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United States Department of State

*Bureau of Oceans and International
Environmental and Scientific Affairs*

Washington, D.C. 20520

January 20, 1998

cc: JAF
AM
RL
JA

TO: *Distribution

FROM: OES/EGC - Daniel A. Reifsnyder *JAR*

SUBJECT: Discussion Paper on Rules for Emissions Trading

Attached is a paper on Rules for Emissions Trading -- to serve as a discussion document for the meeting that David Sandalow will convene tomorrow, January 21, at 4:00 p.m. in Room 472 of the Old Executive Office Building. This paper supplements materials on this issue that will be distributed by EPA also for the meeting.

Attachment:

As stated.

5 pages total

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CEQ/NSC	David Sandalow	456-2710	456-6224

**Discussion Paper on Rules for
Emissions Trading: Objectives for COP-4
(January 20, 1998)**

Background

- While the U.S. had advocated a more elaborate Protocol provision on emissions trading, including various rules, the final Article 16-bis is barebones, leaving it to the COP to define “the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability....”
- Largely due to U.S. insistence that the establishment of emissions trading rules not be put off until the first Protocol COP, a COP-3 decision calls upon COP-4 in Buenos Aires to take up “definition of relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability of emissions trading....”.

U.S. Objectives

- In general, the U.S. should seek to achieve a regime that is consistent with the rules that it supported leading up to Kyoto.
- This includes affirmative support for desired rules and opposition to inappropriate rules proposed by others.
- In addition, the regime must be consistent with approaches we may wish to take within an “umbrella group.”

Affirmative Support

- A rule included in the U.S. proposal was that, in order to engage in trading, a Party had to be in compliance with its measurement and reporting obligations under the Protocol (now Articles 5 and 7), as well as have in place a national mechanism for the certification and verification of emissions trades. We should continue to support such a rule in the relevant decisions on trading.
- Another rule proposed by the United States was that a Party could authorize intermediaries (such as the private sector) to participate in actions leading to the transfer or acquisition of emissions allowed. Both the JI and CDM articles in the Protocol contain such a provision; however, because the trading article was truncated, it does not appear there. Such an explicit rule in the relevant decisions on trading would be helpful, although we should maintain, in any event, that nothing in the Protocol precludes a Party from deciding to involve its private sector.

- Another rule proposed by the United States was that a Party whose emissions are in excess of its emissions budget in any budget period could acquire, but not transfer, emissions allowed. [DOE has since raised questions about this provision; this issue should be resolved interagency in order to determine whether this rule should be promoted.]
- Another rule proposed by the United States related to what happens when there is a question regarding a Party's compliance with its measurement or reporting obligations; in essence, our proposal was that transfers could continue to be made, but that transferred emissions could only be used for purposes of meeting target commitments after the compliance issue had been resolved. We should continue to support such a rule in the relevant decisions on trading.
- In our original proposal, we called for Parties, with respect to any international trading in which they participate, to submit annually to the Secretariat information regarding the quantity, Party of origin or destination, and the relevant budget period. We should continue to support such a rule in the relevant decisions on trading. [However, we would not want to be required to provide information on prices.] We should also call upon the Secretariat to publish annually a tabulation of emission trades made in the previous year and of the resulting adjustments to assigned amounts under Article 3.
- Leading up to Kyoto, we sought to ensure that not only Annex I Parties, but "Article 10" Parties as well (*i.e.*, developing countries that took on targets) would be able to engage in emissions trading. While a free-standing Article 10 was not included, the fact that Article 16 *bis* allows the Parties included in "Annex B" to participate in trading is very helpful. It essentially means that a developing country could, through an amendment to Annex B (which would consist of its name plus its QELRO commitment), engage in trading. A U.S. objective will be to ensure that any rules that emerge from the COP do not compromise this view.

Oppose

- It is possible that other countries may try to impose a numerical limit on the amount of a Party's target commitment that may be met through emissions trading. In our view, the language in Article 16 *bis* that trading shall be "supplemental to domestic actions" is not to be further defined by the COP. Hence, this purely qualitative language should not be redefined quantitatively. (This provision stands in contrast to Article 12(3)(b) on the CDM, which calls for the COP to determine what "part" of a target commitment may be satisfied through CDM certified reductions.)
- As at COP-3, India or others may invoke "equity" to seek to impose a limit on the amount that may be traded. Their argument was that Annex I countries should not be entitled to profit from selling off emission rights based on their large historical emissions. Indeed, Article 16 *bis* includes a reference to having the COP decide on "relevant principles" in response to the Indian concern. The U.S. would need to oppose any limits proposed on this basis, including on the ground that, notwithstanding the Protocol text, the COP-3 decision does not include "principles" in its mandate to COP-4.

- At COP-3, the U.S. reached conceptual agreement with several other non-EU countries (such as Russia, Canada, Australia) on establishing an “umbrella group,” whose members might agree only to engage in emissions trading among themselves or to accord each other better conditions than non-umbrella group members. It will be critical to ensure that no rules emerge that would be inconsistent with such an approach (for example, potential EU proposals about “free market” principles).

Other

- Going into Kyoto, we had a position formulated concerning the bracketed proposal in the Estrada draft that pre-budget period tons (so-called “superheated air”) could not be used as the basis for emissions trading. There is no provision addressing this subject in Article 16 bis, leaving unclear the issue’s resolution. To the extent that our position is not reflected in the absence of the provision, we may need to address the issue in the rules.

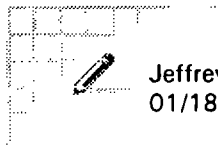
**LISA D.
BRANCH**
01/20/98 09:24:00 AM



Record Type: Record

To: Adele C. Morris/CEA/EOP, Joseph E. Aldy/CEA/EOP, Randall W. Lutter/CEA/EOP
cc: Jeffrey A. Frankel/CEA/EOP
Subject: Mtg on LDCs

Jeff is free at 4 today to discuss this issue. Can you make this time? Please respond ASAP.
Thanks.



Jeffrey A. Frankel
01/18/98 02:32:12 PM

Record Type: Record

To: Adele C. Morris/CEA/EOP
cc: Randall W. Lutter/CEA/EOP, Joseph E. Aldy/CEA/EOP
bcc: Lisa D. Branch/CEA/EOP
Subject: Re: meeting on LDCs

Let's talk (all four) about this -- particularly the CEA-led paper. Tuesday p.m. or else Wed. at 10.
JF

Adele C. Morris

Adele C. Morris

Record Type: Record

To: Jeffrey A. Frankel/CEA/EOP
cc: Randall W. Lutter/CEA/EOP, Joseph E. Aldy/CEA/EOP
Subject: Re: meeting on LDCs

You'll be getting copies of two discussion papers which, along with the Commerce paper on developing countries that you already have, formed the basis for today's meeting.

Points that came out of the meeting:

At the end of April, the President will go to Santiago for the Summit of the Americas. Some progress on "meaningful participation" by developing countries should be announceable at that time. This may mean action on the Clean Development Fund, agreements to agree on specific JI projects, or opening a dialog about targets for the key LDC's.

CEA will take the lead on developing an interagency options paper for emissions targets and trajectories for LDC's. The paper will examine pros and cons and address confidence building aspects to reassure developing countries that we do not intend to impede their economic growth. In a related exercise, the USG may choose 5-30 specific countries to focus on for meaningful participation and emissions reductions. Key aspects of creating targets for LDC's include obtaining higher quality data on emissions and economic indicators, establishing baselines from which reductions can be measured, and studying specific countries' emissions performance and identifying opportunities for improvement, perhaps as part of the ongoing AID country study efforts.

The Clean Development Mechanism needs flesh on its bones. There is intense interest in several aspects of the program, including its early credit provision and the share of proceeds that should go to island nations for adaptation projects. I think there is a lot of scope for us to help design this thing. Thankfully, everyone is in agreement that although some administrative/expert body should certify the emissions, market forces should determine which projects actually get funded.

The next meeting of the group is next Wednesday.



US ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR AND RADIATION
 IMMEDIATE OFFICE - fax (202) 260-5155
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TO: Gene Sperling ② Katie McGinty ③ Jeff Frankel John Gruber ⑤ Stu Eisenstat	FAX#: 456 7132, 456 2710, 355 6947 622 2633, 647 9763 PHONE#: 260 7400
FROM: David Doniger / David Gardiner	PHONE#:

COMMENTS:

We've already moved
 just a bit in their direction;
 in last night's version.
 Joe can we do a run
 with AEEI of 1.5 or 1.6,
 just in case it is
 required?

9F

cc: JY
 JA
 RL print
 AM 2/6/98

page 1 of 3 (including cover sheet)

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

MEMORANDUM FOR TODD STERN

FROM:

David Doniger, EPA
David Gardiner, EPA

Handwritten signatures of David Doniger and David Gardiner.

SUBJECT: The Role of the Climate Change Technology Initiative
in Evaluating the Costs of Kyoto

DATE: February 4, 1998

We are concerned that the economic analysis now being prepared underestimates the impact of the tax incentives and program investments contained in the President's Climate Change Technology Initiative (CCTI) and the broader technology transformation that these proposals are intended to trigger. While we are not directly involved in preparation of the economic analysis, it is our understanding that the current draft analysis uses a range of 1.0% to 1.25% to represent the annual rate of improvement in energy efficiency across the economy (e/gdp). EPA believes this range significantly understates the potential of the Administration's expanded climate proposals. As explained below, we recommend extending the range examined in the analysis upward, at a minimum, to 1.5%.

The Administration's climate policy follows two paths to reduce the costs of meeting the Kyoto targets. The first path, represented by the CCTI proposals, seeks to lower the cost of purely domestic action by accelerating deployment and R&D incentives for energy-efficient and low-polluting technologies. The second path seeks to obtain low cost reductions from abroad through international market mechanisms (emissions trading, JI, and the CDM). Following both paths simultaneously gives us better prospects of achieving a reasonable cost result than following one or the other path alone.

We are concerned that the 1.0%-1.25% range of rates of change currently being modeled does not reflect the impact of the CCTI and associated policies. Thus, while the analysis is strong on the cost-reducing potential of the international trading path, it appears to sell short the Administration's commitment to reducing costs through accelerated technology change. This will hamper our efforts to gain Congressional support for the CCTI proposals and for our overall post-Kyoto policy.

The draft IAT analysis released last summer concluded that "higher rates of technological progress can cut dramatically the implicit price of carbon and the associated transitional GDP losses." The IAT analysis took 1.25% as a central case, not an upper limit. In the 1997 U.S. National Communication submitted under the climate convention, the Administration projected levels of energy savings from the Climate Change Action Plan programs, at their current funding level of about \$1 billion over five years, that translate into a 1.25% annual improvement in e/gdp

(approximately 1.2% if measured against the higher baseline of AEO 98). The IAT analysis also reported that carbon emissions and control costs would be significantly reduced if the annual e/gdp improvement rate could be increased to 1.75%.

The proposed CCTI program, at \$6.3 billion in new funding over five years, significantly enlarges the CCAP effort. Funding for EPA and DOE programs to accelerate deployment of existing technologies is to be more than doubled. R&D funding is also substantially increased. These efforts are to be matched by \$3.5 billion in tax incentives for technology deployment. EPA conservatively estimates that the CCTI (including the base CCAP programs) can increase the annual improvement in e/gdp in the energy sector to at least 1.5%.

Expanding the range of efficiency improvement rates being modeled to 1.0%-1.5% would, at the upper end, roughly double the expected impact of the Administration's climate programs. Working from the AEO 98 baseline, a 1.5% e/gdp improvement rate is equivalent to a reduction of about 180 mmtce, or about 10% of the baseline emissions in the energy sector. This is also about 35% of the 2010 "gap" in the energy sector.

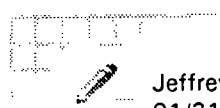
A range extending to 1.5% would also be a conservative way to incorporate the results of the DOE 5 Lab study. Last year EPA undertook an analysis that built technological assumptions consistent with the DOE 5 Lab study into the Markal-Macro model. These assumptions led to an annual e/gdp improvement rate of about 1.6%. That analysis suggested that the price of carbon in 2010 could be lowered by more than 40% with net *positive* gains in GDP.

In sum, EPA believes it is essential that new analysis of the costs of Kyoto include adequate consideration of the potential for the CCTI and our related policies to lower costs by accelerating technological change. The analysis needs to fairly represent the Administration's two-path approach — pursuing lower costs through domestic technology change as well as international market mechanisms — towards reasonable economic outcomes. To understate the value of one path would weaken our prospects for defending both the new budget proposals and the overall economics of the Kyoto agreement.

We recognize that little time remains for preparation of next week's Congressional testimony. We will be happy to contribute in any way.

cc: Gene Sperling
Jeff Frankel
Katie McGinty
Jon Gruber
Stuart Eisenstat

FB
cm



Jeffrey A. Frankel
01/21/98 08:09:10 PM

Record Type: Record —

To: Janet L. Yellen/CEA/EOP
cc: Joseph E. Aldy/CEA/EOP, Randall W. Lutter/CEA/EOP, Adele C. Morris/CEA/EOP
Subject: report on Eizenstat mtg. re GCC

The 5:00 mtg. at State turned out to be chaired by Eizenstat, with a big agenda (which I will circulate). One interesting item was the question whether the President should sign the treaty now; the general consensus seemed to be to withhold signing (in addition to submission for ratification) until after Buenos Aires.

The most important item on the agenda from our viewpoint was the economic analysis. The view was that there had to be one, and that this meant eventually a report that would be released. He asked whether we could have the basic economic analysis (not the full report) ready in time for his testimony. The Senate Foreign Relations Committee has asked him for Feb. 5, but they thought they might possibly be able to postpone it another week. Jon and I told him that another week would help a lot -- that currently we are missing an authoritative interpretation of what to assume on sinks, as well as results from other models (in the latter case, to be honest, another week won't get us much more). He told his State people to try to get us some answers to our questions on sinks (Rafe...).

Stu was definite that someone from the economic team would have to testify. Half the time, the presumption among those present was that it would be Larry. But half the time other formulations were used (e.g., "someone from the economic team," "Larry or Janet," etc.).

Joe, et al: Regarding our work program, we'll know more after tomorrow's meeting. But after we fill in the holes in the basic analysis that we have done (e.g., other models), we also have to start thinking about "visuals," about quantifying (if not monetizing) climate effects, about things we can say about the impact on the energy bill of a typical family, and about other pieces of the argument, such as answering claims that there will be large numbers of unemployed. We will need to divide up these tasks among us, and with Treasury.

JF

S.E. Staff

AGENDA

I. Review of Last Week's Action Items

- Presidential Decision Memo on signing
- Economic Analysis
- Eizenstat - Byrd Conversation • Lieberman - Byrd
 opposite. sign now. save leverage for ratification.
 Pos about Kyoto. Don't sign before B.A.
- Hill Packet
- Testimony and Visuals

Rashell: Atmos. signing now would
 2x danger eventual success.
 Hold off to B.A. Time to educate,
 signing would lead to neg. resolution.

II. Diplomatic Strategy Stock Taking

- Issues
 - Defining meaningful participation of developing countries.
 - Defining the rules for emissions trading.
 - Pursuing the emissions trading umbrella.
 - Strategy for advanced developing countries.
 - Power Plant Initiative in LDCs. SE should leverage IFIs: we will not support any initiative that does not
- Papers
- Key Venues and Principals Engagement
 - (R. G. + J. Hunker)
 - Paul
 - Hales
 - Treas.: does not mind very quickly.
 But doesn't want...
 - Wilcox was there. But need Graham for

III. Next Steps and Next Meetings



Jeffrey A. Frankel
11/11/97 04:16:53 PM

Record Type: Record

To: Adele C. Morris/CEA/EOP, Randall W. Lutter/CEA/EOP, Joseph E. Aldy/CEA/EOP
cc: Lisa D. Branch/CEA/EOP
Subject: GCC mtg with TJ/Peter Orszag 1:30-3pm on Wednesday (11/12) in Rm 324.

I will probably go to this meeting. But Adele (or else Randy) should probably plan on coming too.
JF

----- Forwarded by Jeffrey A. Frankel/CEA/EOP on 11/11/97 04:14 PM -----



Record Type: Record

To: See the distribution list at the bottom of this message
cc: See the distribution list at the bottom of this message
Subject: GCC mtg with TJ/Peter Orszag 1:30-3pm on Wednesday (11/12) in Rm 324.

You are invited to attend an interagency discussion mtg hosted by TJ Glauthier and Peter Orszag regarding Global Climate Change. The purpose of this meeting is three-fold: 1) to follow-up on agency efforts to develop a program of R&D initiatives in light of the President's announcement on October 22, 1997 of \$5 billion; 2) to provide some guidance to the agencies about the way the President's announcement will be incorporated into the FY99 budget ; and 3) to discuss the potential distribution of that announcement between tax incentives and spending.

THE MEETING WILL TAKE PLACE AT 1:30PM IN ROOM 324. THOSE OF YOU IN THE OEOB, PLEASE RESPOND BY E-MAIL IF YOU WILL NOT BE ABLE TO ATTEND.

The list of agency invitees is as follows:

DOE	Reicher, Mazur, Moniz?, Romm, and Peterson
EPA	Gardiner, Doniger
DOD	S. Goodman, Pete Petochny
Treasury	Stoltz, et al
Transportation	Kruesi
Commerce	Hunker
Labor	Montgomery
State	Gordon
WHCCTF	Forrister, Greenwald

Message Sent To:

Jonathan Orszag/OPD/EOP
Joseph J. Minarik/OMB/EOP
Randolph M. Lyon/OMB/EOP
Kathleen Peroff/OMB/EOP
Ronald M. Cogswell/OMB/EOP
Randolph J. Steer/OMB/EOP
Robert J. Tuccillo/OMB/EOP
Henry C. Kelly/OSTP/EOP
Rosina M. Bierbaum/OSTP/EOP
David B Sandalow/CEQ/EOP
Jeffrey A. Frankel/CEA/EOP
Gary L. Bennethum/OMB/EOP

Message Copied To:

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Edith D. Hopkins/OMB/EOP
Darlene B. Fleming/OMB/EOP
Franklin F. Urteaga/OSTP/EOP
Lorena E. Ahumada/OSTP/EOP

Adele C. Morris

Record Type: Record

To: Jeffrey A. Frankel/CEA/EOP

cc: Randall W. Lutter/CEA/EOP, Joseph E. Aldy/CEA/EOP, Lisa D. Branch/CEA/EOP

Subject: Re: GCC mtg with TJ/Peter Orszag 1:30-3pm on Wednesday (11/12) in Rm 324. 

I can go.

→ R.L.

This discussion makes sense
only if permits are to
emit, not to market fuels
containing, carbon. Should
this distinction be made clear.
DOs would pay higher prices
if permits were at wellhead.

11/13/97 Randi.

Your note of the other day
was of course 100% on target.
But at that meeting (as so often),
I felt the political crosswinds were
so strong that it was best to say little.
(Your point would have bolstered DO, who I believe
has behaved badly in this.) DF

25/10 '97 SAT 14:18 FAX

003

25 October 1997

Memorandum

To: Please See the Attached List

From: USDEL/Bonn - Mark G. Hambley

Subject: Climate Change Talks, Update No. 6: Activities for October 24/25, 1997

This is one of a series of unofficial and informal reports covering meetings and activities related to the meetings of the Ad Hoc Working Group of the Berlin Mandate (AGBM-8), the Subsidiary Body on Implementation (SBI), and the Subsidiary Body on Scientific and Technological Advice (SBSTA) which are meeting in Bonn between October 20-31, 1997. This report covers activities from the afternoon sessions on Oct 24 through the morning meetings on Oct 25. Additional, more detailed reports on the following topics are also provided:

- (a) Report on the QELROS Policy Non-Group for Oct 24 (prepared by EPA's Sharon Saile)
- (b) Reports on National Communications from the SBSTA discussions and notes on the contact group on methodologies prepared by DOE's Bill Breed; and
- (c) Report on the Oct 21 Second Meeting of SBI prepared by USDA's Dr. Carol Whitman.

Although the contents are unclassified, they are not intended for attribution or for use outside the U.S. Government. The final paragraphs of this report can be used as a submission to the Daily Activities Report (DAR) as desired or appropriate.

Climate Changes Talks, Update No. 6: Trading, Banking, and Borrowing Under Growing Assault; U.S. Position "Questioned" by Chairman Estrada; Growing Fractures within G-77/China Group?

Key Flexibility Features Under Increasing Attack

Throughout Oct 24 and into Oct 25, a number of flexibility proposals favored by the U.S. undercame a near withering challenge from a broad spectrum of countries (mostly from the G-77/China grouping). In the QELROS "policy" non-group (chaired by Sweden's Bo Kjellen), and as is reported in some detail in Report A prepared by EPA's Sharon Saile which is attached, the concepts of emissions trading, banking and borrowing were attacked by the G-77 (Tanzania), India, Iran, China, Colombia, and Uganda (which expressed concern that banking is a concept designed to permit countries to forgo obligations). The G-77 also questioned the need for a multi-year budget and supported a single year target. Supporting banking were Switzerland (somewhat surprisingly), Poland, New Zealand, Australia, Canada, Japan, Russia, and the U.S. The EU supported incentives for early action but did not specifically mention banking. Support for borrowing in the context of non-compliance received heavily qualified support from Norway, Canada, the EU, New Zealand, Japan and Russia. In the later discussion on flexibility for the economies in transition (EIT), the U.S. found itself alone in its desire to have no flexibility for the EIT baseline and other aspects for these countries.

4 of 10

Chairman Estrada Also Joins the Critics

In the QELROS "technical" discussions, chaired by Brazil's Gylvan Meira, positions favored by the U.S. were also questioned or found little to modest support. In discussing the portion of the text dealing with differentiation in para 3 of the revised text, we found ourselves alone in opposing the concept of differentiation. At one point, Gylvan went to take a phone call. Chairman Estrada took the chair and asked the U.S. to explain why it was opposing differentiation? Was the U.S. trying to get everyone to "do nothing" by adopting its proposal for stabilization by 2010? Dr. Pershing ably parried multiple jabs by the chair in this regard for over 20 minutes, making use of these awkward opportunities to elaborate on our proposal. However, the Chairman seethed.

After the session, he was spotted in a back hallway reporting in considerably more angry terms on this exchange to FCCC Executive Secretary Michael Cutajar and other leading members of the Secretariat. He grabbed the passing reporting officer by the sleeve and continued with his diatribe, claiming that the U.S. intent appears to be one of "sabotaging the negotiations." Visibly angry, he stormed off to his office, later returning to join a meeting in progress with the President of the Conference of the Parties and, obviously still upset, stormed out of that meeting, as well (Fortunately, he did not have any chairs to throw or plates to smash on this occasion). Estrada brought forth his complaint that the U.S. proposal advocates that all Annex I Parties "do nothing at the morning briefing of the NGOs."

Slow Movement Also Reported in the PAMs Discussions

Policies and Measures (PAMs) is also proceeding with painful slowness. A drafting group has twice come up with formulations on specific lines from the text only to have the G-77 later renege on the compromise worked out. The G-77/China has attempted to introduce the compensation issue more directly into the text. Regarding the annex in the revised text, which contains a list of policies and measures, the EU has tried to make these mandatory or harmonized. The U.S., Australia, and the G-77 to varying degrees want the list taken out. Canada and Japan appear to favor retaining the list as just that -- a list of possible policies and measures. L/QES's Sue Biniarz, who is skillfully handling this issue, reports, that if the list is retained, it will probably include all sorts of trash from the G-77/China.

NGOs Complain About our ICAO Policy

The technology contact group reports that no progress was made, while the same can be said for the contact group on Article 4.1. In an informal SBSTA discussion, agreement on a roster of experts, which was reached in a contact group, has been stymied (temporarily we hope). Meanwhile, Washington can expect some letters or telcons from NGOs concerning the U.S. position that matters affecting aviation as a sector should first and foremost be discussed at ICAO. Annie Peterson of EDF expressed strong reservations to us that NGOs were not advised about this position in advance and questioned singling out a specific sector in advance.

A Bit of Sunlight from the SBI

Finally, for a bit of sunlight, the SBI did agree to propose a decision to the Conference of the Parties on a decision to review non-Annex I communications. The decision will be to continue discussions in the future. It was also agreed to hold an informal workshop on this topic sometime next year. This outcome had been pushed by the U.S., so Dan Reifsnnyder can put at least one small feather in his cap.

25/10 '97 SAT 14:22 FAX

5710

Growing Fractures within the G-77?

Meanwhile, we have received growing indications of increasing fractures within the G-77/China grouping. It will be recalled that at AGBM-7 in August, the Saudis and OPEC had scored tactical points by broadening the appeal of their compensation proposal and by making themselves spokesman for the policies and measures "non-group." The G-77/China proposal for a ludicrously ambitious target announced Monday by the group was engineered, we understand, largely by Saudi Arabia with support from Iran and other OPEC members. Although they would strongly deny the accusation, it appears to us that this agreement — in which, for example, AOSIS dropped its opposition to compensation in exchange for OPEC's support for a 35 percent cut below 1990 levels by 2020 (with adoption of European targets in earlier time-frames), was designed as poison pill. The Chairman is believed to view it as such, although thus far he has reserved his public critiques for us.

In any case, all is clearly not well among the G-77/China. The Latin Americans are the group most vexed that their views are not being heard. One report is that Estrada urged them to withdraw from the G-77, although this report has not been confirmed. Africa, as well, is not happy, although its positions appear to have been bolstered in recent days. We will do what we can to explore the significance of these differences, and hope that our ALDAC demarche to capitals on this negotiation will assist us in galvanizing support for more of our position.

25/10 '97 SAT 14:23 FAX

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6918

The following paragraphs can be used as DAR item as desired or appropriate:

Climate Changes Talks, Update No. 6: Trading, Banking, and Borrowing Under Growing Assault; U.S. Position "Questioned" by Chairman Estrada; Growing Fractures within G-77/China Group?

Throughout Oct 24 and into Oct 25, a number of flexibility proposals favored by the U.S. undercame a near withering challenge from a broad spectrum of countries (mostly from the G-77/China grouping). In the QELROS "policy" non-group (chaired by Sweden's Bo Kjellen), the concepts of emissions trading, banking and borrowing were attacked by the G-77 (Tanzania), India, Iran, China, Colombia, and Uganda (which expressed concern that banking is a concept designed to permit countries to forego obligations). The G-77 also questioned the need for a multi-year budget and supported a single year target. Supporting banking were Switzerland (somewhat surprisingly), Poland, New Zealand, Australia, Canada, Japan, Russia, and the U.S. The EU supported incentives for early action but did not specifically mention banking. Support for borrowing in the context of non-compliance received heavily qualified support from Norway, Canada, the EU, New Zealand, Japan and Russia. In the later discussion on flexibility for the economies in transition (EIT), the U.S. found itself alone in its desire to have no flexibility for the EIT baseline and other aspects for those countries.

In the QELROS "technical" discussions, chaired by Brazil's Gylvan Meira, positions favored by the U.S. were also questioned or found little to modest support. In discussing the portion of the text dealing with differentiation in para 3 of the revised text, we found ourselves alone in opposing the concept of differentiation. At one point, Gylvan went to take a phone call. Chairman Estrada took the chair and asked the U.S. to explain why it was opposing differentiation? Was the U.S. trying to get everyone to "do nothing" by adopting its proposal for stabilization by 2010? Dr. Pershing ably parried multiple jabs by the chair in this regard for over 20 minutes, making use of these awkward opportunities to elaborate on our proposal. However, the Chairman seethed.

Policies and Measures is also proceeding with painful slowness. A drafting group has twice come up with formulations on specific lines from the text only to have the G-77 later renege on the compromise worked out. The G-77/China has attempted to introduce the compensation issue more directly into the text. Regarding the annex in the revised text, which contains a list of policies and measures, the EU has tried to make these mandatory or harmonized. The U.S., Australia, and the G-77 to varying degrees want the list taken out. Canada and Japan appear to favor retaining the list as just that -- a list of possible policies and measures.

The technology contact group reports that no progress was made, while the same can be said for the contact group on Article 4.1. In an informal SBSTA discussion, agreement on a roster of experts, which was reached in a contact group, has been stymied (temporarily we hope). Finally, for a bit of sunlight, the SBI did agree to propose a decision to the Conference of the Parties on a decision to review non-Annex I communications. The decision will be to continue discussions in the future. It was also agreed to hold an informal workshop on this topic sometime next year. This outcome had been pushed by the U.S.

Meanwhile, we have received growing indications of increasing fractures within the G-77/China grouping. The Latin Americans are the group most vexed that their views are not being heard. One report suggests that Estrada (who is Argentina's Ambassador in China) urged them to withdraw from the G-77, although this report has not been confirmed. Africa, as well, is not happy, although its positions appear to have been bolstered in recent days. We will do what we can to explore the significance of these differences in coming days. (Hambley)

25/10 '97 SAT 14:25 FAX

To: Mark
From: Sharon

A

7910

OELROs Policy Non-Group with Amb. Kjellen, Friday October 24

Will cover the issues in the order they appear in the Chair's text: eit baselines (3.4), banking (3.13), borrowing (3.14), emissions trading (5), joint implementation (6), review of implementation (8), voluntary commitments for non-Annex I Parties (10), and adequacy of commitments (11).

EIT Flexibility:

Russian Federation - wants para 3.4 to reflect FCCC 4.6 4th line, after Article 4.6 of the Convention, add essentially "For the Parties included in Annex I undergoing the process of transition to a market economy, the provisions of Art 4.6 of the Convention should apply". If in addition they need to specify the baseyear, prepared to work on that - willing to change the wording if others agree. **Poland** - Merit to Russian proposal - important to broaden to cover other aspects - could live with paragraph as it stands now - but major difficulties to have reference to Article 4.6 of FCCC moved out of operative article.

Tanzania/G-77 - delete this para 3.4 - just refer to FCCC 4.6 in preamble because the differentiation has already been negotiated. The problem is the lack of chapeau for Article 3, and that would be an OK place to refer. **China** intervened to note that Decision 9/CP.2 lists the baseyears for Bulgaria 1989, Hungary average of 85-87, Poland 88, Romania 89.

UK/EU - accepts that negotiated baseline for the Convention in Article 4.6 are ok - but disagree with the idea that the text in brackets would allow the eits to choose a baseline not in the Art 4.6. Therefore, shorten paragraph to essentially "EITs parties with baseline established in Art 4.6 shall use that baseline for the commitments in this Article. Plus the square bracketed text for differentiation in Attach 1. Supports the idea that the language needs to be specific.

US - need to be clear - reference to 4.6 alone is not sufficient. Art 4.6 flexibility was only for Article 2, and not necessarily beyond the timeframe in the FCCC. Ask Russians for more detail (Chair's response is that para says until the objective is met - so of course 4.6 would apply). US was absolutely alone in its desire to have no flexibility in the baseline and other aspects for the EITs.

Informal contract group was convened and included the UK and US and Poland and Russia, but no G-77 representative, so "conclusions" were preliminary until Amb. Kjellen could consult with them:

1. Modify protocol para 3.4 to reference Article 4.6 as stated by the Russians, but conditioned on the flexibility conditioned on further COP/MOP of the protocol.
2. Specific reference to Decision 9/CP.2 baseyear so that those 4 countries shall use those identified baseyears.
3. Add a footnote indicating other countries might request this type of flexibility as EITs in the future.

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A continued!

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Banking and Borrowing:

Tanzania- G-77 - these articles are linked with other parts, i.e. associated with emissions trading in Article 5. Borrowing from future is counter to sustainability. Disagree in principle to both banking and borrowing. Quoting the US "Question of certainty is important - can't have legally binding targets unless language is clear" - these issues remain a mystery. Summary - Completely against banking, borrowing, budgets and emissions trading: Tanzania/G-77, China, India, Iran, Columbia, Uganda (concern that banking and borrowing substantively designed for an individual country to avoid meeting its limit)

Supports for banking - Switzerland, Poland, New Zealand, Canada, Norway, Japan, US, Russian Federation, Australia. (EU/UK???- supported incentives to take early action, but did not mention banking specifically). Poland and Canada support early credit banking as an incentive for early action (Poland and Russian Federation want credit to accrue beginning at the end of the baseyear (i.e. credit from 1990 or indeed 1988 for all emissions avoided below the target). Norway wants ambitious targets, but otherwise would have to go for lower targets without flexibility. Budget is a practical element to avoid compensation for temperature changes - budget period of 3-5 years. Norway suggests banking "shall" be credited should be changed to "may" be credited.

Support borrowing in non-compliance context - Norway, Canada, UK/EU conditionally, New Zealand. Russian Federation notes complicated, but with short budget periods, then possible support. Canada proposed and New Zealand and Australia supported some new ideas for an early warning system for addressing non-compliance.

Support borrowing still in compliance, with limit and penalty - Japan, US, Australia - Dan made clear that we support a limited amount of "legal" borrowing plus then something perhaps with a bigger penalty to address the bigger exceedences which would be deemed noncompliance. Supported the 2-way nature of the link to target.

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National Communications in SBSTA
Note by Bill Breed

SBSTA agreed to a conclusion based upon discussion of the annex in the Compilation and Synthesis report. The conclusion calls upon Parties to submit views on resolution of the methodological issues presented; invites Parties to submit inventories using both their best and the IPCC default methods for comparison; requested that the Secretariat prepare a document listing methodological issues identified in processing national inventories and in the process of the in-depth reviews; and agreed to consider the above information for consideration of revisions to the guidelines for preparation of national communications at its ninth session.

Contact group on Methodological issues
Note by Bill Breed

A small contact group met to discuss a draft COP decision submitted by the Group of 77. The draft decision as presented called for the SBSTA to identify gaps in the research and methodologies for preparation of national GHG inventories; endogenous capacity for monitoring CC; and systematic information networks. It then called for SBI to implement a plan to address these gaps. The contact group was able to focus the discussion to needs for preparation of national inventories. A SBSTA conclusion will be drafted by the Secretariat for the SBSTA to consider, asking that the Secretariat prepare a paper that examines the gaps and opportunities that the bodies can later address to facilitate preparation of non-Annex 1 national GHG inventories.

25/10 '97 SAT 14:29 FAX

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SBI-7, 2nd Meeting, October 21, 1997, 10:00-1300
Beethoven Halle, Bonn
Dr. Carol Whitman

SBI Vice-Chair Jose Romero (Switzerland) opened the meeting with a discussion of Activities Implemented Jointly (AIJ), noting that a joint SBI/SBSTA contact group had been established. Sri Lanka indicated that the requirement for financial additionality was problematic and should be dropped. India, supported by Venezuela, reminded Parties of the limited experience and knowledge of current AIJ projects. Australia countered that there were environmental and economic benefits for all in AIJ projects and noted the wide range of ongoing activities. Meanwhile, methodology issues remain to be addressed. The Secretariat then introduced syntheses of the second national communications from Annex I Parties (FCCC/SBI/1997/19 and Add.1; INF.4). The USA and Luxembourg (EU) noted that while the communications had gotten better, there was still room for improvement. Both noted that data collection and reporting on policies and measures, specifically HFCs, PFCs, and SF₆, although improved, remained inadequate. The USA requested that Parties submit suggestions for revisions to the reporting guidelines. China observed that only 18 Annex I Parties (1/2) had submitted 2nd communications; half of those countries' GHG emissions increased in 1995; CO₂ accounted for 83% of total emissions; fossil fuel combustion was the greatest source of CO₂ emissions and should be the main policy concern; and that technology transfer was not sufficiently prominent. India noted that land use change and forestry emissions could be substantial and the methods need improvement. Uzbekistan suggested that non-Annex I and CEIT Party experts could benefit from participation on review teams. Uruguay announced that it had submitted its first national communication. The Secretariat of the Global Environment Facility presented its report to COP-3 on its review of the implementation of the convention financial mechanism (FCCC/CP/1997/MISC.1). The GEF also noted that the GEF Council had approved the MOU with the COP. The Chair reminded the SBI that it needed to recommend decisions to COP-3 to approve the MOU and provide guidance to the GEF. Luxembourg (EU) said that the review of the financial mechanism was an ongoing activity and hoped that the review would provide the basis for the GEF to be the financial mechanism of the FCCC. Tanzania (G77/China) said they would continue a dialogue on the GEF, but they were not ready for a conclusion on the financial mechanism. India and Chile remarked on the importance of the GEF to preparation and completion of non-Annex I communications. Mr. John Ashe (Antigua/Barbuda) was asked to chair a contact group on the financial mechanism. The Secretariat then introduced proposed amendments to the convention FCCC/SBI/1997/15: (1) from Pakistan and Azerbaijan to delete Turkey from Annex I; (2) from the Netherlands (EU) to amend Art. 17 so that if efforts to reach consensus on a protocol fail, the protocol can be adopted by a three fourths majority of the Parties present, and the paragraph can be applied provisionally pending its entry into force; and from Kuwait, an amendment to Art. 4.3 which would require Annex II Parties to provide the full incremental costs of developing country Parties in meeting their obligations under the convention. Citing Art. 4.2(f), Japan, Switzerland, USA, and Canada had reservations about the proposal, and suggested that the annexes should be reviewed in December 1998. Saudi Arabia, Venezuela, Australia, USA, Korea, Switzerland, and China opposed the EU proposal, particularly its provisional application which some felt was not legal. The Kuwaiti proposal was predictably supported by Saudi Arabia and opposed by the USA, Australia, Japan, and Switzerland. The Chair proposed forwarding the proposed amendments to the COP without recommendation, and agreed to forward Parties stated views on the amendments.



United States Department of State

Bureau of Oceans and International
Environmental and Scientific Affairs

Washington, D.C. 20520

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MESSAGE:PLS find attached Amb.
Hambley's Update #6

2 of 10

Climate Talks, Bonn, GermanyOctober 20-31, 1997

Revised 10/25/97

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USAID	David Hales	(202) 712-1750	(202) 216-3174
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WH	Todd Stern	(202) 456-2702	(202) 456-2215
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NSC	Jim Steinberg	(202) 456-9491	(202) 456-9490
NEC	Gene Sperling	(202) 456-2807	(202) 456-2878
NEC	Dan Tarullo	(202) 456-5353	(202) 456-1605
NEC	Peter Orzag	(202) 456-5358	(202) 456-2223
USTR	Jennifer Haverkamp	(202) 395-7320	(202) 395-4579
USUN	Burgess Laird	6-7583	6-7551

Questions and Answers on President's Climate Change Proposal
DRAFT -- 11:30 a.m. October 22, 1997

Q: Don't economic models suggest that this effort will cost more than 1.5 million jobs and tank the economy?

A: Some models may suggest that, but only by ignoring several key elements of the President's plan:

1. They ignore the President's \$5 billion package of tax cuts and Federal R&D: To spur energy efficiency and the development of lower-carbon energy sources, the Administration supports a major new package of tax cuts and R&D spending amounting to \$5 billion over five years.

2. They ignore the potential for increased use of existing energy-efficient products: As the Department of Energy's 5-Labs study illustrates, many existing technologies produce win-win solutions to reducing carbon emissions -- but nonetheless are still not widely used. The President is committed to expanding their reach. The models referenced assume little change in the penetration rate of existing energy-efficient equipment.

3. They ignore the President's Federal energy initiative: To reduce greenhouse gas emissions from Federal sources, the Department of Energy will spearhead a comprehensive effort that includes expanded performance contracting to make Federal buildings more energy-efficient, improved Federal procurement practices, establishment of a new level of excellence for Federal building construction and renovation, and partnerships to improve the energy efficiency of Federal aircraft, ships and vehicles.

4. They ignore electricity restructuring: To spur further efforts to clean our air and deliver a down payment on greenhouse gas emission reductions, while saving consumers billions, we will pursue a bold plan to restructure the energy sector. It is time to change the rules that are often more than 70 years old -- stifling innovations that can save money and impede newer, cleaner technologies.

5. They ignore international emissions trading. Two key components of the President's plan are his support for an international system of emissions permit trading, and his commitment that developing countries must participate in the international effort. International trading can substantially reduce the costs of emissions reductions.

6. They ignore the economic costs associated with climate change itself. Climate change will lead to increased flooding, sea-level rise, and other dislocation. So looking just at the impact of reducing emissions on GDP is misleading.

Finally, we all must admit there is much uncertainty over cost projections that are a decade or more in the future -- after all, a decade ago, we could never have predicted that we would now have an unemployment rate below 5 percent, core inflation below 2.5 percent, and a budget deficit substantially under \$50 billion. That's why the President has proposed a graduated, three-stage approach with regular reviews -- starting with a period of voluntary action, tax incentives, R&D, and Federal efficiency improvements, and followed by an evaluation period before the internationally binding period. Only after we have accumulated ten years of experience with the first two stages of the program would we enter the internationally binding period.

Q: Didn't the 5-labs study conclude that carbon prices would have to rise by \$50 to reach 1990 levels by 2010, and isn't that on the optimistic side?

A: The 5-Labs study examined a scenario in which there was no international trading and no electricity restructuring legislation, and concluded that the permit price would have to be \$50 to reduce emissions to 1990 levels by 2010 without such elements. But the President's plan emphasizes international trading and developing country participation, and includes a commitment to properly crafted electricity restructuring. [A DOE analysis that combines international permit trading and electricity restructuring with the results of the 5-Labs study suggests that a permit price of \$25 or lower in 2010 would allow the country to meet its target and timetable.]

Q: Doesn't the President's plan amount to the largest energy tax increase in history -- \$200 billion a year or more?

A: Not at all. The President's plan includes tax *cuts*, not tax increases. It does not involve tax increases at all.

Follow: but isn't a permit system just like a tax?

A: No. There are several critical differences between a permit system and a tax. [For example, a permit system provides insurance that a given quantitative target will be met, whereas a tax does not.] In any case, the permit system does not begin until we have accumulated ten years of experience with tax incentives, R&D, Federal energy efforts, early credit, and the other components of the President's initial action plan.

Q: How can you possibly reduce emissions to 1990 levels by 2008-2012 without imposing excessive costs on the economy?

A: • The President believes that climate change is a critical challenge facing the country, and that if we make this a top priority, we can accomplish significant emissions reductions at low cost. In this effort, it would be irresponsible not to explore all possible avenues for low-cost emissions reductions. That's why the President has

proposed a graduated, three-stage approach -- starting with a period of early credit, tax incentives, R&D, and Federal efficiency improvements, and followed by an evaluation period around 2004. He has proposed regular economic reviews, to ensure that the economic costs are not excessive. Only after we have accumulated ten years of experience with the first two stages of the program would we enter the internationally binding period.

Q: Won't this plan lead to massive shifts of U.S. industry and jobs abroad?

- A:
- No. The President has made very clear that we will not assume binding obligations without the participation of developing countries.
 - I would also note that non-tradeable sectors account for a substantial share of carbon emissions. Transportation and buildings, for example, account for roughly two-thirds of U.S. emissions. For these sectors, the "competitiveness" argument seems largely irrelevant.
 - In most manufacturing sectors, furthermore, energy costs are a small percentage of total costs. According to the 1995 Annual Census of Manufactures, energy costs - for manufacturing industries averaged just 2.2 percent of total costs.

Q: How is the president's initial action plan different from the Climate Change Action Plan that the Administration has already adopted?

A: The first stage of the President's climate change proposal differs from the Climate Change Action Plan in four critical ways:

- It includes substantially more funding. The President's proposal includes funding for carbon-reducing activities of \$5 billion over 5 years -- substantially more than current funding for the climate change action plan. Activities under the Climate Change Action Plan are estimated to reduce CO2 emissions by 95 million metric tons in 2010 -- and doubling the funding should lead to more reductions. [Total reductions needed in 2010 are 390 million metric tons.]

[Funding for the Climate Change Action Plan in FY 1995 was \$184 million, in FY 1996 \$158 million, and in FY 1997 \$163 million. Total funding for climate-related activities is somewhat higher -- but still less than \$500 million per year -- because items such as PNGV are not included in the Climate Change Action Plan definition.]

- Crucially, the President's proposal now includes binding targets. In expectation of these binding targets, firms and households will begin to adjust their behavior today -- a factor that was not present in the climate change action plan.

- To provide further incentives for firms to take action now, the President has indicated his strong support for developing an early credit program of appropriate rewards for those who take prompt early action.
- Finally, the President has indicated his support for environmentally-friendly electricity restructuring, which has the potential to reduce emissions.

Q: Hasn't the climate change action plan failed to reduce emissions?

A: Total emissions are higher than anticipated when the Climate Change Action Plan was adopted several years ago, because of stronger economic growth, lower energy prices, and reduced funding for Congress. But the *partial* effect of the activities under the current Climate Change Action Plan is still estimated to be a reduction in CO2 emissions of 32 million metric tons in 2000 and 95 million metric tons in 2010 (and *all* greenhouse gas emissions of 76 million metric tons in 2000 and 169 million metric tons in 2010). The President's three-stage plan includes substantially more funding than the Climate Change Action Plan -- and thus could produce substantially more reductions in carbon emissions. [390 million metric tons of CO2 reductions are needed in 2010 to move from business-as-usual to 1990 emissions levels.]

Q: Will you submit any agreement reached at Kyoto to the Senate for its advice and consent?

A:

- We honor and respect the U.S. Senate's important role in providing advice and consent to the ratification of treaties. We would anticipate the need for Senate advice and consent to any international agreement adopted in Kyoto that would impose binding commitments on the U.S. to control emissions.

Q: Will the President or Vice-President go to Kyoto?

A:

- We have not made final decisions about the membership of our delegation in Kyoto.

Q: What is the President proposing that developing countries do as part of his proposal?

A:

- Today, the President emphasized that the United States will not assume binding obligations under the climate treaty without developing country participation.
- The President believes we can engage developing countries on this issue in ways that are good for them and good for us. He believes that developing countries have an opportunity to chart a different energy future -- one based on clean and cheap technologies.

- The President spoke about this issue in each country he visited in Latin America last week. Throughout his trip, he shared his conviction that we can and must work together on this problem, in ways that benefit us all. He plans to raise this issue with Jiang Zemin next week.

Q: Why did the U.S. propose such a modest target and timetable, which is weaker than any of the proposals to date, including from the European Union and Japan?

- A:
- The President has put forward a strong target that is realistic, achievable and pragmatic, not just rhetorical. We have backed up those proposals with a three-stage domestic implementation plan. And we have called for a comprehensive international framework that will ensure that all countries participate in a global effort to reduce emissions at the least cost.
 - Keep in mind that some of these other targets aren't all they seem to be. The EU derives enormous benefits from a 1990 baseline -- Germany, for example, gets to claim credit for all the cheap reductions that were a fortuitous consequence of reunification.
 - With regard to Japan, a careful examination of their proposal shows that we are not so far apart.

Q: Isn't it true that this proposal doesn't actually reduce emissions at all but instead just stabilizes them at a certain level?

- A:
- No. Our proposal involves real and meaningful reductions. Consider that under a business-as-usual scenario, U.S. emissions are predicted to be 28% above 1990 levels by 2010.
 - We also stipulate that further reductions, below the 1990 baseline, would be achieved in a second emissions budget period.

Q: Given how far apart countries seem to be in their stated positions, is it realistic to expect any kind of agreement in Kyoto?

- A:
- We are hopeful that all countries will come to Kyoto with an open mind, prepared to negotiate an agreement that provides real and achievable gains.
 - No agreement is better than a bad agreement. The U.S. will continue to insist that any international framework include realistic, achievable targets; flexible implementation mechanisms like emissions trading and joint implementation; and

the meaningful participation of developing countries.

Q: What happens if there is no deal in Kyoto?

- A:
- We are hopeful that all countries will come to Kyoto with an open mind, prepared to negotiate an agreement that provides real and achievable gains.
 - Even if we cannot reach agreement in Kyoto, climate change will remain a top priority issue for this President. The U.S. will continue to work on building support for a comprehensive international framework that involves all countries in a common effort to meet this important challenge.
 - And we will get busy on the elements of the President's plan that we can start right away.

Q: Does the climate change science justify near-term action? Aren't the uncertainties still too great?

- A:
- No. The fundamental science of climate change is clear. Greenhouse gas concentrations in the atmosphere are rising as a result of human actions. These increased concentrations are warming the planet, and unless we reduce our emissions, the effects on our climate are likely to become increasingly severe.
 - Uncertainties do remain. We are not sure exactly how fast the planet will warm or which regions of the world will suffer the worst impacts. Yet what we do know is more than enough to justify taking the kinds of sensible actions the President has proposed.
 - As for the skeptics who would have us do nothing, they represent a tiny fraction of the scientific community. On the other hand, the Intergovernmental Panel on Climate Change, including 2,000 of the world's premier climate experts, has underscored the seriousness of the climate change problem and the need for action.
 - As part of his proposal, the President has called for additional scientific studies focused on key areas, including a call to the National Academy of Sciences to examine the issue of establishing a long-term goal for stabilizing atmospheric concentrations of greenhouse gases.

PRESIDENT CLINTON'S CLIMATE CHANGE PROPOSAL

October 22, 1997

Global climate change is the premier environmental challenge and opportunity of the 21st century, and the risks it poses justify sensible preventive steps. Addressing this issue is one of the United States' greatest imperatives, for this and future generations. Recognizing the solid foundation of climate science, President Clinton is committed to strong and sensible action to reduce greenhouse gas emissions -- including realistic and binding emissions targets.

Key elements of President Clinton's climate change proposal include:

- **Binding Targets to Reach 1990 Emissions Levels by 2008-2012 and Reductions Below 1990 Levels in the 5-Year Period That Follows.** A critical component of the President's comprehensive framework is a realistic, achievable, and binding target of reducing greenhouse emissions to 1990 levels by 2008-2012 and reductions below 1990 levels in the 5-year period that follows.
- **\$5 Billion Program of Tax Cuts and R&D for New Technologies.** To spur energy efficiency and the development of new technologies, the President proposes a major new package of tax cuts and R&D spending amounting to \$5 billion over five years.
- **Industry-by-Industry Consultations and Early Credit.** The Administration challenges key industries to prepare plans over the next 9 months on how they can best reduce emissions. To provide an incentive for near-term actions to cut emissions, the President is committed to ensuring appropriate rewards for firms that act early.
- **Developing Countries Must Participate.** Climate change is a global problem, and requires a global solution. That's why the United States has spear-headed joint implementation projects, and the President has committed that the United States will not adopt binding obligations without developing country participation.
- **Broad-Based Domestic and International Emissions Trading System Begins After A Decade of Experience Has Accumulated.** The President is committed to a market-based emissions trading system, both domestically and internationally, that will harness the power of the market to reduce emissions to 1990 levels by 2008-2012. The trading system would begin after a decade's worth of experience with tax incentives, R&D, early credit, electricity restructuring, Federal efforts, and other measures.

BINDING TARGETS: The U.S. binding target is realistic: It seeks to return U.S. emissions to 1990 levels in the period 2008-2012 and reduce them further thereafter. We reject the European proposal for more stringent early reductions, as well as the "do-nothing" approach of some interests. The target is achievable: By providing incentives for early action to reduce emissions, attacking domestic energy inefficiencies, and putting in place a market-based emissions trading system, we can reach 1990 levels in the proposed time frame with minimal economic costs. And it is meaningful: Achieving 1990 levels in the period 2008-2012 would amount to almost a 30 percent reduction off a business-as-usual path, an important first step on the road toward stabilizing greenhouse gas concentrations in the atmosphere.

SOLID PRINCIPLES: The President's five climate change principles include: that the policies should be guided by science, rely on market-based, common-sense tools, that we should seek win-win solutions, that global participation is essential to addressing the global problem of climate change, and that we must have regular common-sense reviews of the economics and science of climate change.

SOUND AND SENSIBLE THREE-STAGE APPROACH: Reflecting his five key principles, the President's plan includes three stages: Stage 1 includes priming the pump through programs such as R&D, tax incentives, incentives for early action, and Federal leadership, and industry consultations. Stage 2 builds upon the first stage by including a review and evaluation in preparation for the permit trading system. Stage 3 -- which does not occur for a decade -- involves meeting binding targets through a domestic and international emissions trading program. The President is committed to working with labor and Congress to insure that we give proper assistance to any workers dislocated by the changes in energy usage inherent in any climate change plan.

INITIAL ACTION PLAN: The President's immediate action plan includes 9 elements:

1. *\$5 Billion in Tax Cuts and Federal R&D:* To spur energy efficiency and encourage the development and deployment of lower-carbon energy sources, the Administration supports a major new package of tax cuts and R&D spending amounting to \$5 billion over five years.
2. *Credit for Early Action:* To provide an immediate incentive for near-term actions, the President is committed to ensuring that firms acting early are rewarded appropriately.
3. *Industry-by-Industry Consultations:* The Administration challenges key industry sectors to prepare plans over the next 9 months on how they can best reduce emissions.
4. *Encouraging the Use of Energy-Efficient Products:* The President will complement his tax incentives, commitment to early action credit, and industry consultations by engaging in a broad-based effort to expand the use of *existing* energy-efficient technologies.
5. *Federal Procurement and Energy Use:* The Department of Energy will spearhead a comprehensive effort to reduce greenhouse gas emissions from Federal sources.
6. *Electricity Restructuring:* To deliver a significant downpayment on emission reductions, while saving consumers billions, we will pursue a bold plan for electricity restructuring.
7. *Setting a Concentration Goal:* The United States supports developing a specific, long-term concentration goal with the assistance of the National Academy of Sciences and other bodies.
8. *Bilateral Dialogues:* In addition to pursuing agreement in Kyoto, the Administration will pursue bilateral dialogues with key developing countries to promote clean energy.
9. *Economics and Science Reviews:* The President proposes regular scientific and economic reviews. These reviews will ensure that policy-makers have the best possible information on climate change.

WIN-WIN: There are numerous win-win solutions to reducing carbon emissions. For example, a breakthrough in fuel cell technology announced yesterday will clear the way toward developing cars that are three times as efficient as today's models -- cutting pollution while also cutting driving costs.

INITIAL CLIMATE CHANGE ACTIONS

October 22, 1997

President Clinton has proposed nine immediate actions to begin addressing climate change:

- 1. *Tax Cuts and Federal R&D:*** To spur energy efficiency and the development of lower-carbon energy sources, the Administration supports a major new package of tax cuts and R&D spending amounting to \$5 billion over five years. Many of the ideas from the recent report of the President's Committee on Science and Technology (PCAST) will be considered in constructing this package.
- 2. *Credit for Early Action:*** To provide an immediate incentive for near-term actions to cut emissions, the Administration is committed to ensuring that firms which act early are rewarded appropriately. We will work with companies to build a program that appropriately rewards those who take prompt and early actions before the beginning of the mandatory emissions budget period in Stage 3.
- 3. *Industry-by-Industry Consultations:*** The Administration challenges key industry sectors to prepare plans over the next 9 months on how they can best reduce emissions, including how the Federal government can remove regulatory hurdles that discourage energy efficiency. The Administration will work in partnership with industry to develop sensible efficiency standards in a variety of areas.
- 4. *Encouraging the Use of Energy-Efficient Products:*** As the Department of Energy's 5-Labs study illustrates, many existing technologies produce win-win solutions to reducing carbon emissions -- but nonetheless are still not widely used. The President is committed to expanding their reach. He will therefore complement his other programs by engaging in a broad-based effort to expand the use of *existing* energy-efficient technologies -- while also spurring the development of *new* technologies.
- 5. *Federal Procurement and Energy Use:*** To reduce greenhouse gas emissions from Federal sources, DOE will spearhead a comprehensive effort that includes expanded performance contracting to make Federal buildings more energy-efficient, improved Federal procurement of energy-efficient technology, and partnerships to improve the energy efficiency of Federal aircraft, ships and vehicles. Federal agencies will also be called upon to assess emissions in major initiatives.
- 6. *Electricity Restructuring:*** To spur further efforts to clean our air and deliver a downpayment on greenhouse gas emission reductions, while saving consumers billions, we will pursue a bold plan to restructure the energy sector. It is time to change the rules that are often more than 70 years old -- stifling innovations that can save money and impede newer, cleaner technologies.
- 7. *Setting a Concentration Goal for Greenhouse Gases in the Atmosphere:*** The goal of the existing climate treaty is to stabilize concentrations of greenhouse gases, but the specific concentration has never been defined. The U.S. supports developing a specific, long-term goal, with the assistance of the National Academy of Science and other appropriate bodies.
- 8. *Bilateral Dialogues:*** In addition to pursuing agreement in Kyoto, the Administration will pursue bilateral dialogues with key developing countries to promote clean energy.
- 9. *Economics and Science Reviews:*** The President proposes regular scientific and economic reviews, to ensure that policy-makers have the best possible information on climate change.

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PRESIDENT CLINTON'S FIVE CLIMATE CHANGE PRINCIPLES

October 22, 1997

Global climate change is the premier environmental challenge and opportunity of the 21st century, and the risks it poses justify sensible preventive steps. Addressing this issue is one of the United States' greatest imperatives, for this and future generations. Recognizing the solid foundation of climate science, President Clinton is committed to strong and sensible action to reduce greenhouse gas emissions -- including realistic and binding emissions targets.

President Clinton's climate change plan is based on **five key principles**:

- **Guided by science.** The vast majority of the world's scientists have concluded that if the countries of world do not work together to cut greenhouse gas emissions, temperatures will rise and disrupt the global climate. Indeed, most scientists say this process has already begun. But there is much we still don't know about how the climate and human health will react to increased greenhouse gas concentrations. That's why the President's plan includes regular science reviews, to ensure that our policies are guided by the best science available.
- **Market-based, common-sense tools.** We have learned that the costs of protecting the environment is substantially lower if we harness the power of markets to do so. That's why the President's plan emphasizes flexible and market-based mechanisms. His plan includes a domestic and international permit trading system for greenhouse gas emissions, similar to the highly successful permit trading system that has dramatically cut acid rain at a fraction of the predicted cost.
- **Seek win-win solutions.** There are a multitude of win-win solutions to reducing carbon emissions, that can improve our energy efficiency and save consumers money. For example, a breakthrough in fuel cell technology announced yesterday will clear the way toward developing cars that are twice as efficient as today's models -- cutting pollution while also cutting driving costs. The President believes that we must seek such win-win solutions to addressing climate change.
- **Global participation.** Climate change is a global problem, and requires a global solution. A ton of carbon emitted in Argentina has just as much effect on the global climate as a ton of carbon emitted in the United States -- and within the next few decades, emissions from developing countries are expected to exceed those from developed countries. And many win-win opportunities exist to reduce greenhouse gas emissions in developing countries. That's why the United States has spear-headed joint implementation projects and the President has committed that the United States will not adopt binding obligations without developing country participation.
- **Common-sense economic reviews.** Our knowledge of the challenges and opportunities we face will grow over time. Therefore, the President is calling for regular 5-year economic reviews and updates, to ensure that policy-makers, both in the Administration and in Congress, have the best possible information on how the economy is responding to the effort to address climate change, how other countries are performing relative to their own commitments, and how the climate is changing in response to human activities.

THE PRESIDENT'S THREE-STAGE PLAN ON CLIMATE CHANGE

October 22, 1997

Reflecting his five key principles, the President's plan will proceed in three stages:

- **Stage 1: Priming the Pump Through R&D, Tax Incentives, Incentives for Early Action, Federal Leadership, and Industry Consultations.** The first stage of the President's package includes a 9-point action plan -- including \$5 billion in tax incentives and spending for R&D and energy efficiency, incentives for early action, a set of Federal government energy initiatives, and industry-by-industry consultations to explore their best ideas on how to reduce emissions in a cost-effective manner (including market-oriented standards for energy efficiency). The first economic review would occur near the end of Stage 1.
- **Stage 2: Review and Evaluation.** The second stage, which would begin around 2004, will build upon the programs adopted in Stage 1, by including a review of our progress and an evaluation of next steps as we move toward a market-based permit trading system for carbon emissions. During this second stage, the details of the permit system would be refined and perhaps tested. Such a permit system is similar in concept to the one that dramatically cut acid rain emissions -- although the scale would be significantly larger than the current acid rain program. The second economic review would occur near the end of Stage 2.
- **Stage 3: Meeting Binding Targets Through Domestic and International Emissions Trading Program.** In the third stage, we would reduce emissions to 1990 levels by 2008-2012, and below 1990 levels in the 5-year period after that, through a market-based domestic and international emissions trading system. Before beginning this third stage, the second economic update and review would allow Congress and the President to evaluate how the economy had responded to a decade's worth of experience in the first two stages of the President's plan. The President is committed to working with labor and Congress to insure that we give proper assistance to any workers dislocated by the changes in energy usage inherent in any climate change plan.

This three-stage program recognizes the long-term nature of the effort to address climate change in three ways:

- By adopting a graduated approach to emissions reductions, it allows us to exploit the tremendous opportunities for win-win reductions first.
- By adopting a system of regular scientific and economic updates and reviews, it allows us to monitor our progress and re-assess our success in reducing emissions, the state of scientific knowledge, and how the economy is responding to our efforts. Only after we have accumulated ten years of experience with the first two stages of the program would we enter the internationally binding period.
- By insisting that the United States will not adopt binding obligations without developing country participation and by emphasizing the importance of an international trading system and joint implementation, we take advantage of low-cost reduction possibilities wherever they occur -- either here or abroad.

COMPREHENSIVE FRAMEWORK FOR EFFECTIVE, SENSIBLE ACTION

October 22, 1997

GREENHOUSE GAS EMISSION REDUCTION TARGET

Under the current international climate change agreement (signed in Rio de Janeiro in 1992), industrialized countries accepted a non-binding emissions reduction goal. Most nations, including the United States, will fall short of meeting it. This fact, coupled with better scientific evidence on the seriousness of the climate change threat, led the U.S. to propose last year that a new agreement set binding limits on emissions. The proposed U.S. emissions target is designed to provide important environmental gains while maintaining strong economic growth. It is:

- **Realistic.** Seeks to return U.S. emissions to 1990 levels in the period 2008-2012 and reduce them further thereafter. Rejects European proposal for more stringent early reductions, as well as the “do-nothing” approach of some interests.
- **Achievable.** By providing incentives for early action to reduce emissions, attacking domestic energy inefficiencies, securing flexible international implementation mechanisms, and putting in place a market-based domestic emissions trading system, the U.S. can reach 1990 levels in the proposed time frame with minimal economic costs.
- **Meaningful.** Achieving 1990 levels in the period 2008-2012 would amount to almost a 30 percent reduction off a business-as-usual path, an important first step on the road toward stabilizing concentrations of greenhouse gases in the atmosphere. Emissions accounting will include all greenhouse gas sources and sinks (including reforestation).

FLEXIBLE, MARKET-BASED IMPLEMENTATION

Just as the effects of climate change will be felt globally, so too are the causes of climate change global in nature. Greenhouse gas emissions do equal harm to the atmosphere whether they come from a coal plant in China or a bus in Boston. For this reason, any regime to reduce greenhouse gases must be global. It must also allow all nations the ability to seek out the most efficient way of reducing emissions so that the greatest gains are achieved at the least cost. For these reasons, the United States strongly supports the inclusion in a new climate change agreement of two innovative, flexible mechanisms for reducing emissions:

- **International Emissions Trading --Using Markets to Lower Costs.** The principle of emissions trading is to use the efficiency of the market place to achieve environmental objectives at the lowest possible cost. Under an international emissions trading regime, a country (or firm) would be able to meet its emissions reduction target by reducing pollution itself, purchasing reductions from another country (or firm) that was able to achieve excess gains, or some combination of both.
- **Joint Implementation --A Global Solution to Low-Cost Reductions.** Joint Implementation (JI) is an innovative, market-based approach for addressing global climate change that uses international partnerships to achieve low-cost reductions in greenhouse gas emissions. Under JI, a company in the United States invests in a project which reduces emissions in another country and uses those reductions as a less expensive means of meeting its own target.

PARTICIPATION OF DEVELOPING COUNTRIES

In addition to its non-binding emissions reduction aim for developed countries, the Rio climate change agreement required all countries to take policies and measures to reduce emissions. Many developing countries have made real strides, through, for example, reducing energy subsidies. Nevertheless, given that developing country emissions will eclipse those from the developed world within several decades, these countries need to do more. Accordingly, the U.S. calls on developing countries to strengthen their existing commitments and to agree that their obligations must increase over time to include binding emissions limits. Our principles include:

- **Global Participation.** All countries must participate. Every nation would be required to take meaningful actions to limit emissions. The U.S. will not assume binding obligations until developing countries agree to participate meaningfully in the challenge of addressing climate change.
- **Equity.** The obligations of poorer and less developed countries should take into account their state of economic development and their relative contribution to the climate change problem.
- **Assistance.** While insisting that developing countries take meaningful actions to address climate change, the U.S. recognizes that many of these countries face significant development challenges that hamper their ability to reduce emissions. President Clinton is reemphasizing his commitment to working with these nations to help build more sustainable energy futures. This includes a \$1 billion package of assistance from USAID and a renewed commitment to provide financial assistance through the Global Environment Facility, as well as our pathbreaking joint implementation proposals.

FACT SHEET ON INTERNATIONAL EMISSIONS TRADING

October 22, 1997

Description

The principle of emissions trading is to use the efficiency of the market place to achieve environmental objectives at the lowest possible cost. Under an international emissions trading regime, a country (or firm) would be able to meet its emissions reduction target by reducing pollution itself, purchasing reductions from another country (or firm) that was able to achieve excess gains, or some combination of both.

Given an effective international regime, emissions trading provides a powerful incentive for nations to reduce below the amount required and then sell excess reductions to others who in turn avoid more costly actions. The U.S. has proposed that emissions trading be permitted among all countries that agree to a binding emissions target.

How it would work

Consider a simplified example for how international emissions trading might work. Country A and Country B must reduce emissions by 100 tons each. It might cost each country \$1,000 to reduce 100 tons individually for a total cost of \$2,000. However, if Country A could reduce its emissions by 200 tons for a total cost of \$1,500 and sell half of these reductions to Country B, the overall target would be achieved for \$500 less, a savings of 25 percent.

U.S. experience

Emissions trading is being used successfully at the domestic level to reduce sulfur dioxide emissions (which cause acid rain) under the Clean Air Act. Achieving targeted reductions was originally estimated to cost \$5 billion annually if traditional controls had been required and \$4 billion with emissions trading. A GAO estimate after the initial stage of emissions trading now puts the cost at \$2 billion per year, or 60 percent below the original estimate with pollution reductions significantly ahead of schedule. Emissions trading has also been successful in cutting the costs of phasing out leaded gasoline and in curbing the production of chlorofluorocarbons which deplete the ozone layer.

Cost savings

According to the 1997 Economic Report of the President, international emissions trading for carbon dioxide could lower the cost of reductions by 50 percent below the minimum achievable using purely domestic programs.

FACT SHEET ON JOINT IMPLEMENTATION

October 22, 1997

Description

Joint Implementation (JI) is an innovative, market-based approach for addressing global climate change that uses international partnerships to achieve low-cost reductions in greenhouse gas emissions. Under JI, a company in the United States invests in a project which reduces emissions in another country and uses those reductions as a less expensive means of meeting its own target. The U.S. has proposed that a formal regime that gives credit for JI projects be part of a new climate change agreement.

How it would work

Consider the example of a project announced today as part of a pilot program on joint implementation instituted by the United States. Two U.S. companies (Solar Electric Power and Light of Washington, D.C. and Trexler and Associates, Inc of Oak Grove, Illinois) will work with Renewable Energy Services Company of Asia, Ltd. to market and install 812,000 solar home systems in Sri Lanka. These systems will replace the use of kerosene lamps for lighting and the use of diesel-electric charging of lead-acid batteries for powering small home appliances. The result will be a 1.5 million metric ton reduction in greenhouse gas emissions and cleaner energy for tens of thousands of people.

U.S. experience

Under the U.S. pilot program on JI (formed under the existing climate change convention), 28 projects have been approved in 12 countries, including Costa Rica, Bolivia, the Czech Republic, and Russia. These projects span a range of technologies, including solar, geothermal, and wind power; fuel switching for district heating; biomass energy; and reforestation. U.S. companies and organizations already participating include Commonwealth Edison, Wisconsin Electric Power, Kenetech Windpower, Sealweld Corp., American Electric Power, PacificCorp, Detroit Edison, Clean Air Coalition, and many others.

Benefits

Lower costs: JI provides a strong incentive for companies and countries to search the globe for the lowest cost ways of reducing greenhouse gas emissions.

Expanded exports of U.S. technology: The enormous potential for JI projects around the world creates major opportunities for the increased sale of U.S. energy efficiency and alternative energy technologies.

Technology transfer: Increased reliance on more energy efficient technologies and less carbon-intensive energy alternatives will help developing countries meet their growing energy needs with more environmentally sustainable solutions.

FACT SHEET ON ELECTRICITY RESTRUCTURING

October 22, 1997

As part of his climate change initiative, President Clinton announced his support for appropriately crafted electricity restructuring legislation that will save consumers billions of dollars while reducing carbon emissions.

Description

The electricity sector is our nation's most capital intensive industry -- and has sales of over \$200 billion. Under electricity restructuring, competition would be the primary mechanism to set electricity generation prices. Utilities would open up their distribution and transmission wires to all qualified sellers. The transmission and distribution of electricity would continue to be regulated because they will remain monopolies for the foreseeable future. The system would be restructured, not deregulated. Done correctly, this process can save consumers in their utility bills and reduce carbon emissions. A properly structured retail competition system can deliver electricity more efficiently, and just as reliably, as our present system of regulated monopolies.

Cost savings

Most experts are confident that restructuring will reduce the cost of electricity, although there is a diversity of views over the potential size of the savings. Because the industry is so large, even modest savings represent billions of dollars. DOE economists estimate potential savings of \$20 billion a year, which would mean average direct savings of about \$100 a year to a typical family of four and indirect savings to such a family through lower cost goods and services of about another \$100 a year. Other studies predict far larger savings.

Carbon reductions

With appropriate market-based provisions, electricity restructuring legislation could reduce carbon emissions by creating incentives to produce and use electricity more efficiently and with less pollution. As emphasized at the White House Conference on Climate Change, two-thirds of the energy used to produce electricity is currently wasted. Restructuring should introduce incentives for reducing this waste heat. Restructuring legislation could also include other provisions -- such as various incentives and mandates to promote energy efficiency and renewable energy -- that offer potential carbon savings.

Next steps

The Administration looks forward to working with interested parties on crafting comprehensive electricity restructuring legislation.

FACT SHEET ON FEDERAL ENERGY MANAGEMENT

October 22, 1997

Aggressive energy management can substantially reduce carbon emissions from the activities of the Federal government, which has the nation's largest energy bill at almost \$8 billion per year. Significant strides have already been made --energy consumption per square foot in Federal buildings is down 15 percent and energy use in civilian and military vehicles is down about 27 percent from 1985 levels. However, we can do much more.

The initiatives below will reduce Federal emissions of greenhouse gases through enhanced focus on energy efficiency and renewable energy. They address areas which can deliver the greatest energy savings, best leverage private sector funding and improve the Federal procurement system.

1. Expand Energy Savings Performance Contracting

- Expand use of Energy Savings Performance Contracts. ESPC uses private investment capital and expertise to accomplish energy and cost saving projects in Federal facilities. When a private sector firm which has invested in federal energy efficiency improvements is fully repaid from its share of the delivered savings, all additional savings accrue to the government. Streamlined ESPC contracts put in place by DOD and DOE are beginning to speed large investments in energy projects at Federal facilities. However, use of ESPC's is still limited in the Federal government. The Office of Management and Budget will lead an effort to increase their use. It will include new policy and budget guidance for agencies. ESPC authority can also be extended to other areas including:
 - *Leased Federal buildings.* These include buildings where the Government either pays for the energy use directly or in other building where ESPC can provide a better lease for the Government.
 - *Federal mobility.* There may be great potential for energy savings from more efficient energy use in aircraft, ships and vehicles.
 - *Water conservation.* Water conservation projects save energy because each gallon contains energy from pumping, heating, chilling or treatment.
 - *Non-federal facilities* where the Government makes indirect payment of energy expenses. These include, for example, National Guard facilities which the state owns but where the Federal Government covers utility expenses and public housing facilities which are Federally supported but owned by public housing authorities.
 - *State and local government facilities.* Federal energy experts can help transfer ESPC techniques to state and local governments so they can access this important approach to energy efficiency.

2. Improve Federal Procurement of Energy Efficient Technology

- *Accelerate the development of Product Energy Efficiency Recommendations.* These cover products that are in the top 25 percent of their class for energy efficiency or have Energy Star ratings, for example electric motors and air conditioning chillers. They provide a guide to Federal purchasers

of the energy efficiency level to request in a specification or procurement.

- *Establish as standard practice, the purchase of energy efficient products for Government use.* Traditionally, federal purchases have been based on lowest price, ignoring the substantial savings many energy efficient products can achieve over their life. The Executive Office of the President will lead an interagency team to streamline and update Executive Orders and procurement practices to encourage the acquisition of these products. Use of alternative contracting vehicles to acquire energy-efficient products will be encouraged, and purchase of products in the top 25 percent of class for energy efficiency or conforming to Energy Star standards will become standard practice, subject to necessary exceptions. The initiative will be augmented by publication of a “best practices” buying guide and expanded training of purchasing decision-makers.
- *Use consolidated purchasing to stimulate markets and lower prices.* Consolidated Federal purchasing can stimulate commercial markets for new and emerging products which offer greater energy efficiency, lower operating costs, and sales opportunities for small businesses that produce these products.
- *Increase Federal procurement of renewable energy.* In states that have implemented retail competition in their electricity industry, Federal facilities will work with their suppliers to ensure that the facilities purchase competitively supplied non-hydro renewable energy at levels equivalent to the percentage specified in that state’s retail competition legislation.
- *Report Federal Agencies’ Contributions to Reduction of Carbon Emissions.* This initiative will develop an appropriate measurement methodology to convert currently available data on Federal energy use to carbon emissions to aid national carbon reduction efforts.

3. Building for the 21st Century

- *Establish a new level of excellence for Federal building construction and renovation that incorporates energy efficiency, quality, affordability, and sustainability.* By using the latest construction techniques and tapping the knowledge of the building community and local partners, agencies will work to ensure that new Federal buildings achieve energy efficiency increases of 30-50 percent by 2000 as compared to existing facilities. This will be accomplished through a “whole building” approach that treats buildings as integrated systems rather than a series of independent component selections.
- *Deploy solar technologies in Federal buildings.* Show Federal leadership by installing solar photovoltaic and solar thermal systems on 20,000 Federal roofs by 2010 in support of the President’s ‘Million Solar Roof Initiative’. Utilize alternative financing methods to provide the rapid infusion of investment necessary to support the cost-effective installation of these systems.
- *Expand the use of combined heat and power generation at Federal facilities.* Combined heat and power makes greater use of the waste heat produced in the generation of electricity.
- *Use biomass fuels in Federal boilers.* Biomass would come from agricultural and wood waste and methane from landfill and treatment plant operations.
- *Expand public awareness of energy efficient technologies.* By showcasing energy efficient and

renewable energy technologies at National Parks, Federal offices, embassies, military bases, and other facilities the public will be more aware of their potential to reduce pollution and lower costs.

- *Seek increased resources for civilian agency staffing to expand energy management activities and complete energy efficiency projects.* In recent years, budgets for energy management in several key agencies have been cut by more than 80 percent. These Federal appropriations often provide the most cost-effective funding for Federal energy efficiency projects.

4. Improve Aircraft, Ship, and Heavy Vehicle Fuel Efficiency

- *Public-Private partnerships to improve the energy efficiency of Federal aircraft, ships and vehicles.* Energy use in Federal aircraft, ships and vehicles, predominantly in the military services, is responsible for 43 percent of the \$8 billion Federal energy bill. This initiative would improve the energy efficiency of main propulsion systems, with particular emphasis on medium and heavy diesel engines and high performance turbine technology. The initiative -- designed along the lines of the Partnership for a New Generation of Vehicles -- would involve a partnership between Federal agencies and the private sector. Advances under this initiative will have significant application in commercial markets. In addition, the initiative will focus on near-term energy efficiency opportunities such as lighting retrofits on ships.
- *Increase the use of alternative fueled vehicles (AFVs) in the Federal fleet.* Federal agencies are increasing the use of alternative fuel vehicles which, among other things, helps reduce emissions of greenhouse gases. This initiative would enhance the focus of the current program on AFVs such as electrics, hybrid-electrics, natural gas and renewable-fueled vehicles.

5. Greenhouse Gas Assessments

- Federal agencies will be required to assess their greenhouse gas emissions in major actions they undertake.

FACT SHEET ON U.S. GLOBAL CHANGE RESEARCH PROGRAM

October 22, 1997

Background: The U.S. Global Change Research Program (USGCRP) is a National Research Program conducted under the auspices of the National Science and Technology Council (NSTC) Committee on Environment and Natural Resources. The NSTC is a cabinet-level council established by President Clinton in November 1993 to coordinate Federal science and technology efforts. The program's fundamental purpose is to increase understanding of the Earth system, and of human and naturally induced changes in the Earth's environment, and thus provide a sound scientific basis for decision making on global change issues. The USGCRP began as a Presidential Initiative, and was codified by the Global Change Research Act of 1990. The overall FY 1997 USGCRP budget was \$1.81 billion.

The core program of the USGCRP is focused on four key scientific areas:

- *Seasonal to Interannual Climate Variability:* The development and refinement of forecasts of seasonal and interannual climate variability, including study and prediction of the El Niño phenomena.
- *Climate Change Over Decades to Centuries:* Analysis and projection of the effects of long-term climate change on natural resources, public health, and socio-economic sectors.
- *Changes in Ozone, UV Radiation, and Atmospheric Chemistry:* Research on the causes, rate, magnitude, and human health and ecological consequences of changes in stratospheric ozone, UV radiation, and atmospheric chemistry.
- *Changes in Land Cover and Terrestrial and Aquatic Ecosystems:* Research on the causes and consequences of land-cover changes, and on basic processes governing the functions and structure of terrestrial, aquatic, and marine ecosystems.

New Research Directions: Global change research is providing the information about the changing Earth system, and in particular, about climate change, that is needed to achieve a sustainable future. New research efforts include:

- *A National Assessment of Climate Change Impacts* to aggregate information across regions and sectors, analyze national-scale consequences, and support development of mitigation and adaptation strategies.
- *Improved Regional-scale Analyses*, including regional estimates of the rate and magnitude of climate change, analyses of the environmental and socio-economic consequences of climate change in the context of other stresses, and integrated assessments of the implications for society and the environment of climate change.
- *Regional Workshops* to examine the vulnerabilities of various regions of the United States to climate change.

FACT SHEET ON PNGV

October 22, 1997

Announced at the White House on September 29, 1993 by President Clinton, Vice President Gore, and the CEOs of the domestic auto makers, the Partnership for a New Generation of Vehicles (PNGV) is a partnership between the U.S. Federal government (7 agencies and 20 federal laboratories) and Chrysler, Ford, and General Motors that aims to strengthen America's competitiveness by developing technologies for a new generation of vehicles. Its programs include research support for over 350 automotive suppliers, universities, and small businesses.

PNGV's long-term goal is to develop production prototypes of an attractive, affordable car that can meet all applicable environmental and safety times and achieve up to three times the fuel efficiency of a comparable automobile sold today. This would mean that a typical midsize car would be able to achieve 80 mpg. The partnership also aims to (i) improve automotive manufacturing, and (ii) introduce efficiency technologies into production vehicles as soon as they are economically justified.

There are numerous reasons for pursuing PNGV, including:

- **Environmental:** Automobiles are a major contributor to atmospheric carbon dioxide, a major greenhouse gas. Already, concentrations of carbon dioxide are 25 percent higher than pre-industrial levels and are expected to double within the next century. Since the number of registered vehicles in the United States is expected to climb from 194 million in 1993, to as many as 270 million in 2010, PNGV's success is critical to any program of controlling US and world greenhouse gas emissions. It will also result in low cost methods for controlling the emissions that contribute to urban air pollution.
- **Reducing U.S. Dependence on Foreign Oil:** The United States currently imports 50 percent of the oil we consume -- this share is expected to grow to more than 60 percent by 2010. Petroleum imports make up ten percent of our country's import inventory and account for a large chunk of the nation's trade deficit. This dependence on foreign oil makes the United States vulnerable.

PNGV Status Report: The industrial partners are now in the process of selecting technologies that will be included in concept vehicles that will be completed by the turn of the century. The federal agencies are working to revise their research priorities to support both technologies that can be incorporated in production prototypes for 2004 and that can be integrated into even more advanced vehicles that would be designed in later years.

The goal of the program, while extremely ambitious, still seems possible given the advances in key technology that have been achieved during the life of the program. These include advances in production of low-cost, light-weight materials for the vehicle body and frame; electrical control systems, batteries; and compact, inexpensive fuel cells -- including the new technology for using gasoline to power fuel cells announced yesterday; and, advanced internal combustion engines for use in hybrid vehicles.

FACT SHEET ON FUEL CELLS

October 22, 1997

THE BREAKTHROUGH: A gasoline-powered technology that would allow you to double the fuel efficiency of a car and emit half the greenhouse gases and virtually no other air pollution. For the first time, gasoline was used to produce electricity from a pollution-free fuel cell, allowing the use of the existing gasoline infrastructure. Previously, fuel cells have been powered by hydrogen or methanol, which are less convenient for use in cars.

The Department of Energy, together with Los Alamos National Laboratory, and A.D. Little, have developed a breakthrough fuel processor, which can extract hydrogen from gasoline and other fuels such as ethanol and natural gas. Last week, this fuel processor was combined with a fuel cell from Plug Power to demonstrate for the first time that a fuel cell electric car could be fueled by gasoline or ethanol. This eliminates the limited driving range and lengthy recharging times associated with electric cars that run on batteries.

WHAT IS A FUEL CELL: The fuel cell converts the chemical energy of a fuel directly into usable electricity and heat without combustion. Fuel cells are similar to batteries in that both produce a direct current by means of an electrochemical process, but fuel cells can operate indefinitely as long as fuel is supplied to them. Fuel cells can provide power for cars and other applications, such as electricity and hot water for buildings.

The Department of Energy working with its partners has brought down the cost of proton exchange membrane (PEM) fuel cells by a factor of twenty in the last ten years. Continued R&D, coupled with the economies of scale from mass production of fuel cells as they enter the marketplace, should allow us to maintain this pace of cost reduction for another decade.

PARTNERSHIP FOR A NEW GENERATION OF VEHICLES (PNGV): The fuel cell breakthrough was accomplished as part of President Clinton's PNGV initiative, an innovative partnership between the government, the national laboratories, the big three automakers, and their suppliers. PNGV's goal is to develop a family-sized vehicle with triple the fuel efficiency of today's cars, without compromising cost or convenience.

POTENTIAL GREENHOUSE GAS REDUCTIONS: One-third of the nation's carbon dioxide emissions comes from the transportation sector, primarily cars. Fuel cell technology alone can directly double fuel efficiency and cut carbon dioxide emissions in half. In combination with other PNGV advances, such as lightweight materials and regenerative braking, fuel cells will allow a tripling of fuel efficiency and a further reduction in greenhouse gas emissions. Powering the fuel cell with renewable fuels, such as ethanol, could eliminate automotive greenhouse gas emissions entirely in the long run. The buildings sector also generates one-third of the nation's emissions of carbon dioxide. A building that uses the electricity and hot water from a fuel cell fueled by natural gas would have about half of the greenhouse gas emissions of the average building today. Plug Power expects to introduce fuel cells for homes and other buildings in 2000 that will provide electricity for less than the current residential rate. By 2010, fuel cells in buildings could be providing emissions savings of five million metric tons of carbon.

FACT SHEET ON PATH

October 22, 1997

What is PATH? We are working to develop a partnership for 21st century housing bringing together government and industry to develop, demonstrate and deploy housing technologies, designs and practices that can significantly improve the quality of housing without raising the cost of construction. The **Partnership for Advancing Technologies in Housing** includes government (DOE, HUD, EPA, Labor, Commerce, FEMA, and DOD) and industry working together develop, demonstrate and deploy housing technologies and practices so that homes can be built cheaper, more environmentally sustainable, more disaster resistant, and provide a safer working environment.

PATH has a five-part approach:

- Industry-driven research on new technologies and practices
- Working with industry on pilot programs building thousands of marketable houses
- Streamlining of federal, state and local codes and regulations
- Judicious use of existing authority on standards
- Information campaign to influence consumer demand

R&D: Support more funds for accelerated research and demonstration of inexpensive, highly efficient, highly attractive housing. Link with million solar roofs program.

Standards: The success of PATH will in some part be based on utilizing existing authorities on standards for a select few products that have the potential for great savings. There are five appliance/products currently under review by DoE; Clothes Washers, Ranges/Ovens, Ballasts, Residential water heaters, transformers. Of these, the Clothes Washers and Water Heaters seem to have greatest potential.

Creating Markets: The key to making the Partnership successful will be the ability to create markets and consumer demands for homes that meet the PATH goals. The Partnership will work with states and communities to help them understand the benefits of building these homes, and the opportunities it affords the communities for economic growth. The Partnership will attempt to gain agreements between communities that PATH homes can go through an expedited permitting process.

Education and Outreach: Marketing the benefits of these homes to consumers and to encourage consumers to begin to ask for homes that are built to the quality level of >PATH= homes. This will need to be an intensive campaign of getting the message out to communities, builders and developers. This will provide incentives for more and more builders to want to build these homes.

Pilots: The pilots will play an important role in the success of PATH. The pilot sites will begin of developing the markets and demonstrate the feasibility of the homes. The pilot sites can also act as training sites for builders and community leaders to learn about the benefits of the technologies and as a classroom for training on how to use the technologies. Sites under consideration are Stapleton Airport, Denver (Redevelopment of old airport site near downtown) and Florida (Working with the State to link energy and environment to disaster resistance and affordability).

Regulatory Streamlining: Working with states and communities on making the code approval process more efficient and less time consuming.

FACT SHEET ON POTENTIAL INDUSTRY SECTOR SAVINGS

October 22, 1997

The industrial sector produces approximately one-third of total U.S. emissions. We can cut emissions substantially in this sector through the right mix of tax incentives, accelerated research and development, electricity restructuring, and environmental regulatory reinvention. According to a recently released report from five of the nation's energy laboratories, programs such as the ones below can reduce emissions in the industrial sector in 2010 by 28 million metric tons even with no increase in energy prices.

Increasing Energy Efficiency: Energy audits encourage systematic approaches to energy efficiency that typically have high yields. Southwire Corporation, a large manufacturer of wire, rod, and cable, cut their use of natural gas by 60 percent and cut electricity use by 40 percent per pound of product produced. Motors consume 70 percent of industrial electricity used, and there is room for improving their efficiency. The Greenville Tube Company, for example, increased productivity by 15 percent, increased energy efficiency by 30 percent, reduced scrap by 15 percent, and achieved \$77,000 per year savings -- a 6 month payback -- by improving the efficiency of their motors.

Cogeneration (Combined Heat and Power): New technologies available in the industrial sector will allow us to capture the waste heat the U.S. now throws away. With the right policies, industrial cogeneration of natural gas or biomass could cut annual carbon emission significantly by 2010. Advanced turbines developed by DOE with industry will be available in three years (orders are already being taken). They have an overall efficiency of 80 percent to 90 percent, produce steam together with low-cost electricity and significantly reduce NOx emissions. These turbines can run on natural gas or biomass. Some industries have their own low-cost biomass feedstocks (for example, black liquor gasification in the pulp and paper industry), which makes possible cogeneration with nearly zero carbon emissions.

Expanding Industries of the Future: The seven most energy-intensive industries—steel, aluminum, petroleum refining, chemicals, pulp and paper products, glass, and metal casting—account for about 80 percent of the carbon emissions in U.S. manufacturing and more than 90 percent of the hazardous waste. Industry, partnering with the Department of Energy, has developed long-term visions of energy-efficient, low-polluting, highly competitive "Industries of the Future" as well as technology roadmaps to identify an R&D and deployment pathway to achieving the vision. Visions typically foresee annual energy efficiency improvements of 1.0 percent to 1.5 percent for two decades.

FACT SHEET ON POTENTIAL BUILDINGS SECTOR SAVINGS

October 22, 1997

The buildings sector also produces approximately one-third of total U.S. emissions. There is substantial opportunity to improve the energy efficiency of our buildings and the appliances in them. Many of these technologies improve the quality of service delivered (i.e. higher quality lighting), and have also been documented in a number of cases to improve productivity. According to a recently released report from five of the nation's energy laboratories, programs such as the ones below can reduce emissions in the buildings sector in 2010 by 25 million metric tons even with no increase in energy prices.

Standards: Substantial carbon emissions reductions in 2010 can be achieved through existing authority of the Department of Energy to establish market-oriented efficiency standards for appliances, such as refrigerators and air conditioners. The Department of Energy uses a consensus-based approach in which manufacturers, environmentalists, consumer advocates, and the states work together to develop applicable standards.

Voluntary Programs: Significant carbon reductions in 2010 could also be achieved by expanding voluntary programs such as the joint EPA-DOE Energy Star program. Energy Star labeling has already transformed a number of markets. For example, it has cut the energy used by computers, monitors, and printers by 50 percent at virtually no incremental cost. It is now being extended to dozens of other products.

Adopting Best Electricity Engineering Practices: Electronic equipment consumes electricity in stand-by mode (even when not being used) generating 12 MMTs of carbon emission each year. Preliminary analysis suggests that 80 percent of that could be saved through adopting best engineering practices without reducing service.

Research and Development: Designing buildings with advanced technology can reduce energy consumption by 25 to 50 percent without increasing the building's initial cost. The extra cost of some of the energy-efficient equipment is offset by the smaller required heating and cooling system.

Combined Heat and Power: As in industry, we can reduce the carbon intensity of the buildings sector by accelerating the use of combined heat and power (CHP). Two CHP technologies—small turbines and proton-exchange membrane (PEM) fuel cells—can convert natural gas to useful energy with 80 to 90 percent efficiency, significantly cutting carbon emissions from a building.

FACT SHEET ON POTENTIAL TRANSPORTATION SECTOR SAVINGS

October 22, 1997

The transportation sector produces approximately one-third of total U.S. emissions. According to a recently released report from five of the nation's energy laboratories, programs such as the ones below can reduce emissions in the transportation sector in 2010 by 73 million metric tons even with no increase in energy prices.

High Efficiency Cars And Light Trucks: The goal of the President's Partnership for a New Generation of Vehicles is to produce cars that are three times more efficient than current vehicles with no compromise in size, safety, comfort or cost. The objective is a production prototype vehicle with a fuel efficiency of 80 mpg in 2004 and commercial availability soon after. A variety of efficient technologies such as hybrid vehicle design, advanced engines, regenerative braking and lightweight materials are under development. These technologies are also applicable to light trucks and sport utility vehicles, so that a PNGV for these heavier passenger vehicles is quite possible with an expanded research effort.

High efficiency heavy trucks: Ongoing federal R&D on advanced diesel engines and lightweight materials have the potential to substantially reduce carbon emissions from heavy trucks. These technologies are projected to be available by about 2003 and be quickly adopted by trucking manufacturers since energy is a major cost component of freight transportation (a truck typically gets 7 to 8 miles per gallon while traveling over 50,000 miles a year).

Advanced Efficient Aircraft and Rail: Ongoing federal R&D on advanced aircraft engines, improved airframes, and air traffic control have the potential to improve aircraft energy efficiency by 35 percent, with an additional increment of carbon emissions reductions achieved by increasing the efficiency of trains.

Low-Carbon Fuel: Government-industry R&D partnerships have brought the cost of ethanol from cellulosic waste (such as crop waste) and dedicated crops (such as switchgrass) from \$3.60 per gallon in 1980 to \$1.20 per gallon today. Such fuels are carbon neutral because the crops capture carbon dioxide when they grow and release it during combustion.

Talking Points on President's Climate Change Proposal

October 22, 1997

The President has proposed an ambitious climate change plan that is environmentally strong and economically sensible. Based on the President's conviction that global climate change is the premier environmental challenge of the 21st century, the President's plan will proceed pragmatically -- in three stages and with periodic economic and scientific reviews -- to cut greenhouse gas emissions by almost 30% from levels projected for 2010.

In the first stage, the President's plan will provide funding, create incentives, build partnerships and give credit for early emissions reductions. The second phase, beginning around 2004, will review, evaluate and extend the efforts of the first phase while laying the groundwork for phase three. In phase three, an international and domestic emissions trading system would begin.

The President's plan includes the following key elements:

- **A binding, realistic target to reach 1990 emissions levels by 2008-2012.** This target is part of a comprehensive framework for agreement in Kyoto that also includes flexible, market-based mechanisms and the participation of developing countries. The President is also committed to reductions below 1990 levels in the five-year period that follows.
- **A \$5 billion program of tax cuts and R&D for new technologies.** To spur energy efficiency and the development of new technologies, the President proposes a major new package of tax cuts and R&D spending amounting to \$5 billion over five years.
- **Active consultations over the next 9 months on an industry-by-industry basis, with early credit for companies making early reductions.** The President is committed to working with business to get their best ideas on how they can best reduce their own emissions, and to rewarding firms that act early.
- **Developing countries must participate.** Climate change is a global problem, and requires a global solution. That's why the President has committed that the United States will not adopt binding obligations without developing country participation.
- **A domestic and international emissions trading system.** Such a system can harness the power of the market to reduce emissions, as it has with great success in the case of acid rain.
- **Encouraging the use of energy-efficient products.** The President will engage in a broad-based effort to expand the use of existing energy-efficient technologies.
- **Federal procurement and energy use.** The Department of Energy will spearhead a comprehensive effort to reduce greenhouse gas emissions from Federal sources.
- **Electricity Restructuring.** To deliver a significant down payment on emission reductions, while saving consumers billions, we will pursue a bold plan for electricity restructuring.
- **Setting a concentration goal.** With advice from the National Academy of Sciences, the U.S. supports developing a specific, long-term concentration goal for greenhouse gases in the atmosphere.
- **Transition assistance.** The President is committed to working with Congress and labor to ensure a just transition for any workers dislocated by the changes in energy usage inherent in any climate change plan.



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

OFFICE OF
AIR AND RADIATION

MEMORANDUM

TO: Jeff Frankel, CEA

FROM: Skip Laitner, EPA/OAP *Skip Laitner*

SUBJECT: Background Information on EPA's Use of the AMIGA Model

DATE: September 5, 1997

Following the presentation of the Lab Study two weeks ago, I promised to provide you with background information on our use of the AMIGA model. As I indicated in our discussion, AMIGA is a computable general equilibrium model that incorporates both technological and sectoral detail. We developed a stabilization scenario using the information from the DOE Lab Study. The analysis was completed in late May. I hope you find this useful. Please let me know if you have further questions.

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages = 8

To	Jeff Frankel	From	SKIP LAITNER
Dept./Agency	CEA	Phone #	233-9833
Fax #	395-6947	Fax #	233-9589

NSN 7540-01-317-7988

5089-101

GENERAL SERVICES ADMINISTRATION

Preliminary Results of the AMIGA/Lab Study Scenario

Skip Laitner
EPA/OAP
September 5, 1997

Background

The Argonne Multisector Industry Growth Assessment (AMIGA) Model is a general equilibrium model that was developed to understand and to quantify the costs, benefits and other impacts of technology penetration and related policies on the economy. AMIGA calculates Gross Domestic Product (GDP), demands for different goods and services, energy consumption, sector outputs, prices, trade balance, and employment for alternative scenarios and policies.

AMIGA most typically operates with 236 sectors. Special sectors or subsectors may be added to characterize future technologies. It uses a modified Gauss-Seidel method to solve the simultaneous price, demand, production and income equations. It includes important endogenous cost changes, including learning curves for selected new technologies, reductions in end-use energy-related service costs from the market penetration of cost-effective energy-efficient technologies, other substitutions in factors of production, scale economies in distribution of products to customers which lower unit costs.

EPA/OAP Policy Scenario

EPA/OAP ran the AMIGA model with the assistance of Don Hanson of ANL's Policy and Economic Analysis Group (phone: 630/252-5061). The AMIGA reference case is calibrated to EIA's Annual Energy Outlook 1997. The starting assumptions of the policy case are the results from the Interlab study. Among other things, this includes the motor vehicle analysis, including cellulose biomass fuel assumptions, and the buildings and industry analysis. In addition, we used a \$55 per ton carbon price (in 1996 dollars) to simulate a cap and trade policy. This constrained carbon emissions so that they stabilized at 1990 levels by the year 2015.

The policy run relative to the reference case also assumes:

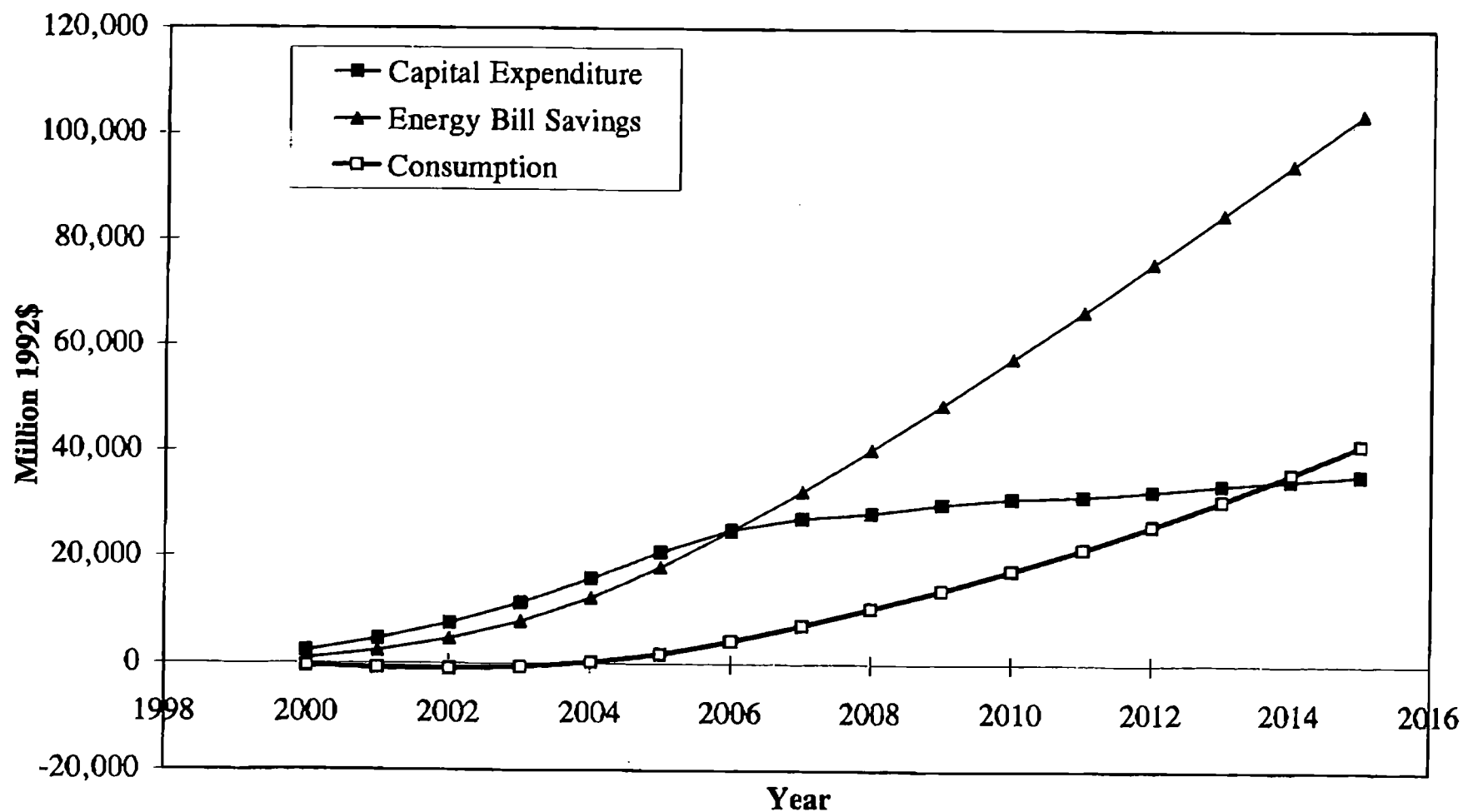
- ❖ Recycling of the carbon tax revenue collected by the US to other alternative uses, namely in this run, lowering the marginal cost of hiring a worker by lowering existing payroll taxes. Of course other taxes could also be lowered or the revenue could finance other things such as R&D. If the tax revenue yields a lower return compared to some other use than in payroll tax reduction, then we have overstated benefits.

- ❖ Energy efficiency performance of new technology in all the sectors is improved over the entire forecast time horizon. It is our view that policy is needed on the manufacture of these technologies over and above the demand side effects of a medium carbon tax. Standards or other programs are assumed to focus on developing and making available in the marketplace more efficient equipment. The technology improvement is due partly from induced innovation driven by cumulative production of the advanced equipment and partly, in complement, from autonomous R&D related technical advance over time.
- ❖ Governments are assumed to play an important role in control of their own purchases, by buying almost entirely energy efficient and innovative equipment, thus effecting the induced technical progress channel.
- ❖ The adoption rate of more efficient equipment is increased at a rate that phases in over 5 years. This shift is in addition to the carbon tax related price effects; additional policies to make this happen would be needed. Adequate sales volume and regional market access are assumed to achieve normal scale economies in the distribution markups of efficient equipment.
- ❖ Cellulose biomass fuel displaces 10 percent the anticipated gasoline consumption.
- ❖ Renewables displace enough utility coal use to achieve stabilization by 2015.

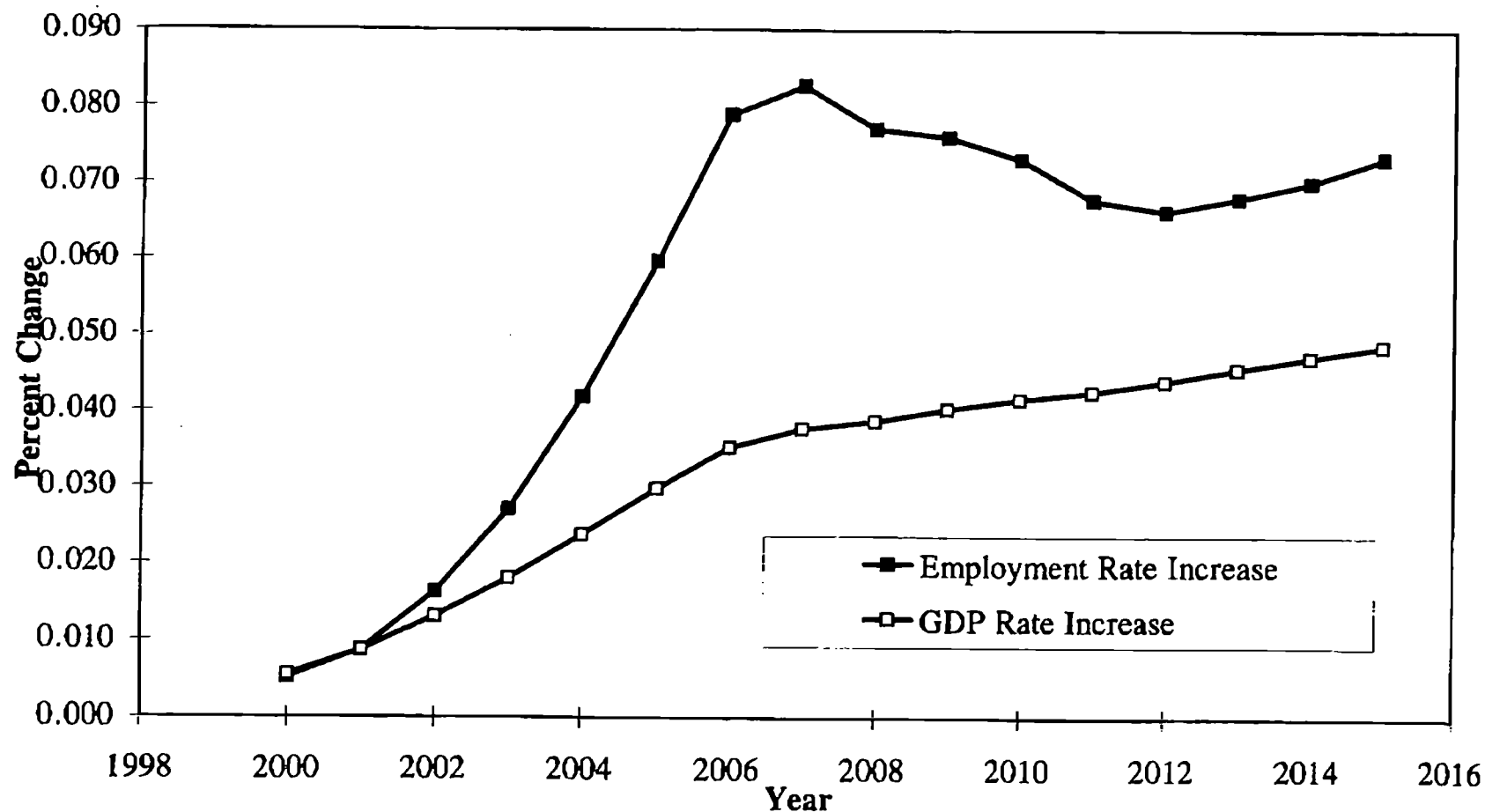
Policy Impacts

In the year 2010, GDP is up \$47.7 billion (in 1992 dollars), about 0.45 percent over the reference case. Real consumption, measured by a Divisia quantity index with variable expenditure weights, goes up markedly over the time horizon, except for the first couple years due to some crowding out from the increased investment. By 2015 consumption is up \$41.5 billion, about 0.62 percent over the reference case. This is shown in the graph on the following page. Employment is up about 113,000 jobs by 2015, about 0.07 percent over the reference case. This is also illustrated in the graph on the next page. Detailed sectoral results for employment are shown on the last three pages of this narrative. We expect to refine the results of this scenario in the immediate future.

An Increase in Real Consumption Can be Expected from Appropriate Energy Efficiency Measures



In the Macro Economy, the Employment Rate and the Cumulative GDP Growth Rate Are Both Slightly Improved



Sectoral Deltas of AMIGA Analysis

Run Date: May 28, 1997

Year = 2010

GDP = \$47,720 (Millions of 1992 \$)

#	Sector	Employment (1000s)	Sector Shipments
1	Ag -Livestock	3	207
2	Ag -Crops	(5)	(429)
3	Metal mining	(1)	(56)
4	Coal mining	(34)	(6,996)
5	Crude oil	(19)	(4,650)
6	Natural gas	(10)	(2,516)
7	Mineral mining	0	44
8	Mining constr	1	64
9	New constr	60	5,050
10	Repair & Maint.	17	1,475
11	Food & kindred prod	5	1,348
12	Textile mills	0	59
13	Textile prod	8	693
14	Wood & prod	2	199
15	Furniture	5	408
16	Paper mills	(1)	(376)
17	Paper & boxes	0	5
18	Printing	1	62
19	Chemicals	9	3,501
20	Synth materials	(1)	(182)
21	Pharmaceutical	0	83
22	Paint & clean	0	200
23	Refining	(10)	(19,662)
24	Lub & asphalt	(1)	(58)
25	Plastic prod	2	192
26	Rubber & prod	1	65
27	Glass & S&C	2	344
28	Iron & steel	1	200
29	Nonfer metals	0	(109)
30	Fab metal	10	1,298
31	Engines & mach.	(4)	(480)

Sectoral Deltas of AMIGA Analysis

Run Date: May 28, 1997

Year = 2010

GDP = \$47,720 (Millions of 1992 \$)

#	Sector	Employment (1000s)	Sector Shipments
32	Indust mach.	(1)	(164)
33	Computers	(1)	(190)
34	Serv machinery	2	294
35	Elect ind eq	6	821
36	Appliances	7	1,233
37	Elect light	5	675
38	Commun eq	0	233
39	Electronic comp	(3)	(240)
40	Elect eq oth	0	7
41	Motor vehicles	13	4,401
42	Truck bodies tr	0	121
43	Aircraft & parts	(7)	(1,069)
44	Transp equip	0	43
45	Hitech inst	3	260
46	Photo eq etc	0	5
47	Ordnance	(1)	(97)
48	Misc mfg	1	81
49	Rail & passngr	(9)	(872)
50	M frght tr & wareh.	3	177
51	Water transp	(8)	(624)
52	Air transp	(7)	(898)
53	Pipelines, freight forw.	(6)	(1,203)
54	Communications	6	705
55	Elect util	(93)	(25,372)
56	Gas util	(61)	(15,082)
57	Water & san	0	(142)
58	Wholesale trade	(101)	(13,547)
59	Retail trade	224	5,394
60	Finance	10	1,113
61	Own houses	0	0
62	Real estate	(4)	(1,534)

Sectoral Deltas of AMIGA Analysis

Run Date: May 28, 1997

Year = 2010

GDP = \$47,720 (Millions of 1992 \$)

#	Sector	Employment (1000s)	Sector Shipments
63	Person serv	5	289
64	Data process.	(2)	(165)
65	Legal,eng,acc	11	1,589
66	Other Bus serv	(2)	(276)
67	Advertising	0	199
68	Restaurants	9	1,251
69	Auto repair &	2	221
70	Amusements	4	404
71	Health serv	42	3,020
72	Social serv	19	939
73	Oth govt ent	0	23
74	St & gov ent	(2)	(85)
75	Noncom impts	0	0
76	Scrap & used	0	(582)
77	Govt workers	0	0
78	Other adjust	0	(1,458)
79	MV trans serv	0	0
80	MV serv Bus	0	0
81	Housg Serv-SFam	0	0
82	Housg Serv-MF am	0	0
83	H Serv-Mob Home	0	0
	Sector Totals	105	(60,119)

**LISA D.
BRANCH**
03/05/98 09:31:17 AM

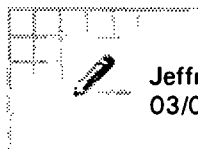


Record Type: Record

To: Randall W. Lutter/CEA/EOP, Joseph E. Aldy/CEA/EOP, Adele C. Morris/CEA/EOP

cc: Jeffrey A. Frankel/CEA/EOP

Subject: Tomorrow's Meeting on LDCs and GCC, 3/6, is at 3:30pm, Rm. 314



Jeffrey A. Frankel
03/04/98 08:09:40 PM

Record Type: Record

To: Janet L. Yellen/CEA/EOP

cc: Randall W. Lutter/CEA/EOP, Joseph E. Aldy/CEA/EOP, Adele C. Morris/CEA/EOP

Subject: mtg. Fri. to discuss LDCs and GCC



LDCTRGTS.CEA/

Janet,

I would like us five to meet sometime Friday to discuss what should be the CEA position on emission targets for developing countries. I enclose a write-up of the two key points I think we have to offer in the inter-agency process. After we have discussed them, and revised them along whatever lines you suggest, I propose that we circulate them soon as a memo. (I also propose we attach the cross-country plot of emissions per capita against GDP per capita, with regression line, that Joe did in November. The point of this is that if we offer some evidence that we have thought with some degree of rigor about this problem, it might put our arguments a notch above those of the ten other agencies who presume at meetings that anybody's idea is as good as anybody else's).

The status quo on this subject is that State is drawn to negotiate bilateral deals with Argentina, South Africa, etc. one-by-one, with ad hoc definitions of meaningful participation that are not necessarily desirable from our point of view. The closest thing to a systematic approach to emission targets is the unedifying USAID paper, which among other things implies that we should make no demands on small countries.

Recall that I am away next week (and you thereafter).

JF

Proposal for CEA position on targets for developing countries (i.e., the strong form of “developing country participation”)¹

1. It would be useful to get LDCs to agree to binding limits, even if they involved no (or little) cuts below BAU. Reasons:

- We want to forestall increases over BAU, in response to Annex I cuts (leakage)
- The ability for Annex I countries to buy reductions from LDCs would greatly reduce the costs of meeting our targets (as CEA testimony showed).
- *With targets close to BAU, the LDCs would benefit from the ability to sell emission permits. This actually gives them a genuine economic incentive to join, which is otherwise lacking.*
- Agreement on modest targets in the nearer term is the first step to drawing LDCs into the system, where larger cuts relative to BAU may be possible in the longer term (in some proportion to the cuts made by richer countries that have gone before them).

2. It might be useful to phrase LDC targets as a formula (intended approximately to replicate BAU on an ex ante basis²). Reasons:

- It is hard to know what the right BAU estimate for a given small poor country is, ex ante.
- Even if we think we know, it will be hard to get agreement. It would require protracted self-serving negotiations with each country one-by-one. Simpler and fairer to agree on a uniform formula that generalizes.
- *Even an optimal forecast ex ante could turn out very poor ex post -- e.g. unintentionally stringent. Ten years ago one would have predicted that Korean growth in the coming century would be far more rapid than Slovenia's growth; looking forward from today, the opposite could be*

true. If countries' future growth rates turn out to be very different from what was anticipated when a binding BAU path was established, they will simply refuse to abide by them.

- Such a formula would constitute tangible proof that we are not preventing them from growing rapidly
- Compared to pragmatic alternative approaches that determine future targets from past emissions, a formula that puts less weight on past emissions minimizes the incentive for countries to maximize emissions in the near term in order to have a higher base allocation in the future.