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Folder Title:
Global Change: Strategy Task Force Meeting - 1/11/91

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Gale

to DPC for planning.

THE WHITE HOUSE
WASHINGTON

- brochure - yes or no

- comprehensive approach - do you walk, how do you "get" the comprehensive

January 10, 1991

- defn of framework conv., with no binding commitments on emissions
approach of U.S. to nego.

MEMORANDUM FOR THE GLOBAL CHANGE STRATEGY TASK FORCE

FROM: D. ALLAN BROMLEY

SUBJECT: Global Change Strategy Task Force Meeting

The Global Change Strategy Task Force will meet Friday, January 11, 1991, at 3 p.m. in Room 476 of the Old Executive Office Building.

As we discussed at our meeting last week, we will review a draft paper on key issues related to the preparations for the first negotiating session of the Framework Convention for possible submission to the Domestic Policy Council. Enclosed is a copy of that paper for your comment, but note that the document should be treated as "Close Hold". Please be prepared to discuss the issues presented in the paper at the meeting. Additional comments should be forwarded to Nancy Maynard at 456-6202 by COB Friday January 11, 1991.

Thank you

Enclosures

clearly approved

- whether at any stage will agree to commitment to stabilize near term, binding levels
- how not a comprehensive approach - walk over - if do not get it - will instead be set gas by gas in comprehensive
- do we push our accomplishments if they can be used against us

long term all countries agree to comprehensive approach

what is the walk out signal - what is defn of comp. approach

biggest issue - media, political perception

DRAFT

January 10, 1991

MEMORANDUM

FROM: D. ALLAN BROMLEY

SUBJECT: Global Change Framework Convention Negotiations

Issue: Negotiations on a global response to possible climate change will take place over the next 18 months under UN General Assembly auspices, with the aim of agreeing on the text of a framework convention in time for signing at the June 1992 UN Conference on Environment and Development (UNCED) to take place in Rio de Janeiro, Brazil. The United States will host the first session of the negotiations in Washington from February 4 to 14. The first session is expected to focus on organizational matters and the preparation of an initial negotiating text, without any attempt to resolve differences until subsequent sessions. The text will be based largely on the work of the Intergovernmental Panel on Climate Change (IPCC), which completed its first interim report last Fall.

include

BACKGROUND

Science: Scientific research has attempted to determine whether global warming is a potential threat and, if so, what would be the appropriate policy responses. Although atmospheric monitoring has shown an increase in concentrations of greenhouse gases, the mechanism of this increase, its natural and human components, and its potential effect on the earth's temperature regulation process and on climate change are unclear. What is known is that some human activities (such as the burning of fossil fuels, cattle raising, rice paddies, and garbage dumps) contribute to atmospheric concentrations of greenhouse gases (e.g., carbon dioxide - (CO₂), methane, nitrous oxide, and chlorofluorocarbons). An increase in greenhouse gases increases the atmosphere's retention of heat. A complex natural system of temperature regulation can adjust to changes in temperature and greenhouse gas concentrations. It bears emphasis that the greenhouse gases entering and exiting the atmosphere through natural processes are more than twenty times larger than those resulting from human activities. This system involves complex cycles of emissions from "sources" of gases and sequester by "sinks". These cycles also include the absorption and radiation of energy.

Much effort has been undertaken to create computer models of this complex system in order to predict the effects on climate change of different levels of greenhouse gas concentrations. However, due to its complexity, the natural system of temperature

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regulation has never been accurately reflected in models, leading to uncertainties in the science and limited ability to predict climate change. Thus, there are great differences of opinion regarding the magnitude, spatial distribution, and timing of any climate changes caused by increased concentrations of greenhouse gases and the effect of natural mitigating factors. Moreover, the models are reasonably successful in representing global average phenomena, and incapable presently of giving reliable predictions on a regional basis. It is these smaller scale predictions that are of the greatest interest in developing economically viable measures to respond to potential global climate change.

International Action: The United States has participated in and endorsed the activities of the Intergovernmental Panel on Climate Change (IPCC). The IPCC was set up in 1987 by the World Meteorological Organization and the United Nations Environment Programme to assess the scientific information pertaining to the climate change issue, to assess impacts and to assess the factual basis for possible strategies to assist in controlling and responding to climate change. The IPCC adopted an interim report at the Second World Climate Conference in November 1990. The report addresses four major areas of climate change: 1) research, 2) the impacts of potential change, 3) response strategies, and 4) legal measures to implement response strategies, including possible elements of a framework convention on climate change. The report gives the current international perspective on global climate change and will form the basis for these international negotiations on a framework convention on climate change.

Other countries positions and international . IPCC first assessment and what it says, predictions etc.

Congressional Action: There has been growing interest in global climate change issues among members and committees of the Congress. Over 50 bills, concurrent resolutions, and amendments were introduced in the 101st Congress dealing with various aspects of this issue. In addition, Congress has increased its attention to activities both of the Executive branch and the international community in global change research and international discussions. Congressional interest and activity will certainly increase in the 102nd Congress, with likely impacts on the framework convention negotiations.

Economics: Policy in this area must weigh the economic costs and human consequences of proposed response measures against the benefits associated with any resulting change in the timing and magnitude of any possible warming. Current analyses of the costs of a commitment to permanently hold carbon dioxide emissions at 80 or 100 percent of present levels show widely varying assessments of impacts on output and economic growth. Most studies using aggregate methods show an impact in the range of .05 percent to 1 percent of GNP (about \$35 to \$70 billion) at the turn of the century. Particular sectors, such as coal mining, would be particularly hard hit. Also, because the share of fossil fuels in the total primary energy supply varies widely across industrialized countries, there are likely to be significant trade and competitiveness effects.

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Some "bottoms up" analyses show that the substitution of more energy-efficient technologies (better lightbulbs, more insulation) can contribute to emissions reduction on the near term without raising the lifecycle cost of energy-using activities. Such evaluations do not account for the differences in taste and usage across consumers or the need to weigh energy-efficiency investments against alternative uses of capital. Obtainable energy savings and emissions reductions are almost certainly lower than estimates of technological potential.

Maintenance of any constant emissions level implies an ever increasing percentage reduction from an emissions baseline that is expected to grow as the economy expands. Since the marginal cost of emissions reduction increases after the cheapest opportunities are exploited, both aggregate and "bottoms up" modelling suggests that the costs of a constant emissions target are likely to rise over time. Finally, in considering the possible benefits of emissions reductions, it must be recognized that climate processes depend on world emissions, which are dominated by expected emissions increases outside of the industrialized countries.

Energy Issues: In spite of the relatively small contribution made by human activities, concerns about climate change and the build up of greenhouse gas concentrations have led to discussions of ways to reduce manmade emissions. Fossil fuel use is one source of these emissions. U.S. fossil fuel use produced almost 6 billion tons of CO₂, one major greenhouse gas, in 1988. This represents about 25% of total human induced emissions world-wide.

Since 1973 various strategies have been used to reduce our dependency on foreign oil imports. Additional steps to address energy issues could have an impact on the level of greenhouse gas emissions if they involve incentives to reduce fossil fuel use or increase the use of alternative energy sources, such as energy efficiency, conservation, or substitution.

CLIMATE CONVENTION NEGOTIATIONS

→ lead para. - the framework convention is... come out of a legal framework that everyone agrees to.

Process: The climate change negotiations will be carried out through a single process and forum provided by the Intergovernmental Negotiating Committee (INC). Following the first session here in Washington, most of the negotiating sessions will be held at UN facilities in Geneva, with one or possibly more sessions in Nairobi. Sessions will be one to two weeks in length, at intervals of three to four months in 1991, that is, in May or June, in August or September and in November or December. One to two sessions will be scheduled as needed in 1992. Jean Ripert of France will likely chair the negotiations. At the first session the United States will press for all substantive decisions to be taken by consensus and will seek appropriate participation by NGOs (non-governmental organizations, including both environmental and industry groups).

V.N. decisions in the UNGA

like Vienna convention, V.C. is...

broader range

procedure for clarification of questions as they are raised in the negotiations

composition and organization of the bureau.

3

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foreign participants:

U.S. Delegation: The U.S. delegation for the first session will be headed by Curtis "Buff" Bohlen, Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs. The alternate head of delegation will be Robert A. Reinstein, Deputy Assistant Secretary of State for Environment, Health and Natural Resources. Reinstein will function as negotiator for this and subsequent sessions. The negotiating team is expected to include 12-15 representatives of the agencies with relevant environmental, scientific and economic expertise.

process for answering questions in real time - summary in LPH.
Scenario for First Session: Although a draft agenda has not yet been circulated by the UN Secretariat the following work-plan is anticipated for the nine-day session:

- o Organizational matters -- 1 day;
- o initial country statements (more than 100 countries are expected to attend) -- 2 days;
- o establishment of subgroups and preparation of the legal negotiating -- text 5 days;
- o and other matters (including establishment of relationship with IPCC and setting date and place of next session) -- 1 day.

Countries will propose text they wish to see included in the convention. All of the proposals will be bracketed in those instances where the text has not been agreed to by all participants. Although there will be some discussion of the reasons why specific text is being proposed, an attempt to resolve brackets will not be made during the first session. The U.S. delegation will propose the inclusion of language for elements we wish to see included in the convention. U.S. proposals will concern trade particularly on scientific research and cooperation. U.S. proposals will seek to address greenhouse gases in a comprehensive manner, that will include consideration of all sources and sinks. U.S. negotiators will make it clear that the U.S. considers such a comprehensive approach, with its potential for sharing any obligations across sources and sinks, gases, and countries to be of fundamental importance.

other countries' position here

Elements for Possible Inclusion:

A number of non-controversial elements that may be included in the framework convention have been identified by the IPCC. We expect additional elements to be proposed as well, including controversial elements that more properly should belong in future protocols to the convention dealing with specific commitments following-on general commitments made in the convention itself. Both types of proposals are discussed briefly below:

- picture of mtg
- what you know about what other countries would say for press purposes. (classified / intelligence)
Noncontroversial:

-- **Preamble:** This generally consists of hortatory language and declarative findings and is often negotiated after the body of the agreement has been completed. It may include statements on issues where the countries cannot agree and accordingly may be used for compromises.

-- **General obligations:** A framework convention would usually contain a set of general obligations that may or may not be followed by specific commitments. One possibly potentially controversial general obligation may be raised by the inclusion of a formulation of the "Precautionary Principle" (discussed below).

-- **Institutions:** Such agreements generally establish a permanent secretariat to carry out administrative functions (presumably institutionalizing the ad-hoc secretariat that will support the negotiations) and a Conference of the Parties, which is simply the mechanism through which the countries become Parties to implement the agreement.

-- **Research, systematic observations and analysis:** This is a section of the agreement on which we will want to concentrate.

-- **Information exchange and reporting:** The U.S., consistent with our preference for a comprehensive approach, will want to emphasize comprehensive monitoring and reporting of data on all sources and sinks of all greenhouse gases in these sections.

-- **Settlement of disputes:** This is not controversial as long as there are no specific obligations.

-- **Final clauses:** These include miscellaneous legal provisions, and requirements for, entry into force, amendments, withdrawal, etc.

Controversial: *- will not propose language, until have to*

-- **Annexes and protocols:** The major issue to be debated over the next 18 months is the question of targets and timetables for reductions of greenhouse gas emissions, particularly CO₂ emissions from the burning of fossil fuels. We are committed to addressing all greenhouse gases in a comprehensive manner, and that we will not be part of any agreement that does not include a comprehensive approach. Any specific obligations of this kind would be included in annexes or protocols to the convention. We have taken the position that such commitments are not appropriate at this time and should be negotiated subsequent to signing of the convention in 1992, and then only if analysis demonstrates that they are necessary. All other OECD countries, except Turkey, have made political statements arguing that such obligations should be undertaken now, either as part of the convention itself or in protocols negotiated simultaneously with the convention.

*EC
work has
made
commitments
to stabilize
LCD - present*

will not contact ~~the~~ positions, until see other side

actions that are justified in their own right.

Don't mention
-- General obligations: the Precautionary Principle: Many countries are on record as wanting to include in the framework convention an article on the so-called "Precautionary Principle." To date, there is no internationally agreed definition of the principle. Some have described it as merely expressing the general notion that it is desirable to prevent pollution. Others have taken a more extreme position, describing it as meaning that, before an activity may be undertaken, it must be affirmatively proven that the activity will not cause harm to the environment. If unable to avoid it, we should seek a climate-specific definition of the precautionary principle or "precautionary approach" based on the [no-regrets] policy, that is a policy that will take into account the degree of scientific certainty and economic considerations.

Waste
-- Financial assistance: Consistent with the Houston Economic Declaration, a general commitment to promote financial assistance for developing countries will be raised in the framework convention. Developing countries will undoubtedly propose that this include a commitment to provide "new and additional" funding, a commitment that we oppose. The United States, and other donor nations, believe that financial assistance should be to meet incremental costs incurred, based on the extent to which global benefits of a project are expected to exceed benefits to the recipient country. The United States also believes that the newly established Global Environmental Facility (GEF) in the World Bank is the appropriate mechanism through which any multilateral assistance should be processed.

-- Development and transfer of technology: The developing countries have often called for technology transfer on a "preferential and noncommercial basis." Although this language raises the problem of protection of intellectual property rights (IPR), there is in fact, a wide range of technologies where IPR issues do not arise and where there may indeed be significant opportunities for providing technical assistance to developing countries through existing bilateral cooperation programs. As a counter to unreasonable demands in this area, we will need to explore some of these options as the negotiations proceed. We will also stress that failure to address the technology transfer question on a commercial basis, with full account taken of market forces and the protection of IPR, will act as a disincentive to the development of needed technology. A proactive approach to assisting in the application of technology that is readily available and does not involve IPR issues will benefit the environment, increase market share, give an opportunity for a positive political action, and enhance the development of new technologies.

Strategy: In addition to our substantive positions, we need to develop a realistic strategy to carry us through the course of the negotiations. Our strategy will need primarily to address two arenas: (1) the negotiations themselves, and (2) Congress and the U.S. public. The United States is entering these negotiations from a relatively isolated position, seeing it is the only major developed country not committed to some target and timetable for greenhouse gas reductions. *But it is*

Within the negotiations themselves, we can bolster our basic position on the targets and timetables by demonstrating the economic costs of such commitments and their administrative complexities, possible trade problems arising from the imposition of

*policy commitment vs
financial commitment*

large taxes on the carbon content of fossil fuels (the principal means of achieving major reductions), and other problems that are far from being solved. This will require solid economic and scientific analysis in order to back up our positions. But such analysis is already well underway and partially completed.

Many other countries have expressed some doubt about our sincerity about addressing the climate issue. In this regard, any signal we might give that we are willing to take actions, even though fully justified for other reasons (such as energy security, longer-term industrial competitiveness, other proven environmental concerns, etc.), which would result in some significant reduction in greenhouse gas emissions would have a major beneficial strategic impact. Such a signal from the United States would also help to ensure that the climate negotiations do not affect other international environmental issues. It is important to emphasize that both in terms of the U.S. investment in a deeper understanding of the phenomena involved in global change, and in specific policy actions, that we are already acting to reduce U.S. greenhouse gas emissions. These U.S. activities are unmatched by any other country. For various reasons, the U.S. has found itself in a reactive mode in national and international media coverage. It will be essential for us to focus on changing the situation so that our achievements are widely recognized and credited to the President's initiatives and programs.

We expect the negotiations to receive considerable press attention. Foreign governments and U.S. environmental groups will use the media to further their positions, particularly during the first negotiating session. We will have a list of Administration achievements for distribution during the first session to the press and other governments. Congress to continue will also play a vocal role throughout the negotiations.

- get non-controversial legal means language
being judged by DOS / IPCC.



U.S. Department of Justice

Environment and Natural Resources Division

Office of the Assistant Attorney General

Washington, D.C. 20530

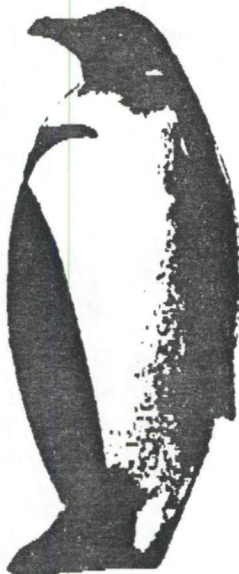


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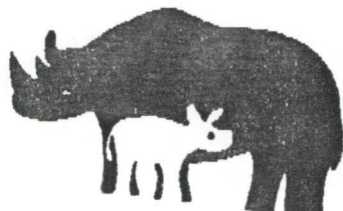
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FROM: Richard B. StewartNO. OF PAGES: 17
(INCLUDING
COVER PAGE)TO: Ken Yale, OSTPTELEPHONE NO: 456-7116FAX NO: 395-3261

MESSAGE: Please distribute these memos to working
working group. We have thus far been unable
to coordinate monitoring paper with NOAA.



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DOJ DRAFT 12/26/90

A COMPREHENSIVE APPROACH TO CLIMATE CHANGE

Briefing Materials for the Domestic Policy Council

Presentation by the Department of Justice,
Environment & Natural Resources Division

on behalf of the

Task Force on
Comprehensive and Incentives Approaches
to Climate Change

January XXX, 1990

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"Comprehensive Approach" described

- o It is an approach to structure consideration of climate change issues on a comprehensive basis. It stands in contrast to the "piecemeal" approach currently dominating the discussion, which focuses narrowly on emissions of one gas, carbon dioxide (CO₂), primarily from the energy and transportation sectors.
- o It considers all of the significant gases that affect climate:
 - Carbon dioxide (CO₂), Methane (CH₄),
 - Nitrous oxide (N₂O), Chlorofluorocarbons (CFCs),
 - Hydrochlorofluorocarbons (HCFCs),
 - Tropospheric Ozone (O₃) and its precursors:
 - Nitrogen oxides (NO_x)
 - Carbon monoxide (CO)
 - Volatile organic compounds (VOCs)
- o It also considers sinks, such as forests, that absorb gases. It focuses on net emissions (sources less sinks).
- o It considers all sources and sinks of the relevant gases, in every sector of human activity:
 - Energy generation, Transportation, Agriculture,
 - Forestry and land clearing, Industry
 - (See Appendix I)
- o It employs a measure, such as an index, of the comparative environmental impacts of the gases. This index reflects the fact that gases vary in their effects on the atmosphere. (See Appendix II.)
 - An index ensures that decisions are not made piecemeal to manage one gas while ignoring others. Some index or weighing system is unavoidable, whether implicit or explicit. A CO₂-only policy implicitly weights the other gases at zero.
 - One possible index is the "Global Warming Potential" (GWP) index, presented in the IPCC Report. The GWP measures the relative "radiative forcing" of each gas over time -- its potential to warm the atmosphere.
 - (The IPCC GWP figures are shown in Appendix II.)

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Comprehensive approach has multiple applications

- o Research. Designing research strategies to generate information relevant to all gases, sources, and sinks.
- o Monitoring and Inventories. Calculating current atmospheric currents and net emissions for all gases by nation and sector.
- o "Report cards." Calculating the likely effects on net emissions for all gases of current policy actions.
- o Technology evaluation. Calculating the effects on net emissions for all gases of new technologies and practices. Possible uses in foreign technology assistance, federal R&D funding, assessments of technology choices encouraged by other regulatory programs.
- o Policy choices. Calculating the effects on net emissions of policy actions proposed by others or considered by the U.S.
- o Policy design. Defining any proposed or agreed response measures in terms of a comprehensive approach, accounting for and allowing flexibility among all relevant gases, sources and sinks.

"How to" and "how much"

- o In general, the comprehensive approach addresses "how to," that is, the design of cost-effective responses (including research, technology development, limitations, etc.). It does not directly address the question of "how much" response to potential climate change is desirable; that is the province of overall cost-benefit analysis.
- o The comprehensive approach does shed light on some approaches to the question of "how much," by highlighting the potentially limited environmental benefits and high economic costs of piecemeal measures.

- 3 -

Advantages of a Comprehensive Approach over a Piecemeal Approach

A. Environmental advantages

- o Piecemeal policies have historically proved environmentally ineffective or even counterproductive. The history of environmental policy has been piecemeal; command and control efforts have been aimed at air, water, and land emissions separately. This has led to cross-media shifts in "residuals" (emissions and wastes), moving pollution around without reducing it.
- o This Administration has developed better approaches:
 - multimedia approach to solid and toxic pollutants
 - multipollutant approach to air emissions
 - comprehensive approach to climate
- o Shifting residuals in the climate context: A narrow focus on limiting emissions of one trace gas, or one sector, could induce counterproductive shifts in emissions to unregulated gases and sectors. For example:
 - Piecemeal policy aimed at CO₂ alone could induce fuel-switching from coal to natural gas, because natural gas emits less CO₂ per BTU than coal. But a CO₂-only approach would overlook resulting increased methane (CH₄) emissions from natural gas transmission leaks. If the CH₄ leakage rate is about 6%, all of the CO₂-related reduction in radiative forcing (GWP) from this fuel-switch is offset by CH₄ leaks. Although CH₄ leaks average 1% in the U.S., they are 3% in Australia, where about half the CO₂ savings would be offset. And CH₄ leaks average 5-10% in the Soviet Union and Poland, so a CO₂-only policy applied there could actually increase net contributions to radiative forcing.
 - Piecemeal focus on limiting agricultural CH₄ could induce use of nitrogenous fertilizers that reduce CH₄ emissions per rice yield, but also raise N₂O emissions.

Comprehensive approach ensures that such shifts are accounted for by decisionmakers.

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Advantages, continued

- o Inclusion of Sinks. By focusing on "net" emissions, the comprehensive approach fosters sink protection and expansion, such as afforestation and protection of phytoplankton. Benefits include biodiversity, reduced soil erosion, protected food webs.

- B. Economic and social advantages
- o Piecemeal approach is economically inefficient. Piecemeal policy (for example, one that deals solely with CO2 emissions) would exclude policy options that address sinks or other gases and achieve the same environmental outcome at less cost. For example, a policy aimed only at energy sector CO2 would bar potentially less costly abatement options such as afforestation, CH4 reductions, attention to CFC-substitutes, or N2O reductions.
- o Flexibility reduces costs. The costs of different options will vary across nations, so to minimize costs each ought to have the flexibility to build its least-cost policy mix among the gases and sectors.
- o Level Playing Field. A piecemeal approach inevitably favors some nations over others. For example, a CO2-only approach penalizes nations with relatively greater dependence on fossil fuels. A comprehensive approach provides a "level playing field" across nations.

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Potential objections to a comprehensive approach

- o "Data and monitoring of sources and sinks are inadequate."
 - We are building better data and monitoring.
 - Employ carefully chosen proxies or surrogates for difficult-to-measure emissions.
 - Design incentives for monitoring improvements, such as offering emissions credit to those who demonstrate better monitoring techniques.
 - The groundwork needed to flesh out a workable comprehensive approach is surely less costly than an ineffective, inflexible piecemeal approach.
- o "The Global Warming Potential Index is uncertain."
 - There is emerging consensus: the scientific fundamentals are sound. (See Appendix II.)
 - Work toward improvements.
- o "Other discrete actions will have already been taken, e.g. a forestry agreement, limits on CFCs in the Montreal Protocol, limits on VOCs."
 - Integration of prior and current actions into comprehensive approach will be appropriate in any case;
 - Comprehensive approach provides the opportunity for integrating domestic actions that reduce net greenhouse gas emissions but are taken for other reasons ("justified in their own right").
- o "CFCs should not be included in comprehensive basket."
 - Comprehensive approach would not allow violation of the Montreal Protocol.
 - Some nations are doing more to reduce global CFCs than others, and their contribution should be recognized.
 - CFC substitutes (HCFCs, HFCs) may be quite important to radiative forcing.
 - Existing reservoirs of CFCs are leaking into the atmosphere, but are not covered by the Montreal Protocol. Giving credit for reductions in these CFCs would provide helpful incentives.

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Options for Including a Comprehensive Approach in a Framework Convention.

The convention is not likely to contain emissions limitations obligations. But as described earlier, the comprehensive approach has multiple applications. Each could be incorporated in the convention.

- (1) Research strategy. Pursue scientific and economics research on a comprehensive basis: ensure attention to the sources, sinks, atmospheric properties, and socioeconomic and ecological impacts of all the relevant trace gases.
- (2) Monitoring. Develop comprehensive source and sink monitoring: cooperative international networks measuring emissions and uptake of all relevant trace gases. Create institutions for data sharing, harmonizing methodologies, R&D on new techniques.
- (3) International inventories. Build the capacity to estimate international net emissions of relevant trace gases: baseline levels and changes due to policy actions. Provide for national reporting, workshops to compare numbers and methods.
- (4) Index. Cooperative development and refinement of an index. Create an institutional expert body to conduct regular reassessments and to keep policy makers informed of research developments.
- (5) Technology evaluation. Employ a comprehensive approach to assess any technology transfer and financial assistance activities.
- (6) Ensuring a comprehensive framework policy. Ensure that any policy discussion, any calls for "national plans," or any limitations obligations (if any, whether now or in the future), are defined in terms of a comprehensive approach. This could be required, or at least endorsed, in a convention.
- (7) Advance assurance. Give advance assurance that current actions will receive "credit" against any future limitations obligations, in accordance with a comprehensive approach.
Pros: Helps avoid disincentives to taking actions justified on other grounds; nations may hold such actions in abeyance lest they lose credit for them. Ensures a comprehensive approach to credit for discrete initiatives (e.g. CFCs, forestry, VOCs, and any national actions such as CAA, tree planting, energy efficiency).
Cons: Requires debate over baseline.

- 7 -

Options for International Trading in the Convention. Emissions trading has proved quite successful in the U.S., and is a mainstay of the Administration's acid rain title under the new Clean Air Act. If there is eventual agreement, globally or regionally, on limitations on net greenhouse gas emissions, each participating nation would have an allowance of such emissions. Portions of these allowances could then be traded, both domestically and internationally. Allowing firms or nations to trade any net gas emissions limitations would offer useful flexibility and reduce costs. For example, if the USG provided assistance to Brazil in reducing degeneration, it might receive partial credit (in the form of net greenhouse gas emission reduction allowances) for the resulting reduction in CO₂ and CH₄ emissions. Or, a U.S. firm that invested in construction of a factory to produce energy - efficient refrigerators in China could receive similar credits as a part of its compensation; the U.S. firm could resell the credits to a utility (in the U.S. or elsewhere) constructing a new fossil-fueled generating plant.

Without agreeing to any emissions limitations in a framework convention, the following bases for international trading could be laid:

- (a) "REIOs." Under the Montreal Protocol, "regional economic integration organizations" (REIO) may achieve aggregate compliance; they can reduce CFCs under an REIO-wide "bubble." This notion could be broadened to allow any group of nations, regional or non-contiguous, to work together.
- (b) Joint cooperation. The convention could include general language stating that any obligations under the convention or subsidiary instruments can be met through "joint cooperative arrangements." This would ensure the option of international trading for technology development, emissions limitations, or other obligations.
- (c) Registry. The convention could develop an international information center on trades. The center could initially gather information and provide advice on how to arrange and implement effective trades.
- (d) Financial and technology transfers. The convention could incorporate emissions credits into international technology transfer and financial assistance arrangements. Funds and technology transferred by donor countries, directly or through a global environmental funding facility, could earn credits for the donors corresponding to the net emissions change (calculated in terms of a comprehensive approach) achieved by the transfer. The donor could then submit the credit in compliance with any international limits on emissions that might later be agreed.

APPENDIX I:

Anthropogenic Sources & Sinks of Selected Gases

<u>Gas</u>	<u>Sources</u>	<u>Sinks</u>
Carbon dioxide (CO ₂)	Fossil fuel combustion Land clearing	Forests Grasses Soils Ocean biota & storage
Methane (CH ₄)	Enteric fermentation in livestock Rice cultivation Wetlands Landfills Natural gas drilling, venting, transmission Coal mining Biomass combustion	Atmospheric OH interaction Soil removal
Nitrous oxide (N ₂ O)	Agricultural fertilizers Land clearing	Soil removal
Halocarbons (CFCs and related)	Refrigerants Aerosol propellants Foam blowing agents Solvents and cleaning agents Fire retardants	
Tropospheric Ozone (O ₃)	Precursors: CH ₄ , CO, VOCs, in the presence of NO _x Transport of strat. O ₃ into troposphere	Halocarbon depletion
Carbon monoxide (CO)	Fossil fuel combustion Biomass combustion Precursors: CH ₄ , VOCs	Atmospheric OH interaction
Nitrogen Oxides (NO _x)	Fossil fuel combustion Biomass combustion Agriculture	
Volatile Organic Compounds (VOCs)	Fossil fuel combustion Biomass combustion Industry	Atmospheric OH interaction
Aerosols/sulfates (e.g. SO ₂)	Fossil fuel combustion	

APPENDIX II:

Trace Gas Indices

- o Gases vary by several characteristics:

1. Heat trapping ability ("radiative forcing")
2. Residence time in the atmosphere
3. Reactivity with other gases (which affects both the gas' own residence time and the production of other radiatively active trace gases in the atmosphere)
4. Other attributes

- o The "Global Warming Potential" (GWP) Index calculated by the IPCC reflects the first 3 characteristics of gases:

<u>Gas</u>	<u>Instantaneous radiative forcing per kg</u>	<u>Atmospheric residence years (estimated)</u>	<u>Relative radiative forcing potential over years</u>		
			<u>20</u>	<u>100</u>	<u>500</u>
CO2	1	120	1	1	1
CH4	58	10	63	21	9
N2O	206	150	270	290	190
CFC-11	3970	60	4500	3500	1500
CFC-12	5750	130	7100	7300	4500

(Source: IPCC Scientific Assessment, tables 2.3 and 2.8.)

- o Per unit, CO2 is the weakest of the radiatively active trace gases. It is a feature of the large abundance of current CO2 emissions that CO2 accounts for about 50% of current human contributions to total radiative forcing.
- o Some uncertainties remain in the GWP values, relating principally to the residence times of gases such as CO2 and N2O. The consensus of the Boulder Workshop on GWP Indices in November 1990 was that although these uncertainties require urgent attention, they do not warrant abandoning the index. Moreover, for practical policy purposes, some index is much better than no index; an imperfect index could serve well and then be amended at a date several years later agreed in advance.
- o Time and discounting need further discussion. measures taken today to limit short-lived gases, such as CH4, will provide benefits for much fewer years than index equivalent measures to limit long-lived gases, such as CO2, N2O, and CFC. How should these benefits be compared?

Appendix II, page 2

- o A truly comprehensive "global change index" could incorporate other salient global impacts of the gases in addition to their radiative forcing. These other global impacts include beneficial plant enrichment from CO₂, and adverse stratospheric ozone depletion from CFCs and some of their substitutes. Ignoring such impacts could lead to perverse results, such as limiting warming but inducing other adverse environmental consequences. On the other hand, developing and applying a multiple attribute index would be a challenging analytic and empiric exercise.

APPENDIX III:

Research needed in the short term to support the comprehensive approach. The "Interim Report" of the Task Force on Comprehensive and Incentives Approaches identified tasks needed in the next three months, including:

(1) Index. Develop an improved radiative forcing index and outline a plan for further improvements. Incorporate new research results. Draft a proposal for a standing international expert group, to be established in the framework convention, that would develop the index further and would shepherd it toward accuracy, international consensus, and continuing reassessment in light of new research. Draft talking points on time horizons. Outline a global change index, incorporating salient environmental effects in addition to radiative forcing; provide a rough quantitative estimate of its measure.

(2) Emissions monitoring. Draft a proposal for international emissions monitoring network(s) to cover all gases, sources and sinks. Identify specific techniques to be used (e.g. satellites, ground stations). Highlight gaps in knowledge and disputes over methods. Develop proxies or surrogates where needed.

(3) Documenting environmental advantages of a comprehensive approach. Formulate "crisp retorts" or "zingers" to deflate piecemeal proposals, showing they would have little environmental benefit, or actually be counterproductive. Calculate effects of cross-nation, cross-gas, cross-sector shifts. Collect empirical examples of the environmental backfiring of piecemeal strategies applied to other environmental problems.

(4) Documenting economic advantages of a comprehensive approach. Develop quantitative estimates of the marginal cost of abatement of different gases in different selected nations.

(5) Report card. Update the comprehensive "report card" or "budget" of net index-weighted emissions changes achieved by climate-relevant actions taken for other reasons. Repeat analysis for selected foreign nations.

DOJ DRAFT 12/26/90

MONITORING: ELEMENTS FOR THE CONVENTION**I. Atmospheric Concentrations**

- o Create global concentration monitoring networks for each of the relevant trace gases. Ensure appropriate geographic coverage to measure gradients and distributions. For example, create a Methane Monitoring Network, a VOCs Monitoring Network, and so forth. Each network would consist of agreements by nations to undertake monitoring and share methods and data. Where possible, the Networks would build on existing institutions (e.g. IGBP) rather than create new institutions.
- o Organize data collection institutions and structures to receive, code, interpret and report on data collected by the Networks.

II. Net Emissions: Sources and Sinks

- o Sponsor workshops or research programs on atmospheric chemical reactions of relevant trace gases. For example, a Workshop on Methane Interactions, or a Workshop on HCFC Interactions. The output from the Workshops would help describe how concentrations change (residence times and dynamics), and what gases are indirectly affected or produced by molecules of the subject gas, and hence feed into projections of total warming, calculation of the GWP Index, and consideration of non-warming impacts.
- o Organize efforts to harmonize current emissions monitoring methodologies.

For example, there is much controversy over the proper way to monitor emissions from forestry. At the macro level, Brazil has asserted that its satellites are the only ones capable of estimating forest cover properly. At the micro level, there are differences over the contributions to net carbon fixing of different tree types, tree ages, and forestry practices (through their effects on trees, soil biota, and moisture).

The convention could address these topics and set up workshops, expert panels, and research programs to address them.

- o Organize a thorough study of the carbon cycle (atmosphere-ocean-terrestrial sinks such as forests). This would build on the CEES Global Change group's current effort to understand all carbon processes. This work would generate critical information about, among other important topics, CO2 residence time. CO2 residence time is quite uncertain because each carbon atom cycles in and out of the ocean over 5-10 year periods, but is not fully removed from the cycle for hundreds of years or more. Better understanding of the carbon cycle would help specify the GWP index values relative to CO2 (currently quite uncertain).
- o Create micro-monitoring programs, to match the concentration monitoring programs described above by measuring actual emissions and uptake from surface activities. For example, we urgently need better information on N2O, CH4, and NOx emissions worldwide. An "Agricultural Methane Emissions Monitoring Program," for example, could provide technical assistance, operate a network of experimental monitoring stations (with host nation permission), operate pilot test monitoring stations to gather data on typical agricultural practices where on-site monitoring is impractical or not permitted, etc. A "Soil Net Emissions Project" could be similarly designed. Monitoring could be organized on topical/sectoral, regional or national emissions bases. Ensure coverage of developing country emissions. These programs could also develop a data set of emissions/uptake factors for current and potential technologies and practices, covering all relevant gases, sources and sinks, to be used as proxies or surrogates in estimating difficult-to measure (diffuse or non-point) sources and sinks.
- o National inventories. Build outward from the OECD Inventories project to calculate baseline net emissions inventories for all nations. Invite all nations to regional workshops. Feed the data into institutes where these data can be used in emissions forecasting efforts.
- o Develop new and expanded economic models that overhaul and elaborate current economic models to cover multiple trace gases, multiple sectors, sinks as well as sources, better detail on developing countries, etc.
- o Develop monitoring technology, including remote sensing (satellite observation using lasers, etc.), aerial reconnaissance, on-site instruments, etc. For example, create a Remote Emissions Monitoring Platform, or a Tropospheric Ozone Monitoring Technology Clearinghouse. Award recognition, funding, and/or international intellectual property rights to inventors.

DOJ Hq
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③a long approach

③b - language on long approach we would put in table

- stabilization

accounting - confidence in models, focus concern about 2010.

- refined version of long approach.
agreed to put in table

① - ^{and where we are} summary of accomplishments to date, policy + accomplishments
pro to reg + ready for Feb

2 things in table for Feb; and about positions

④ ^{next policy budget} other countries, where we are, G-7, pressure political
1-2 major issues for clearance + guidance ^{with and}

② ^{what to say} whether to try view on initial, given
can accomplish - a subset of targets + timetables.

intell from other countries, what they will say

political statements

- commitment to stabilization at a specific date - G-7 + G-8 results

- commitment to action - NBS, energy

maintain stabilization to the issue

accomplishments

see if anything new, if not -

comprehensive approach

all countries

R&D investments are right

debate shifts - targets and timetables vs actions

POB US to say something at spring session?

do not discuss stabil

discuss stabil generally

commit to stabil, if...

*** discussion in NCS, link ~~but~~ with climate chg.

conv approach must ~~not~~ have any new we begin

try down, i.e. timetables is not right approach

should be bottom up - match us on actions

challenge others to concrete actions that would

yield 10 yr effects

take all actions on NBS

generate Post NBS chart of C/6 missions

NBS - more long term changes

~~to~~

stabil - not allowing to ~~the~~ way not be able to
maintain it

~~plans & strategies~~

commitment - probably have to do more - - to say -

technology transfer } put on table, positions for future
financial support for } agencies - what are our goals.

political issues - play in press -

stabilization - we have a position, should not
overseas, could be saying forget resources, etc.
energy - key issue

NBS not in advance of conv. - unless something
substantiated in it

mid east - another factor in release of NBS

geared - not to sell

brief issues arising in 18 mos and dynamics
involved

may want to have a position to report
coordinated CDE position

future - softer commitments for CDE a non-
quantitative nature.

goal - long term energy situation
long term view - reduction of oil dependency
CO₂ ~~side~~ benefits.
rather than targets & timetable

non document - commits both day 1 & 2.

document publicly together gives from this discussion

gen discussion on where we stand on stabilization
comp approach - on table
accomplishments

nothing from CDE's

shape or form of document

chair of RSWG

JANUARY 3, 1991

Agenda for January 4, 1991, Friday meeting.

1. Scorecard

Grady: A statement should be made...scorecard...an accounting where we are and where we are going A) science B) economics. GRADY AND DELAND x6982 (OUT UNTIL MONDAY).
Greenfund?

Norm Hartness x6840 (IN, ON TELEPHONE, WILL CALL BACK)(CALLED BACK)

(1) Grady assigned scorecard to Norm

(2) Grady said he would write a "concept paper" to begin on thinking about a commitment. A draft will go to Grady by the end of next week January 4, 1990. Grady will be back by the 3rd. Is not working with Gruenspecht.

Scorecard concept, already doing according to existing legislation and regulation.
None of the other countries have any

Has discussed with Deland's office.

2. Comprehensive Approach for Beginners and Monitoring and Reporting

Lay out the key issues, public document.

Knauss was going to work with him to make sure the monitoring.
KNAUSS AND DICK STEWART

Draft paper is in, and distributed on Monday, Dec 31st.

3. Stabilization commitment to the year 2000

Policies that will get us to 2000
GRADY AND DELAND

Concept paper that Grady is doing.

Call Kerrigan and Hecht regarding who is working on this.

4. Science and Economics Overview

Overview of economic research and science research.
CEES is to do this. HOWARD GRUENSHPECT, chaired NSF group on this.