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Fall 96 Global Climate Change NEC [National Economic Council]

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**GLOBAL CLIMATE CHANGE
PREPARATIONS FOR DECEMBER NEGOTIATIONS
CALENDAR OF UPCOMING MILESTONES**

- October 25** -- Finalize first drafts of papers needed for December negotiations. The papers will elaborate four of the key issues to be considered over the next 14 months during climate change negotiations (as identified in the U.S. "elements paper" submitted to the Climate Change Secretariat). Four papers will be produced: 1) Advancing Developing Country Commitments; 2) Compliance; 3) Structure of a Target; and 4) International Joint Implementation/Trading
- Oct. 28** -- Distribute first drafts of papers for review at working level
- Nov. 1** + -- Distribute publicly U.S. "elements paper" submitted to FCCC
- Nov. 6** -- Working-level IWG to discuss second drafts of papers
- Nov. 7** -- Assistant Secretary-level meeting to review progress of Ehrlich-led Interagency Analysis Team
- Nov. 11** -- Discussion of U.S. "elements paper" with interested Hill staff, NGOs (week of) and private sector representatives
- Nov. 14** -- Distribution of third drafts
- Nov. 16** -- Assistant Secretary-level discussion of third drafts of papers
- Nov. 18** -- Final drafts of papers distributed for formal interagency clearance
- Nov. 21** -- Final Assistant Secretary-level review and final clearances due
- Nov. 26** -- Demarche to key countries on U.S. views related to December negotiations
- Dec. 9-13** -- Next round of climate change negotiations (Geneva)

* Deputies Committee meetings as necessary

GL. W.
MEC Negoties

10/23/96

science in July

science
binding may

are thinking

2050 target on GHG in atmosphere

not uniform measures imposed on all countries as Europeans want.

trading
JI + trading

WCS
Need LDCs

Dec. negotiatio

4 paper

1. targets
 2. compliance
 ↓
 "binding" monitoring & verification
 dispute settlement mechanism
 3. LDCs
 4. JI + trading
 ↓
 P.O.W. skeptical
- China
technology changes

Asst. Secs. 2nd Eileen

Nov 4-10

Ev E

where the rabbit enters the hat

(1) choice of model; e.g. K stock adj.

(2) techn. progress: middle ground
between "techn. exogenous"

+ "wishing makes it so"

speed of techn. diffusion

(3) Experts "2010 go back to 1990"

People have 13 yrs. advanced notice.

Rio Framework Conv.

put requirements on OECD + FSU

(Korea, as it joins OECD, has agreed to be schedule 1. But this has not yet been established as general OECD principle.)

THE WHITE HOUSE
WASHINGTON
October 29, 1996

cc: JAF
RR

MEMORANDUM FOR DISTRIBUTION

FROM: Michael Warren, Executive Director
National Economic Council

SUBJECT: Climate Change Deputies Meeting

There will be a joint NEC-CEA Deputies meeting on climate change on Monday, November 4 at 3 p.m. in room 231 OEOP. This meeting will be chaired by Dan Tarullo and Kathleen McGinty.

Deputies plus one are invited to attend. It is important that deputies personally attend.

An agenda will be sent to you later this week. Please call Kristen Panerai at the NEC at 456-5353 with your clearance information by COB Wednesday, October 30. Thanks.

Distribution:

Charles Curtis, DoE
Ev Ehrlich, Commerce
Jack Gibbons, OSTP
John Schmidt, DoJ
Fred Hanson, EPA
Jeff Lang, USTR
Jack Lew, OMB
Cynthia Metzler, Labor
Richard Rominger, USDA
Alicia Munnell, CEA
Sandy Berger, NSC
Ben Nye, Treasury
Tim Wirth, State

Alvin

Thom

Howard Overholt

back envelope

effect on P gas
coal

deadweight loss

Reasons for

Control & Control Experiment

(1) To show ~~that~~ we know the difference

(2) To ~~show~~ ~~them~~ make the cost of a market.

opened system look not so high

(3) To convince any command & control

that it's a bad way to do it

(4) To set a "U.S. freewheel" example for other countries

etc.

11/4/96

MFC-CEQ

Issues for Geneva in Dec

Robt
Sch
Agr.

Mid NW. e.g. 19th
mm

1 hr on science

1 hr on alt. strategies

3 options with costs
for Kyoto

3 approaches

- (1) Agree to doubling stock of carbon
- (2) Reduce emissions relative to benchmark
- (3) We'll work hard on this

DT

Our intention was not to help NEC manage the issue.

Health care crisis of 2nd Admin.

EPA DOE State juggernaut will collide with Econ/politics.

can't be swept under the rug.

Sooner face up to the better.

At least Pres. + V.P. have to understand

P = \$100/ton carbon

P electr. x 3 for coal
x 2 for other

Non mkt.-oriented

P gas = + 30/gal.

approaches more expensive.

Are we going to sign on a treaty in Kyoto?

If so are we going to try to hide the contradiction

until 2001

(1) support large ΔP then or (2)

Ev has no models, + has no interest (apparently)

(i) acquiring models

(ii) running model

(iii) presenting quant. effects of scenarios, lex alone

(iv) taking policy position

who chairs mtg.

Alicia suggested DT.

He said "we don't have the capability."

Dan Albritton

climatology expert

NOAA

FRA Hanson DOE

**GLOBAL CLIMATE CHANGE
CALENDAR FOR DECEMBER MEETING PREPARATION**

- October 25** -- Finalize first drafts of papers needed for December negotiations. The papers will elaborate four of the key issues to be considered over the next 14 months during climate change negotiations (as identified in the U.S. "elements paper" submitted to the Climate Change Secretariat). Four papers will be produced: 1) Advancing Developing Country Commitments; 2) Compliance; 3) Structure of a Target; and 4) International Joint Implementation/Trading
- COMPLETED
- Oct. 28** -- Distribute first drafts of papers for review at working level
- COMPLETED
- Nov. 1** -- Distribute publicly U.S. "elements paper" submitted to FCCC
- COMPLETED
- Nov. 6** -- Working-level IWG to discuss draft papers
- COMPLETED
- Nov. 7** -- Assistant Secretary-level meeting to review progress of Ehrlich-led Interagency Analysis Team
- COMPLETED
- Nov. 11** -- Discussion of U.S. "elements paper" with interested Hill staff, NGOs (week of) and private sector representatives
- COMPLETED
- Nov. 13** -- Distribution of second drafts
- COMPLETED
- Nov. 15** -- Assistant Secretary-level discussion of second drafts of papers
- COMPLETED
- Nov. 20** -- Distribution of consolidated papers - third drafts
- Nov. 22** -- Assistant Secretary-level review of third drafts
- Nov. 26** -- Distribution of fourth drafts
- Dec. 3** -- Tentative Deputies meeting to finalize papers
- Dec. 7** -- Delegation departs for Geneva
- Dec. 9-13** -- Next round of climate change negotiations (Geneva)

12/3/96

Differentiation

- E Targets vs. policies
- Allocation amounts
- Allow trading

"equalize carbon costs"

Much higher costs for Norway than G.S.
Japan than Ger.

China

Tim Wirth "we do not like harmonized measures"

Eur. to play to their green politics

Brazil very opposed to J2

K & Mex graduate

Next mtg. in March. Negotiation glimmers at beginning

June Serious "

Aug.

Binding interim term

flex

Curtis

1990 was a bad year for U.S.

Low emissions

1981 commitment --
+ 1990 recession

Some are using 5 yr baseline

) e-efficient
Austria x coal
Norway. oil x [e-efficient]

ACS was pilot for J2. to be terminated in 2000

ISSUES FOR NEC/CEQ DEPUTIES TO CONSIDER AT DECEMBER 3 MEETING

These elaborate on stated positions (e.g., July) or cover concerns not previously addressed.

INTRODUCTION/LINKAGES

(1) The U.S. believes the following items are inextricably linked and must be part of any agreement: targets must be legally-binding and medium-term, the agreement must maximize national flexibility, and developing countries must be part of the agreed-upon effort to solve the climate change problem.

(2) The U.S. rejects short-term goals (i.e., before 2010).

DEFINING THE FORM OF THE TARGET

(3) The U.S. rejects single year-targets, opting instead for multi-year averages.

(4) The U.S. strongly supports banking emissions between multi-year periods (so if emissions in one period are below the targeted amount, a nation can increase its target level in the future by a corresponding amount). The U.S. urges consideration of a borrowing scheme whereby nations could emit more in one period by promising to reduce future targets by a corresponding amount.

(5) The U.S. supports including all greenhouse gases in an agreement.

(6) The U.S. rejects differentiation among Annex I Parties (all would have the same regime).

(7) The paper is silent on the issue of baseline emissions.

EMISSIONS TRADING AND JOINT IMPLEMENTATION

(8) The U.S. expresses strong support for an international emissions trading regime.

(9) The U.S. strongly supports joint implementation (JI) with credit.

ADVANCING THE IMPLEMENTATION OF COMMITMENTS FOR ALL PARTIES

(10) Consistent with the Berlin Mandate, developing countries would not be subject to any new requirements, though the paper sets out a range of options (without recommendation) for ensuring expanded developing country participation, now and in the future.

COMPLIANCE

(11) In the July statement, the U.S. called for a legally binding target as a means of promoting greater realism in setting a target and increased commitment to meeting it. The U.S. notes that compliance is a key component of an enforceable target and the paper sets out several options for facilitating compliance.

12/20/96

GCC

Econ Analysis

Mtg. Jan 10

baseline + assumptions went into it
market * DRI + on. Birtel needs more wh.

Atkins RAR of techn. ch.

economists or non-econ.

"nothing is free."

to
Technology

Technological utopians

* engineers

+ parametric det. of tech. progress

can't fit the identical baseline

old new policies green lights baseline
CCAP

new new policies PNGV

End Jan

stakeholder. How much pain. ["base case" ?]

Start/Point rather than

multi-yr. average.

e.g. stabilizn in 2010

J. Corbace
Eileen Clausen } NO change
in next 5 yrs.

Ratified with implementing
legislation

cc: AM
JAF
RP

THE WHITE HOUSE
WASHINGTON

October 22, 1996

MEMORANDUM FOR DISTRIBUTION

FROM: Michael Warren, Executive Director
National Economic Council

SUBJECT: Climate Change Deputies Meeting

Attached please find the agenda for the joint NEC-CEQ Deputies meeting on climate change on Wednesday, October 23 at 10:30 a.m. in room 231 OEOB. This meeting will be chaired by Dan Tarullo and Kathleen McGinty.

If you have not done so yet, please call Kristen Panerali at the NEC at 456-5353 with your clearance information. Thanks.

Distribution:

Charles Curtis, DoE
Ev Ehrlic, Commerce
Jack Gibbons, OSTP
Jamie Gorelick, DoJ
Fred Hanson, EPA
Jeff Lang, USTR
Jack Lew, OMB
Cynthia Metzler, Labor
Richard Rominger, USDA
Joe Stiglitz, CEA
Nancy Soderberg, NSC
Larry Summers, Treasury
Tim Wirth, State

**DEPUTIES COMMITTEE MEETING
CLIMATE CHANGE NEGOTIATIONS
October 23, 1996**

- I. Schedule Ahead (State, Commerce)
- II. Interagency Economic Analysis (Commerce)
- III. Interagency Decision Process (NEC, CEQ)
 - A. Constituencies (Congress, industry, labor, environment, etc.)

Climate Change: Next Steps

I. Decision Process

- Interagency Working Group (IWG chair: Amb. Mark Hambley, technical level staff from agencies)
Principal tasks: develop workplan, prepare analyses, develop/recommend policy options, staff U.S. delegation to Climate Convention and related negotiating sessions
- Claussen Group (chaired by A/S Eileen Claussen, A/S level from agencies)
Principal tasks: manage process; take policy decisions on most issues
- Interagency Analysis Team (IAT chair: U/S Everett Ehrlich; technical staff from analytic agencies)
Principal tasks: develop analytic toolbox to assess policy options; evaluate selected options
- Deputies Committee (co-chairs Katie McGinty and Dan Tarullo, U/S and Cabinet level)
Principal tasks: approve/modify Claussen Group decisions as appropriate, make final major policy decisions

II. U.S. Framework

Announced in Geneva at second session of convention Conference of Parties (by Tim Wirth); includes:

- legally binding target and timetable (rejecting common/harmonized policies and measures)
- medium term emissions target (rejecting short term, i.e., 2005), and long term concentration goal
- flexibility (e.g., emissions trading and/or Joint Implementation (JI))
- requirement of a compliance regime
- inclusion of developing countries

III. Negotiating Timeline

September/October:

- Claussen Group Meeting: October 15. Review proposed submission to convention secretariat
- Submission to convention secretariat (due Oct. 15): propose elements of a protocol/legal instrument, to include: JI/trading, legally binding/compliance, non-Annex I involvement, targets (written by IWG, cleared by Claussen Group/Deputies)

November

- U.S. positions prepared by IWG, cleared by Claussen Group and Deputies. Position to be based on elaboration of October submission, to include:
 - emissions trading/JI (including underlying principles, but no operational details)
 - developing country commitments (developing countries must take part in agreement)
 - target design (with no numbers)
 - legally binding/compliance issues
- Claussen Group Meeting: November 24. Review U.S. positions prior to December AGBM; possible agreement on demarche to other countries

December

AGBM (Geneva):

- Concept for and structure of instrument to be tabled/discussed;
- Meeting output will likely take form of outline for agreement

February /March 1997

AGBM (Bonn):

- Initial tabling of language for agreement
- FCCC Secretariat to compile bracketed text based on December discussion and interim submissions.
- U.S. will need actual draft agreement language (rather than concepts) on:
 - emissions trading/JI,

IV. Other Meetings: Timeline

September/October:

- OECD Meetings (Paris, September 30-October 3): discussion of elements of protocol/legal instrument; possible EU focus on policies and measures; additional discussion of developing countries

November

- Annex I Countries of the Asia Pacific (ACAP: US, Canada, Australia, Japan and New Zealand) (Hawaii, October 31 - November 1): all issues related to December Ad Hoc Group on the Berlin Mandate (AGBM: negotiating body for next steps)
- Developing country contact group (Paris, tentative): issues related to technology, Global Environment Facility (GEF), Article 4.1

April/May

Second Climate Action Report due to FCCC (April)

- Will require announcement of anticipated shortfall in meeting 1990 ghg emission levels by 2000, as well as anticipated additional measures being taken to reduce emissions
- IWG to draft, Claussen Group/Deputies to clear; will require financial support from agencies to prepare and publish: will be circulated internationally at Spring/Summer AGBM

September/October

IPCC to begin Third Assessment Report

G1 C.C.

10/25/14

Tim Wirth

Gres. round

RFM.

Jim Lusk WR
Ken Leigh Enm

Paul Portney

RAA tax shifting

judicial

Environmental movement is all about trees. 1870 mining
to ending cutting on federal land
subsidy: bldg. woods
forestry service lies

Nancy McGarry

Mining
Note: bumper pushes that it's not as important as the rest
no stop short of getting a fee royalty on what can take out
(1) need requirement for reclamation highest std.
(2) patent don't give them surface rights

45 days not
they are tree farmers

Would ~~great~~ get
support from big
timber industry in S.E.
It's all private land

Most lead
guys

Tom Glass
Demo

Enisco; Co
Ande
Wesner
counsel ~ John Syberley

99-year lease

But S
no:

in return (conservation easement)
not develop

David
on theory

Getches

Law faculty
water lawyer

to work with Bruce Babbitt
Colo. - Boulder
wyg. & enlightened

Grand Canyon Trust

Bradley

Fred Kruff → Env. Dev. Fd. in Berkeley David Rowe good on pr.
most int. - oriented & aware of
Tony Coelho represented the Valley

Sierra Club
grass roots

Paul Lipp Exec. Dir. Chris Storr
good landmeter on land rep S.P.

N RAC

John Adams

legislative

Frank Loy
OMF

Leg of Conser. volun

Denver

(1) Boulder

Getches

charlie wilkinson

law

law school

(2)

Jim Mader EDF
was his chief of staff
Maggie Fox Sierra Club
daughter in law of Mader

} Regional office

(3)

David Albritton

NOAH Boulder

Sister

Mar C. Ann. Res.
NSF-funded

THE WHITE HOUSE

WASHINGTON

November 1, 1996

MEMORANDUM FOR DISTRIBUTION

FROM: Michael Warren, Executive Director
National Economic Council

SUBJECT: NEC/CEQ Climate Change Deputies Meeting

Attached are documents that may be useful in preparation for the NEC-CEQ deputies meeting scheduled for Monday, November 4th at 3 pm in room 231 OEOB:

1. Agenda
2. Outline of the major issues we will be discussing at the meeting: international emissions trading, joint implementation, and targets design. (Longer staff-level background papers on these subjects were recently circulated in draft form to your climate change policy staff. These longer papers may be helpful in preparing for the meeting as well.)

While this is not a decisionmaking meeting, we will be discussing some of the major issues that are to be the focus of an international meeting in early December, in which USG representatives will be participating. Accordingly, your attendance on Monday is strongly encouraged.

If you have not done so, please call Kristen Panerali at the NEC at 456-5353 with your clearance information. Thanks.

Distribution:

Charles Curtis, DoE
Ev Ehrlich, Commerce
Jack Gibbons, OSTP
John Schmidt, DoJ
Fred Hanson, EPA
Jeff Lang, USTR
Jack Lew, OMB
Cynthia Metzler, Labor
Richard Rominger, USDA
Alicia Munnell, CEA
Sandy Berger, NSC
Ben Nye, Treasury
Tim Wirth, State

DEPUTIES COMMITTEE MEETING
CLIMATE CHANGE NEGOTIATIONS
NOVEMBER 4, 1996

- I. Status of melding and how results will be integrated into policy process
- II. Target design options
- III. International emissions trading and joint implementation programs

DEFINING THE FORM OF THE TARGET

BACKGROUND

- * While rejecting proposals for short-term emissions reductions, at the second Meeting of the Parties in July, the United States called for a realistic, verifiable and binding medium-term emissions target.
- * Proposals by some other countries have defined a target in terms of a single level that would be reached in a given year (e.g., a 20% reduction by 2005).
- * Options exist for structuring a target which provides greater flexibility and potentially reduced compliance costs.
- * This discussion focuses only on the form of the target and not on the level of the target nor the timing for reaching the target which are being examined by the Interagency Analytical Team.

KEY ISSUES AND OPTIONS

- * Form of Target: The simplest option would be to follow existing proposals and call for a specific level of emissions reduction to be achieved by a specific year. A second option would be a multi-year average target (e.g., a specified target achieved over the average of 2010-2015). Thirdly, the target could take the form of a cumulative target over a much longer period of time (e.g., 20 or 30 years or longer). A fourth option would be to define a target in terms of each nation's contribution to atmospheric concentration of greenhouse gases (however, this type of target might be harder to implement and be more controversial).

These options must be evaluated in terms of their impacts on such factors as economic costs, capital stock turnover, the rate of technological change, and the rate of climate change.

- * Baseline: The current baseline under the Framework Convention's non-binding aim is to return to 1990 emissions levels for each developed country. The range of options for an alternative baseline include:

- o shifting to a more recent year (e.g., 1995 or 2000);
- o adjusting emissions levels to reflect weather, energy or economic anomalies;
- o averaging emissions over several years; or
- o focusing on changes from projected levels of future emissions.

These options must be evaluated in terms of the degree of flexibility and cost savings they offer and how they would impact the United States and other nations.

- * **Treatment of Gases:** The United States has supported and the Climate Convention covers all greenhouse gases (except those controlled under the Montreal Protocol's ozone treaty). These include: carbon dioxide, nitrous oxide, methane, and fluorinated compounds. While continuing to support a comprehensive approach to the issue, a number of options are possible:

- o define a target using a single basket approach and allow trading between gases;
- o define a target in terms of carbon dioxide from energy use alone (70 percent of emissions) and treat other gases separately; or
- o limit the target only to sources and sinks of gases that can readily be quantified.

- * **Other Issues:**

- * How do we define "medium-term" commitments?
- * How often should commitments be reviewed?
- * How will the form of the target impact emissions trading? Will the choice of targets hinder efforts to further engage developing countries?

JOINT IMPLEMENTATION

BACKGROUND

- * Joint implementation (JI) is a concept under which entities from different countries could work together to reduce, avoid or sequester greenhouse gas emissions.
- * The U.S. has been an advocate for allowing joint implementation for two reasons:
 - o It can reduce the costs of meeting any given target by achieving those reductions through some combination of actions at home and abroad.
 - o It provides a potentially powerful incentive for redirecting investment flows in developing countries and economies in transition toward more greenhouse friendly technologies.
- * A limited form of JI (trading rights for producing CFCs) was used under the Montreal Protocol to reduce the costs of the phase-out of ozone-depleting substances.
- * To date, joint implementation has received only limited support by Parties to the Convention with strong opposition from many developing countries. This opposition reflects an unwillingness to accept baselines and concerns over sovereignty.
- * A broad spectrum of U.S. industry has strongly supported JI. For example, electric utilities have developed and support their own voluntary JI program.
- * A pilot JI project has been initiated to improve understanding but without granting "credit" for such activities (the amount of "credit" is an open issue).

ISSUES AND OPTIONS

- * Stay the course: Continue supporting the existing pilot project and work toward building a foundation for shifting to a credit-based regime in the future.
- * Advance the process: Seek agreement now that JI would be allowed after some specified year (e.g., 2000) with credit given to the parties involved.
 - joint activities between developed countries could build on agreed baseline commitments.
 - joint activities with developing countries could be permitted if the developing nation "opted in" and agreed to a baseline or could be permitted on a project-by-project basis.
- * Some observers have expressed some concern that a large JI program could have negative job implications for developed countries by shifting investment to developing countries with lower costs of emissions control.

May we a good
well done
memo

INTERNATIONAL EMISSIONS TRADING

BACKGROUND

- * International emissions trading is a more systematic form of joint implementation where national commitments to reduce greenhouse gas emissions can be achieved through some combination of activities at home and abroad.
- * Given the large differences in the marginal cost of controls among countries, the potential savings for meeting an agreed-upon target appear significant. For example, one modeling exercise showed a savings of roughly 70% for the United States if emissions trading were permitted on a global scale. This study assumed no transaction costs.
- * Establishing a robust emissions trading system represents a significant challenge given the complexities of any international climate regime.
- * A limited form of "international" trading has been used successfully under the Montreal Protocol. Emissions trading programs within the United States have been widely viewed as a success in reducing the costs of acid rain controls.
- * International emissions trading is widely supported by business and many environmental groups within the United States. Most developed countries have less experience with the regime but their interest appears to be increasing. Most developing countries have opposed any form of trading for reasons of national sovereignty and unwillingness to accept an emissions baseline.

ISSUES AND OPTIONS

- * Differences in domestic implementation: Countries are likely to employ a wide range of options in implementing domestically any internationally agreed upon emissions target. This will complicate the process of ensuring the integrity of international trades and potentially impact transaction costs.
- * Inclusiveness of trading regime: Trading between different greenhouse gases could be permitted, as could trades between sources and sinks. However, emissions from some sources are easier to quantify and verify than emissions from other sources.
- * Participants in trades: Trading must involve active private sector participation. At the same time, governments, not individual firms, are responsible for their treaty obligations. One option, to create a new entity that reviews or approves all trades, has little appeal.

- * Relationship to compliance: In defining measures related to compliance for the treaty, it will be important to take into consideration the need to support the integrity of trades without imposing undue transaction costs.
- * A country can attain its emissions reduction goals by either controlling domestic emissions or through trade of emissions rights. This points up the importance of the initial allocation of emission rights.
- * In the absence of a worldwide cap on emissions, international emissions trading by itself will not be sufficient to meet a global emissions target.



EXECUTIVE OFFICE OF THE PRESIDENT

COUNCIL OF ECONOMIC ADVISERS

WASHINGTON, D.C. 20500

MEMBER

November 4, 1996

MEMORANDUM FOR LARRY SUMMERS, TREAS
JOSH GOTBAUM, TREAS
EV EHRLICH, COMMERCE

FROM:

ALICIA MUNNELL
JEFF FRANKEL

Attached is a memo to Tim Wirth and Rafe Pomerance that attempts to pin down the quantitative exercise that we all are required to complete before November 19. Please look it over and suggest any changes or additions that you think would make it more useful.

We realize that it will be difficult to get precise numbers, but firmly believe that it will be helpful to attach a range of existing estimates to each of these options.

We plan to fax this memo to State Thursday morning (11/7), so it would be great to receive your comments by c.o.b. Wednesday, November 6.

Attachment

November 7, 1996

Summary
all running (baseline is now
50% increase in energy)

MEMORANDUM FOR TIM WIRTH
RAFE POMERANCE

FROM: ALICIA MUNNELL
JEFF FRANKEL

SUBJECT: Three Climate Change Options

Before pulling together the best available information on the economic implications of three possible options coming out of Kyoto, we wanted to make sure that the options coincided with your sense of good, bad, and medium outcomes. The three options on our list are:

1. Stabilizing at 1990 emissions levels by 2010
2. Stabilizing at 1990 emissions levels by 2020
3. Cutting the trend rate of growth of emissions in half for each year between now and 2020, i.e., from a 20 percent increase by 2020 to a 10 percent increase by 2020.

We would present the effect of each of these policies on the price of carbon (and on oil, coal, gasoline, etc) and on GDP. All estimates would assume that the cutbacks were achieved in the most efficient way. The first set of numbers would assume that the cutbacks were all achieved domestically. The second set would include international emissions trading among Annex 1 countries, with the initial endowment distributed in proportion to GDP. The third set would include international emissions trading, with the initial endowment distributed on the basis of $\angle$ population.

Please let us know as soon as possible whether you agree with this formulation of the exercise.

Office of Economic Policy

Department of the Treasury • Washington, D. C. 20220

FAX

Date:

Nov. 6, 1996

Number of pages including cover sheet:

2

	Name	FAX Number	Phone Number
To:	<u>Jeff Frankel</u>	<u>395-6947</u>	<u>395-5046</u>
	<u></u>	<u></u>	<u></u>
	<u></u>	<u></u>	<u></u>
	<u></u>	<u></u>	<u></u>
	<u></u>	<u></u>	<u></u>
	<u></u>	<u></u>	<u></u>
From:	<u>Josh Gotbaum</u>	<u>202-622-2633</u>	<u>622-2200</u>

REMARKS:

☐

Urgent

☐

For your review

☐

Reply ASAP

☐

Please comment



DEPARTMENT OF THE TREASURY
WASHINGTON, D.C.

ASSISTANT SECRETARY

November 6, 1996

To: Alicia Munnell
Jeff Frankel

From: Larry Summers
Josh Gotbaum *JG*

Re: Climate Change Analysis

We like the suggestions set out in your memo. We have two suggestions to offer:

1. Since Tim mentioned a target concentration of perhaps 560 ppm, we suggest amending your third option to include it:

Modifying the trend rate of growth of emissions consistent with an ultimate atmospheric concentration of 550 ppm.

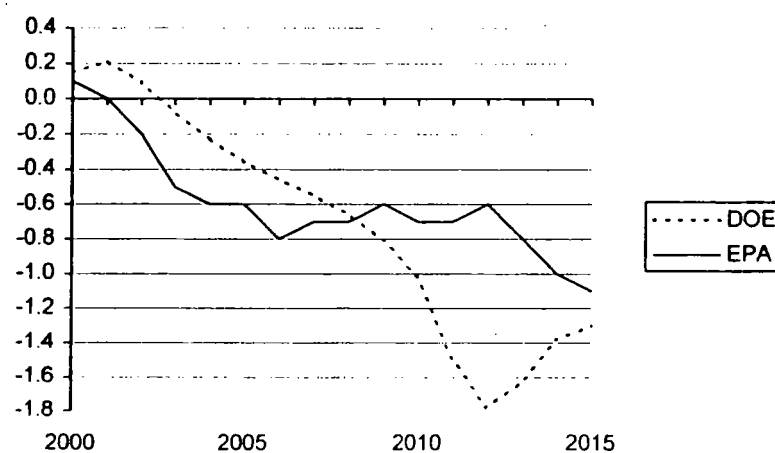
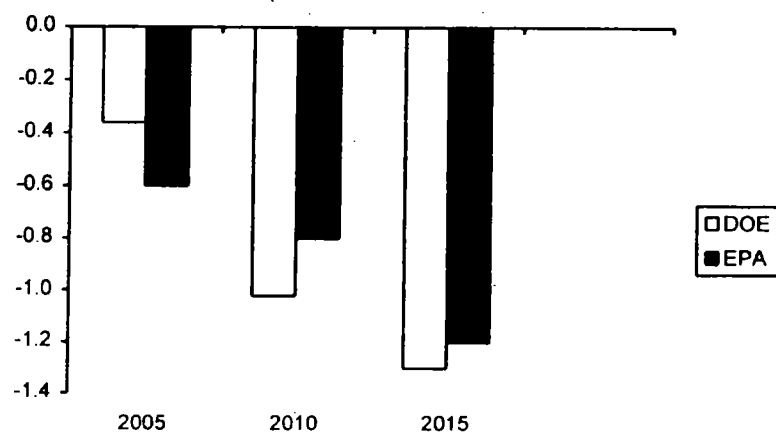
This may or may not be a more stringent test than the current version 3. (Under any foreseeable control regime, concentrations would not exceed 550 until at least the end of the next century.)

2. For the estimates that assume international emissions trades
 - Make sure the assumptions, even if optimistic, are sensible, and
 - Provide some sense of the magnitude of the trades, i.e., how much money changes hands.

Stabilization: 1990 CO₂ Levels in 2010

Revenue Recycled: 100% to Consumers
(DOE & EPA Using the DRI Model)

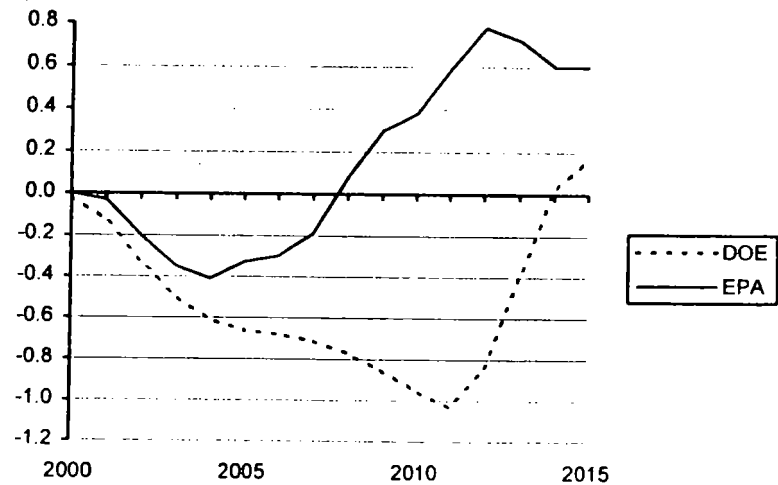
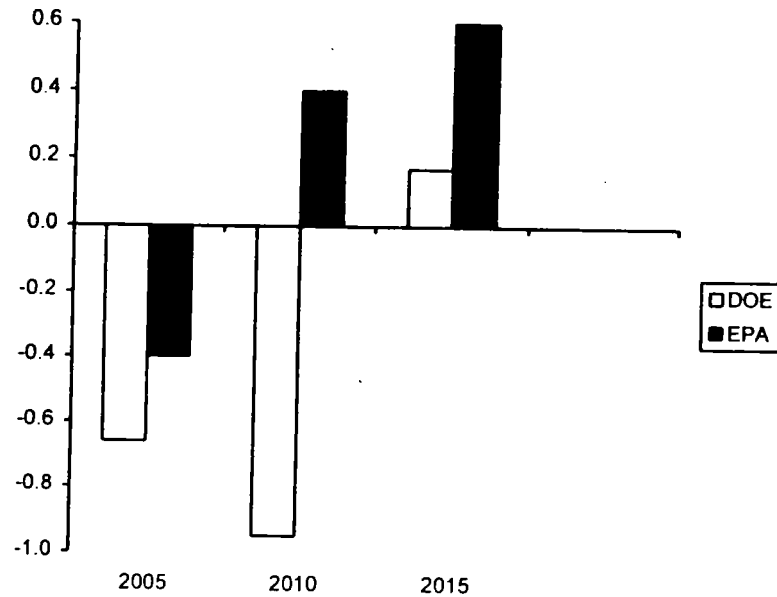
Percent Change in GDP (U.S.)



Stabilization: 1990 CO₂ Levels in 2010

Revenue Recycled: 40% to Consumers, 60% to Business
(DOE & EPA Using the DRI Model)

Percent Change in GDP (U.S.)



DOE: annual data are not yet available.

Notes on the June DOE and EPA Model Runs

- Which is right? Probably neither.
- EPA abates about 350 million tons of carbon with a “shadow tax” of \$160 per ton. DOE abates about 200 million tons of carbon at a cost of about \$195 per ton. Yet, despite the smaller deadweight loss, DOE produces far greater macroeconomic losses.

Why this contradiction?

- EPA runs represented energy in their potential GDP equation through “domestic oil and gas production,” a misspecification. (DOE, correctly, used total energy demand.) Absent a binding “speed limit” equation, EPA adjustment happens more quickly and effortlessly. This accounts for half the difference between the two sets of results.
- EPA also recycles revenues through reductions in marginal tax rates: DOE does so through lump sum transfers. EPA’s approach leads the model to increase investment and, therefore, productivity.
 - Revenue recycling has much to do, therefore, with final impacts.
- There were also important differences on the energy front:
 - DOE uses the “IDEAS” model -- a model based on an exogenous set of technological choices. As a result, it is fairly static, and yields very low observed price elasticities. EPA used DRI’s energy model, which has econometrically derived elasticities with more conventional term structure, etc. As a result, DOE’s results emphasize fuel switching, while EPA’s emphasize demand reductions and energy efficiency improvements.
 - The conservatism of DOE’s approach is seen in the fact that EPA had faster electricity consumption growth and emissions growth in its baseline, yet still produced cheaper emissions reduction.
- DRI may simply be too static in its approach. Other models produce more sanguine results.
 - ICF, a (the) leading energy/environment consulting firm, has produced utility sector runs showing greater responsiveness, hence lower adjustment costs.
 - CGE models generally give smaller burdens. Twelve of them analyzed by the Stanford Energy Modeling Forum produced median annual costs of \$8 billion (in \$1987).

Tues, 12/19/96, 3-5pm
cc: HW
JAF
RP

THE WHITE HOUSE
WASHINGTON
November 14, 1996

MEMORANDUM FOR DISTRIBUTION

FROM: Michael Warren, Executive Secretary
National Economic Council

SUBJECT: Climate Change Deputies Meeting

There will be a joint NEC-CEQ Deputies meeting on climate change on Tuesday, November 19 from 3:00 - 5:00 pm in room 231 OEOB. This meeting will be chaired by Dan Tarullo and Kathleen McGinty.

Deputies plus one are invited to attend. It is important that Deputies personally attend. The agenda is attached.

Please call Kristen Panerali at the NEC at 456-5353 with your clearance information by COB Monday, November 18. Thanks.

Distribution:

Charles Curtis, DoE
Ev Ehrlich, Commerce
Jack Gibbons, OSTP
John Schmidt, DoJ
Fred Hanson, EPA
Jeff Lang, USTR
Jack Lew, OMB
Cynthia Metzler, Labor
Richard Rominger, USDA
Alicia Munnell, CEA
Sandy Berger, NSC
Ben Nye, Treasury
Tim Wirth, State

AGENDA
Climate Change Deputies Meeting
Tuesday, November 19, 1996, 3-5 pm
Room 231 OEOB

- I. **Climate Science**
- II. **Economic Effects**
- III. **Cost-effective Mechanisms to Reduce Emissions**

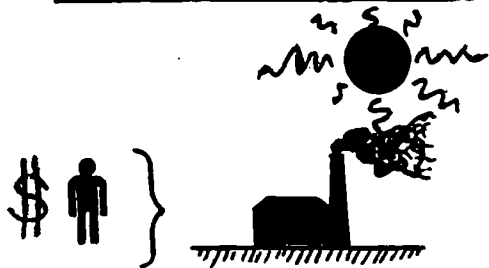
GLOBAL WARMING: WHAT WE KNOW & WHAT WE DON'T KNOW

DAN ALBRITTON - NAT'L OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA)

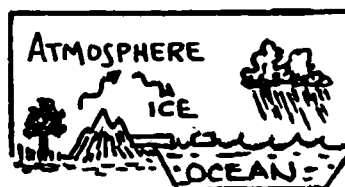
DEPUTIES COMMITTEE ON CLIMATE CHANGE
DOS, 19 NOVEMBER 1996

► CONTEXT: THE CLIMATE SYSTEM & HUMANKIND

• CLIMATE CHANGE FORCINGS



• PHYSICAL PROCESSES



• PHYSICAL RESPONSES



• BIOLOGICAL PROCESSES

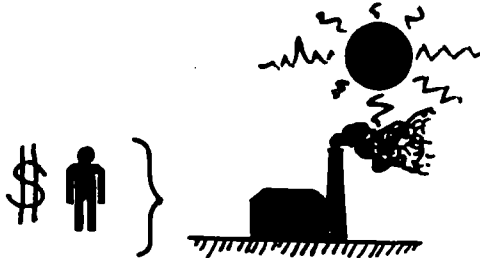
- CROP YIELD
- COASTAL HABITATION
- FOREST MIGRATION
-

• IMPACTS

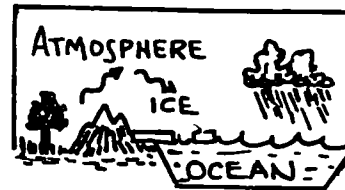
GLOBAL WARMING: WHAT WE KNOW & WHAT WE DON'T KNOW

► CONTEXT: THE CLIMATE SYSTEM & HUMANKIND

• CLIMATE CHANGE FORCINGS



• PHYSICAL PROCESSES

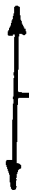


THREE MAJOR QUESTIONS:

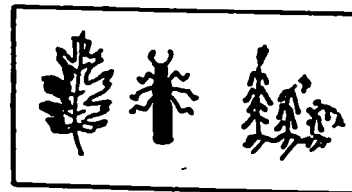
★ • HOW WELL DO WE UNDERSTAND THE CLIMATE SYSTEM & OUR ROLE IN CHANGING IT?

• HOW WELL CAN WE CHARACTERIZE THE IMPACTS OF CLIMATE CHANGE?

• WHAT ARE OUR FUTURE OPTIONS?



• PHYSICAL RESPONSES



• BIOLOGICAL PROCESSES



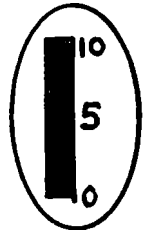
- CROP YIELD
- COASTAL HABITATION
- FOREST MIGRATION
- ⋮

• IMPACTS

A SCIENTIFIC STATUS REPORT



THERE IS A NATURAL GREENHOUSE EFFECT.
IT KEEPS THE EARTH WARMER THAN
IT WOULD BE OTHERWISE.



"CONFIDENCE INDEX"

POINTS...

● IN TERMS OF BASIC PHYSICS:

ⓑ IT WARMS UP AND...

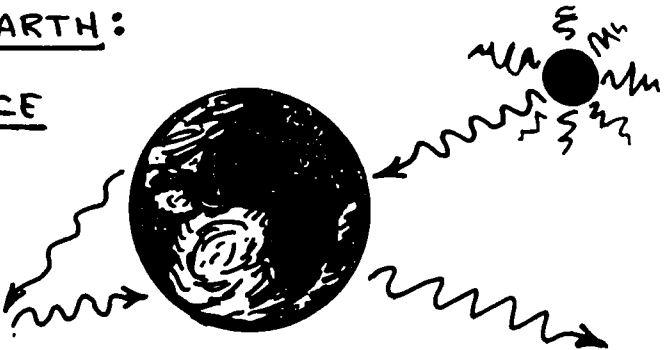


Ⓐ IF AN
OBJECT IS
BATHED IN VISIBLE LIGHT...

ⓒ IT EMITS INFRARED LIGHT.

● IN TERMS OF OUR PLANET EARTH:

<u>ATMOSPHERE</u>	<u>ABUNDANCE</u>
NITROGEN	78%
OXYGEN	20
⋮	
★ WATER VAPOR	2%
CARBON DIOXIDE	0.03
⋮	
↗ ⋮ ↘	
GREENHOUSE GASES	



● KEY ASPECTS

> WATER VAPOR & CARBON DIOXIDE HAVE BEEN PART OF OUR
ATMOSPHERE FOR MILLIONS OF YEARS.

> THEIR PRESENCE YIELDS AN AVERAGE SURFACE TEMPERATURE OF ~60°F.

> WITHOUT THEM, THE AVERAGE WOULD BE ~5°F.

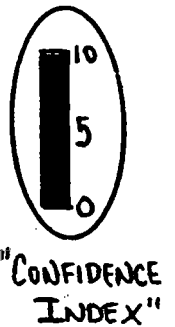
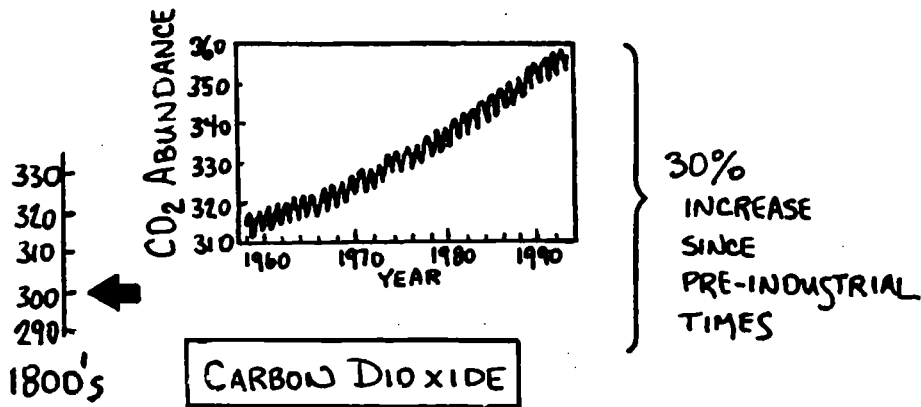
SO ... WHAT'S THE PROBLEM?

➡ GREENHOUSE GASES ARE INCREASING IN THE ATMOSPHERE BECAUSE OF HUMAN ACTIVITIES, AND THEY ARE INCREASINGLY TRAPPING MORE HEAT :



POINTS...

- IMPECCABLE SCIENTIFIC MEASUREMENTS



- OTHER GASES ARE INCREASING TOO

METHANE, FOR EXAMPLE

- THE SOURCES ARE HUMAN-CAUSED

CO₂ ~ ALL
METHANE ~ MOST

Q: BUT, WHAT ARE THE POTENTIAL CONSEQUENCES?

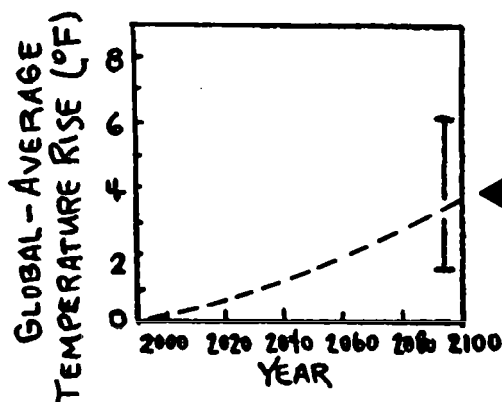
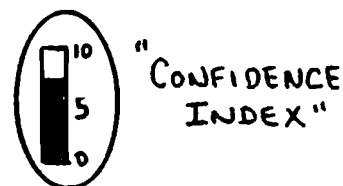
➡ A CONTINUED FUTURE GROWTH IN GREENHOUSE GASES IS PREDICTED TO LEAD TO VERY SIGNIFICANT CLIMATE CHANGES.

POINTS...

- CO₂ ABUNDANCE LIKELY COULD DOUBLE AROUND 2100

INDEED... TO STABILIZE AT DOUBLED → CUTS IN EMISSIONS
TO RETURN TO TODAY'S → DEEP CUTS

- PREDICTED CLIMATE RESPONSES.



"BEST ESTIMATE": $3\frac{1}{2}$ °F INCREASE IN TEMPERATURES AVERAGED OVER THE GLOBE.

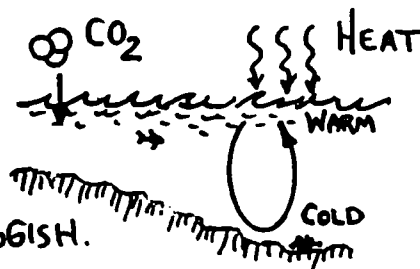
> IF SO, THIS WOULD EXCEED THE NATURAL CHANGES OVER THE PAST 10,000 YEARS.

> CORRESPONDING SEA LEVEL RISE : ~20 INCHES.

- A GREENHOUSE WARMING COULD ONLY BE REVERSED VERY SLOWLY.

REASON:

THE OCEANS ARE SLUGGISH.



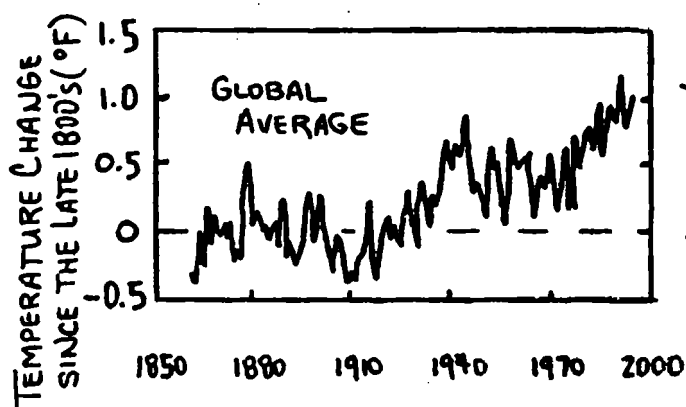
Q: HAVE WE SEEN ANY WARMING YET?



GLOBAL TEMPERATURES HAVE WARMED OVER THE PAST CENTURY & THE BALANCE OF EVIDENCE SUGGESTS A DISCERNABLE HUMAN INFLUENCE.

POINTS...

● GLOBAL TEMPERATURE MEASUREMENTS



THE EARTH (ON THE AVERAGE) HAS WARMED 0.5-1.0 °F OVER THE PAST 100+ YEARS.

> SLOW, NATURAL SWINGS IN TEMPERATURE SINCE THE LAST ICE AGE ARE NOT DISSIMILAR IN SIZE.

● THE OBSERVED WARMING IS UNLIKELY TO BE ENTIRELY NATURAL.

REASONS:

COMPARISONS OF TEMPERATURE-CHANGE PATTERNS:

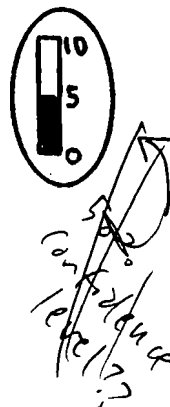
PREDICTIONS ↔ OBSERVATIONS

☒ REGIONAL }
☒ SEASONAL } PATTERN OF CHANGES
☒ VERTICAL }

• PREDICTIONS
 • OBSERVATIONS
TEND TO CORRESPOND

☒ CORRESPONDENCES INCREASE WITH TIME

☒ PROBABILITY IS LOW THAT A "NATURAL-ONLY" EARTH WOULD HAVE SUCH CORRESPONDENCES
 How low?

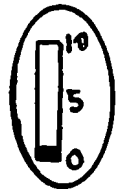
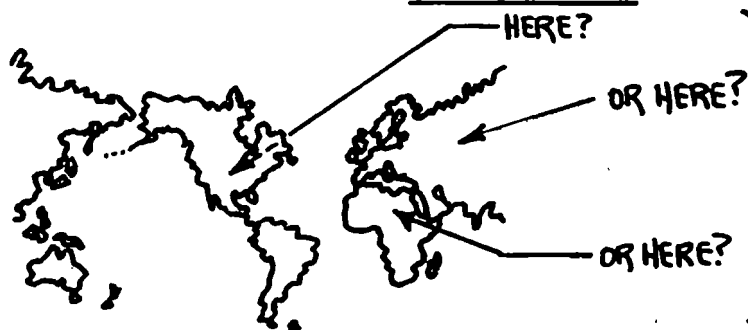


Q: BEYOND "GLOBAL AVERAGES"?

▶ IT IS A COMPLEX PLANET & WE HAVE IMPERFECT KNOWLEDGE, SO, PREDICTION OF FURTHER DETAILS SUFFERS.

POINTS...

● WHAT WILL HAPPEN IN PARTICULAR PLACES?



● REGIONAL CHANGES CANNOT YET BE PREDICTED RELIABLY.

- INDICATIONS ARE: • LAND WARMS MORE THAN OCEANS } WINTER.
- MAX N. HI-LATITUDE WARMING }
- TEMPERATURES BETTER PREDICTED THAN RAINFALL.

● HOW ABOUT "EXTREME EVENTS"?

> A WARMER WORLD → A MORE-VIGOROUS HYDROLOGICAL CYCLE

PERHAPS MORE VARIATION } FLOODS/DROUGHTS: MORE OR LESS SEVERE, FROM REGION-TO-REGION.

> HURRICANES: MORE/LESS FREQUENT? INSUFFICIENT KNOWLEDGE

● SURPRISES?

- > ABRUPT CLIMATE SHIFTS?
- > CURRENTLY UNKNOWN GEOPHYSICAL PROCESSES ACTIVATED?

POSSIBLE. HERE'S WHY:

- ENTERING A NEW REGIME OF CLIMATE PERTurbation.
- CLIMATE IS A NONLINEAR SYSTEM:

CONCLUDING COMMENTS

● BOTTOM LINES ➡ THE VAST-MAJORITY SCIENTIFIC VIEWPOINT:

- THE ISSUE IS A REAL ONE.
- SOME HUMAN-INDUCED CLIMATE CHANGE APPEARS INEVITABLE.
- DISCERNABLE "FIRST SIGNS" ARE SUGGESTED NOW.
- EXACTLY WHERE (REGIONS)
WHEN (RATE OF CHANGE) IS HARD TO PREDICT.
HOW MUCH (MAGNITUDE)
- HUMAN-INDUCED CLIMATE CHANGE WOULD BE SLOW TO REVERSE.

● BASIS OF THIS INFORMATION

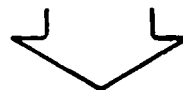
INTERGOVERNMENT PANEL ON CLIMATE CHANGE



OFF THE PRESS: APR/MAY '96

ASSESSMENTS:

- PREPARED BY EXPERT COMMUNITIES.
- INTERNATIONALLY BASED.
- "ONE-STOP SHOPPING" FOR THE ISSUE.



THE LAST BOTTOM LINE:
➡

KEY INPUT
TO POLICY
DECISIONS



THE WHITE HOUSE

WASHINGTON

December 2, 1996

*Copy to
Mr.
Prime*

MEMORANDUM FOR DISTRIBUTION

FROM: Michael Warren, Executive Secretary
National Economic Council

SUBJECT: Climate Change Deputies Meeting

Attached please find the agenda for tomorrow's joint NEC-CEQ Deputies meeting on climate change. The meeting is from 3:00 - 5:00 pm in room 231 OEOP. This meeting will be chaired by Dan Tarullo and Kathleen McGinty.

Deputies plus one are invited to attend. It is important that Deputies personally attend.

If you have not done so yet, please call Kristen Panerali at the NEC at 456-5353 with your clearance information **BY COB TODAY**. Thanks.

Distribution:

Sandy Berger, NSC
Charles Curtis, DoE
Ev Ehrlich, Commerce
Leon Fuerth, OVP
Morton Downey, DOT
Jack Gibbons, OSTP
John Garamendi, DOI
Fred Hanson, EPA
Jeff Lang, USTR
Jack Lew, OMB
Ben Nye, Treasury
Cynthia Metzler, Labor
Alicia Munnell, CEA
Richard Rominger, USDA
John Schmidt, DoJ
Tim Wirth, State

AGENDA
Climate Change Deputies Meeting
Tuesday, Dec. 3, 1996, 3:00pm
Room 231 OEOB

- I. International Framework for Negotiations
- II. U.S. Positions for December Meeting

Climate Change: U.S. Non-Paper
December 1996

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II. Linkages.....	3
III. Defining the Form of the Target.....	3
IV. Emissions Trading and Joint Implementation.....	5
V. Continuing to Advance the Implementation of Article 4.1 Commitments.....	8
VI. Compliance.....	10

I. Introduction and Background

At the second meeting of the Conference of the Parties (COP-2) to the United Nations Framework Convention on Climate Change (FCCC), the United States called for next steps under the Climate Convention for the post-2000 period to reduce the threat of climate change consistent with economic prosperity. For developed countries, these steps should include verifiable, binding medium term targets that are realistic and achievable, designed with maximum flexibility, and implemented through national programs. The U.S. position also underscored the need for all nations, including developing nations, to take actions to limit greenhouse gas emissions. Finally, we called for continued work on a longer-term global concentration goal (e.g. 50-100 years). We continue to believe that this is the approach that will produce a successful outcome at the third session of the Parties in Kyoto in December 1997.

To this end, we would like to call attention again to the conclusions of the IPCC Second Assessment Report, which found that "the balance of evidence suggests a discernible human influence on global climate." In the U.S. view, the potential for impacts of climate change on natural systems, the economy and the quality of life for future generations is truly significant; the scientific evidence suggests it could be detrimental for human health, ecosystems, food security and water resources in many regions of the world. In our view, all Parties should act on the conclusion Ministers reached last July: that the science provides a compelling basis for action to address climate change.

Notwithstanding the evidence compiled so far, we must continue our efforts to further develop and refine our understanding of the science of climate change, even as we seek to ameliorate its impacts. Such understanding, coupled with advances in the development and application of new technology, will ultimately enable a more efficient and successful long-term approach to addressing this pressing problem.

We believe that next steps must be as cost-effective as possible. Our analyses completed to date suggest that more flexible approaches offer significant cost-saving opportunities, and these must be brought into the Convention's basic framework. Flexibility includes allowing Parties nationally to determine the most appropriate policies and measures to meet the agreed target, and allowing emissions trading and joint implementation between Parties to minimize the cost of reductions.

The United States arrived at this basic framework for a number of reasons. It is clear that the Convention's existing framework of a non-binding "aim" is not working, even though, at the national level, numerous voluntary partnerships with industry are working well. Most developed countries, including the United States, will not achieve the goal of returning emissions in 2000 to 1990 levels. A binding commitment will create a stronger incentive for nations to decide on a realistic target, to make the effort required to meet the target, to ensure a level playing field, and to foster development and deployment of advanced technologies.

Our focus must be on appropriate steps over the medium term, while we continue to develop a longer term goal. We reiterate that short-term targets (i.e., before 2010) are unrealistic, and we cannot accept them. Short-term targets would be unnecessarily burdensome to national and global economic growth and development. They could mean that few, if any, countries would ratify the agreement.

Finally, the United States recognizes the need for global climate change to be addressed on a global basis. As a result, we believe it is imperative that the agreement we reach in Kyoto include specific provisions that advance the implementation of commitments by developing nations to mitigate their emissions of greenhouse gases. While recognizing that developed countries must show leadership in addressing this problem, we believe it is very clear that all nations must be part of the solution.

The Ministerial Declaration in Geneva at the Second Conference of the Parties to the Convention provides climate negotiators with a blueprint for action; we strongly endorse its approach. However, it is now time to develop and agree on concrete proposals.

This paper outlines our view on a number of issues and suggests several other options that merit closer scrutiny.

We expect to have further views on specific numbers that should be included in targets and timetables in the future as the results of our continuing analysis and assessment emerge. We hope that other Parties will join us in developing new proposals to meet our environmental and economic goals.

II. Linkages

A number of key variables under consideration are interdependent. This interdependence must be recognized in negotiating our next steps. The United States proposed a three-part framework for the target in Geneva, including that the target be binding, that it focus on the medium term, and that there be national flexibility in implementation. In addition, the United States believes it will be critical to include developing countries in next steps; finding a solution to the climate change problem will require a concerted global effort. In our view, all four of these concepts are linked, and all four must be included in the legal instrument.

III. Defining the Form of the Target

As noted above, at COP-2 in July, the United States specifically called for focusing negotiations on a binding, medium-term emissions target, incorporating flexibility in time and place of implementation. The United States also expressed an interest in continuing to work toward a longer-term concentration goal. We rejected any target which called for an unrealistic near term goal -- and we continue to reject such an approach. We also remain convinced that the target should be designed in a manner that allows for adjustment on the basis of new and evolving science. This paper outlines some of our current thinking on the form and structure of the target.

Multi-year Targets

The United States believes that the target set in the next step should cover a multi-year period in order to accomplish several objectives. First, a multi-year target would smooth year-to-year variability in weather and economic cycles. U.S. analyses of the effects of such variability provide a striking example of the importance of this issue: unusually hot or cold years can change U.S. gross national emissions by as much as two percent -- or about 40 percent of the emissions reductions sought from the energy sector by the year 2000. Because swings in weather, energy prices or economic cycles cannot be predicted with confidence, a single year target would require each country to build in an extra margin of GHG reductions to ensure compliance, significantly and unnecessarily raising the cost.

Second, a multi-year average would give Parties important flexibility to determine the pace at which their emissions budget would be expended over the period (evenly, front-loaded, or back-loaded). This flexibility may be particularly important in helping Parties to reduce their compliance costs in view of differing national circumstances. To provide this flexibility, targets could be set with budgets covering a multi-year period, for example, 2010-2020. Enforceability is a key issue in defining a multi-year period.

Banking/Borrowing

The United States strongly urges consideration of banking between multi-year average target periods. Such a process would allow emissions below the target in one period to be used to offset higher than target emissions in later periods. Banking of emissions could reward efforts to make reductions in earlier periods. Similarly, we should explore allowing Parties to borrow against their targets for the next period in order to emit more in a current period. We recognize that borrowing will require that a credible accounting and repayment mechanism be put in place, and that it also could entail additional restrictions (e.g., to limit the proportion of emissions reductions postponed).

Differentiation Among Annex I Parties

A number of Annex I Parties have suggested proposals for differentiation of commitments of the members of this group. While the United States acknowledges that clear distinctions can be (and are) drawn between different Parties and groups of Parties, we do not believe that developing a complex, formulaic approach which differentiates at an individual Party level is a viable alternative at this stage in the negotiations. To date, we have seen no formula for a differentiated approach which equitably addresses all Parties' concerns.

An effort to define an acceptable differentiation scheme in this legal instrument will likely derail the negotiations, by being too divisive and time-consuming, or by disadvantaging a group of countries that might then choose not to sign or ratify. Either outcome could negate the value of the differentiation effort.

Instead we endorse the adoption of a common approach with respect to targets that retains each Party's flexibility with respect to the choice of domestic policies and measures to implement the target. We also support international trading instruments to minimize and equalize Parties' marginal costs of making reductions. Such an approach would enable the completion of the agreement by December 1997.

Comprehensive Approach

The United States continues to support the inclusion of all greenhouse gases, both sources and sinks, in a comprehensive, verifiable approach to addressing the climate change problem. Gases other than carbon dioxide account for about 30 percent of the radiative forcing from all emissions since the industrial revolution. Furthermore, different gases represent different strategic opportunities from the perspective of effects on the climate system. For example, reductions in methane emissions could yield a lower rate of warming over the next several decades than comparable reductions in carbon dioxide. To forgo such a significant source of reduction potential would be both to reduce flexibility and to decrease the cost-effectiveness of the overall effort.

Assuming a comprehensive approach, several issues still require additional consideration. These include the different level of certainty with regard to measurement of non-CO2 emissions in various sectors, problems with verification, and the relative importance or weighting to be assigned to different gases. Significant technical difficulties also exist concerning accounting of sinks which need to be addressed. We will continue to insist that any agreed approach be fully quantifiable and verifiable, and include appropriate accounting procedures prior to inclusion into the legal instrument. This approach must be able to incorporate changing state-of-the-art methodologies for the measurement of the sources and sinks of all gases. The United States is currently working to address these concerns, and believes that a solution that is technically and politically satisfactory is achievable within the Kyoto timeframe.

IV. Emissions trading and Joint Implementation

The United States believes commitments adopted in Kyoto must be structured so as to allow Parties flexibility to achieve their emissions target as cost-effectively as possible. It is critical that provisions for international greenhouse gas emissions trading and joint implementation be included in the Kyoto agreement in order to meet the new commitments at the lowest cost.

Definitions: Emissions Trading, Joint Implementation, Activities Implemented Jointly

In the U.S. view, some common definitions and distinctions will help clarify discussions in this area. We envision emissions trading as applying between Parties that have assumed a binding target for their greenhouse gas emissions. We

envision joint implementation as a mechanism to allow credits for emission reductions between Parties with a target and between a Party with a target and a Party without a target. Activities implemented jointly (AIJ) is a pilot program to evaluate the viability of project-based reductions in the absence of targets and without credit. While AIJ will provide valuable insights for JI, we see no role for a continued pilot effort beyond the year 2000.

Emissions Trading Among Parties With Targets

The United States believes that the Kyoto agreement should include provisions for emissions trading among Parties that have assumed a binding quantified emissions target. This includes Parties that assume such a target in the Kyoto agreement, and additional Parties that do so subsequently. Through emissions trading, such Parties would have the opportunity to meet their emissions target at the lowest cost. This is a matter of ensuring environmental gains in the most cost-effective way.

Trading makes sense when costs of controlling greenhouse gas emissions differ among Parties. In this case, it is more cost-effective for the high-cost Party to buy a portion of the emissions budget of the low-cost Party than to undertake those reductions domestically. This rationalization of emissions reductions would be strictly voluntary, and would occur only if both Parties agreed. Under such an approach, the environment is protected, the high-cost Party saves money, the low-cost Party is rewarded, and the combined cost of meeting the targets is reduced.

The United States has had success domestically using emissions trading substantially to reduce the costs of complying with clean air standards for acid rain. Experience with international emissions trading has also been gained under the Montreal Protocol on Substances that Deplete the Ozone Layer through its industrial rationalization provisions.

Based on such successes, the United States believes that an effective and enforceable regime for emissions trading among Parties with a binding target should be developed and should be included in the Kyoto agreement. A number of issues need to be addressed regarding how such an international regime might be structured.

Emissions trading, as noted, would take place only between Parties that have assumed a binding emissions target. The target will give each such Party an allowable amount of greenhouse gases it can emit during a time period -- in other words, an "emissions budget" for the relevant period, expressed

in metric tons of carbon equivalent. In its most basic form, the emissions trading regime would allow one Party to transfer (sell or trade) some of its allowable emissions to another Party. The first Party would then be responsible for meeting its emissions target, minus the amount transferred. The second Party would be responsible for meeting its emissions target, plus the amount transferred.

We anticipate that many Parties will desire to develop emissions trading further, in order to allow private firms or other entities within their borders to engage in emissions trades with counterparts in other nations. In addition to government-to-government trades and firm-to-firm trades, we can also envision mixed transactions, in which firms from one Party buy directly from the government of another Party.

Certain fundamental institutional features are necessary for Parties that engage in international emissions trading to ensure that trading is verifiable, efficient, and environmentally beneficial. These include compatible mechanisms for accurately measuring, tracking, and reporting domestic emissions. Parties also must have the means to track amounts of emissions transferred to or from other Parties, to reduce or augment their national emissions target accordingly, and to ensure the integrity of trades undertaken by their nationals. The United States believes that guidance for these areas should be developed by and agreed to at COP-3 in Kyoto.

Joint Implementation

The FCCC Parties have been engaged in discussions of joint implementation for several years. During this time, support has grown regarding the value of joint implementation involving a Party that is subject to an emission target and another Party that is not (whereby a Party with a target gains credit for taking actions that reduce emissions in a Party without a target). Such an approach has the potential to reduce the first Party's cost of meeting its target, while increasing investment in and diffusion of technology to the second Party.

The United States believes that the Kyoto agreement should include the establishment of a joint implementation regime providing for emissions credits. Such a regime will encourage the rapid development and implementation of cooperative, mutually voluntary projects between partners; encourage private sector investment and innovation in development and dissemination of technologies; and provide an incentive through financial and technical assistance to further the development of non-Annex I country programs to limit increases in greenhouse gas emissions.

In order to realize the potential of joint implementation, the process of developing criteria, currently underway in the Subsidiary Body for Scientific and Technological Advice (SBSTA), must continue. Such criteria will be essential to ensure that joint implementation becomes a credible and significant contributor in solving the climate change problem. The U.S. Initiative on Joint Implementation (USIJI) has been one of the most successful and aggressive programs in the development and application of criteria. We intend to remain active in the further development of criteria (working both in the domestic context of the USIJI and internationally). We reiterate our view that criteria development can be completed prior to the year 2000, in time to include JI credits in national GHG reduction compliance programs.

We continue to stress the importance of three criteria in particular: (1) acceptance by the governments of the participating countries; (2) the importance of the reporting of data and methodological information with regard to the project, and (3) the need to insure "additionality" (i.e., a reduction in net greenhouse gas emissions as a result of the project).

V. Continuing to Advance the Implementation of Commitments for All Parties (Article 4.1 Commitments)

Recognition is widespread that the threat of climate change is a global problem that can only be overcome through global action. While industrialized countries now account for the majority of the world's past and current greenhouse gas emissions, greenhouse gas emissions are growing most rapidly in the developing countries; emissions there are projected to exceed those of the developed countries by about 2020. The Climate Convention, and the Parties (based on their decisions to date) recognize both realities.

The Berlin Mandate began a process to enable the Parties to take appropriate action for the period beyond 2000. It provides for developed countries to elaborate on policies and measures, and to set quantified emission limitation and reduction objectives for greenhouse gas emissions. For developing country Parties, the Berlin Mandate process will not introduce any new commitments but calls upon Parties to reaffirm existing commitments in Article 4.1 and continue to advance the implementation of those commitments. The Geneva Declaration from the Second Conference of the Parties last July provides that the outcome of the current negotiating effort should fully encompass the remit of the Berlin Mandate.

Two key points emerge from these documents: (1) next steps under the Convention must include all Parties, and (2) actions

ultimately taken by developed and developing country Parties should be appropriately balanced, recognizing the common but differentiated responsibilities and respective capabilities noted in the Convention and upheld both in the Berlin Mandate and the Geneva Declaration.

To date, all Parties have been making progress toward implementing their commitments under the Convention, including those related to the submission of first national communications under Article 12. Through the U.S. Country Studies Program, we are aware that many developing countries are already far along in preparing national inventories of greenhouse gas emissions and in developing national action plans. A number of developing countries have also initiated projects under the Pilot Phase for Activities Implemented Jointly.

Beyond these current efforts to implement existing Convention commitments, a wide range of possibilities exist through which we can "continue to advance the implementation of existing commitments" as contemplated by the Berlin Mandate. Much work remains to be done to gauge the level of effort developed country Parties will undertake pursuant to the Berlin Mandate. Still, it is not too early to advance our thinking about the range of possibilities for continuing to advance the implementation of existing commitments, recognizing the need for all Parties to take action.

National Communications/Policies and Measures

While the Parties have adopted guidelines for the preparation of initial communications from developing countries, they have yet to consider options for reviewing those communications. Such a review process could include systematic efforts to assist developing country Parties in identifying and implementing no-regrets and cost-effective options for mitigating greenhouse gas emissions.

The review could seek to identify key sectors and technological options within them. It could also consider the possibilities for promoting voluntary agreements with industry aimed at identifying and encouraging the implementation of "no regrets" measures. Partnership agreements have proven highly effective in the United States at enlisting private sector support for mitigating greenhouse gas emissions, and in helping to capture efficient emissions reductions opportunities that are otherwise obstructed by market barriers.

In addition, we could explore various means through which Parties could obtain both the know-how and the technology needed to implement the options identified.

Next Steps

Beyond these kinds of efforts, we could consider developing guidelines for revising the Convention Annexes (that establish which Parties assume which commitments under the Convention, and for considering how better to reflect the common but differentiated responsibilities and capabilities of Parties. In our view, as countries develop to -- and beyond -- a certain point, they must graduate to assume responsibilities commensurate with their development. The present groupings do not reflect dynamic changes in the world that have occurred since 1992 and that will only accelerate in the future.

Another option would be to consider agreeing in the context of the Berlin Mandate negotiations on further negotiations to establish a specified date in the future by which all Parties would be expected to have quantitative commitments with respect to their greenhouse gas emissions. Two variables might also be considered. First, the date need not be the same for all Parties -- we could envision a schedule for phasing in quantitative commitments. Second, the nature of the quantitative commitments need not be the same for all Parties -- we could also envision establishing different levels of commitment based on various factors, including levels of development. It would be important to consider carefully the mandate for these negotiations, including when they could begin, when they would conclude and what results should be anticipated.

As noted, the range of possibilities is very wide. It represents a kind of continuum beginning with modest efforts, but potentially extending to those which would bring us significantly closer to a truly global response and to the Convention's ultimate objective. It is as yet too soon to determine precisely where along this continuum we should strive to reach as part of the Berlin Mandate process. Inevitably, this will depend in large measure on the level of action that developed countries are prepared to undertake, and it is not yet clear what that level will be. Still, in our view, it is not too early to think boldly about the possibilities and about how best to position ourselves for the future, recognizing that the steps we take in Kyoto will represent only a second milestone along a much longer path toward the Convention's ultimate objective.

VI. Compliance

The U.S. has called for a binding target both to promote a realistic negotiation and to promote compliance with the result. The question is what other elements should be included

in the compliance regime, recognizing that, on the one hand, effective compliance is important for both environmental and economic competitiveness reasons and, on the other hand, that too stringent a compliance regime could result in vague commitments and/or scare off countries from joining the agreement.

Several categories of elements could promote compliance; they are discussed below.

Structure of commitments

In terms of the target, as a matter of drafting, it needs to be articulated as clearly and quantitatively as possible; as a matter of substance, it should be as objectively measurable as possible. In terms of commitments to advance implementation of Article 4.1, these should, ideally, also be as specific as possible. The desire of developing countries for flexibility could be met by providing flexibility in the choice of implementation options rather than by vague, heavily qualified commitments (such as those in the current Convention).

Ascertaining compliance

Ascertaining compliance will involve a combination of: requirements on parties to monitor and report on their emissions; and an international mechanism to verify such monitoring/reporting. The Convention's current obligations regarding national inventories, national communications, and an international in-depth review process are an excellent basis. The new agreement may require strengthened national and/or international mechanisms. (For example, parties bound by the target could be required to have in place a domestic emissions monitoring system, at a minimum for CO₂, at a minimum for specified sources.) There will also be a need to promote uniformity of measurement.

Supporting implementation

Particularly in terms of developing country performance, the availability of sources of technical assistance (such as systematic support for efforts to develop national action plans) and expanded programs aimed at developing, diffusing and deploying climate-friendly technologies could be effective in promoting compliance.

Dispute settlement

The current Convention allows any party to challenge another party's compliance with its obligations before a neutral third party, with a recommendatory result. (Parties

can opt for a binding result, but it is not required.) Whether this system would suffice for the new agreement, or whether it would need to be enhanced needs to be considered, taking into account, among other things, the extent to which the target is clear and objectively measurable (which is not currently known). Ways to enhance the system include, for example, requiring the issuance of binding judgments or specifying particular consequences flowing from a binding judgment of non-compliance.

Additionally or alternatively, the dispute settlement system could be supplemented by a multilateral consultative process, akin to that being developed under the current Convention. Unlike dispute settlement, such a process is considered non-adversarial in that implementation issues can be raised without asserting an actual treaty violation; the parties, rather than third parties, consider issues; and it is multilateral rather than State-against-State.

Non-parties

Development of a compliance regime regarding a global issue also requires consideration of how to deal with non-parties (the so-called "free rider" problem), so that the environmental objective of the agreement is not undermined. Ways to seek to minimize the non-party problem include: the provision of positive incentives for countries to join the regime (for example, assistance, differentiated obligations, other participatory privileges); through an entry into force clause that requires ratification by countries that account for a particular percentage of global emissions of greenhouse gases; and/or the use of measures against non-parties.