up these matters at its next meeting. If it were held next week, it could be the vehicle for the clearance described in paragraph 1.

3. Pamphlet on comprehensive approach and trading. A pamphlet should be developed, for dissemination in mid-January to RSWG participants, explaining our position on the

benefits of the "comprehensive" and "international trading" approaches to international agreements on greenhouse gases, their sources and sinks, and the drawbacks of other approaches, such as pollutant-by-pollutant and command-and-control methods. The pamphlet should draw on U.S. and international experience with each regulatory method.

4. Response to UNEP initiative on draft convention. This week Dr. Tolba, on behalf of UNEP in Nairobi, requested that all nations suggest language, by January 15, 1990, for a draft framework convention on global climate change. This request appears to compete with the normal IPCC procedures, and to accelerate the schedule for drafting such language. In addition, there may be growing pressure to address this question in the United Nations General Assembly instead of in the IPCC forum. The U.S. should develop a strategy for dealing with this pressure, including consideration of how far to insist on the IPCC's jurisdiction over these matters, and whether to present our substantive proposals to the U.N. if it takes up these matters.

5. Additional needed background work.

Relevant federal agencies should work on the following matters relevant to our proposed approach:

(a) Economic impacts. Assessments should be developed of the economic impacts, on the U.S. and other principal negotiating nations or blocs, of several scenarios for international agreement, including different timetables, baselines, and variances for developing nations within our "comprehensive" approach.

(b) Global Warming Potential Index. A "global warming potential index" should be developed to relate the contribution of each greenhouse gas to total global warming.

(c) List of greenhouse causal factors. The list of greenhouse gases, their sources and sinks, should be developed for inclusion in a "comprehensive" approach to international agreement on climate change.

(d) Monitoring and implementation assurances. Analysis and recommendations should be developed regarding mechanisms for monitoring and implementation assurance provisions in international agreements on climate change. This work should survey and analyze mechanisms used in past international agreements, and recommend the most appropriate mechanisms for both a "comprehensive" approach and an "international trading" approach.

6. Spring 1990 science/economics conference. Work should commence to develop the materials, key speakers, and exhibits that could be assembled at the President's spring science/economics conference on the global environment, in order to educate those attending as to the benefits of our comprehensive and international trading approaches, the drawbacks of traditional command and control regulatory mechanisms, and U.S. and international experience with each system.

United States Department of State

Bureau of Oceans and International
Environmental and Scientific Affairs

Washington, D.C. 20520

December 29, 1989

Dr. N. Sundararaman
Executive Secretary
Intergovernmental Panel
on Climate Change
c/o WMO, Case Postale No. 5
1211 Geneva 20, Switzerland
Geneva, Switzerland

Dear Dr. Sundararaman:

Enclosed are additional comments of the United States on the economic and legal measures papers which were discussed at the October 2-6, 1989 meeting of the Intergovernmental Panel on Climate Change (IPCC) Response Strategies Working Group. We would appreciate your providing these comments to the topic coordinators for the economic and legal measures papers.

Sincerely,

Eleanor Savage, Acting
Deputy Assistant Secretary
for Environment, Health,
and Natural Resources

Enclosure:

As stated.

December 29, 1989

U.S. Comments on the Economic Measures Paper

Given that the paper is inclusive rather than exclusive of differing viewpoints, we hope that the following perspectives can be reflected in the body of the final paper. Suggested insertion points are provided alongside each item.

Page 2, paragraph 1 (substitute for or expand on last sentence):

> The ultimate purpose of policy measures to slow climate change is to enhance overall welfare. Overall well-being depends on both the socio-economic and environmental effects of climate change and the socio-economic effects of emission targets and the policy measures implemented to reach them. Whether or not a strict cost benefit approach is applied, it seems clear (to some?) that both kinds of socio-economic impacts must be taken into account in setting policy targets.

Page 5, enumeration of criteria for convention or protocol (additions):

> The international policy regime should recognize that the interests of the international community relate to global climate objectives, not the means by which they are achieved.
>
> International measures should recognize any arrangements between individual countries that maintain an overall greenhouse contribution within the sum of their individual obligations as an acceptable compliance strategy.

Page 7, paragraph 1 discussion of right to pollute (points to weave into the discussion):

> Both regulation and economic instruments effectively allow for the same right to pollute: the only difference is in the transferability of this right. Regulation does not banish the profit motive, since profit opportunities in regulatory systems are often directly dependent on securing favorable regulatory treatment. The waste of resources in lobbying for favorable regulatory treatment represents a drawback to the regulatory approach.

Page 9, paragraph 2 discussion of sinks (addition):

An international policy regime that focuses on global climate objectives, rather than the means by which they are achieved, would treat sink creation and emissions reduction as one for one substitutes.

Page 9, enumeration of benefits (additional point):

opportunity for low income rights holders to sell rights to others in exchange for compensation of greater value.

December 29, 1989

U.S. Comments on the Legal Measures Paper

1) Add the following ticks to section 1. (Preamble):

- Recognition of interrelationship among all greenhouse gases, their sources and sinks, and the consequent utility of treating them collectively

- Importance of developing response measures that operate in an equitable and economically efficient and effective manner, and that encourage innovation and diversity in the technological and institutional means of addressing global climate change

- Need to consider the possible socio-economic impacts of policies that might be taken to address climate change

- Recognition that the interests of the international community relate to global climate objectives, and that each country should have maximum flexibility to devise its institutional and other means of achieving these objectives

- Recognition that two or more countries should have the flexibility to meet their aggregate global climate change objectives through joint arrangements of their source and sink policies

2) Add the following ticks to section 3. (General Obligations):

-- Development as soon as possible of a protocol addressing all adequately scientifically understood greenhouse gases, their sources and sinks (with appropriate treatment of substances subject to control under the Montreal Protocol), in a comprehensive approach to controlling net emissions of greenhouse gases through national performance targets, leaving to each country the choice of domestic policy responses to achieve its net greenhouse gas emissions target; keep under continuing review the set of greenhouse gases, their sources and sinks, and revise the set, according to evolving understanding of the science, economics, and technological advancement. (This approach is further elaborated in Appendix __.)

-- Development of equitable and economically efficient implementation measures, including a system of international emissions trading (see Economic Measures paper, section 5.2). (This approach is further elaborated in Appendix __.)

3) The second and third ticks on page 4 refer to "emission limitations/reductions". Either add "net" before "emission" in each of these ticks or repeat both these ticks with the word "net" before "emission".

4) Add the following ticks to section 11. (Annexes and Protocols):

- treat all greenhouse gases, their sources and sinks (with appropriate treatment of substances subject to control under the Montreal Protocol) comprehensively, in a single protocol

- international emissions trading

Appendix

U.S. CONCEPT PAPER
COMPREHENSIVE GREENHOUSE GAS APPROACH TO ADDRESSING CLIMATE CHANGE

Proposal:

The RSWG should seriously: 1) consider the merits of supplementing a framework convention on climate change with one or more protocols that would treat greenhouse gases and their sources and sinks collectively, based on a comparative index of their contributions to global climate change; and 2) evaluate alternative implementation procedures, including international emissions trading.

Summary:

Global emissions of greenhouse gases (CO_2, CH_4, N_2O, CFCs, CO, and other trace gases) are currently increasing in every country because of man's activities. Any effort to curtail these emissions will require a comprehensive and flexible approach that will enable countries to find economically efficient measures to stabilize or reduce net emissions while achieving economic growth. The RSWG should consider whether a framework convention on climate change should establish a process focusing on the collective potential of greenhouse gases to change the climate, rather than on individual greenhouse gases. Countries would be free to select between emission reduction or sink enhancement strategies and among gases, as long as these were consistent with a negotiated "collective" greenhouse gas target. Under this approach, the framework convention would set forth a general goal of stabilizing or reducing net greenhouse gas emissions at levels and dates to be established in a protocol or protocols to the convention to be developed as soon as possible.

A system of international emissions trading could be an option in implementing this approach.

Concepts and Definitions:

Collective treatment of all greenhouse gases will require some method for aggregating and comparing the impacts of each gas on climate variables. Greenhouse gases differ both in their ability to trap heat (more precisely, infrared radiation) and in their atmospheric lifetimes. For example, methane traps infrared radiation approximately 30-40 times more effectively than CO_2, but has a lifetime of 8-12 years, while CO_2 has an effective lifetime of several hundred years. The concept of an index has been proposed as a means of accounting for these differences by providing a comparison of the effects of different greenhouse gases on the climate. Recent papers by B. Assarsson and by Lashof and Ahuja propose two similar approaches for defining such an index. For example, the second paper suggests that the "global

warming potential" of methane relative to CO2 is 3.7. In other words, a one unit reduction in emissions of methane achieves the same potential environmental benefit as a 3.7 unit reduction in emissions of CO2, according to the Lashof and Ahuja paper. A comprehensive approach to greenhouse gas net emissions targets would employ an index of the global climate impacts of each greenhouse gas. Sources and sinks of greenhouse gases could then be assessed and compared in terms of the index.

The concept of emissions trading has been used successfully in environmental regulation in the United States. For example, the trading of emission reduction credits has been used as a means of achieving real emissions reductions of lead in an economically efficient manner. Further, under the proposed Clean Air Act Amendments, a national SO2 emission target has been identified and each utility company has the choice of achieving SO2 reductions by either directly reducing emissions at its own facilities or by purchasing allowances from another company, whichever is more economical. The application of such a concept, while never attempted on a cross-pollutant or global scale, would enable each country to achieve net emissions targets using a least cost approach.

Advantages of the Approaches:

The comprehensive greenhouse gas approach has the following potential benefits:

-- It would encourage economically efficient approaches within countries by permitting each country to meet its net emissions target through the best internal mix of policies addressing the various greenhouse gases, their sources and sinks. This is especially important for developing countries, which are constrained economically.

-- By addressing greenhouse gases collectively, it would reduce the number of separate protocols, thereby accelerating comprehensive international action.

-- It provides flexibility to each country to manage net emissions in a manner consistent with its own social and political needs. It allows tradeoffs between sources and sinks, to the extent feasible.

-- It provides incentives to develop and use cost-effective, energy-efficient industrial and consumer products, emission control technologies, reforestation and agricultural practices, thus avoiding the obstacles to technological innovation that typically accompany individual pollutant regulation.

-- Addressing greenhouse gases collectively would improve environmental protection by helping to avoid cross-pollutant shifts.

-- It avoids placing inequitable burdens on the nations whose economies rely on activities that emit the particular gas regulated in a first single-gas protocol.

A system of international emissions trading has the following potential benefits:

-- It would encourage economically efficient approaches among countries.

-- It would bolster economic growth and development in developing countries, as they exchange low cost emission reductions for much needed financial assistance.

-- It may serve to facilitate the process of developing a convention even though uncertainties remain over the economic impacts of a protocol. Trading could act as a safety valve, if it turned out that reductions within a country were more expensive than anticipated.

Issues to be Addressed:

In developing a convention/protocol(s) along the lines above, the following factors would need to be considered:

-- Defining an appropriate index for comparing the effects of the different greenhouse gases on the climate. Initial consideration should be given to including at a minimum CO2, CH4, and CO. Also, the approach should allow other gases to be added at a later date as new scientific information is developed. The index would then be used to assess and compare the contributions made to global climate change by different sources and sinks of the various greenhouse gases. The issues of whether CFCs should be included, and the choice of an appropriate discount rate to be used in aggregating the potential of gases with varying atmospheric lifetimes to affect the climate, must be addressed.

-- Establishing global and equitable national targets in terms of the index. This will require estimating each country's emissions by major gas for a baseline year. It will also require careful consideration of when the agreement should enter into force and the need for interim objectives. Each country would be free to allocate current and future net emissions among the various greenhouse gases, their sources and sinks, in any manner.

-- Evaluating whether and how credits should be given to national governments for actions taken prior to when the convention enters into force, e.g., nuclear power, reforestation, CFC reductions and others.

-- Evaluating alternative administrative, implementation, and enforcement mechanisms, including possibly a system of international emissions trading. (International emissions trading could leave the primary burden for arranging trades to the private sector, but national governments will have to provide guidance, monitoring, and enforcement.) In addition, an international tracking system might be needed to record data and assess trends as a complement to current UN efforts to compile fuel use and other data.

-- Assessing the special needs of developing countries including their specific technological needs, financial requirements and the most appropriate manner for them to participate in such a convention.

-- Evaluating the interrelationship of other complementary global initiatives such as the call to reforest 12 million hectares of forest land per year.

-- Evaluating how to determine credits for sinks, such as reforestation and agricultural practices.

EDITORIALS
PAGE F2

COMMENTARY

WARREN BROOKES

White House effect vs. greenhouse effect

As the nation shivered through one of the coldest Decembers in North American history, White House advisers were seeking ways to cool down President Bush's exposure on global warming, without reneging on his rhetorical 1980 campaign flourish:

"Those who charge we are powerless to do anything about the 'greenhouse effect' are forgetting about the 'White House effect.' " So far, the main "White House effect" has been damage control, keeping environmental hotheads from signing the United States up to potentially disastrous international agreements, long before any scientific evidence even remotely supports them.

But that changed Friday. The State Department, under pressure from the White House, quietly filed with the Intergovernmental Panel on Climate Change (IPCC) the ultimate strategic weapon: an unassailably sound, but bold new market-based approach to the international regulation of greenhouse gases that should put the Bush administration back in charge of this debate.

While the purpose of this new approach is to avoid the kind of command-and-control environmentalism that has made the Clean Air Act such a costly and ineffective di-

mental hotheads from signing the United States up to potentially disastrous international agreements, long before any scientific evidence even remotely supports them.

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While the purpose of this new approach is to avoid the kind of command-and-control environmentalism that has made the Clean Air Act such a costly and ineffective disaster, it also will slow down the ideological rush to put greenhouse policy way out ahead of real science, and hard evidence.

Most of all, it will drive the international environmental bureaucrats right up the wall, because it hugely undercuts their potential turf and power to meddle in domestic national affairs.

A Dec. 14 confidential memorandum by a brilliant environmental lawyer in the Justice Department, Assistant Attorney General Richard Stewart, supplied Mr. Bush with exactly the intellectual construct he needed to strike a blow for environmental sanity.

Mr. Stewart, one of the nation's leading environmental law theorists, has long been a supporter of the market-based "bubble and offset" approach to controlling pollutants.

Under that strategy, instead of setting discrete emission-reduction targets, pollutant by pollutant, company by company, total "bubble" targets are set for a region, letting all players use the trading process to find the best way to achieve them.

That's in stark contrast to the greenhouse approach promoted in the Netherlands last November (and supported by Environmental Protection Agency Administrator William Reilly and State Department departing greenie William Nitze) of signing up the United States to at least 13 separate, specific targets — on carbon dioxide, methane, agricultural practices, nitrous oxide, tropospheric ozone, forestation, etc., etc.

Instead, Mr. Stewart argued for the development of an overall performance goal or "global warming potential index," allowing nations to decide individually the best ways to meet it.

The major advantage of this approach, aside from efficiency, is that development of such an index will force the kind of comprehensive and detailed science that has so far been missing in the climate-change models with their deliberate preoccupation with carbon dioxide while ignoring all other variables:

Under Mr. Stewart's proposals, all aspects that either contribute to (sources) or reduce (sinks) global warming would be "scored" in setting an index both for the world and for each country — and each nation could then decide for itself which components to emphasize.

For example, some nations might find it easier to cut more carbon dioxide by substitution of non-fossil fuels, but be unable to do as well on methane. Other nations might be in an opposite situation, or have more "sink potential" from forestation or land-use change.

The upside of Mr. Stewart's approach is that it will finally force the kind of real science we need, either to make more sensible policy or to dismiss the problem.

In addition, Mr. Stewart argues for a system of both intranational and international trading to allow nations to cooperate on mutually advantageous strategies. For example, the United States might be willing to pay Brazil for preserving the Amazon rain forests, and use those "sink credits" to allow more carbon-dioxide emissions from the United States.

The advantage of this approach is that while it introduces the efficiency of market mechanisms to a world environmental problem, it does not dictate strategy to individual nations. That lessens the greatest danger of all: Anti-democratic central planning by unaccountable, power-hungry, global-greenie bureaucracies.

Those bureaucracies won't take this lying down. State's Mr. Nitze, who has routinely wounded the Bush administration with manipulative leaks, reportedly weighed in with a parting shot, damning the Stewart approach with the faintest possible praise, and with arguments sure to be played back by his IPCC colleagues.

Ironically, another potential threat to this comprehensive approach will come from multinational corporations both in the United States and in Europe, who see specific emissions targets as a way of inflicting competitive harm — Europeans against the United States, and both Europe and the United States against Japan and the Pacific Rim nations.

For example, Dupont and the United Kingdom's Imperial Chemical Industries have a direct stake in immediately phasing out CFCs, now that their Asian and Latin American competitors can make them cheaper, while they, in turn, have a head start on producing more environmentally benign substitutes.

Such manipulation would become moot under an overall performance and trading strategy. Also moot are the five incredibly crude Global Circulation Models (GCMs), which can't even explain the last five decades let alone predict the next 100 years. They would be unacceptable in setting comprehensive indices called for in the Draft Framework Convention filed to the IPCC Friday.

Thus will the global greenies have to go back to the drawing board, and the climate modelers back to their computers. While this is a major victory for the "White House Effect" over the Reilly hothouse fervor, it still is too large a concession to the whole notion of global warming as a real problem. There has been no significant warming trend since 1890, either in the best land-based records (the United States) or the exhaustive ocean-based records recently published by the Massachusetts Institute of Technology. But the upside of Mr. Stewart's approach is that it will finally force the kind of real science we need, either to make more sensible policy or to dismiss the problem altogether.

Warren T. Brookes is a nationally syndicated economics columnist.

Memo DRAFT 12/6/89

To: D. Allan Bromley
From: Nancy G. Maynard
Subject: Draft Summary of 12/6 Meeting on White House Science/Economics/Environment Conference

Issue:

A decision on the timing, participation, objectives, and structure of the White house Science/Economics/Environment Research Conference is needed.

Background:

Following the last meeting of the DPC Working Group on Global Change and prior to his departure to meet with President Gorbachev in Malta, the President was briefed on the Working Group's deliberations and presented with the environmental conference options identified by the group. After his discussions with Gorbachev, the President chose to announce two initiatives. One of those is an international meeting at the White House next spring, to be attended by each government's chief science, economics, and environmental official. The general prupose of the meetings will be to advance the quality and understanding of the analytical tools necessary to confront international environmental problems, including global change. The conference will have the specific goal of sharing analytical techniques and research in an effort to develop a common integrated approach for response to global change that takes into account the best information on the scientific, economic and environmental aspects of the issue.

Meeting Summary:

On 12/6/89, Dr. Bromley convened a small task force on the White House Conference to develop proposals on the objectives, timing, participants, and structure of that meeting for consideration by the Global Change Working Group . A summary of that meeting follows.

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
08. Memo	From Nancy Maynard to D. Allan Bromley Re: Summary of 12/6 Meeting w/WH Science/Economics/Environment Conference Options and analysis paragraphs redacted (4 pp.)	12/06/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
(Document Follows)
By JL (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
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The following points were agreed upon at the meeting:

1. The conference should be in the spring of 1990, preferably as early in April as possible, and should be set up so that it does not conflict with other meetings, Presidential events, etc.

2. It is important to invite the right combination of countries. F. Bernthal is reviewing this for the group. Of particular importance is the establishment of clear defensible selection criteria for use in discussion with countries that are not selected and wish to join.

3. It is important to focus on the specifics of the analytical tools available for addressing the issue of global change - and the interdependance of the sci/econ/enviro factors. Specifically, this conference should, from its outset, eschew discussion of policy.

4. This conference should not duplicate any other conferences such as IPCC/Bruntland/Hague - must have its own clear purpose and products

There was considerable discussion on many of the specific aspects of the conference. A summary of these discussions follows below together with actions required in each of the major categories. (actions are starred):

Major Issues Addressed:

1. DATE: As early in April as possible - ~~specific~~ date to be determined by group

Discussion:

. Other international meetings already scheduled:

- . February 5-8: IPCC Plenary - Washington, DC
- . June 18-30: Bush-Gorbachev Summit
- . April 22: Earth Day (note: 20th anniversary)
- . May 8-16: Conference on Bruntland Report, Bergen
- . July 9-11: G-7 Economic Summit, Houston, TX
- . Sept-Dec: UN General Assembly
- . Nov: 2nd World Climate Conference, Geneva

*** Action:

- . Final review of the President's schedule (OCA)
- . Final review of the international meeting schedule (FB)
- . Finalize the dates of conference
- • ~~Does this conference satisfy~~
Is this conference intended to satisfy the President's commitment to host an international

2. COUNTRY PARTICIPATION: To be determined

Discussion:

- Since one of the main objectives of this conference is to build leadership and good will for the President and US in the international global change arena, it will be essential to avoid mistakes and diplomatic blunders in the initial selection of countries for participation.

- Several lists of countries were considered but, in each case, there appeared to be important nations omitted.

- Initial lists included G-7 countries, USSR, E. European reps, developing country reps (China, Mexico, Brazil, e.g.), Korea, Poland, Indonesia, Australia, Japan, Zimbabwe, Egypt, Scandanavian reps

*** Action:

- Analysis by F. Bernthal of apropriate list of countries
- Have clear understanding/statement of selection criteria

3. SPECIFIC OBJECTIVES AND DELIVERABLES OF CONFERENCE

Discussion:

- Agreed that should focus on specifics of analytical tools available for addressing issue of global change
- Should attempt to get real data/models on table
- Could be a way to obtain agreement on what (common) assumptions should be used when making decisions regarding responses to global change (e.g., CO2 equivalencies, emissions trading)
- Should provide important input to G-7 Summit and toward 2nd World Climate conference
- Should not duplicate IPCC/Hague/Bruntland/etc conferences - i.e., should have unique and clear purpose/product

- Suggestions for increasing focus of conference:

  (1) after the President's letter of invitation to the conference has gone out, a questionnaire containing requests for specifc information could be sent to all participants
  e.g., what are major uncertainities, major gaps in info and what is new in each field, what is level of activity in each country. Identify chief scientist, chief economist, chief environmentalist

  (2) Assign certain people to prepare short papers and

to present talks

*** Action:

- Decide on specific products/deliverables to be obtained from conference
- Do we work toward a conference concensus report
  or,
  Do we prepare a chairman's summary as at Noordwijk, and ask for a general approval
- Who is audience for the product?
- What can be derived from combination of sci/econ/envt "tools" to address global change
- What would be most useful for input to:
  - G-7 Summit
  - 2nd World Climate Conference
- Prepare questionnaire to be sent out in advance
- Assign selected people to prepare short papers and to present talks

4. CONFERENCE ARRANGEMENTS/STRUCTURE

Discussion

- Agreed that it was essential to put in place a full-time, experienced conference coordinator as soon as possible to coordinate and oversee all preparatory work for the conference
  - Need intellectual content coordinator
  - Need logistics coordinator (suggested that contractors could be hired as with IPCC Plenary in Feb by DOS)

- Agreed that conference would involve:

1. Day 0
   a. Registration of participants at conference hotel
      - Which one
      - In or out of Washington
      - Should we consider a conference center
   b. Reception for delegates
2. Day 1
   a. Opening plenary session
   b. Three separate working groups
      - science
      - economics
      - environment

      Each with a keynote address to set the stage for discussion
   c. Lunch - where?
   d. 1st Day Plenary Session - 4 pm
      - Review presentations from each working group

. Focus on unanswered and unresolved questions
f. Reception and Banquet at State Dept.

. Use questionnaires topics/info as basis for initial discussions

3. Day 2
a. Mixed working groups - Set 1 - 0900-1100
b. Mixed working groups - Set 2 - 1100-1300
d. Lunch - 1300-1500 Where?
e. Plenary Session - 1500-1700
f. Reception and Banquet at Air and Space Museum?

*** Action:

. Decide on specifics of conference coordination
. scientific/intellectual content
. logistics
. Decide on specifics of all conference-associated activities (see above)
. Set up specific outline of conference organization and procedures
• Reserve State Dept and Air & Space rooms and begin arrangements

5. OTHER TOPICS REQUIRING DISCUSSION AND AGREEMENT

** A. Method of invitation to Heads of State
(suggested letter from President inviting their sci/econ/enviro ministers)

** B. Length of conference

** D. President's speech and involvement in briefings

*** E. Funding of Conference *****
. How do we finance
. Coordination
. Conference
. Do we charge a conference fee

Attendees: D.Allan Bromley, Thomas Ratchford, Wiliam Reilly, Fred Bernthal, Steve Danzansky, Mike Boskin, Bob Grady, David Bates, Nancy Maynard

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
09. Paper	Issue paper on WH Science/ Economics/ Environment Conference Options and analysis paragraphs redacted (5 pp.)	12/11/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
(Document Follows)
By JL (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
FOIA/SYS Case #:	1998-0004-F[1]	**Appeal Case #:**	
Re-review Case #:	2005-0426-S	**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
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AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

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DRAFT

Global Warming

December 11, 1989

I. ISSUE

A decision on the timing, participants, objectives and structure of the White House Science/Economics/Environment Conference is needed.

II. BACKGROUND

Following the last meeting of the DPC Working Group on Global Change and prior to his departure to meet with President Gorbachev in Malta, the President was briefed on the Working Group's deliberations and presented with the environmental conference options identified by the group. After his discussions with Gorbachev, the President chose to announce two initiatives. One of those is an international meeting at the White House next spring, to be attended by government science, economics and environmental officials. The general purpose of the meeting will be to advance the quality and understanding of the analytical tools necessary to confront international environmental problems, including global climate change. The conference will have the specific goals of sharing analytical techniques and research in an effort to develop a common integrated approach that takes account of scientific, economic and environmental factors.

III. PROPOSALS

Decisions must be made in four areas: dates of the conference; participation; objectives to be achieved; and structure for the deliberations. A representative task force convened by Dr. Bromley has developed the following proposals for consideration by the Working Group.

A. Timing

In his announcement of the conference, the President specified that the meeting would be held next spring. The following events on the international environmental calendar must be considered in making a decision on the dates for the meeting:

February 5-8 - Plenary session of the Intergovernmental Panel on Climate Change (IPCC) in Washington.

April 22 - Earth Day 1990 (its 20th anniversary; events are also scheduled for several days before and after that day in Washington and throughout that nation).

May 8-16 - Bergen Conference on Action for our Future (the follow-up session to a conference previously held under the auspices of Norwegian Prime Minister Bruntland).

June 18-30 - Summit meeting between Presidents Bush and Gorbachev.

July 9-11 - G-7 Economic Summit in Houston, Texas.

Proposal

To avoid conflicts with the events noted above, hold the meeting [in early April, most likely April -].

B. Participants

The meeting was described by the President as international in nature, without any elaboration as to invitees. Rather than inviting all nations, a smaller group of invitees[, specifically those nations that have identifiable government science, economic and environmental officials, will be invited. These nations are also those that have been most involved in developing models for dealing with global environmental problems. It will also be important to include representatives from the developing world.]

Proposal

Invite the following nations: [State Department to provide list].

C. Objectives

The conference will have several specific objectives:

(1) To produce specific products or deliverables, such as real data and models, in science and economics, taking account of the interrelationships in environmental policy-making;

(2) To seek agreement on common assumptions that can be used when making decisions regarding responses to global change, such as CO2 equivalencies.

(3) To provide input for the G-7 Economic Summit and the Second World Climate Conference, scheduled for Geneva in November.

(4) To ensure that the conference does not duplicate the work of the IPCC, particularly the working groups dealing with science and effects, or other international bodies, such as the Bergen conference or the Noordwijk process; the conference must have its own very clearly formulated purpose which is not issue-specific (i.e., solely devoted to global

change) and produce defined products that will not be developed by any of the other forums.

In interrelating scientific, economic and environmental factors and concerns, the objectives in each area are as follows:

(1) Science

The scientists will focus on the largest gaps and uncertainties in current understanding of global warming and greenhouse phenomena and on such topics as:

(a) The range of predicted temperature changes from the current major world climate models, the uncertainties in these predictions, and the primary sources of these uncertainties; this will make possible greater awareness of these uncertainties among the participant economists and environmentalists;

(b) The relative sensitivity of the climate models to their input parameters and the most critical new experimental measurements required to address gaps and uncertainties in current understanding and predictions;

(c) The global impacts to be expected for different global warming scenarios in such areas as agricultural and oceanic productivity, sea level change, vegetation patterns and migration, changes in storm patterns and severity, occurrence of droughts, etc.;

(d) The availability and inter-comparability of national data bases pertinent to environmental research;

(e) Improvement of current climate and weather models to at least begin to address regional changes on a larger time horizon than is currently possible;

(f) The possibility of developing an integrated, coherent international plan of research that would build upon the expertise, experience and relevant data available in the participant countries. Such a plan could form a structure within which the contributions of all interested nations could be used with greatest effectiveness and form the basis for coordinated resource allocation and implementation;

(g) The development of greater awareness on the part of participating scientists of the economic aspects of global change and the relative economic value of improved understanding and predictive capability in different areas.

(2) Economics

The participation of economists should enhance ~~four~~ Three useful information flows:

(a) Best-practice methods of estimating the costs of ~~inaction~~ and of various sorts of action, along with the latest estimates of costs; discussions of this topic should serve to advance the state of the art, to lead to a greater standardization of methods and to enhance awareness of robust results.

(b) Greater familiarity on the part of economists with the actual state of scientific knowledge, increasing their ability to render it more faithfully in their modeling.

(c) Greater awareness on the part of environmentalists of the benefits to both the economy and the environment of adopting flexible, market-based response strategies; this typically grows slowly but does grow when cultivated.

(3) Environment.

The sole objective with respect to the environmental officials at the conference will be to expose them to the scientific and economic issues discussed, thus providing them with greater familiarity with and sensibility to those factors when considering environmental issues. This is consistent with the need for this conference to have a clear purpose and defined products distinct from policy decisions considered in other forums.

D. Structure

The actions prior to the conference and the structure of the event itself should serve the objectives discussed above.

Proposal

(1) Pre-Conference Actions.

(a) To give greater visibility to the conference, the invitations to government officials will come directly from the President.

(b) To refine the scope of the conference, a questionnaire requesting specific information (e.g., major uncertainties in the areas, major gaps in existing information and new developments) will be sent to all participants.

(c) Assignments for the preparation of a limited number of short papers will be made among the participants, with the authors presenting the papers at the conference as keynote talks to initiate discussion.

(2) Conference Activities.

(a) To ensure full discussion of the issues, the conference will extend over [ ] days.

(b) The conference will begin with an opening plenary session, with the participants then breaking into groups of science, economic and environmental officials. The results of the questionnaires circulated prior to the conference will serve as the basis for initial discussions. To ensure cross-pollination (one of the essential purposes of the conference), the groups will be mixed to expose each of the groups to members from the other disciplines. At the end of the conference, all participants will reconvene for summary discussions.

(c) Presidential involvement will be another key factor in heightening the visibility of the conference, and will also serve to fulfill his campaign pledge. [The President will address the opening plenary session and participate in the concluding session and perhaps one or two sessions during the conference.]

(d) To ensure that the conference is a success, a full-time White House coordinator will be designated through detail or otherwise; another person to coordinate the logistics of the conference is also needed, either through detail or contract.

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
10. Memo	From Roger Porter to John Sununu Re: Global Environmental Conferences (1 pp.)	11/29/89	P-5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

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By JL (NLGB) on 10/28/05

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RESTRICTION CODES

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Freedom of Information Act - [5 U.S.C. 552(b)]

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Global Warming

THE WHITE HOUSE

WASHINGTON

November 29, 1989

MEMORANDUM FOR GOVERNOR SUNUNU

FROM: ROGER B. PORTER RBP

SUBJECT: Global Environmental Conferences

Following this morning's meeting in your office regarding global environmental issues and Malta, the following occurred to me as useful in thinking about our options:

1. The President made a commitment during the campaign for the United States to host a global environmental conference. This can be satisfied in any number of ways. Indeed, there is no reason merely to hold another environmental conference given the large number that are already scheduled. Our agreeing to host a framework convention on global climate change satisfies this commitment.

2. We want to look like we are driving the engine rather than riding in the caboose on global environmental issues. The reality is that we have a strong commitment to a sustained program of environmental improvements. Furthermore, very little of real value is likely to occur without U.S. leadership.

3. Environmental issues will play a prominent role, or at least should, in my view, at the International Economic Summit Conference that we will host in Houston next July. Everytime we host a conference it is important that something useful, other than discussion, emerge.

4. Given that we are hosting the February IPCC meeting, offering to host the Global Climate Framework Conference later in the year, and hosting the International Economic Summit Conference in July, it is worth pondering carefully the purpose that would be served by yet another, more broad-based global environmental conference.

5. If we are going to go ahead with such a conference we should have a clear idea of its purpose -- to focus more attention on scientific issues, to attempt to secure commitments regarding what other nations are prepared to do, to showcase the efforts we are making, to generate global enthusiasm for conservation or reforestation, etc.

6. In any event, if we are going to do such a conference it is a appropriate candidate for announcement in the State of the Union. A post-Malta announcement should be limited to our offering to host a Global Climate Change Framework Conference.

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
11a. Memo	From D. Allan Bromley to POTUS Re: The Noordwijk Conference on Atmospheric Pollution and Climate Change (1 pp.)	11/15/89	P-5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

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THE WHITE HOUSE
WASHINGTON

November 15, 1989

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY

SUBJECT: THE NOORDWIJK CONFERENCE ON ATMOSPHERIC POLLUTION AND CLIMATE CHANGE

I thought that you might be interested in the enclosed list of conclusions that I jotted down following my participation in last weeks conference in Noordwijk, The Netherlands.

I believe that our delegation had a very positive impact on the outcome of the conference -- despite some media comments to the contrary. Should you wish further information on any of the points listed I would be happy to provide it.

Enclosure

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
11b. List	From D. Allan Bromley to POTUS General Conclusions from the Noordwijk Meeting (7 pp.)	11/8/89	P-5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

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D. Allan Bromley
November 8, 1989

General Conclusions from the Noordwijk Meeting

1. For many reasons, many not yet fully understood in the participating countries -- particularly in the Third World but also in Europe -- environment has moved rapidly to the top of the political agenda.

2. Active measures to separate industrialized from non-industrialized countries -- forced primarily by EC countries -- act to isolate the U.S., Japan and the USSR from natural allies in the Third and 2.5 Worlds (i.e., China, Brazil and India).

3. Relatively few of the 60-70 participant countries have any quantitative idea of how they would reach the discussed 20 percent CO_2 reduction in 2000 or of what it would cost them to do so but are carried along by considerable emotion and a degree of mob psychology.

4. Scientific facts are largely irrelevant to current discussions. Recognizing that current models and their uncertainties do not provide compelling grounds for

immediate large scale amelioratory action, environmental activists have stopped referring to their predictions precipitously and now focus instead on historical, multi-thousand-year ice core records that show a striking correlation between atmospheric CO^2 content and temperature. The still open question as to which is cause and which effect is usually not discussed.

5. There is a strong -- and in some areas not entirely straightforward -- move by the U.K. to wrest world leadership from the U.S. in matters of the environment. The U.K. should hereafter be viewed as a less than reliable partner in this area. Japan, on the other hand, has been very reliable and, although for different reasons, so also have been the Soviets.

6. The U.S. delegation to Noordwijk was a well integrated, coherent and effective one. Without extensive and intensive work on many persons' parts, the declaration would have been damaging to the U.S. and to U.S. leadership.

7. It remains true that in terms of actual progress toward understanding the scientific foundations of global change and responding to it in concrete fasion, the U.S. leads the world by at least an order of magnitude.

8. It is critically important that well before (one month minimum) the February 1990 plenary IPCC meeting in Washington, we must develop a clear, well articulated U.S. policy regarding global change -- with specific reference to stabilization of greenhouse gas emission, based on the best economic analyses possible in the intervening time interval. We also need to look, as quantitatively as possible, at what 20% reduction in CO2 emission early in the 21st century would require of the U.S. and what its impacts would be.

9. We must continue to emphasize our leadership in the related science and response areas and, particularly in the science areas, invite others to join with us. The proposed Earth Observing Satellite systems (EOS) provide a particularly good base for such invitations. And we must continue to focus on the fact that many countries still have no real idea of what they are prepared to commit themselves to in this area.

10. We must expect that many countries that are now enthusiastic about achieving ambitious greenhouse gas emission goals will find that they are unable to meet their stated commitments. Many delegations look on the Noordwijk declaration and

its goals as rather optimistic political statements intended, as much as anything, to leverage public support for environmental activities and expenditures in their own countries, rather than any firm commitment to actual results. One delegation leader from a major EC country told us, "They can't take you to the World Court in The Hague if you don't actually comply with it."

11. It is essential that we in the U.S. keep a substantially broader focus on global change than just the greenhouse effect that dominated the discussions at Noordwijk. Matters such as clean air, pure water, biodiversity and ocean pollution received, at most, token mention.

12. This supports our idea of convening the G-7 science as opposed to environmental ministers early in 1990 to at least attempt to structure a coherent international scientific program aimed at integrating all participant countries in an attack on current gaps and uncertainties in our understanding of the underlying science. Preliminary and informal response to this idea, from countries such as the UK, Canada, Italy, France and Japan, has been enthusiastic.

13. With input from such a meeting, from what we are doing in the DPCWG, and from the IPCC, we should be prepared to host a Framework Convention in late 1990, and the President should announce this intention at the earliest reasonable time -- in the State of the Union speech at the latest -- to retain world leadership in the environmental field. There is a widespread belief that the President is committed to hosting such a meeting in 1990 given both pre- and post election statements.

14. Under the DPCWG, we should bring in both a representative cross-section of the most distinguished scientists in the environmental area, as well as an equivalent cross-section of the most visible environmental activists, to at least search for some common ground and moderate some of the more extreme positions.

15. We should not forget that many of the Third World countries are already in serious environmental trouble and are looking to us for guidance and help.

16. And we must also recognize that some of the Third World countries will continue to ask for increasing amounts of funding to help them -- with as few strings as possible. It would -- in my opinion -- be most unwise of us to agree to the establishment of any general fund -- as has been proposed -- in which we were not able to know in advance, and specify, what kinds of projects and which projects in particular our funding would support. We need to be realistic about the fact that the demands will very probably always exceed our capacity to respond. However, we should begin now to consider some offer of help -- both financial and technological -- that would be feasible for us within our constraints. Judicious U.S. investments early on can yield some handsome dividends, both political and environmental.

17. Having evolved a coherent national -- and our part of the international -- strategy, it is essential that we take a proactive role with the U.S. media who are, in general, antagonistic in this area. Otherwise, the IPCC meeting aftermath in February, 1990 could be extremely negative and could hurt the President. We should consider what

announcement of significant environmental activities, both national and international, the President could make prior to the February meeting. In my view, if we are to retain a credible leadership position we have to be seen as being prepared to undertake some specific new initiatives in this area -- insisting in all cases, however, that there be strong scientific bases of understanding for our actions and, at the present time, arguments beyond simply greenhouse emission ones for the proposed actions.

THE WHITE HOUSE
WASHINGTON

Date: 11/16/89

TO: THE CHIEF OF STAFF

FROM: **JAMES W. CICCONI**
Assistant to the President and
Deputy to the Chief of Staff

The attached has been forwarded to the President.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

file

November 17, 1989

THE ADMINISTRATOR

MEMORANDUM FOR: Governor John H. Sununu
Chief of Staff
The White House

SUBJECT: The Dutch Ministerial Conference on Atmospheric Pollution and Climate Change

We were able to contain much of the damage at the Dutch Ministerial and avoid having to disavow the Communique. In the end it was a consensus document but just barely. Privately, I pulled out all the stops, reminding the Dutch of the President's own good faith in sending me and warning of his personal disappointment if the conference were to embarrass the U.S.

At numerous private meetings with ministers, I tried to line up support for deferring any commitments to CO_2 reductions by a specified amount or date. We were successful in heading off agreement to reduce CO_2 by 20% by the year 2005 but only we and Japan excepted to a commitment by the other industrial nations to stabilization of CO_2 by the year 2000. My colleagues among the G-7 ministers seemed a bit startled by how aggressively I tried to head them off, beginning at a lunch at our Ambassador's house on the Sunday preceding the conference. But while they were sympathetic and helpful, and have a large reserve of respect for the President's environmental commitment, they are unlikely to be with us unless we have a specific reduction strategy with a timetable. That was true in Noordwijk and it will be true at future such meetings. Only Japan will be resistant to reductions and, in my opinion, if the Japanese were to find themselves isolated without us, they would agree to reductions and simply move more industry off shore to developing countries, so wary are they of having to become even more energy efficient than they already are.

I want to set out some impressions of the situation and also suggest a response to short-term criticism that we're stonewalling the number one environmental issue. That was the theme of the European press reaction, a heavily negative barrage that we, Japan and the U.K. were sabotaging the conference. As you know, the U.K. dropped out and left us and the Japanese, with the British minister proclaiming loudly at the final press conference, "Let us all be perfectly clear that the U.K. was in the majority here, not the minority." (When asked about that, I

said that if anyone really was concerned about who was in the majority, then it was the U.S. for we stood with the vast preponderance of the world's nations in rejecting commitments to CO_2 reductions for ourselves at this time, along with the USSR, China, India, Brazil and the rest of the developing world. Only by defining the developing countries out and asking little or nothing of them was unanimity possible on stabilization of CO_2 by 2000.

Then, of course, I was asked how our position was consistent with the President's promise to provide leadership on the international environment. My answer was essentially as follows: "It is the very essence of leadership when confronted by a very serious problem to take careful stock of options, to assess their costs and benefits and technological feasibility, to consult closely with those sectors of the society likely to be most adversely affected, and finally to make commitments whose consequences you understand and promises you intend to keep. When we, who have done more scientific research, more analyses of both effects of climate change and also stabilization options complete our assessments -- and develop our position, we will be ready to make real and not fantasy commitments." The Europeans privately respected that position, and took it as a consequence of our having been in office only ten months. But they do not regard it as leadership.

In my formal statement to the conference, I complimented the faith shown by other countries that have committed to decisions to stabilize without waiting for any analysis of how they intend to do it. I was later told that environmentalists watching on closed circuit TV had a good laugh over that remark. They know full well that most countries don't have any idea how they're going to achieve stabilization, and some nations who do know how difficult it would be (e.g., Canada, Switzerland) privately express great doubt about whether they'll get there.

In all my public comments I carefully avoided saying anything that would complicate a future U.S. position either pro or anti-reductions. I <u>did</u> note how difficult stabilization would be for us but indicated that if the global environment required it the U.S. would more than do its part. At the press conferences I referred all the scientific questions to Allan Bromley. We had a very harmonious and united delegation.

I regret that we were not able to advocate from the beginning stabilization without deadline and that we could not invite the parties to the U.S. to begin negotiations on the "Washington Convention on Global Warming." That would have allowed us to capture the high ground publicly and I still hope we can do it. It would assure us a large measure of control. But it would also require us to advance a stabilization and/or reduction policy.

We also succeeded, in the Netherlands, in killing a proposed commitment to make specific CO_2 reduction commitments -- beyond stabilization -- at the World Climatological Conference in November 1990. I assumed that was necessary so as not to lock us into a specific timetable for making public our long-term position on reductions. But most other nations agreed that the Conference, following on the report of the IPCC, will be the moment when such positions will be revealed.

Given the Noordwijk experience, a number of conclusions can be drawn.

1. <u>The train is moving very fast, at least in the industrialized countries.</u> At least three countries are dead serious about stabilization and then reduction of CO_2: West Germany, France and the Netherlands. The Germans particularly don't understand how we, who emit 21 tons of CO_2 per capita per year, <u>cannot</u> make reductions, while they, who emit 12.8 tons, can. The French, of course, have their nuclear capacity and are selling it to everybody -- the Italians, Swiss, Austrians and Germans -- while many of their customers warn of the perils of nuclear power and promise to allow no more reactors in their own countries. The Canadian minister told me that Canada must be with the U.K. and France on this. And the U.K. wants to be with the European Community, as do Austria and Switzerland. The Scandinavian countries are enthusiastic. So France and Germany will swing the European Community and Canada and the Scandinavians will be right with them.

2. <u>There is an Alice-in-Wonderland quality to much of the global climate debate.</u> The French environment minister said to me, "Why not agree to the majority position? It's really a political statement. You can't be sued in the World Court of Justice on it."

   Sweden is committed to dismantling all 12 of its nuclear reactors. It seems inconceivable to me that Sweden could, during the same period, stabilize CO_2.

   Spain has the highest growth rate in Europe; surely they're not headed toward early stabilization. Nor is Greece. Italy is buying more gas from Libya and the USSR and may be in a position to make reductions. Pollution is so severe in Italy and Greece that they will no doubt want to be progressive on global climate issues, but I don't believe they've done any analysis. That's a fourth of the European Community yet the EC was extremely forceful in advocating stabilization.

Austria and Australia both took a whack at the U.S. as rich and profligate in energy use. Both their ministers told me they will stabilize. (I suggested to environmental groups in both countries that they press hard for the details and the necessary legislative commitments.)

3. Virtually all our allies, minus Japan, believe that a protocol to limit or reduce CO_2 emissions should be negotiated simultaneously with the negotiation of a framework convention. This was in several of the country statements. I had not realized this would be their position. It will require the U.S. to develop our position much earlier than I had assumed; it is one of the contributions of the Dutch conference to flush this out. We may well be isolated if we insist on deferring any discussion of targets and timetables until after a framework convention is negotiated.

4. U.S. leadership would be welcomed although I detected more than a hint of pleasure in our discomfort. The Germans were particularly generous in avoiding any confrontational rhetoric with us. They probably will lead on this if we don't, but they consider our commitment essential. Helmut Kohl's principal advisor on global climate issues, Baldur Wagner, told me they very much hope our position in the Netherlands merely reflects our short time in office, and that we will be with them eventually. He has far less confidence that the Japanese will ever be aboard.

5. I continue to suspect that the real action on global climate will be in the developing countries. Presently, they generate very little CO_2 but the prospect exists for huge increases in China (a two-fold increase in coal use is planned by the year 2000) and India (a three-fold increase in coal is contemplated). No one has any idea what to tell the Chinese to avoid their cancelling out all the gains that the industrialized nations might make. I was not at liberty to meet with the Chinese minister. The Indian minister simply reaffirmed that India will do nothing unless they are compensated by developed countries. Mexico takes a decidedly different position, forcefully rejecting the implication that they will only take what measures they are compensated to take. They want to begin working with us on assessing their options.

6. Nuclear energy is one of the few near-term options for places like China and India. And the fact that France has a surplus of energy capacity due to its nuclear reactors is an important part of both France's and

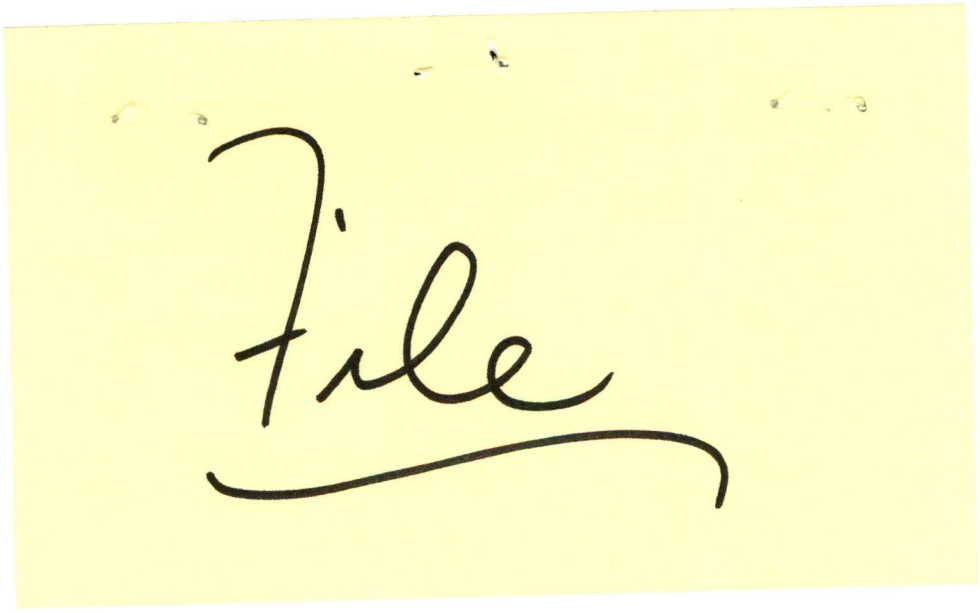
Germany's willingness to commit to CO_2 stabilization and later reductions. As Germany reduces its subsidies to soft coal, it will step up its purchases of French nuclear generated power, which it needs to do to reduce the size of Germany's current trade surplus with France. Natural gas from the Netherlands and the USSR also figures importantly in German plans.

7. <u>The U.S. needs to engage in a serious debate about global climate change and U.S. options to address it.</u> For the U.S. stabilization of CO_2 by the year 2000 would require big changes in indoor and outdoor lighting (possible), insulation practices (possible), reforestation (possible), significant automobile fuel efficiency improvements (possible but would be strongly resisted by the auto industry), electric utility efficiency improvements (there will be significant conservation in response to the President's acid rain bill), big gains in energy efficiency in industry (highly unlikely without sharp energy price increases or large new taxes), major realignments in fuel use from oil and coal to gas (some of this is likely anyway but would probably require policy intervention to accelerate and increase in scale), and new nuclear reactors to provide needed capacity in areas like the Northeast (unlikely in the time frame of ten years due to public attitudes).

In conclusion, I emphasized in the Netherlands that the conference, while an important event was not the <u>main</u> event. The main event, for which we will need a fully developed position, is the IPCC process. It's going to be on us soon, beginning in February. In my opinion it will be difficult for us to put off our formal position on stabilization and possible reductions of CO_2 beyond the Summit of the G-7 countries next summer.

Bill

William K. Reilly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THE WHITE HOUSE

WASHINGTON

THE CHIEF of STAFF has seen

October 23, 1989

MEMORANDUM FOR GOVERNOR SUNUNU

FROM: D. ALLAN BROMLEY, ASSISTANT TO THE PRESIDENT FOR SCIENCE AND TECHNOLOGY, AND CHAIRMAN, DPC WORKING GROUP ON GLOBAL CHANGE

DAVID BATES, ASSISTANT TO THE PRESIDENT AND SECRETARY TO THE CABINET

SUBJECT: Decision on the Hague Ministerial and Related Issues

The DPC Working Group on Global Change met on Friday, October 20 to discuss issues related to U.S. participation in the upcoming Hague Environment Ministerial Conference, November 6-7.

The attached is a discussion of the three issues for decision. Please give us some guidance on how you would like to proceed with this decision.

OPTIONS

1. The issues can be presented to the full DPC for consideration and recommendations to the President.

2. The issues can be presented to the President in the attached paper from us.

3. You can convene a small Cabinet group to make recommendations to the President.

DECISION

Option 1 _____

Option 2 _____

Option 3 _____

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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
13. Paper	Re: Decisions on The Hague Ministerial Conference (6 pp.)	10/23/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
(Document Follows)
By JL (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
FOIA/SYS Case #:	1998-0004-F[1]	**Appeal Case #:**	
Re-review Case #:	2005-0426-S	**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
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Freedom of Information Act - [5 U.S.C. 552(b)]

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October 23, 1989

ISSUE

I. **Should the United States be represented at the Hague Ministerial Conference, November 6-7, at the ministerial level (EPA Administrator Bill Reilly) or at a lower observer level?**

II. **Should the United States offer to host the first negotiating session of a framework convention on global climate change, and if so, when should the President announce it?**

BACKGROUND

The DPC Working Group on Global Climate Change, chaired by Dr. Allan Bromley, met on Friday, October 20 to discuss issues relating to U.S. participation in the upcoming Hague Ministerial.

The Netherlands will sponsor an international conference of Environment Ministers, November 6-7, to consider and to sign a declaration on global warming.

There is consensus among the relevant Federal Agencies and Departments that the United States cannot support the declaration because it is inconsistent with U.S. policy in several areas. It calls for action to stabilize carbon dioxide (CO2) emissions by the year 2000 and to reduce CO2 emissions by 20% by the year 2005, to reduce CFC emissions beyond the President's stated pledge, to create an international climate change fund, and possibly to create a permanent international secretariat to institutionalize the "Hague process" -- none of which can be supported by the United States, for obvious reasons, at the present time.

The Hague Ministerial also competes with a parallel process to address international global climate change under the United Nations Environment Programme (UNEP) -- the Intergovernmental Panel on Climate Change (IPCC). The United States was aggressive in advocating the creation of the IPCC and insisted on chairing the policy subcommittee (the Response Strategies Working Group) in order to consolidate the consideration of global warming into one international arena, in which we would have significant influence and control. We are, as a matter of policy, bound and committed to the IPCC process as the sole

international process for consideration of global warming issues.

For these reasons, the DPC Working Group agrees that the U.S. cannot support the draft Hague declaration and that there are significant risks for the U.S. to be represented at the ministerial level. It should be noted that EPA Administrator Reilly believes that a commitment for his participation was signaled to the Dutch Prime Minister in the presence of President Bush during the Dutch bilateral meeting, which followed the G-7 Paris Economic Summit. At that time, Administrator Reilly informed the Dutch that his attendance at the Hague Ministerial would be dependent on progress on the President's Clean Air Act proposal in Congress.

The DPC Working Group also discussed the related issue of a framework convention on climate change under the IPCC process. The issue of a framework convention has surfaced many times over the past year. At the first meeting of the U.S.-chaired Response Strategies Working Group (RSWG) in January, 1989, the United States successfully avoided the creation of a separate group to examine the issue of "legal instruments" or a framework convention. At the May RSWG meeting, after considerable press attention alleging that the United States was recalcitrant in moving forward on a framework convention, the United States invited countries to participate in a "workshop" to begin discussions of the elements of a framework convention. This workshop was held in Geneva on October 6, and discussion of a framework convention began.

It is now proposed by both EPA and the State Department that a decision be made, to be announced by the President, that the United States will host the first negotiating session of the framework convention after the final reports of the IPCC are completed.

This decision should be made within the context of the IPCC process and U.S. strategy in aggressively seeking its creation in 1988. The purpose in creating the IPCC was to avoid having to respond on many international fronts to the global warming issue, particularly in light of the scientific uncertainties. U.S. policy was to seek creation of a single global entity to address the issue. The IPCC was empowered to make a definitive international statement about the scientific analysis and uncertainties that currently exist, the actual effects of any global warming, and the potential policy options for responding. At U.S. urging, Great Britain became the Chair of the Science Working Group, the Soviet Union became the Chair of the Effects Working Group, and the United States became

the Chair of the Response Strategies Working Group. The Working Groups are to make reports, to be completed by the end of 1990, leading up to a World Climate Conference. At such time, after international consensus had been achieved, a decision on the need for a framework convention could be made on much more certain scientific and safer political grounds. Some in the Administration are concerned that if the United States does not offer now to host the first negotiating session, another country may issue the invitation and assume control of the process. It should be noted, however, that the Washington Representative for UNEP, representing the UNEP Director General, Dr. Mostafa Tolba, insists that the negotiations for a framework climate change convention will not be assigned to any country before Spring, 1990, and that the United States is the UNEP's preferred host for the framework convention, given the expected difficulty in negotiating any such convention. According to this UN official, any announcement for a negotiating session for the framework convention is premature, given the IPCC's current timetable.

The United States is currently functioning well within the IPCC. RSWG is meeting its obligations and is encountering little dissent. It should be noted, however, that RSWG is moving much faster than either the Science or the Effects Working Groups, on which the response policy was to have been based. So the process is somewhat inverted.

DISCUSSION

I. **Should the United States be represented at the Hague Ministerial by its Environment Minister, EPA Administrator Reilly, or at a lower observer level?**

PRO

A. Ministerial participation in the Hague Conference will show U.S. environmental leadership. Failure to participate at the ministerial level could be misconstrued as pulling back from commitments made at the G-7 Economic Summit.

B. The EPA Administrator could attempt to guide the Dutch declaration in a direction more consistent with U.S. and IPCC policy and could use the opportunity to stress the scientific uncertainties associated with global warming. Failure to send the EPA Administrator may represent a loss of U.S. influence in the "Hague process."

C. Failure to send the EPA Administrator may be misconstrued as lack of United States policy on global warming or unwillingness to articulate its policy in the international arena.

D. Failure to send the EPA Administrator may risk short-term political losses with the international and domestic environmental community.

CONS

A. The Hague declaration is antithetical to U.S. policy and our strategy in creating the IPCC.

B. If the EPA Administrator attends, he has no choice but to be negative toward both the substance and form of the meeting. The press and public perception will inevitably be that the United States opposes any progress on the global warming issue.

C. The EPA Administrator will be needed at the time of the Hague Ministerial to steer through Congress the President's most important domestic environmental initiative, the Clean Air Act. The EPA Administrator's absence at a crucial time in the Clean Air Act could cause significant domestic difficulties for the President. The risk of a double negative is high - international backlash for failure to support the Dutch declaration and domestic backlash for failure to be on-scene for the Clean Air Act negotiations.

D. The EPA Administrator's presence at the Hague Ministerial, regardless of the U.S. position on the declaration, may lend credibility to the concept of a permanent secretariat to institutionalize the "Hague process."

It was suggested that a graceful way to avoid many of the negative effects of failure to participate at the ministerial level would be for the President to send a letter to the Dutch Prime Minister making the following points: congratulating him on his leadership on the climate change issue; explaining U.S. policy and research goals for climate change; reiterating support for the IPCC process which we expect will eventually lead to the negotiation of a framework convention; and explaining that Mr. Reilly's presence is badly needed for a domestic Clean Air Act initiative which will be a model for the use of market mechanisms in service to environmental protection. Such a letter could be released prior to the Hague

Conference and would be the basis for the statement of the U.S. observer.

II. A) Should the United States offer to host the first negotiating session of a framework convention on climate change, B) and if so, should the President announce it before the Hague Ministerial or at a later date?

A. PROS

1. Hosting the first negotiating session on a framework climate change convention would place the United States in an international leadership role on the global warming issue. It would signal U.S. intention for international action, put the U.S. on the cutting edge of international environmental politics, and be popular with the domestic and international environmental community.

2. Hosting a U.S. negotiating session would allow the United States to have significant control and influence over the negotiating process and, possibly, the ultimate framework convention.

3. A U.S. decision to host the first negotiating session prior to the conclusion of the IPCC process, which is scheduled for November, 1990, would accelerate the IPCC process and would enhance U.S. influence within the IPCC.

4. A U.S. negotiating session would not be inconsistent with U.S. policy: the President made a statement in May, 1989 that he expects the outcome of IPCC to be the negotiation of a framework convention and the G-7 Paris Economic Summit communique advocates the negotiation of a framework convention.

CONS

1. The definition, form, and substance of the legal instrument for the framework convention is not yet determined. A decision to host a U.S. negotiating session assumes that the framework convention will not follow precedents for international legal instruments that we cannot support. We should know what kind of legal instrument is contemplated before the United States agrees to initiate the negotiation.

2. A decision to host a U.S. negotiating session assumes that the final IPCC report and international consensus will be consistent with U.S. policy, which is not at all certain at this time.

3. A decision to host a U.S. negotiating session will seriously reduce U.S. leverage to ensure that the IPCC deliberations are consistent with U.S. policy by prematurely supporting its conclusions, which will not be final until the end of 1990.

4. A decision to host a U.S. negotiating session undermines the reports of the IPCC Science Working Group, chaired by Great Britain, and the Effects Working Group, chaired by the Soviet Union, by suggesting that there is a need for a framework convention regardless of their conclusions. It distorts scientific analysis by presuming the scientific conclusions; in short, it places international politics before science.

B. PROS (Announce before the Hague Ministerial)

1. Announcement of a U.S. negotiating session prior to the Hague Ministerial Conference would ameliorate criticism for U.S. opposition to the Dutch declaration and, if Reilly does not attend, for failure to be represented at the Dutch conference at the ministerial level.

2. Announcement of a U.S. negotiating session prior to the Hague Ministerial Conference would preempt other countries from asserting a leadership role.

CONS

1. An announcement of a major environmental initiative, such as a U.S. negotiating session, should be tied to an important domestic event for a domestic audience for maximum domestic political benefit.

2. This announcement, should there be a consensus for a U.S. negotiating session, is more appropriate to the State of the Union, the February, 1990 Washington IPCC plenary session, or the President's International Conference on the Environment, should it be something other than the February IPCC.

3. Announcing a major U.S. initiative related to the IPCC prior to the Hague Ministerial would compound U.S. opposition to the Dutch declaration and the "Hague process." It could doubly embarrass the Dutch for the U.S. to announce a major initiative on a competing process shortly before their conference.

Withdrawal/Redaction Sheet
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Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
14. Memo	From Michael Boskin to D. Allan Bromley Re: U.S. Position on Climate Change Convention (3 pp.)	12/13/89	P/5	

Collection:

Record Group: Bush Presidential Records
Office: Chief of Staff, White House Office of
Series: Sununu, John, Files
Subseries: Issues Files
WHORM Cat.:
File Location: Global Warming (2 of 2) - 1990 [5]

Open on Expiration of PRA
(Document Follows)
By JP (NLGB) on 10/28/05

Date Closed:	12/17/2004	**OA/ID Number:**	29158-005
FOIA/SYS Case #:	1998-0004-F[1]	**Appeal Case #:**	
Re-review Case #:	2005-0426-S	**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

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Freedom of Information Act - [5 U.S.C. 552(b)]

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THE CHAIRMAN OF THE
COUNCIL OF ECONOMIC ADVISERS
WASHINGTON

December 13, 1989

MEMORANDUM FOR D. ALLAN BROMLEY

FROM: MICHAEL J. BOSKIN MJB

SUBJECT: U.S. Position on Climate Change Convention

I have recently had some disturbing conversations about the ongoing international discussions aimed at the development of a framework climate change convention and subsequent protocols, as well as the position that U.S. representatives have taken in those discussions. I am writing to let you know that it is imperative that a major shift in our position be made.

The U.S. has apparently not challenged the view (which is reflected in Fred Bernthal's memo to you of October 24 and, even more clearly, in the legal and institutional measures portions of the October RSWG Workshop draft report now being circulated for comment by EPA) that the convention should be drafted in anticipation of a large number of gas-specific and policy-specific follow-on protocols. This many-protocol approach ignores important regulatory lessons that have been painfully learned in the U.S.; it would place us and the world as a whole on a path toward unending negotiation and detailed regulation that would be both ineffective and expensive. <u>This approach is philosophically inconsistent with the President's approach to regulation in general and with his stated position on the need to reconcile the environment and economic growth.</u>

A far superior approach, which the U.S. should adopt forthwith, would be to draft the convention in anticipation of negotiating only country-specific limits on total net greenhouse emissions (or, more plausibly, a formula for computing those limits), along with protocols on baselines, funding mechanisms, enforcement, research, monitoring, technology transfer, and related implementation issues. This approach, which explicitly rules out gas-specific protocols and international agreements on specific control measures, would allow each country to find the best way to reduce its impact on global climate, taking into account its own economic, political, national security, and lifestyle conditions and concerns. Most nations, we should hope, would adopt flexible, incentive-based approaches, but those who choose to rely on other methods would be free to do so. All the world as a whole legitimately cares about is the change in the global atmosphere, not the method by which the U.S. or any other nation makes its contribution to that change.

The many-protocol approach would lead us instead to attempt to replicate on a world scale the sort of detailed command and control regulation (epitomized by scrubbers on powerplants) that we have tried and found wanting in the U.S. The inflexibility that would be induced by a large number of specific protocols would dramatically raise the costs of whatever actions were ultimately taken to mitigate global change. (We should also reconsider the need for multilateral protocols on adaptation, which are now envisioned, since, research and technology transfer aside, the adaptation measures that have been widely discussed have at most regional effects.)

The many-protocol approach may be a recipe for inaction. Strong actions to control emissions of any particular greenhouse gas or operation of any particular source category would impose very different costs on different nations. We might be willing to take drastic steps to reduce methane emissions from our rice paddies, for instance, but it is hard to imagine much enthusiasm in East Asia. If those nations don't go along with a strong rice paddies protocol, however, methane emissions from rice cultivation will not be noticeably decreased, even if such decreases would represent the most cost-effective way for East Asia to reduce its net greenhouse emissions. Bundling issues (gasses, sources, and sinks) makes an effective agreement to control net emissions more likely.

At the same time, the many-protocol approach may be a recipe for singling out the U.S. and other advanced nations for disproportionate burdens, since we might well find it hardest politically to resist any proposed protocols. Under this scenario, the first protocol would call for the equivalent of 50 m.p.g. CAFE standards for all new cars, the second would set absurd efficiency standards for home appliances, and so on. We could easily find ourselves nibbled to death by a large number of protocols aimed at rich nations but having, in aggregate, little effect on ambient greenhouse gas concentrations.

I thus consider it vitally important that the U.S. firmly and quickly reject the many-protocol approach in the IPCC process. That approach is inconsistent with the President's stated view, which is solidly grounded in U.S. experience, that flexible and incentive-based regulation best harmonizes environmental concerns with economic growth, and is particularly unlikely to produce sound policy in this multi-national setting.

On the other hand, I do not mean to suggest that a crusade on your part will be necessary to bring this about. Last week Boyden Gray met with representatives of EPA, State, Justice, CEA, and other interested parties, and he made the case for a position shift of the sort I have described. There was no visible resistance, so that this shift may occur without your participation. On the other hand, appearances can be deceptive,

and meditation may produce opposition. I thus urge you, if the occasion arises, to support movement away from the many-protocol approach to drafting a climate change convention and to a simpler and more rational approach based on changes in what matters: net greenhouse emissions.

I would, of course, be most interested in your reactions to all this.

THE TRIBUNE
An independent newspaper serving the Greater Bay Area from Oakland since 1874

Global warming — or hot air?

Earthquakes, hurricanes, massive floods: These terrifying natural disasters seem almost trivial beside the potential destruction of nature itself by mankind.

Dire warnings of such a cataclysm echo almost daily in the media as politicians and environmental activists sound the alarm over what Vermont Sen. Robert Stafford termed "the very real and imminent threat to humanity's survival posed by the linked dangers of global warming, stratospheric ozone depletion and . . . acid rain."

The prophets of global cataclysm argue, along with Secretary of State Jim Baker, that the world can "not afford to wait" for more scientific evidence before taking steps to avoid "being trapped on a boat that we have irreparably damaged."

Indeed, policy-makers are not waiting. President Bush has endorsed the goal of banning all chemicals known to attack the Earth's ozone layer and proposes cutting emissions that form acid rain by half. A coalition of national environmental groups demands that he further mandate a 20 percent reduction in the output of "greenhouse gases," especially carbon dioxide, by 2000.

Every one of these proposals carries staggering costs, from tens to the hundreds of billions of dollars. Are such drastic remedies needed? Do better alternatives exist? How much do experts really know about possible threats to the global environment?

Today begins a five part series on the widening gap between science and popular fears.

The Earth: warming or cooling?

The long, hot summer of 1988 brought with it more than droughts, forest fires, urban smog and good beach weather. It also brought heated alarm from the public over the startling assertion by NASA climate expert Jim Hansen that global warming was finally an established fact. "It's time to stop waffling," he declared.

The Imperiled Globe: Fact or Hype?

Only a decade ago, some scientists announced with equal certainty that an opposite disaster was in the making. In 1974, the CIA issued two major reports on the implications of what it called "the global cooling trend." It cited a "growing consensus among leading climatologists" that the world was growing colder, noting evidence of an expanding arctic ice-pack and shorter growing seasons. The reports predicted "worldwide agricultural failures" and changes in "the world balance of power."

Today's forecasts of environmental doom sound almost the same. Only this time they depend on scenarios of rapid global warming caused by the pumping of carbon dioxide and other gases into the air.

CO2 acts like a blanket surrounding the Earth, trapping radiant heat emitted from the Earth's surface and warming the atmosphere. Without it, the Earth would be a frozen, possibly lifeless planet like Mars.

But too much CO2, the theory goes, will overheat the Earth. The polar ice caps may melt, causing flooding of coastal settlements. Rainfall patterns will change, possibly causing droughts in regions where most of the Earth's food is grown. Forests might shrink, accelerated by raging fires.

Everyone has heard the scary scenarios. Fortunately, most scientists don't believe the warming has yet happened — if it ever will.

By clearing forests and burning fuels, humans have undeniably dumped a huge amount of CO2 into the atmosphere, helping to increase its total by about 25 percent over the past hundred years.

But the Earth seems hardly any warmer for it. Reid Bryson of the University of Wisconsin, one of America's pioneer climatologists, declares that talk of a perceptible warming trend over the past century "is based on flawed data."

Scientists at the National Oceanic and Atmospheric Administration in Boulder, Colo., published results in January indicating no detectable warming or rainfall trend over the continental United States since 1895.

Similar studies of global trends show little if any warming, well within the range of the Earth's natural variability and far below the predictions of greenhouse models.

"On the basis of the available records," writes Richard Lindzen, a meteorologist at MIT, "our best estimate for the global temperature change that has occurred over the industrial period does not significantly vary from zero, and this certainly suggests that current models are greatly exaggerating expected warming."

These and other empirical objections haven't dampened the enthusiasm of global warming advocates. If the Earth hasn't shown signs of heating yet, they say, it soon will; the greenhouse properties of CO2 leave no room for any alternative.

Cloudy models

But the models depend at their core on feedback effects. If these are positive, the Earth will warm quickly. If they are negative, the greenhouse effect will be swamped by other forces.

CO2 is a relatively weak greenhouse gas; water vapor traps heat much more effectively. The greenhouse models assume that slight warming caused by CO2 will in turn pump more water vapor into the air, multiplying the effect to damaging levels.

Yet water vapor forms clouds, which reflect more heat than they trap. A 1987 study in the British journal Nature, which has since been confirmed, concluded that "the net cloud effect is a cooling of the planet."

"It is becoming apparent that uncertainties in the treatment of clouds severely undermine model predictions of climate," Tony Slingo, a global climate specialist at the National Center for Atmospheric Research, wrote in September. "The fact that 14 models give 14 different answers for the cloud feedback, show that we are far from the goal of accurate predictions of future climate change."

Many greenhouse models ignore another, no less important feedback effect. As surface warming increases evaporation from the oceans, columns of water vapor carry the heat upward to great heights. The water then condenses out as rain. The heat is released into space, bypassing most of the greenhouse blanket.

Over much of the globe, argues Hugh Ellsaesser of Lawrence Livermore Laboratory, "the feedback from water vapor is likely to be negative rather than positive." MIT's Lindzen estimates that this effect alone "could diminish estimates of CO2 warming by a factor of about six."

New discoveries, new questions

The more scientists learn about the mechanics of global climate change, the more they confront their own ignorance. Past assumptions of the stability of solar radiation have recently given way to evidence that the sun's output varies over time and may be a major cause of shifts in climate. Volcanic and man-made aerosols may play a much greater role than climate models now allow.

And scientists are only now coming to grips with biological processes that may

temper the physical dynamics. For example, as the CO2 level rises, ocean plankton tend to multiply and absorb the gas in ever greater amounts, carrying carbon to the bottom as they die. At the same time, they release into the air a chemical that seeds more clouds, thus cooling the planet.

The risk of abrupt climatic shifts caused by human intervention certainly deserves great scientific attention — but not the cynical demagoguery of politicians and interest groups that put other agendas ahead of the truth. Humanity's future will not be served by the attitude of greenhouse guru Sen. Tim Wirth, who said, "What we've got to do in energy conservation is try to ride the global warming issue. Even if the theory of global warming is wrong, to have approached global warming as if it is real, means energy conservation so we will be doing the right thing anyway ... "

Let the proponents of energy conservation make their case without concocting dubious scenarios to scare the public. If and when scientists do confirm the greenhouse models, the public must have no doubt about the objectivity of their claims. And if those models fail, the world deserves to know in order to save the expense of a drastic cure.

Tomorrow: How CO2 benefits the Earth.

THE TRIBUNE
An independent newspaper serving the Greater Bay Area from Oakland since 1874

A-10 Tuesday, November 14, 1989 Oakland, California

CO2: the Earth's friend

Countless doomsday warnings of global warming give the public only one possible impression: Carbon dioxide, the major culprit in the "greenhouse effect," threatens to poison the Earth's entire biosphere.

Yet without CO2, most or all life on earth would vanish. The invisible gas contributes to a greenhouse blanket that traps heat and prevents the planet from freezing over.

No less important, carbon dioxide forms the basic chemical building block in a long food chain. Plants grow by using the sun's energy to convert CO2 into more complex organic chemicals by photosynthesis. Animals in turn depend on plants for their own energy and growth.

Yet CO2 supplies cannot be taken for granted. Its concentration has plummeted over geologic time, until now it makes up only 0.03 percent of the Earth's atmosphere.

That decline has enormous biological implications. According to research physicist Sherwood Idso, whose new book "Carbon Dioxide and Global Change" documents the case in massive detail, if CO2 levels were to decline much further, "we could well see many plants struggling to survive" from a combination of cold climate and inadequate nutrition.

The reverse side, Idso maintains, is that mankind's output of CO2 "may well play a significant role in forestalling the demise of the biosphere" and, additionally, delay or prevent the onset of a coming ice age. Indeed, the distinguished Soviet climate scientist Mikhail Budyko predicts a new "Eden" if present trends continue.

Every greenhouse operator knows what a miracle nutrient CO2 is for enhancing plant growth. Plants raised in an enriched atmosphere generally grow taller, with thicker leaves, more branches and larger and more numerous flowers and fruits.

For most plants studied by biologists, doubling the level of carbon dioxide in the atmosphere raises harvestable yields by fully a third. Productivity continues to rise with CO2 beyond that level.

By a fortunate stroke of luck for humans, food crops tend to show relatively more improvement than weeds.

CO2 also makes plants more resistant to the stresses of air pollution, saline water and unusual heat or cold.

No less important, plants exposed to more carbon dioxide tend to lose relatively less water to the atmosphere. The water use efficiency of most plants actually *doubles* when CO2 levels are doubled.

Plant species would probably proliferate under such optimal conditions. In past geologic eras, when the atmosphere was much richer in carbon dioxide, complex ecosystems of mutually supporting plant life were more common than today.

Spreading plant life would also stabilize fragile top soil against wind and water erosion. The quality of soils would in turn be

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improved by increasing organic material from their plant cover. Aside from fostering better plant growth, such soil would also act as a more effective filter to prevent groundwater contamination.

Carbon dioxide stimulates tiny bacteria that grow on roots and "fix" nitrogen, drawing it from the air to fertilize their host plants. As Idso notes, "enhanced nitrogen fixation due to atmospheric CO2 enrichment may also play a major role in the rejuvenation of fragile tropical ecosystems where vast reaches of land lie barren due to poor soil conditions and lack of rain."

Consider then the enormously beneficial effect that rising CO2 levels will likely have on the Earth's biosphere. Deserts may begin to recede as grasses grow back into dry, once inhospitable zones. Forests should spread. Crop yields will improve, helping to

feed the Third World. Elaborate and costly irrigation works may become less essential as plant water efficiency rises.

Some evidence suggests that ecosystems are already responding well to the 25 percent increase in CO2 over the past century. One group of researchers reported in 1987 that soybean yields "may have increased by 13 percent from about 1800 A.D. to the present due to global carbon dioxide increases." A study of Australian wheat production attributed a significant improvement in yeilds over time to carbon dioxide enrichment. A recent analysis of tree rings from bristlecone pines correlated faster growth with rising atmospheric CO2. And several studies of global plant production have found clear increases over the past several decades, almost surely caused at least in part by CO2 fertilization.

All this research suggests than a massive, global campaign to drive down carbon-dioxide levels in the atmosphere on the basis of unverified greenhouse models would be the height of folly. Humanity, quite by accident, may actually be improving the world's ecosystems by returning to the atmosphere some of the carbon locked up in coal and oil back when the Earth enjoyed a more productive biosphere.

To risk human economic progress as well as these potential environmental gains on the basis of dark prophesies, misleading models and incomplete information would be a crime of incalculable proportions. The risks and uncertainties cry out for more research and better science. Such a call inevitably suggests to impatient politicians and members of the public a campaign to stall while doom approaches. In this case, however, the costs of taking the wrong steps are so high that humanity cannot afford to get it wrong.

Tomorrow: holes in the ozone scare.

THE TRIBUNE
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Holes in the ozone scare

"It's terrifying," one government scientist told The New York Times. "If these ozone holes keep growing like this, they'll eventually eat the world."

The discovery of the Antarctic "ozone hole" in the mid-1980s revived with a vengeance a global catastrophe scenario that had lain dormant since the debate over the Supersonic Transport a decade earlier: the prospect that man-made chemicals will eat away the high-altitude layer of ozone that protects the Earth's surface from harmful ultraviolet rays.

Scientists found to their surprise and alarm that ozone concentrations now fall off drastically over the South Pole for a few months each year. Strong evidence suggests chlorine atoms do much of the dirty work. Much of the chlorine comes from compounds known as CFCs, used in everything from refrigerators and air conditioners to foam insulation and industrial solvents.

Last year, NASA went further and reported that long-term studies of the Earth's ozone blanket detected a reduction of anywhere from 1.7 percent to 3 percent between 1969 and 1986 in the temperate northern latitudes where most people live.

The stage was thus set for dire predictions of a skin cancer epidemic, waves of people blinded by cataracts, shriveling of major crops and mass die-offs of ocean phytoplankton leading to a disruption of world food chains.

This March, after agreeing earlier to cut use and production of CFCs by 50 percent over the next decade, the United States and 12-nation European Community recommended phasing out the chemicals entirely by the turn of the century, a drastic step that could cost tens or hundreds of billions of dollars.

The atmospheric observations have scientists and policy-makers legitimately worried. But just how certain are the experts that the ozone layer is vanishing? And how badly will the Earth's biosphere suffer?

Dwindling ultraviolet

Forget ozone for a moment; the ultimate threat, if there is one, comes from powerful ultraviolet rays that can burn living organisms. Have UV levels climbed over the past couple of decades?

Quite the contrary. Last year a team of scientists reported in the journal Science that ground-level UV detectors in the United States registered "a negative shift at each station" between 1974 and 1985, "with decreases ranging from 2 to 7 percent." The researchers suggested that various physical and meteorological factors, including increased cloud cover, "may play a greater

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role in attenuating (UV) radiation than was previously suspected."

A British scientist, Stuart Penkett explains the decrease in UV on the *rising* concentration of ozone in the lower atmosphere, below the normal ozone belt. "This increase," he noted in a recent issue of the journal Nature, "could counteract the effect of the stratospheric depletion on the amount of radiation reaching the Earth's surface, especially in the northern hemisphere."

These remarkable findings should have recast the whole debate, but instead they have been swallowed up by a hole in the media coverage of ozone.

Even if UV isn't a problem, just how bad is the ozone situation? The gross numbers supplied by NASA — up to a 3 percent drop in the most populous latitudes — mask the key fact that nearly all the decline took

place in the winter months, when the sun is much dimmer. The decrease in late summer amounted to less than 1 percent.

A 1 percent reduction in ozone, other things being equal, increases UV by 2 percent. A person would get the same increase in skin cancer risk by moving about 24 miles to the south.

Do the trends mean anything?

NASA's numbers suggest a worrisome trend, but they cover much too short a time to prove it statistically, according to Guy Brasseur at the National Center for Atmospheric Research in Boulder. And its numbers start in 1969 — one year away from 1970, the largest ozone year on record. Other studies going back to the late 1950s show big increases before that peak. A study by meteorologists J. Angell and J. Korshover found an 8 percent increase in stratospheric ozone from 1962 to 1973, suggesting that any chemical attack on the ozone layer "is being overwhelmed by natural processes."

MIT ozone expert Alan Plumb says such studies "undermine our ability to get excited about a few percent decrease since 1970. There's no real consensus view on what the decrease really means. If it really is caused by CFCs, we don't know."

Normal seasonal concentrations of ozone can vary hundreds of percent, dwarfing any small decline. "One of the things we'd like to know more about is natural variability," Plumb adds.

The real source of worry comes less from the observations than from the models that indicate matters could get worse as CFCs continue to invade the upper atmosphere. But as with global warming, the models have a long way to go before reflecting reality; they failed even to predict the Antarctic ozone hole, for instance. "The models are basically useless," Plumb complains.

The Antarctic ozone hole

One reassuring fact is that the gaping ozone hole over the Antarctic seems to be "a local phenomenon," according to NASA expert Robert Hudson. The processes at work over the South Pole depend on unique meteorological conditions. Scientists who surveyed the North Pole found no comparable depletion of ozone, he explains.

Gregg Mitchell at the Scripps Institution of Oceanography, who has studied the biological effects of the ozone hole, says "it's not easy to resolve" what difference the loss of ozone there has made, given the enormous natural variations from season to season.

"On a clear day in October with an ozone hole you will get roughly the same UV flux as you get in December with no ozone hole," he observes. Much of the UV reflects off the ocean surface and the rest hardly penetrates beyond 20 meters, above the level where many phytoplankton grow. Recent discoveries of UV-absorbing compounds in phytoplankton indicate they may have natural defenses against the harsh rays. A large increase in UV "won't lead to the collapse of phytoplankton" but could favor some species over others, Mitchell says. "Scientists need to temper our statements because of our ignorance," he concludes.

Dr. Frederick Urbach, one of the nation's leading photobiologists, points out that humans have the least to worry about: They can move out of the sun or wear protection if UV increases. The rapid rise in skin cancer over the past few decades "is vastly greater than anything one could expect based on what ozone decrease has occurred," he notes, suggesting that people have invited risk by spending too much time in full sun. "One thing is certain," he underlines, "the change in ozone hasn't caused any great increase in UV and cannot conceivably be the cause of the increase in skin cancer."

What about plants, which can't move? Huge increases in UV damage crops and other organisms. More moderate increases, in line with projections of ozone decline, seem to have little effect; plants protect themselves against the radiation. But knowledge is skimpy because federal support for research in the area has been almost nonexistent for a decade.

MIT's Plumb concludes that the ozone issue is "serious but it's not an issue of survival. A thinner ozone layer means fairly small beer." He, like most other specialists in the field, also emphasizes how much remains to be learned about the problem. That's an assessment the world should keep in mind as it confronts the possible $100 billion cost of replacing CFCs over the next decade — money that could go to meeting other social or environmental needs. The cost of acting in ignorance could be as high as the cost of waiting for the facts.

Tomorrow: How deadly is acid rain?

THE TRIBUNE
An independent newspaper serving the Greater Bay Area from Oakland since 1874

Is acid rain the problem?

Acid rain: The very term conjures up terrifying visions worthy of a horror movie. For politicians riding the wave of public alarm about acid rain, the phenomenon also spells doomed lakes, dying forests, ruined crops and even threats to human health.

But for scientists engaged in an unprecedented exploration of its causes and consequences, acid rain continues to produce new mysteries and confound old assumptions.

The single largest cause of acid rain is the emission of sulphur from coal-burning power plants, especially in the Midwest. Another major source is nitrogen oxide, spewed into the air by cars, utilities and other industries. Reacting in the atmosphere, they form dilute sulphuric and nitric acid.

In its clean air bill this year, the Bush administration proposed slashing sulphur emissions by about 50 percent over the coming decade to mitigate the effects of acid rain. The EPA put a price tag of $4 billion a year on this measure.

Humans aren't the only polluters, however. Natural sources, from volcanos to bogs, also contribute to acid rain — thus limiting the effectiveness of industrial emissions control strategies.

Acid rain, moreover, is only one of many airborne pollutants. Scientists are discovering that other substances, especially ozone, may cause even more damage. If they are right, proposals for fighting acid rain may need major retuning.

Following warnings in 1980 from the Environmental Protection Agency about the hazards of acid rain, Congress set up a 10-year National Acid Precipitation Assessment Program (NAPAP) to guide the response of policy-makers. Ironically, Congress may commit the country this year to a massive and costly attack on sulphur emissions before all the facts are in — and even as experts are recommending caution.

Acid lakes: the exceptions

In testimony before a Senate subcommittee this October, NAPAP Director James Mahoney tempered the fury over acid rain and emphasized that many of the ills attributed to it remain in dispute.

Mahoney noted that although acid rain has killed some Eastern lakes, only a few percent of the total lake area is too acid to support fish or other life. (All the lakes are safe for swimming.) The soils surrounding most lakes seem to "buffer" the waters against acid. "There are significant uncertainties," he admitted, "about the role that watershed mineral processes, organic acids and nitrates (in the soil) may play in the acidification and recovery process."

Those uncertainties arise in part because some lakes seem to have been acidic in

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ancient times, apparently because of decaying organic matter in the local soils. (Human prevention of forest fires in the Northeast may have made matters worse by letting such debris build up.) Florida has little acid rain but the highest proportion of acid lakes, according to Mahoney's figures.

Mahoney raised eyebrows when he acknowledged that a major reduction in acid rain would probably revive only about 75 lakes over the course of 50 years throughout the entire Northeast — at a cost of $4 billion a year. Sen. Daniel Moynihan of New York, who helped commission NAPAP, exclaimed, "We could, with that money, give every welfare family $12,000 to vacation in the Adirondacks on some of the 95 percent of the lakes that are not acidic."

As for forests, Mahoney testified, aside from some red spruce stands on mountain tops in the Northeast, "extensive surveys of forest conditions have indicated no evidence of widespread forest decline in North America related to acidic deposition."

Fears about threats to the nation's food supply are unsupported. "(T)here is no measurable and consistent adverse crop yield

response from the direct effects of acid rain," Mahoney declared, and there even seem to be "indirect benefits" from "decreased fertilizer requirements."

Finally, although acid rain can harm statues, paints and exposed metals, there are "no generally accepted regional or national estimates" of the damage. Other kinds of urban air pollution, he stressed, probably play a bigger role. And acid damage often doesn't show up before structures are replaced anyway for other reasons.

Is ozone the culprit?

In the past few years, scientists who might once have blamed environmental damage on acid rain have shifted gears. "Such things as insects, pathogens, droughts and fires are a much greater problem in themselves," says Gerard Hertel, national program manager for the Forest Response Program, a joint effort of the U.S. Forest Service and EPA.

Among atmospheric pollutants, ozone, a chief ingredient of urban smog, now looms as a bigger threat to forests. "It may be the monster out there," said Thomas Saviello, a scientist with International Paper Co. In Southern California, for example, high levels of ozone have seriously weakened the defenses of pine trees against bark beetles.

In the Black Forest region of Germany, where environmentalists once warned of a total loss of this magnificent natural resource to acid rain, trees are coming back strongly with favorable weather conditions. What damage remains, according to British scientist Kenneth Mellanby, was "certainly not caused by sulphur dioxide, as lichens are very abundant, and these are good indicators of low sulphur levels. The most likely cause of the damage is ozone, the end product of a reaction in which the output of ... automobiles is a starting point. *In this case the drastic efforts of the German government to reduce the output of sulphur dioxide in that country will clearly have little effect ...*" (emphasis added).

Even where acidic clouds do seem implicated in damaging forests, like certain high-elevation red spruce stands in the Northeast, other factors play a major role.

"You need a combination of extreme winter conditions and acidity to have the problem," says Hertel. "The air pollution by itself is not killing red spruce trees."

Indeed, he notes, "trees are pretty tough characters if they have the water and temperatures they need."

His point is borne out by the fact that most of the affected spruce were badly weakened by the severe drought and winter of 1962; newer trees in the region are generally healthy. Northeastern forests are bigger than they have been anytime this century and have enjoyed as high a rate of growth as forests in any region of the country since 1952, despite the acidity of their rain.

Causes for concern

Despite these important caveats, acid rain is definitely not harmless. And major scientific questions remain. Will the acids cause long-term problems for forests by leeching nutrients out of poor soils? Will they interfere with plant growth by making certain problem metals, like aluminum, more active chemically?

As NAPAP's Mahoney told The Tribune, "there is a reason for legitimate conservatism" since the effects of acid rain, if they prove more serious than now known, "aren't easily or quickly reversible. A prudent person would say we don't observe regional effects and that's reassuring, but not reason for having no concern."

On the other hand, with limited dollars to spend on environmental mitigation, most scientists agree that money should be targeted to do the most good. Mounting a crash campaign against sulphur dioxide might do only limited good if ozone, for example, proves the bigger threat. If policy-makers get too far out in front of scientists, the environment could come out a loser.

As the acid rain expert A. G. Everett warned in a recent scientific paper, "expedient political actions, taken in the absence of understanding about what will produce actual ameliorative effects, are doomed to be wasteful and ineffective. Should such action also be accompanied by decreased research emphasis on still unknown relationships of acid deposition and surface water response, it is probable that the long-term situation will be worsened rather than improved."

Tomorrow: What should be done?

THE TRIBUNE
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What is to be done?

Popular warnings of global environmental catastrophe pose a terrible dilemma.

If, as Sen. Al Gore of Tennessee insists, the Earth is in "imminent and grave danger" of "ecological collapse," the price of doing nothing would be staggering. But if such fears are more the products of demagoguery than science, rushing to act without cause would threaten human well-being and possibly even the environment itself.

Fortunately, the choices are not limited to inaction or crash programs. The responsible course lies in between. With evidence not yet pointing to any near-term disaster from the greenhouse effect, ozone depletion or acid rain, most scientists rightly urge further study of the complex processes that govern global dynamics. With better understanding, people and nations will be much better equipped to detect, ameliorate and adapt to changes to the environment.

In the meantime, programs to boost energy conservation don't need to wait for, or be sold as an answer to, global threats; they make sense economically on their own.

Doing good can do harm

Ignoring science or dismissing the need for further research could put people in worse peril. The rule, "better safe than sorry," doesn't support premature action.

Cutting carbon dioxide output by 20 percent over the next decade, as demanded by many environmental groups to limit global warming, might require doubling the price of oil and gas. Given all the doubts about greenhouse models, NASA climate specialist Albert Arking remarks, "If you take steps you don't need to and they cost 3 percent of GNP, that's a heavy price to pay."

Indeed, lives could be lost by unnecessarily killing off the fruits of economic growth: improved food production, health care and safer technology.

Similarly, proposals to curtail carbon dioxide emissions ignore the vital importance of this gas to sustaining plants that form the basis of the world's food chain.

Rushing to save the ozone layer by banning non-toxic, non-flammable CFCs used in refrigeration and insulation could disrupt goods and services worth $30 billion a year in the United States alone.

Scientific concerns over ozone strongly support better recycling of CFCs and the search for alternatives, but hasty use of new chemicals could create unforeseen problems that may take years to discover. The U.S. General Accounting Office warns that for most uses "substitute chemicals or products are either not yet available or not as effective" and "toxicity data" are "still incomplete." Less efficient substitutes would make

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refrigerators and air conditioners use more energy — thus pumping out more greenhouse gases.

Radical environmental policies, proposed in the heat of perceived crisis without the benefit of good science, too often ignore the complex relationships between each of the alleged threats. For example, ozone is a greenhouse gas that warms the Earth. So are CFCs that break down ozone. Nitrogen oxides, precursors to acid rain, help preserve ozone in some parts of the atmosphere by blocking CFCs but can also attack ozone.

Urgent moves in Washington to combat acid rain by slashing sulphur dioxide (SO2) emissions ignore their possible benefits. Sulfate aerosols reflect solar radiation and seed clouds. The British climatologist T. Wigley observes, "If we were successful in halting or reversing the increase in SO2 emissions we could as a byproduct accelerate the rate of greenhouse warming." The eminent Soviet scientist Mikhail Budyko even proposes

spraying the upper atmosphere with SO2 to retard global warming at "incomparably less expense" than "drastic reductions in carbon fuel consumption."

Dwindling money for science

At a time when the public cries out for more answers, policy-makers have let their commitment to science slip. MIT's Richard Lindzen rightly decries the fact that, despite all the hype over global warming, "funding for atmospheric sciences has been declining. Much more money is going instead to policy studies (of what to do about warming). There is little attempt to improve the science since the argument is made that it takes too long to settle. That's very curious since the problem arises in the first place only because of science. Yet the basic physics could be settled in a few years. We don't have to wait 30 years for an answer."

Experts on the effects of ozone depletion make the same point. After a flurry of interest from Washington in the mid-1970s, when the SST debate raised questions about threats to the ozone layer, funding for studies of the impact of ultraviolet light on plant and animal biology dried up almost totally. Amid all the furor over ozone holes, scientists still can't say what effect they will have on living organisms.

Acid rain is a different story. Since 1980, Congress has appropriated hundreds of millions of dollars for research on acid rain, a worthy program called NAPAP. Yet Congress and President Bush propose to ignore that investment by enacting hugely expensive emissions control laws before the studies are completed and contrary to some recent findings.

"It would have great merit," NAPAP Director Dr. James Mahoney reminded Congress last year, "to wait ... and to examine very carefully the question of effective and efficient strategies on a continuing basis as this develops over the next two years or so." NAPAP's final report, summarizing the best expert opinion, will be out next fall. Is that really too long for the environment to wait? Or is it just too long for the politicians?

Don't rush on acid rain

Consider the costs and risks of jumping the gun. One danger is missing the real culprit. Current clean air proposals, reflecting old hunches about acid rain, put most emphasis on sulphur dioxide emissions from power plants, even though growing evidence implicates ozone — a product of both industrial and car emissions — as the greater danger to forests and crops.

Programs to curb sulphur dioxides at a cost of $4 billion a year must be weighed against alternatives. Every dollar spent on that approach is a dollar that could have been spent some other way.

The United States could restore acid lakes far more quickly with limestone treatments — a method used successfully in Sweden — for a mere $4 million a year. It could then use the savings to upgrade national parks (total annual budget: $800 million), do more to fight ozone production and have plenty left over for other worthy ends.

Pushing for a quick fix may produce the worst possible outcome. Utilities, under the gun to cut sulphur dioxide, will have to install expensive "scrubbers" that hog electricity (thus increasing greenhouse gas emissions), do nothing to stop nitrogen oxides and leave behind "great volumes of toxic slurry which may be difficult to dispose of without further damage to the environment," in the words of British scientist Kenneth Mellanby.

Waiting just a few years, on the other hand, should let inexpensive new "clean-coal" technologies come on line. These produce little or no toxic waste and cut both sulphur and nitrogen oxide emissions far below current levels.

The environment and the country's economy will do better to wait. Recent sharp declines in SO2 emissions "and the slowing of lake acidification suggest that some breathing space remains," observed Volker Mohnen, professor of atmospheric sciences at the State University of New York, in Scientific American. "The nation can probably forgo the short-term solution of retrofitting existing plants in favor of the gradual but more comprehensive and economical approach of repowering."

Science, even at its best, can't prescribe public policy. But bad science inevitably produces bad policy. Wild claims, unsupported projections and misleading models used to stampede the public into action represent pseudo-science at its worst. There lies perhaps the greatest cost of all: damaging the effectiveness of humanity's most powerful tool for self-preservation and advancement. To sully the credibility of science for political ends today could put the Earth at risk of a real catastrophe tomorrow.