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U.S. Department of Justice

Environment and Natural Resources Division

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October 10, 1997

MEMORANDUM

To: Assistant Secretaries Group

From: Lois J. Schiffer, Assistant Attorney General
Environment & Natural Resources Section

Re: Right-to-Know Proposal for GHG Emissions

Background

On numerous occasions, the President has expressed his personal commitment to right-to-know provisions and has recognized their effectiveness. For example, in an August 28, 1996 speech in Kalamazoo, Michigan, the President stated,

We're also going to expand our community right-to-know law to make more information, practical information available to families easier and faster. Right-to-know will protect you here in communities like Kalamazoo because you can find out what's dangerous to your families. Once there is a right-to-know law, companies think twice about what they do.

Similarly, in an August 8, 1995 speech in Baltimore, the President stated,

Community right to know is here to stay. . . . Democracies always have depended upon the free flow of information to ordinary citizens.

Finally, the President wrote regarding an existing right-to-know program that information disclosure "encourage[s] informed community based environmental decision making and provide[s] a strong incentive for businesses to find their own ways of preventing pollution." 60 Fed. Reg. 41,791 (1995)

Proposal

The principle of right-to-know is directly applicable to emissions of greenhouse gases (GHG). The public has a right to know who are emitters of gases that threaten community, national and global health and the environment. Were information on emission levels made public, domestic companies would be encouraged to maximize their energy efficiency and minimize GHG. Moreover, the public would have sufficient information to make choices about providers of various services which result in GHG emissions.

Hence, we recommend that a right-to-know proposal be included in any options memorandum to the President which generally identifies federal programs that can help reduce national GHG emissions. The proposal should apply to emitters of GHG at an appropriate level

(i.e. over a particular threshold amount). Information on emissions would be reported to EPA or other appropriate agency and made publicly available on a database. Such a proposal would mesh well with a domestic allowance trading program, since emissions information would already be provided to EPA (or relevant agency) by companies within that program. But the right-to-know proposal would also be important in sectors not covered by a trading program or if reductions were secured through other means (e.g. performance standards).

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2:40

1990 by 2008-12

permit system in 2008

w/ reviews

\$5 billion
over 5 years

- R&D
- tax breaks
- voluntary programs

• true facts

* Cement

* uncertainties

- + int'l II.
- + opportunities to help LDCs to develop low carbon-intens
- + leapfrogging technology
- + business markets
- + WB role
- + Inst. arrangements
 - established policy

T&T

Binding agreement - we fully intend to comply
uncert & imponderables

→ Early action credit

- ① supporting our policy - no new work
- ② comparison lines
 - runs w/ diff assumptions, post Dec.
 - not supporting stuff in testimony
- ③ pre-December analysis
- ④

STATEMENT OF THE HONORABLE DAN SCHAEFER
SUBCOMMITTEE ON ENERGY AND POWER

HEARING ON THE KYOTO PROTOCOL AND ITS ECONOMIC IMPLICATIONS

MARCH 4, 1998

I'd like to welcome everyone to today's hearing on the Kyoto Protocol and its economic implications.

Unfortunately, after 6 hearings, my concerns about where the Administration is headed with this agreement seem to increase rather than decrease with every time we have an opportunity to look closely at the domestic implications of this issue.

Today I hope to focus my questions on the results of the economic analysis contained in the prepared testimony for today. Last July, the Administration released a document at least 59 people across the Administration spent nearly two years developing. That economic analysis determined the cost of stabilizing greenhouse gas emissions to 1990 levels by the year 2010 would require the equivalent of a \$95 per ton carbon tax. The day that document was made public the Administration called it a "flawed" effort.

Today we are presented with the result of analysis conducted, I presume, in the three months post-Kyoto that, apparently using at least one of the same models used in the previous analysis, produces vastly different results for a more ambitious target, \$14-23 per ton of carbon.

What disturbs me the most about this outcome is it appears to be based on assumptions about the outcome of future negotiations that may never materialize. To

be specific: according to Ms. Yellen's testimony, the cost of complying with the Kyoto Protocol is reduced between 50 and 75 per cent if there is efficient international emissions trading. However, the details of emissions trading are, unfortunately, one of the things the Administration has left to work out in a future negotiation. And other parties to this agreement and non-governmental groups are already positioning themselves to place as many restrictions as possible on emissions trading. In this context, I would remind you of the history of joint implementation. The Rio Treaty provides for it, but in subsequent negotiations the promise it held for significantly reducing costs of compliance proved hollow when it was limited to developed countries only.

Similarly, Ms. Yellen's testimony notes that the cost of compliance is further reduced if we can secure full participation by developing countries in the emissions trading markets. I am extremely disturbed if this was relied upon to reach the cost prediction in today's testimony because with respect to meaningful developing country commitments under the Kyoto Protocol: it is a done deal and they don't have any.



In order for us to fully analyze the Administration's economic analysis and the assumptions used, I am formally requesting that the Administration provide to this Subcommittee, no later than two weeks from today, the complete analysis of the conclusions presented in today's testimony, any other economic analysis that was done that reached different conclusions, and I ask that the Administration send its analysis out for peer review. The reason why understanding this analysis is so important was highlighted in an article that appeared in the Washington Post this morning: Robert Stavins, an economist at Harvard noted: the impact can be relatively small if done in the smartest possible way. "But if we don't do it that way it will cost 10 times what the Administration is saying."

Finally, I am pleased that the Administration is supportive of the idea of electricity restructuring. I too believe it will bring real savings to electricity consumers. Unfortunately, it is becoming clear to me that the Administration support restructuring as a way to mask the costs of complying with this treaty from American consumers. As I stated at the last hearing I would like the benefits of restructuring to flow to the consumers and not be spent buying emissions credits from a foreign government.

I hope today the Administration can answer our questions about the agreement in a straightforward manner. I look forward to the testimony and exploring all of these issues during the question and answer period.

Thank you.

GCC/IAT

6/30/97

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Energy

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testimony:

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- KTMC Exec
- (1) Mark becomes thorough lit. review
 - (2) script testimony & Q&A
 - (3) who is ec presence in hearings

September 19, 1997

The Honorable Dan Schaefer
Chairman
Energy and Power Subcommittee
Committee on Commerce
Room 2125
Rayburn House Office Building
Washington, DC 20515

Draft

Dear Mr. Chairman:

I received your August 22 questions that relate to the Administration's policy making process on the issue of global climate change. I appreciate your thoughtful inquiries on this important issue.

As you know, the Administration has not yet settled on a particular set of policies to reduce greenhouse gas emissions. Instead, the President, Members of his Cabinet, and Senior White House officials have been meeting with a wide range of parties interested in the issue of global climate change. We have been consulting with business and labor representatives, scientists, economists, and environmental groups about the best, most cost-effective way to reduce greenhouse gas emissions. And, on October 6, the White House will hold a conference to discuss the scientific evidence, the economic impact, and international implications of global climate change. These discussions are intended to inform the Administration's decision-making process, which will culminate in a U.S. policy position for the international negotiations in Kyoto in December of this year.

Because we are in the final stages of this policy making process, I believe that many of the questions asked in your August 22 submission would be more accurately and thoroughly answered after the Administration has announced its policy position. For that reason, I am requesting that you allow me to provide answers to these questions after the Administration has engaged in a thorough and complete policy making process and has made the key policy decisions about this important issue.

If you or your staff have any questions, please contact me or Michele Jolin, the CEA Chief of Staff at (202)395-5084. I appreciate your consideration and cooperation, and look forward to working with you further.

Sincerely,

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9/18/97

CC

Hilleg's office
re Schaefer request

D. Santolow Oct 96 similar letter from Schaefer
Good letter from Duggell last time. we won't get that
this time.

This time STAR has given similar request. DOE & EIA? ^{current of fear} & here
with LC last time said we had little basis for withholding.

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Ms. I observer group in Senate. have to be included
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Angel Science Ms. we've already done it.
Background articles
short atn. span. 2nd mtg, they've bared.

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—
Sincerely,

Responses to Murkowski Questions

2. When will the Administration release to the public the economic analysis that it used in reaching these targets and timetables?

I don't know the answer to this question.

The Administration will release the economic analysis in a timely manner prior to the opening of the conference in Kyoto.

3. Will the economic analysis used to arrive at these targets and timetables be peer reviewed?

a. If not, why not?

b. If so, will the peer reviewers comments be made public?

The economic analysis will not be peer reviewed. The peer review comments on the Interagency Analytical Team report provided the Administration with valuable information on the strengths and weaknesses of existing economic models. Many of the reviewers' suggestions were incorporated and addressed in this economic analysis. The Administration also drew on the peer-reviewed economic literature for this analysis. Further, as is the case with most major policy decisions, the nature of the internal deliberations of the Administration precluded an extensive and time-consuming peer review.

9. The economic modeling effort that was abandoned by the Administration earlier this year assumed that the mere announcement of an agreement to reduce carbon dioxide would immediately result in a 25% increase in the rate of improvement in energy efficiency.

a. Was this a valid and realistic assumption?

b. Did the peer reviewers feel it was a realistic assumption?

Several of the peer reviewers noted that the rate of energy efficiency improvement (the autonomous energy efficiency improvement, or AEEI) may be on the upper range of estimates of this variable, and may cause some debate. Given the concern about the realism of this assumption, and in response to several reviewers' suggestions about increasing the scope of the sensitivity analysis, the Administration has conducted subsequent economic analyses with an AEEI comparable to the value used by the Energy Information Administration in its energy forecasting.

10. The Administration economic modeling effort also assumed a decrease in long term interest rates to almost 2%.

a. Was this a valid and realistic assumption?

b. Don't new taxes and higher costs tend to increase inflation and interest rates?

The IAT report indicates that in the modeling exercises, the revenues from carbon permit auctions are used to reduce the deficit (or in its sensitivity analyses, to cut income and corporate taxes). As we heard many times over the past several years on the balanced budget debate, cutting the Federal deficit will lower interest rates. Of course, how much interest rates would fall also depends on other characteristics of the economy and how the Federal Reserve responds to them. Qualitatively, the conclusion of the analysis appears to be valid and realistic. "New taxes" don't necessarily lead to an increase in inflation and interest rates if other changes in fiscal policy are undertaken (e.g., reducing the deficit, cutting income and corporate taxes).

11. The Administration modeling effort did not consider the costs associated with the development, implementation, and monitoring of a trading program.

a. Was this a valid and realistic omission?

The purpose of the IAT was not to assess any specific policy position. Since the Administration had not yet developed a policy position internally, the IAT did not have a specific implementation policy to model. It would not be valid for the IAT to devise a specific, hypothetical program and model the costs of implementing it.

12. Did the Administration modeling effort take into account the adverse effects on U.S. competitiveness and the potential shifting of producers in the United States?

As several of the reviewers noted, the models used in the IAT do not handle international trade well and the IAT did not specifically account for effects on U.S. competitiveness.

Responses to Senator Chafee's Questions

1. The President and his Administration are still going through a process of hearing the opinions of the many interested parties on this issue. This process will culminate with a White House Conference in October on the climate change issue.

However, the framework for the Administration's policy has been largely settled. For example, we support the use of flexible approaches, such as joint implementation and international emissions trading. We support the requirement that non-Annex I countries, as they become wealthier, abide to binding emissions goals. For domestic implementation, we support the use of flexible, market based approaches. Although the President has spoken of the need for realistic achievable targets, the Administration is still deciding the details on targets and timetables and domestic implementation.

2. No one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or 30 years into the future. However, a vast array of economic tools exists to provide us with a basis for informed judgment about the likely effects of different climate policies. For example, we know that a market based approach to reducing carbon emissions will be less costly than a command and control approach. The Administration intends to bring to bear on the climate issue many analytic tools and perspectives. Some of these may have strengths on issues where the models used in the IAT analysis were weak. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of economic effects so that the Administration can make informed policy decisions.

3. The Administration is considering an array of market based approaches to implement climate policy.

4. Tradeable emissions permits and energy taxes share several important characteristics. First, they both send a price signal to markets that would stimulate the development and adoption of energy efficient technologies. Second, they both provide flexibility to achieve emissions goals. In the case of tradeable permits, firms that find it very costly to reduce emissions may purchase permits from firms that find it less costly. In the case of taxes, firms would reduce their energy use until it became more costly than the tax. These both achieve emissions reductions at substantially lower costs than through command and control approaches.

Tradeable emissions permits would provide greater certainty than energy taxes of attaining a specified emissions cap. By specifying a number of permits and allowing firms to trade these permits, the country can ensure that it is meeting an agreed upon carbon emissions goal. A tax, on the other hand, would provide greater certainty than a cap-and-trade approach of limiting costs, since the increase in unit costs would be determined by the tax.

5. For international emissions trading, all countries participating in the trading scheme will need to have their emissions capped.

International emissions trading can significantly decrease the costs of meeting an emissions goal. It would provide greater opportunities to reduce emissions at low costs. If some of the emissions reductions necessary to achieve the U.S. goal can be undertaken in other countries at lower costs, then U.S. emissions control costs will fall. In both the IAT analysis and other modeling efforts, the costs of achieving a variety of emissions goals could decrease by more than half.

For joint implementation, all countries may participate, regardless of when their emissions will be capped. Lower cost abatement opportunities abroad again suggest substantial savings to the U.S. could result if U.S. companies could receive credit for incremental abatement efforts in other countries.

6. Some innovation surely occurs in the absence of a price signal. Many studies suggest that energy use relative to GDP falls each year regardless of the price signal by 0.5 to 1.25 percent. To the extent that energy use is associated with climate change effects, and this causes damages not reflected in market prices, this innovation is unlikely to be sufficient. Additional incentives to innovation, such as price signals, or support for R&D may be needed.

7. As the question notes, some observers of the climate change issue have claimed that capping only developed countries' emissions will result in "leakage": the escape of jobs, capital, and polluting activity to developing countries. Any time countries negotiate international treaties that would apply different rules to different countries, there is a concern about some countries gaining a competitive advantage. However, the economic evidence does not support the argument that climate policy will adversely affect U.S. economic competitiveness. First, non-tradeable sectors account for a substantial share of carbon emissions. Transportation and residential and commercial buildings account for approximately two-thirds of U.S. carbon emissions. For these sectors, the "competitiveness" argument does not appear applicable. Second, energy costs comprise only a small percentage of total manufacturing costs. According to the 1995 Annual Census of Manufactures, energy costs for manufacturing industries averaged just 2.2% of total costs. Given the small share of energy in total costs, differential shifts in existing energy prices are unlikely to have substantial effects on location decisions and trade flows. Third, our experience in this country with environmental regulation has been that it does not cause significant leakage. Firms that decide to relocate to other countries do so because of international differences in labor costs, capital costs, material costs, and exchange rate changes that all swamp the costs of complying with environmental regulations.

To address the possibility of leakage occurring, we should do climate policy smart. If we do it dumb, it will cost our economy a lot. By doing it smart, through flexible, market-based approaches, we will make the costs of complying with an emissions goal much lower. In addition to using market-based approaches domestically, joint implementation and international emissions trading would also lower the costs of climate policy. These lower costs associated with a smart climate policy would decrease the economic rationale for industries to move to developing countries.

Responses to Senator Boxer's Questions

1. As stated in my answer to question 7 of Senator Chafee's questions, some observers of the climate change issue have claimed that capping only developed countries' emissions will result in "leakage": the escape of jobs, capital, and polluting activity to developing countries. Any time countries negotiate international treaties that would apply different rules to different countries, there is a concern about some countries gaining a competitive advantage. However, the economic evidence does not support the argument that climate policy will adversely affect U.S. economic competitiveness. First, non-tradeable sectors account for a substantial share of carbon emissions. Transportation and residential and commercial buildings account for approximately two-thirds of U.S. carbon emissions. For these sectors, the "competitiveness" argument does not appear applicable. Second, energy costs comprise only a small percentage of total manufacturing costs. According to the 1995 Annual Census of Manufacturers, energy costs for manufacturing industries averaged just 2.2% of total costs. Given the small share of energy in total costs, differential shifts in existing energy prices are unlikely to have substantial effects on location decisions and trade flows. Third, our experience in this country with environmental regulation has been that it does not cause significant leakage. Firms that decide to relocate to other countries do so because of international differences in labor costs, capital costs, material costs, and exchange rate changes that all swamp the costs of complying with environmental regulations.

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2. The costs of reducing emissions in the U.S., and in Europe and Japan depend on how all of these countries implement their policies. If the U.S. employs a market based approach, the costs will not be that high relative to Europe and Japan. Regardless of the implementation approaches used in these countries, the costs of emissions reductions are not likely to affect U.S. competitiveness. As noted above, energy costs comprise a small share of total manufacturing costs (2.2%). Further, two-thirds of carbon emissions occur in non-tradeable sectors. The evidence on energy price differentials across countries suggests that they are not sufficient to spur firm relocation to other countries.

3. The IAT report did not focus on the benefits of reducing greenhouse gas emissions. Without a benefits assessment, the IAT could not provide estimates of the positive effects on human health and the environment. In addition, the IAT did not study the effects of the risks of climate change on economic activity. However, the report did assess the impacts of climate policy on the

economy. The IAT analysis confirms other economic research (for example, the recent report by the World Resources Institute) that smart climate policy can actually lead to net benefits in the long term. For example, the IAT analysis found that auctioning off tradeable permits and using the proceeds of the auction to lower income and corporate taxes would help the economy grow faster in the future than without climate policy.

4. The longer we wait to take any action can adversely affect the economic and environmental outcomes of climate policy. However, we do know that more gradual efforts to reduce our carbon emissions can lower the economic costs relative to very aggressive reductions efforts while still achieving the same carbon dioxide concentration goal. For example, some international proposals to reduce carbon emissions would have Annex I countries cutting emissions to 20% below 1990 levels by 2005. Such a target would have very substantial economic costs because it does not provide enough time for the capital stock to turn over. It is very expensive to scrap the existing capital stock, while much of it is in the prime of its life, and replace it with carbon-free technology. Further, such a target would require the economy to employ existing low-carbon and carbon-free technologies while longer-term targets would provide more lead time to develop and implement superior technologies. Given that it is the stock of carbon dioxide, not the annual emissions of carbon dioxide, that drive global warming, there is an opportunity to be flexible in the timing of emissions reductions. Less aggressive paths that 1990 -20% emissions level by 2005 could achieve the same carbon dioxide concentration stabilization goal in the year 2100 by increasing carbon reductions in the future when they are less costly to the economy.

5. It is very difficult to assess the nature of the economy, and especially specific industries, 20 or 30 years into the future. If the country embarked on a policy of reducing carbon emissions, obviously the firms and industries that can creatively and cost-effectively reduce their emissions will benefit relative to their competitors. To reduce carbon emissions, it is reasonable to envision that the products and services of industries that develop energy efficient technologies and industries that develop low-carbon based energy (such as renewable energy sources including wind, solar, and biomass) would be in greater demand.

Responses to Senator Lieberman's Questions

1. The Administration's analysis on the issue of climate policy has not occurred in a vacuum. In fact, climate change has been one of the more active areas of research in economics this decade. The economic literature on climate change, complemented by the IAT report, has already done quite a lot to inform the policy development process. Based on the economic research, we have identified some of the important characteristics of the climate policy we will develop: joint implementation, international emissions trading, developing country participation, emissions budgets, and market-based, flexible domestic implementation. My interpretation of the role of economics differs -- I believe economics has informed the process, and I am confident that it will continue to play an important role in our country's deliberations over a climate policy position.

2. As stated in my answer to question 2 of Senator Chafee's questions, no one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or 30 years into the future. However, a vast array of economic tools exists to provide us with a basis for informed judgment about the likely effects of different climate policies. For example, we know that a market based approach to reducing carbon emissions will be less costly than a command and control approach. The Administration intends to bring to bear on the climate issue many analytic tools and perspectives. Some of these may have strengths on issues where the models used in the IAT analysis were weak. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of economic effects so that the Administration can make informed policy decisions.

Responses to Senator Boxer's Questions

1. Some observers of the climate change issue have suggested that capping only developed countries' emissions will result in "leakage": the escape of jobs, capital, and polluting activity to developing countries. Any time countries negotiate international treaties that would apply different rules to different countries, there is a concern about some countries gaining a competitive advantage. However, the economic evidence does not support the argument that climate policy will adversely affect U.S. economic competitiveness. First, non-tradeable sectors account for a substantial share of carbon emissions. Transportation and residential and commercial buildings account for approximately two-thirds of U.S. carbon emissions. For these sectors, the "competitiveness" argument does not appear applicable. Second, energy costs comprise only a small percentage of total manufacturing costs. According to the 1995 Annual Census of Manufacturers, energy costs for manufacturing industries averaged just 2.2% of total costs. Given the small share of energy in total costs, differential shifts in existing energy prices are unlikely to have substantial effects on location decisions and trade flows. Third, our experience in this country with environmental regulation has been that it does not cause significant leakage. Firms that decide to relocate to other countries do so because of international differences in labor costs, capital costs, material costs, and exchange rate changes that all swamp the costs of complying with environmental regulations.

To ensure that climate change policy does not damage U.S. competitiveness, we need a smart climate change policy. If we do it dumb, it could cost our economy a lot. By doing it smart, through flexible, market-based approaches, we will make the costs of complying with an emissions goal much lower. In addition to using market-based approaches domestically, joint implementation and international emissions trading would also lower the costs of climate policy. These lower costs associated with a smart climate policy would decrease the economic rationale for industries to move to developing countries.

2. The costs of reducing emissions in the U.S., and in Europe and Japan depend on how all of these countries implement their policies. If the U.S. employs a market based approach, the costs will not be that high relative to Europe and Japan. Regardless of the implementation approaches used in these countries, the costs of emissions reductions are not likely to affect U.S. competitiveness. As noted above, energy costs comprise a small share of total manufacturing costs (2.2%). Further, two-thirds of carbon emissions occur in non-tradeable sectors. The evidence on energy price differentials across countries suggests that they are not sufficient to spur firm relocation to other countries.

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than us.
Do we have
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Why are
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relying
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much
on IAT?

the proceeds of the auction to lower income and corporate taxes would help the economy grow faster in the future than without climate policy.

4. The longer we wait to take any action can adversely affect the economic and environmental outcomes of climate policy. However, we do know that more gradual efforts to reduce our carbon emissions can lower the economic costs relative to very aggressive reductions efforts, while still achieving the same carbon dioxide concentration goal. For example, some international proposals to reduce carbon emissions would have Annex I countries cutting emissions to 20% below 1990 levels by 2005. Such a target would have very substantial economic costs because it does not provide enough time for the capital stock to turn over. It is very expensive to scrap the existing capital stock, while much of it is in the prime of its life, and replace it with carbon-free technology. Further, such a target would require the economy to employ existing low-carbon and carbon-free technologies while longer-term targets would provide more lead time to develop and implement superior technologies. Given that it is the stock of carbon dioxide, not the annual emissions of carbon dioxide, that drive global warming, there is an opportunity to be flexible in the timing of emissions reductions. Less aggressive paths than 1990 -20% emissions level by 2005 could achieve the same carbon dioxide concentration stabilization goal in the year 2100 by increasing carbon reductions in the future when they are less costly to the economy.

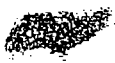
1 other
GHG
Add ~~political~~ credibility argument for going earlier (than 2A models say)

5. It is very difficult to assess the nature of the economy, and especially specific industries, 20 or 30 years into the future. If the country embarked on a policy of reducing carbon emissions, obviously the firms and industries that can creatively and cost-effectively reduce their emissions will benefit relative to their competitors. To reduce carbon emissions, it is reasonable to envision that the products and services of industries that develop energy efficient technologies and industries that develop low-carbon based energy (such as renewable energy sources including wind, solar, and biomass) would be in greater demand.

Responses to Senator Lieberman's Questions

1. The Administration's analysis on the issue of climate policy has not occurred in a vacuum. In fact, climate change has been one of the more active areas of research in economics this decade. The economic literature on climate change, complemented by the IAT report, has already done quite a lot to inform the policy development process. Based on the economic research, we have identified some of the important characteristics of the climate policy we will develop: joint implementation, international emissions trading, developing country participation, emissions budgets, and market-based, flexible domestic implementation. My interpretation of the role of economics differs -- I believe economics has informed the process, and I am confident that it will continue to play an important role in our country's deliberations over a climate policy position.

2. As stated in my answer to question 2 of Senator Chafee's questions, no one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or



30 years into the future. However, a vast array of economic tools exists to provide us with a basis for informed judgment about the likely effects of different climate policies. For example, we know that a market based approach to reducing carbon emissions will be less costly than a command and control approach. The Administration intends to bring to bear on the climate issue many analytic tools and perspectives. Some of these may have strengths on issues where the models used in the IAT analysis were weak. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of economic effects so that the Administration can make informed policy decisions.

Responses to Senator Chafee's Questions

1. The President and his Administration are in the process of discussing the issue of climate change with all interested parties, including representatives from business and labor, environmental groups, economists and others. This process will culminate with a White House Conference on climate change in October.

It's not more specific on purpose?

The Administration has established a framework. For example, we support the use of flexible approaches, such as joint implementation and international emissions trading. We support the requirement that non-Annex I countries, as they become wealthier, abide to binding emissions goals. And, for domestic implementation, we support the use of flexible, market based approaches.

*by
or
"agree to"*

in international treaty negotiations

2. No one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or 30 years into the future. There are a vast array of economic tools that provide us with a basis for informed judgment about the likely effects of different climate policies. For example, we know that a market based approach to reducing carbon emissions will be less costly than a command and control approach. The Administration intends to bring to bear on the climate issue many analytic tools and perspectives. Some of these may have strengths on issues where the models used in the IAT analysis were weak. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of economic effects so that the Administration can make informed policy decisions.

is bringing

3. At this time, the Administration has not settled on a particular set of policies. The Administration is considering an array of market based approaches to implement climate policy.

4. Tradeable emissions permits and energy taxes share several important characteristics. First, they both send a price signal to markets that would stimulate the development and adoption of energy efficient technologies. Second, they both provide flexibility to achieve emissions goals. In the case of tradeable permits, firms that find it very costly to reduce emissions may purchase permits from firms that find it less costly. In the case of taxes, firms would reduce their energy use until it became more costly than the tax. These both achieve emissions reductions at substantially lower costs than through command and control approaches.

Tradeable emissions permits would provide greater certainty than energy taxes of attaining a specified emissions cap. By specifying a number of permits and allowing firms to trade these permits, the country can ensure that it is meeting an agreed upon carbon emissions goal. A tax, on the other hand, would provide greater certainty than a cap-and-trade approach of limiting costs, since the increase in unit costs would be determined by the tax.

There might also be difference in administrative costs and ~~cost~~ transactions costs, and ease of enforcement, depending on how a permit trading system was

*See
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FOR Q 2

JF

7

The existence of modeling difficulties does not mean that we can abandon rigorous economic analysis. Rather, we must employ a broad set of economic tools to analyze the policy options. The tools employed ~~in this paper~~ include results from models of the energy sector and economy over the next 25 years, including but not limited to the models that were used by the Interagency Analytical Team (IAT) earlier in this year. The survey also includes models that are designed to operate on the longer time frame that is relevant for thinking about climatological effects. Other tools include simple relevant statistics, "meta-analyses" of existing models, historical and sectoral examples, and basic economic reasoning. Drawing on this broad array of analytical tools allows an intelligent evaluation of the policy alternatives.

Responses to Senator Chafee's Questions

1. The President, Members of the Cabinet and Senior White House officials have meeting with with a wide range of parties interested in the issue of global climate change. We have been consulting with representatives from business and labor, environmental groups, scientists, economists and others about the best, most cost-effective way to reduce greenhouse gas emissions. On October 6, the White House will hold a conference to discuss the scientific evidence, the economic impact and the international implications of global climate change. These discussions are intended to inform the Administration's decision-making process, which will culminate in a U.S. policy position for the international negotiations in Kyoto in December of this year.

With the lessons we have learned so far,, the Administration has established a broad framework within which this policy position will be developed. For example, we support the use of flexible approaches, such as joint implementation and international emissions trading. We support the requirement that non-Annex I countries, as they become wealthier, abide to binding emissions goals. And, for domestic implementation, we support the use of flexible, market based approaches.

2. No one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or 30 years into the future. There are a vast array of economic tools that provide us with a basis for informed judgment about the likely effects of different climate policies. For example, we know that a market based approach to reducing carbon emissions will be less costly than a command and control approach.

In developing a climate change policy, the Administration intends to bring to bear many analytic tools and perspectives found in the economics literature. Some of these may have strengths on issues where the models used in the IAT analysis were weak. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of economic effects so that the Administration can make informed policy decisions.

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4. Tradeable emissions permits and energy taxes share several important characteristics. First, they both send a price signal to markets that would stimulate the development and adoption of energy efficient technologies. Second, they both provide flexibility to achieve emissions goals. In the case of tradeable permits, firms that find it very costly to reduce emissions may purchase permits from firms that find it less costly. In the case of taxes, firms would reduce their energy use until it became more costly than the tax. These both achieve emissions reductions at substantially lower costs than through command and control approaches.

Tradeable emissions permits would provide greater certainty than energy taxes of attaining a specified emissions cap. By specifying a number of permits and allowing firms to trade these permits, the country can ensure that it is meeting an agreed upon carbon emissions goal. A tax, on the other hand, would provide greater certainty than a cap-and-trade approach of limiting costs, since the increase in unit costs would be determined by the tax.

5. For international emissions trading, all countries participating in the trading scheme will need to have their emissions capped.

International emissions trading can significantly decrease the costs of meeting an emissions goal. It would provide greater opportunities to reduce emissions at low costs. If some of the emissions reductions necessary to achieve the U.S. goal can be undertaken in other countries at lower costs, then U.S. emissions control costs will fall. Various modeling efforts have shown that the costs of achieving a variety of emissions goals could decrease by more than half.

For joint implementation, all countries may participate, regardless of when their emissions will be capped. Lower cost abatement opportunities abroad again suggest substantial savings to the United States could result if U.S. companies could receive credit for incremental abatement efforts in other countries.

6. Some innovation surely occurs in the absence of a price signal. Many studies suggest that energy use relative to GDP falls each year regardless of the price signal by 0.5 to 1.25 percent. To the extent that energy use is associated with climate change effects, and this causes damages not reflected in market prices, this innovation is unlikely to be sufficient. Additional incentives to innovation, such as price signals, or support for R&D may be needed.

7. Some observers of the climate change issue have suggested that capping only developed countries' emission will result in "leakage": the escape of jobs, capital, and polluting activity to developing countries. However, the economic evidence does not support the argument that climate policy will adversely affect U.S. economic competitiveness.

First, non-tradeable sectors account for a substantial share of carbon emissions. Transportation and residential and commercial buildings account for approximately two-thirds of U.S. carbon emissions. For these sectors, the "competitiveness" argument does not appear applicable. Second, energy costs comprise only a small percentage of total manufacturing costs. According to the 1995 Annual Census of Manufactures, energy costs for manufacturing industries averaged just 2.2% of total costs. Given the small share of energy in total costs, differential shifts in existing energy prices are unlikely to have substantial effects on location decisions and trade flows. Third, our experience in this country with environmental regulation has been that it does not cause significant leakage. Firms that decide to relocate to other countries do so because of international differences in labor costs, capital costs, material costs, and exchange rate changes that all swamp the costs of complying with environmental regulations.

To address the possibility of leakage occurring, we should do climate policy smart. If we do it dumb, it will cost our economy a lot. By doing it smart, through flexible, market-based approaches, we will make the costs of complying with an emissions goal much lower. In addition to using market-based approaches domestically, joint implementation and international emissions trading would also lower the costs of climate policy. These lower costs associated with a smart climate policy would decrease the economic rationale for industries to move to developing countries.

Responses to Senator Boxer's Questions

1. Some observers of the climate change issue have suggested that capping only developed countries' emissions will result in "leakage": the escape of jobs, capital, and polluting activity to developing countries. However, the economic evidence does not support the argument that climate policy will adversely affect U.S. economic competitiveness.

First, non-tradeable sectors account for a substantial share of carbon emissions. Transportation and residential and commercial buildings account for approximately two-thirds of U.S. carbon emissions. For these sectors, the "competitiveness" argument does not appear applicable. Second, energy costs comprise only a small percentage of total manufacturing costs. According to the 1995 Annual Census of Manufacturers, energy costs for manufacturing industries averaged just 2.2% of total costs. Given the small share of energy in total costs, differential shifts in existing energy prices are unlikely to have substantial effects on location decisions and trade flows. Third, our experience in this country with environmental regulation has been that it does not cause significant leakage. Firms that decide to relocate to other countries do so because of international differences in labor costs, capital costs, material costs, and exchange rate changes that all swamp the costs of complying with environmental regulations.

To ensure that climate change policy does not damage U.S. competitiveness, we need a smart climate change policy. If we do it dumb, it could cost our economy a lot. By doing it smart, through flexible, market-based approaches, we will make the costs of complying with an emissions goal much lower. In addition to using market-based approaches domestically, joint implementation and international emissions trading would also lower the costs of climate policy. These lower costs associated with a smart climate policy would decrease the economic rationale for industries to move to developing countries.

2. The costs of reducing emissions in the U.S., and in Europe and Japan depend on how all of these countries implement their policies. If the U.S. employs a market based approach, the costs will not be that high relative to Europe and Japan. Regardless of the implementation approaches used in these countries, the costs of emissions reductions are not likely to affect U.S. competitiveness. As noted above, energy costs comprise a small share of total manufacturing costs (2.2%). Further, two-thirds of carbon emissions occur in non-tradeable sectors. The

evidence on energy price differentials across countries suggests that they are not sufficient to spur firm relocation to other countries.

3. The IAT report did not focus on the benefits of reducing greenhouse gas emissions. Without a benefits assessment, the IAT could not provide estimates of the positive effects on human health and the environment. In addition, the IAT did not study the effects of the risks of climate change on economic activity. However, the report did assess the impacts of climate policy on the economy. The IAT analysis confirms other economic research (for example, the recent report by the World Resources Institute) that smart climate policy can actually lead to net benefits in the long term. For example, the IAT analysis found that auctioning off tradeable permits and using the proceeds of the auction to lower income and corporate taxes would help the economy grow faster in the future than without climate policy.

4. The longer we wait to take any action can adversely affect the economic and environmental outcomes of climate policy. However, we do know that more gradual efforts to reduce our carbon emissions can lower the economic costs relative to very aggressive reductions efforts while still achieving the same carbon dioxide concentration goal. For example, some international proposals to reduce carbon emissions would have Annex I countries cutting emissions to 20% below 1990 levels by 2005. Such a target would have very substantial economic costs because it does not provide enough time for the capital stock to turn over. It is very expensive to scrap the existing capital stock, while much of it is in the prime of its life, and replace it with carbon-free technology. Further, such a target would require the economy to employ existing low-carbon and carbon-free technologies while longer-term targets would provide more lead time to develop and implement superior technologies. Given that it is the stock of carbon dioxide, not the annual emissions of carbon dioxide, that drive global warming, there is an opportunity to be flexible in the timing of emissions reductions. Less aggressive paths that 1990 -20% emissions level by 2005 could achieve the same carbon dioxide concentration stabilization goal in the year 2100 by increasing carbon reductions in the future when they are less costly to the economy.

5. It is very difficult to assess the nature of the economy, and especially specific industries, 20 or 30 years into the future. If the country embarked on a policy of reducing carbon emissions, obviously the firms and industries that can creatively and cost-effectively reduce their emissions will benefit relative to their competitors. To reduce carbon emissions, it is reasonable to envision that the products and services of industries that develop energy efficient technologies and industries that develop low-carbon based energy (such as renewable energy sources including wind, solar, and biomass) would be in greater demand.

Responses to Senator Lieberman's Questions

1. The Administration's analysis on the issue of climate policy has not occurred in a vacuum. In fact, climate change has been one of the more active areas of research in economics this decade. The economic literature on climate change, complemented by the IAT report, has already done quite a lot to inform the policy development process. Based on the economic research, we have identified some of the important characteristics of the climate policy we will develop: joint implementation, international emissions trading, developing country participation, emissions budgets, and market-based, flexible domestic implementation. My interpretation of the role of economics differs -- I believe economics has informed the process, and I am confident that it will continue to play an important role in our country's deliberations over a climate policy position.

2. No one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or 30 years into the future. However, a vast array of economic tools exists to provide us with a basis for informed judgment about the likely effects of different climate policies. For example, we know that a market based approach to reducing carbon emissions will be less costly than a command and control approach. The Administration intends to bring to bear on the climate issue many analytic tools and perspectives. Some of these may have strengths on issues where the models used in the IAT analysis were weak. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of economic effects so that the Administration can make informed policy decisions.

Comments on Schaefer Q&As

1. Insert period after “meetings”.
3. Change “accumulate” to “account for”.
7. Rewrite second sentence to read: “However, the IAT process was unsuccessful in providing a definitive answer on the economic effects to support the Administration’s overall decision-making process.” The range of results, as specified in the draft, are less of a concern (especially since the range is in part a function of the different trading, AEEL, and revenue recycling assumptions). Of more importance are the flaws raised by the peer reviewers.
8. Rewrite second sentence to read: “As the work done by the IAT proceeded, the concerns raised by the peer reviewers called into question the benefits of continued IAT work on these economic models, given the many other competing claims on agency resources.”
8. Delete from the last sentence: “given the many other competing claims on agency resources.”
9. Change “models” after “situations” to “modeled”.
9. The range of the IAT results are incorrect. If the context is all permit prices for all runs reported, the highest permit price is \$207 in the year 2020 with Markal Macro under the 1990 - 10% case. If the context is the highest 1990 permit price, then the highest permit price is \$200 with DRI under the 1990 -10% case. The \$145 value only applies to the 1990 in 2010 case.
9. The third sentence should be rewritten to read: “The IAT found that the estimates of the costs to the U.S. economy of a carbon emissions reduction policy depended on several factors, including targets and timetables, the use of market based incentives, technology assumptions, implementation of international emissions permit trading, and revenue recycling.”
9. Delete from the last sentence: “and indeed could produce net benefits in the long run.”
10. Delete “wide” in first sentence.
11. Rewrite first sentence to read: “The IAT’s analysis focused on a standard emissions target widely used in the academic literature for comparing model results.”
12. Replace “or” with “and” in first sentence.
14. Delete from the last sentence: “to changed price levels.”
15. Rewrite answer based on revised answer 9 (permit price range, inserting factors affecting costs).
18. Make “it” possessive in last sentence.

18. Switch “fully” and “implement” in last sentence.

25. Do we want to state that a “full assessment of the costs and benefits of action would be taken prior to committing the United States to any new legal obligation” at the end of the first paragraph?

28. Should our discussion of international emissions trading be couched in more uncertainty, given that under some targets and timetables, we are actually a net seller of permits? Further, any JI might affect the conclusion drawn at the end of this answer.

Question 7 *Substitute for entire answer*

Economic models cannot give definitive answers on the economic impacts of climate policy, only ranges of possible outcomes. The IAT effort provided much useful information, and reinforced how all economic modeling results - both inside and outside the government - depend critically on underlying assumptions about how the economy works and how policies are implemented.

The Administration continues to believe that climate policies can be crafted which will preserve the environment, meet our international responsibilities, meet our responsibilities to our children and grow the economy at the same time. As part of the ongoing Administration decision process, we are drawing on a number of different economic, engineering and other analyses to gauge the likely effects of policies to reduce greenhouse gas emissions.

Question 8

Substitute for second sentence:

The dependence of economic outcomes on modeling assumptions called into question the benefits of continued IAT work on economic models, given the many other competing claims on agency resources.



Joseph E. Aldy
09/29/97 12:58:35 PM

Record Type: Record

To: See the distribution list at the bottom of this message

cc:

Subject: House Commerce Q&As

Bob Tuccillo at OMB called today to inquire about our status with the Q&As. I took Jeff's comments and merged them with mine and printed out a hard copy for all of you. Also attached is an answer supplied by EPA for question 7 (If IAT failed, then how will the Administration determine its position). Look over them and make any suggestions or corrections -- we need to get these over to State and OMB soon. Please note two things: 1) the last two comments I have I would like your input on; 2) Jeff, I could not decipher your handwriting on question 28 (regarding the EU).

Message Sent To:

Janet L. Yellen/CEA/EOP
Jeffrey A. Frankel/CEA/EOP
Michele Jolin/CEA/EOP
Adele C. Morris/CEA/EOP
Randall W. Lutter/CEA/EOP

Responses to Senator Chafee's Questions

1. **Dr. Yellen, you indicate at the beginning of your testimony that the Administration, "has not settled on a particular set of new policies to reduce greenhouse gas emissions." We are now twenty weeks away from Kyoto. When will it? Is there still time for informed public review and debate on the options?**

The President, Members of the Cabinet and Senior White House officials have been meeting with a wide range of parties interested in the issue of global climate change. We have been consulting with representatives from business and labor, environmental groups, scientists, economists and others about the best, most cost-effective way to reduce greenhouse gas emissions. On October 6, the White House will hold a conference to discuss the scientific evidence, the economic impact and the international implications of global climate change. These discussions are intended to inform the Administration's decision-making process, which will culminate in a U.S. policy position for the international negotiations in Kyoto in December of this year.

With the lessons we have learned so far, the Administration has established a broad framework within which this policy position will be developed. For example, we support the use of flexible approaches, such as international emissions trading. We support the requirement that non-Annex I countries, as they become wealthier, abide by binding emissions goals that are formulated in international treaty negotiations. And, for domestic implementation, we support the use of flexible, market based approaches.

2. **You also say in your prepared remarks that, "the effort to develop a model or set of models that can give us a definite answer to the economic impacts of a given climate change policy is futile." How are we to respond? What reliable tools do we have to determine what, if any, agreement is best for the United States?**

No one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or 30 years into the future. The existence of modeling difficulties does not mean that we can abandon rigorous economic analysis. Rather, we must employ a broad set of economic tools to analyze the policy options. Some of these may have strengths on issues where the models used in the Interagency Analytical Team (IAT) analysis were weak.

The analytic tools the Administration is employing include models of the energy sector and economy over the next 25 years, including but not limited to the models that were used by the IAT earlier in the year and models that are designed to operate on the longer time frame that is relevant for thinking about climatological effects. Other tools include simple relevant statistics, "meta-analyses" of existing models, historical and sectoral examples and basic economic reasoning. For example, we know that a market-based approach to reducing carbon emissions will be less costly than a command and control approach. Drawing on this broad array of analytic tools allows an intelligent evaluation of policy

alternatives. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of estimated economic effects so that the Administration can make informed policy decisions.

3. Is the Administration considering some form of new energy tax to administer a new treaty, domestically?

At this time, the Administration has not settled on a particular set of policies. The Administration is considering an array of market-based approaches to implement climate policy.

4. What advantages or disadvantages (economically or environmentally) might a trading system have over energy taxes?

Tradeable emissions permits and energy taxes share several important characteristics. First, they both send a price signal to markets that would encourage energy conservation and stimulate the development and adoption of energy efficient technologies. Second, they both provide flexibility to achieve emissions goals. In the case of tradeable permits, firms that find it very costly to reduce emissions may purchase permits from firms that find it less costly. In the case of taxes, firms would reduce their energy use until it became more costly than the tax. These both achieve emissions reductions at substantially lower costs than through command and control approaches.

Tradeable emissions permits would provide greater certainty than energy taxes of attaining a specified emissions cap. By specifying a number of permits and allowing firms to trade these permits, the country can ensure that it is meeting an agreed upon carbon emissions goal. A tax, on the other hand, would provide greater certainty than a cap-and-trade approach of limiting costs, since the increase in unit costs would be determined by the tax. Taxes and permits may also differ in their administrative and transactions costs and ease of enforcement, particularly depending on how a permit trading system is implemented.

5. In order to use flexibility instruments like the proposed joint implementation and emissions trading, do we need to have a cap on nations' emissions?

To what extent can these instruments reduce the cost of implementation of greenhouse gas emissions reductions for the United States and others? Is there reliable data available?

For international emissions trading, all countries participating in the trading scheme will need to have their emissions capped.

International permit trading allows emission reductions to occur in areas where the costs

half

of those reductions are lowest. If some of the emissions reductions necessary to achieve the U.S. goal can be undertaken in other countries at lower costs, then U.S. emissions control costs will fall, by some estimates as much as two-thirds. While every country is better off when it can voluntarily buy or sell permits according to its respective emissions reduction costs, the ultimate permit price and traded quantities depend ^{very} heavily on the degree of participation by developing countries and economic growth in Russia and Eastern Europe. ~~The U.S. could even end up ^{no less} selling permits rather than buying, i~~ ^{assume perfect functioning markets}

6. Some have argued that innovation toward less greenhouse-intensive technologies will occur in the absence of any market signal. Do you agree? Why or why not? If a market signal is needed, how should it be provided?

Some shift towards a less energy-intensive economy occurs in the absence of deliberate government influences on price, some believe because of the changing composition of the U.S. economy towards less energy-intensive sectors. Many studies suggest that energy use relative to GDP falls each year, regardless of the price signal, by 0.5 to 1.25 percent. To the extent that energy use is associated with climate change effects, and in turn causes damages not reflected in market prices, the business-as-usual decline in energy use relative to GDP is unlikely to be sufficient. Additional incentives to innovation, such as price signals or support for R&D may be needed.

7. Many are concerned that caps on industrialized nations' emissions, without similar caps on developing nations' emissions, will simply promote the flight of jobs, capital, and polluting activity to developing nations. Is this a valid concern? How should it be addressed? Would joint implementation help?

Certainly the participation of developing countries is key to the long term success and cost-effectiveness of a global reduction in greenhouse gas emissions. In the next century, developing countries will likely reach and surpass currently developed countries in their share of global emissions. Any emissions reductions that Annex I countries achieve can be undone by others who do not so carefully address the problem. In addition, the important opportunities for low cost reductions created by developing countries' participation could reduce the overall cost of achieving a given environmental goal by more than a half by some estimates.

Some observers of the climate change issue have suggested that capping only developed countries' emission will result in "leakage": the escape of jobs, capital, and polluting activity to developing countries. Even if caps are not initially placed on developing countries' emissions, the economic evidence does not support the argument that climate policy will adversely affect overall U.S. economic competitiveness.

First, non-tradeable sectors account for a substantial share of carbon emissions. Transportation and residential and commercial buildings account for approximately two-thirds of U.S. carbon emissions. For these sectors, the "competitiveness" argument

Need a sentence or two somewhere acknowledging that leakage

in the broad sense of $-\Delta LDC_{emissions}$ $\Delta Annex 2 retro$ could be a serious problem for the time

Need to acknowledge that retrofit energy intensive could be adverse

does not appear applicable. Second, energy costs comprise only a small percentage of total manufacturing costs. According to the 1995 Annual Census of Manufactures, energy costs for manufacturing industries averaged just 2.2% of total costs. Given the small share of energy in total costs, differential shifts in existing energy prices are unlikely to have substantial effects on location decisions and trade flows. Third, our experience in this country with environmental regulation has been that it does not cause significant leakage. Firms that decide to relocate to other countries do so because of international differences in labor costs, capital costs, material costs, and exchange rate changes that all swamp the costs of complying with environmental regulations.

In conclusion, we should do climate policy smart. If we do it dumb, it will cost our economy a lot. By doing it smart, through flexible, market-based approaches, we will make the costs of complying with an emissions goal much lower. In addition to using market-based approaches domestically, international emissions trading by all countries would also lower the costs of climate policy. These lower costs associated with a smart climate policy would decrease the economic rationale for industries to move to developing countries.

Responses to Senator Boxer's Questions

1. **In the Administration's economic analysis, it is stated that, "There is no evidence of a wholesale 'capital flight' from the United States resulting from an emissions reduction policy." Can you please expand on this?**

Certainly the participation of developing countries is key to the long term success and cost-effectiveness of a global reduction in greenhouse gas emissions. In the next century, developing countries will likely reach and surpass currently developed countries in their share of global emissions. Any emissions reductions that Annex I countries achieve can be undone by others who do not so carefully address the problem. In addition, the important opportunities for low cost reductions created by developing countries' participation could reduce the overall cost of achieving a given environmental goal by more than a half by some estimates.

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2. **The United States has far lower energy costs than Europe and Japan. How would our costs of emission reductions compare with theirs? How would this affect our ability to compete?**

The costs of reducing emissions in the U.S., and in Europe and Japan, depend on how all of these countries implement their policies. If the U.S. employs a market based approach, the costs will not be that high relative to Europe and Japan. Regardless of the implementation approaches used in these countries, the costs of emissions reductions are not likely to affect U.S. competitiveness. As noted above, energy costs comprise a small share of total manufacturing costs (2.2%). Further, two-thirds of carbon emissions occur in non-tradeable sectors. The evidence on energy price differentials across countries suggests that they are not sufficient to spur firm relocation to other countries.

Several analyses indicate that Western Europe will bear *higher* costs for reducing carbon emissions than will the United States. Western Europe already has high energy taxes relative to the U.S., and has already “backed out” of fossil fuel use to varying degrees. This implies that a lot of the less expensive measures for reducing carbon reductions have already occurred in Europe, so that the U.S. has relatively more opportunities to inexpensively cut carbon emissions. For example, 20% of all energy in France, and a majority of its electricity production, is from nuclear power, while only 7% is from coal. Since nuclear is not carbon-based, France cannot further reduce carbon emissions from that energy source, and can achieve relatively limited emissions reductions from its low use of coal. In contrast, in the U.S., nuclear power comprises only 9% of total energy production, while coal comprises 23%.

3. **Dr. Yellen, we have heard horror stories of all the catastrophic economic effects that embarking on a policy of reducing greenhouse gas emissions would cause. Did the administration’s analysis consider the positive effects on health, environment, AND**

the economy that reducing greenhouse gases would produce?

The IAT report did not assess the human health and environmental benefits of reducing greenhouse gas emissions. In addition, the IAT did not study the risks of effects of climate change on economic activity. However, the report did assess the impacts of climate policy on the economy. The IAT analysis confirms other economic research (for example, the recent report by the World Resources Institute) that smart climate policy can actually lead to net benefits in the long term. For example, the IAT analysis found that auctioning off tradeable permits and using the proceeds of the auction to lower income and corporate taxes would help the economy grow faster in the future than without climate policy.

4. **We heard last week that the longer we wait to implement our reductions, the more costly it will be in practically all sectors -- health, environment, and jobs. This reminds me of the commercial where the grizzled mechanic says, "You can pay me now, or you can pay me later." What did your analysis find in terms of the costs of delaying action?**

We believe it is important to take early, credible action towards a long term strategy to control greenhouse gas emissions. More gradual efforts to reduce our carbon emissions can significantly lower the economic costs relative to very aggressive reductions efforts while still achieving the same carbon dioxide concentration goal. For example, some international proposals to reduce carbon emissions would have Annex I countries cutting emissions to 20% below 1990 levels by 2005. Such a target and timetable would have very substantial economic costs because it does not provide enough time for the capital stock to turn over. It is very expensive to prematurely scrap the existing capital stock while much of it is in the prime of its life. Further, such a goal would require the economy to employ existing low-carbon and carbon-free technologies while longer-term reductions would provide more lead time to develop and implement superior technologies. Given that it is the stock of carbon dioxide, not the annual emissions of carbon dioxide, that drive global warming, flexibility in the timing of emissions reductions can lower costs while not undermining our commitment to achieving a given ultimate concentration.

On the other hand, an announcement that we were taking policy actions far off into the future would not be very credible. *only*

5. **California has been a leader in development of new energy technologies. Based upon your analysis, what industries are likely to grow over the next 20-30 years?**

It is very difficult to forecast the nature of the economy, especially specific industries, 20 or 30 years into the future. If the country embarked on a policy of reducing carbon emissions, obviously the firms and industries that can creatively and cost-effectively reduce their emissions will benefit relative to their competitors. It is reasonable to envision that the products and services of industries that develop energy efficient technologies and industries that develop low-carbon based energy (such as renewable energy sources including wind, solar, and biomass) would be in greater demand during a

period of reduction in greenhouse gas emissions.

Responses to Senator Lieberman's Questions

1. **Congressman Dingell suggested on 6/19/97 that the Administration's analysis is "too late to inform the process, and likely will be used to justify what the Administration has already decided to do." Please comment on his concerns.**

The Administration's analysis on the issue of climate policy has not occurred in a vacuum. In fact, climate change has been one of the more active areas of research in economics this decade. The economic literature on climate change, complemented by the IAT report, has already done quite a lot to inform the policy development process. Based on the economic research, we have identified some of the important characteristics of the climate policy we will develop: international emissions trading, developing country participation, emissions budgets, and market-based, flexible domestic implementation. My interpretation of the role of economics differs -- I believe economics has informed the process, and I am confident that it will continue to play an important role in our country's deliberations over a climate policy position.

2. **If the economic impacts of climate policies cannot be determined precisely, how will the economic analysis be used to develop the Administration's specific positions on a target and a timetable? Can the relative costs of different policies be evaluated with confidence by the Interagency Team?**

No one model, or even a small set of models, can give a definite estimate of the effects of a policy on the economy 20 or 30 years into the future. The existence of modeling difficulties does not mean that we can abandon rigorous economic analysis. Rather, we must employ a broad set of economic tools to analyze the policy options. Some of these may have strengths on issues where the models used in the Interagency Analytical Team (IAT) analysis were weak.

The analytic tools the Administration is employing include models of the energy sector and economy over the next 25 years, including but not limited to the models that were used by the IAT earlier in the year and models that are designed to operate on the longer time frame that is relevant for thinking about climatological effects. Other tools include simple relevant statistics, "meta-analyses" of existing models, historical and sectoral examples and basic economic reasoning. For example, we know that a market based approach to reducing carbon emissions will be less costly than a command and control approach.

Drawing on this broad array of analytic tools allows an intelligent evaluation of policy alternatives. I am confident that the analytic tools and perspectives available to the Administration can provide us with sufficient information to generate ranges of estimated

economic effects so that the Administration can make informed policy decisions.

2-1-98

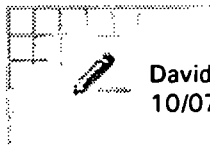
DRAFT

CLIMATE CHANGE WORK PLAN
September 23, 1997 :

Schedule

- | | |
|-------------------------|--|
| Friday, September 19 | Oversight meeting on WH Conference |
| Tuesday, September 23 | Initial draft of follow-up memo to POTUS written by Sandalow, Orszag, and Gruber. Submitted to Sperling, McGinty, and Tarullo. Taskings to agencies for appendices. |
| Wednesday, September 24 | Oversight meeting in Gene's office to cover diplomatic strategy, economic analysis, and short-term Hill strategy. |
| Thursday, September 25 | Oversight meeting in Gene's office to clear on POTUS memo and prepare for principals meeting. |
| Friday, September 26 | <p>Principals meeting led by Sperling, McGinty, and Tarullo on:</p> <ul style="list-style-type: none">-- Technology,-- Auctioning vs. grandfathering, and-- Tasking for recommendations <p>Memorandum from Sperling, McGinty, and Tarullo submitted to POTUS following up on questions raised during September 18 meeting:</p> <ul style="list-style-type: none">-- Emissions sources,-- Technology potential and options,-- Mandates vs. permits,-- Grandfathering vs. auctions,-- Escape clauses, and-- Enforcement mechanisms. <p>Appendices from Treasury on why grandfathering is problematic, and from EPA on how it could work. Sperling section on domestic politics.</p> |

Monday, September 29	Principals meeting led by Sperling, McGinty, and Tarullo to cover: -- Recommendations regarding specific options on targets and timetables, domestic implementation (auctioning vs. grandfathering), and other policy options to achieve target and timetable (including technology package).
Wednesday, October 1	Briefing book submitted by Sperling, McGinty, and Tarullo to POTUS with summary NEC/CEQ recommendations memo. Attach as an appendix individual submissions from Cabinet secretaries, and other background papers (e.g., from Assistant Secretaries working group) as appropriate. Memorandum from NEC/CEQ/NSC on diplomatic strategy submitted either as part of briefing book or separately.
Monday, October 6	White House conference on climate change
October 6-10	POTUS makes final decisions on U.S. position for Kyoto and beyond
FRIDAY, OCTOBER 10	FINAL DECISION OF U.S. NEGOTIATING POSITION FOR KYOTO
October 12-19	POTUS visit to Latin America
Monday, October 20	Negotiations begin in Bonn
Wednesday, October 29	Chinese state visit
November	Intense diplomatic campaign, formulating precise negotiating instructions, and working with domestic constituencies
DECEMBER 1-12	KYOTO



David B Sandalow
10/07/97 08:13:05 PM

Record Type: Record

To: See the distribution list at the bottom of this message

cc:

Subject: climate oversight mtg tomorrow

Peter and I suggest the following agenda for our oversight meeting tomorrow:

1. Safety valve/escape clause
 - relationship to int'l treaty
 - trigger price
2. Developing country policy
 - Hill reaction to two-step
 - int'l reaction to two-step

3. POTUS meeting Friday

Other items for discussion soon:

1. electricity dereg
2. early credit
3. concentration goal
4. federal efforts
 - incl NEPA greenhouse gas guidance
5. technology program
6. tax cuts
7. policy roll-out

I was
in N.Y.

Message Sent To:

Kathleen A. McGinty/CEQ/EOP
Gene B. Sperling/OPD/EOP
Daniel K. Tarullo/OPD/EOP
Todd Stern/WHO/EOP
Janet L. Yellen/CEA/EOP
Jeffrey A. Frankel/CEA/EOP
Peter R. Orszag/OPD/EOP

CIC steering group

Jan 9/26 97

DREAMWORKS

SKG

CONGRESS

Lucia SEP + 30 JY, LS

Maile Martin, Jon Orlor

For my
stand of analysis
techn
s lab

Oct 1 Observer group w/ Tidd + Tim

weight conf 2.05

11/11/97 staff William Scudg JJ

Rerchen Tech plans

Steve Leheard this in the 70s

LS ne a m s good technology to be useful, need to show policy levers.

D-R standard eq mcs, green labeling requires

clearly
KPS machine restructuring

ne madison Ave analogy for diffusion p9ms.

611 Tax cut

Prins.

F. R. Pan

10/16/97

G.S. office

GS P wants to announce (wed.)

tax cut package & R & D

R They're all crummy... terrible tax policy. Does it mean we shouldn't do it.

F.R. ^{spending side} sounds small. But 20% of all available.

tax side is not as constrained. (also offsets that not out of our hie
expenditure Tax credit for purchase of fuel efficient cars

cut We have proposed ^{photovoltaic cell} ^{equipment}
subsidies. ^{depletn.} million units

foreign oil & gas income 200-300 m over 5 yrs.
Can't spend \$1.5 b usefully

34

THURS 8.45 am.

Rubin got exercised

He's the one on talk show.

He heard:

James ^{he} "I'd rather resign than lie."

URGENT

US Del to UNFCCC
at Bonn

8 pages

To: Lake Pomerance
7-0217

from: M. Hambley (Mario Merida)
Date 10/29/97

The attached DRAFT "options" paper has
not been cleaned by the USDEL.

Please do not take "action" until
speaking w/ Mark Hambley or Melinda
Kimble.

Mario Merida for Amb. Hambley

Additional page ~~at~~ to follow 10-15 minutes

Options For Advancing Negotiations With Different Groups

The following summarizes negotiating issues, provides a table of pros and cons, and suggests some packages of importance to groups of countries. Some negotiating issues are near resolution and are not included. Those are: (1) budgets; (2) which gases are included in budgets, and (3) policies and measures.

Negotiating Issues -- Possible Types of Flexibility

1. Level of the budget in the initial period.
2. Offer a possible second period number like minus 5%. Guidance on the acceptable limits would assist in negotiating this target.
3. Announce a willingness to commit to a third budget period number.
4. Indicate flexibility for start year of initial budget period (with 5-year or longer budget period.)
5. Accept differentiation or begin participating in differentiation discussions without fully committing to acceptance.
 - a) Agree to formula for differentiation
 - b) Agree to differentiated budgets as part of the Kyoto Agreement
 - c) Agree to differentiate budgets in principle, but leave determination of actual budgets to a post-Kyoto process
 - d) Agree to differentiation for the second budget period only in Kyoto or in post-Kyoto process.
6. Limit which sinks are included, e.g., omit soil carbon.
7. Accept New Zealand proposal for a stock approach to sink accounting with or without re-allocation scheme. Accept Iceland proposal to count sequestration due only to human activities.
8. Set 2005 as the year by which national institutional arrangements required to meet the budget are in place and subject to review by the Parties.

Flexibility

1. Trading
 - a) Limit the amount of trading or JI, together or separately, that could be applied to each budget
 - b) Credit based trading -- Rule out pre-budget period paper tons while legitimizing them during the budget period. Limit trading to the second and subsequent budget periods.
2. Joint Implementation
 - a) Limits on amounts of JI credit that could be added to budgets.
 - b) Allow to participate only Annex I and Article 10 Parties.
 - c) UNFCCC-charted carbon banks or exchanges. This would create independent institutions to sell JI credits while at the same time provide a vehicle for aggregating small projects into financially attractive sizes.
 - d) Postpone decision on JI until the end of the pilot phase.
3. Banking and Borrowing
 - a) Indicate quantitative limits on borrowing in the protocol
4. Limit banking to JI projects only

Pros and Cons:

<u>Issues</u>		<u>Pros</u>	<u>Cons</u>
Budgets			
1.	Level of 1st budget period	Symbolic importance; may reduce "paper ton" controversy. Stronger budget appeals to EU, AOSIS, and to a lesser extent, Japan.	President, himself, announced target. Stronger target may be unwelcomed by OPEC, China, India and Australia.
2.	Level of 2nd budget period	Further appeal to all groups but OPEC, China, and India	Need to keep EIT's "comfortable" with target. Greater incentive to bank likely to limit "paper tons"
3.	Announce a willingness to commit to a 3rd budget period.	May appeal to EU and some JUSCANZ countries -- Would indicate to continue a known reduction path through 2023	Will be opposed by OPEC, China and India
4.	Differentiation -- move from flat rate proposal	Appeals to JUSCANZ countries and G-77	No single solution addresses concerns of all differentiation advocates. All option variants may complicate negotiations. Difficult to reach consensus on formula, all of which disadvantage some parties
a)	Agree to formula for differentiation at Kyoto	Proposed by Japan	Difficult for countries to determine acceptable solution in short period of time, although easier than agreeing on a formula. Possible never ending negotiating process
b)	Agree to specific differentiated targets (not derived by formula) at Kyoto	Allows political solution without a formula, if solution can be found.	
c)	Agree to post-Kyoto process for arriving at differentiated budgets	Favored by Australia	
d)	Differentiate in 2nd budget period only	May be compromise	If a post

- | | | | |
|----|---|---|---|
| 1. | Exclusion of sinks | Favored by EU, AOSIS, and environmental NGO's | Premature movement towards excluding sinks limits flexibility but reduces reductions US needs for a given target. |
| 2. | Changing to New Zealand accounting basis for sinks | More analytically sound; favored by most JUSCANZ | May accentuate impact of uncertainties. Some countries, e.g. Australia, are particularly disadvantaged (surgical fix for them may be possible). May look, to some, like gimmick without strengthening target. |
| 3. | Start year for first budget period | Earlier start years favored by EU and G-77 | Earliest years (e.g., 2003) may not allow time for implementation measures to be put into place and begin to have an effect. |
| | a) Agree to put in place domestic mechanisms for meeting budget, e.g., domestic trading by 2005 | Possible compromise for EU; might be done outside the protocol (i.e., "prompt start" decision). | Moderate risk of noncompliance included in protocol and ratification is delayed. |
| | b) Agree to a non-binding target prior to initial budget period | | |
| 4. | Trading | Some variant likely to find acceptance with all Annex I | Opposed by G-77 (but not strongly) |
| | a) Limit on amount to be traded | Appeals to EU and G-77 | Industry opposition (intensity depends upon how restrictive) -- possible increase in costs |
| | b) No trading in first period (credit based trading) | May be favored by EU | Severely restricts trading and increases implementation costs |
| | c) Allow paper tons | Favored by EITs -- increases market liquidity in initial budget period, lowering costs | Strong opposition in EU; would likely generate heavy criticism from environmentalists in the |

29/10 '97 WED 20:10 FAX

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US -- may result in
increased emissions

- | | | | |
|----|---|---|--|
| 1. | JI | Appeals to different degrees to all Annex I Parties | Opposed by G-77 (despite some support from individual developing countries outside this forum).
May increase cost |
| | a) Limits on amounts | Favored by EU | |
| | b) Limits on participating countries (e.g., Annex I) | Favored by EU | Increases cost -- opposed by electric utilities.
"Holding-out" for trading may be a better option. |
| | c) Green Development Fund (re-engineered) | May attach some G-77 support | Would take work to overcome Congressional and industry wariness of new approach. |
| | d) Drop JI in favor of emissions trading with Parties that accept budgets under Article 10. | Appeals to G-77 | Would take work to convince skeptical Congress, industry. |
| 2. | Banking and borrowing | Banking attractive to most Annex I countries, borrowing enhances compliance, but has much less support. | Borrowing opposed by most groups. |
| | a) Early period banking limited to JI | Broadens appeal to many groups | Requires that domestic early action be accommodated by domestic budgets. |
| 3. | EU Bubble | | |

Major Groups:

European Union: Seeks tighter GHG emissions reduction targets and favors limitations on exercising each type of flexibility. They support budgets if the initial budget year begins in 2003. They favor a variety of limitations on trading and JI to insure that some portion of Annex I budgets are met domestically. The EU is likely to support banking but not borrowing unless as a compensation mechanism. The EU opposes compensation funds. The EU favors a flat rate budget approach except for their own bubble.

G-77 and China: Great divergence within the group, with potential to neutralize it. Much of their position may be characterized as a "poison pill" to derail negotiations, particularly of interest to OPEC. Have announced the most aggressive targets, namely, 7.5% by 2005, 15% by 2010, and 35% by 2020. They formally oppose all flexibility provisions including budgets, trading, JI and banking and borrowing. They favor both a Green Development Fund capitalized through non-compliance penalties, and managed by geographically representative countries, and a compensation fund for costs incurred both from mitigation actions and climate damage. While their targets are flat rate, they are believed to be sympathetic to differentiation as a principle they could utilize in subsequent amendments. AOSIS and Latin American countries would most favor 1) a deeper (even symbolically), lower target, 2) an earlier budget period, 3) a 2nd budget period target showing "meaningful" reductions, and 4) stronger compliance provisions. They also support flexibility with long limits.

JUSSCANNZ: Except for New Zealand and the U.S., all JUSCANZ countries favor differentiation, although with somewhat different approaches. All JUSCANZ favor flexibility provisions with minor differences. All JUSCANZ countries oppose compensation funds. All oppose EU bubble.

RUSSIA AND EITs: Want to maximize their budgets, including by counting reductions since 1990 and allowing future undefined flexibility. Opposes EU bubble.

JAPAN: Stands alone in JUSSCANNZ on opposing inclusions of HFC, PFC, SF6 and sinks (awaiting instructions from Tokyo on this last item); strongly opposes EU bubble. Strong on differentiation and wants slightly tighter target (below 1990 levels).

Package Options:

Designed to appeal to G-77: Dropping evolution from protocol text is an important G-77 objective. They would tend to favor weaker mandate options with longer time period for negotiation of subsequent agreement. Limits on JI and trading would appeal to these countries. One possibility might be to re-label JI, e.g., Annex I compliance partnerships, but to keep the crediting provisions of our JI proposal. Providing language that speaks to their technology transfer concerns would be appealing -- perhaps by providing some process for facilitating technology transfer.

Designed to appeal to EU: Higher target numbers in every period will appeal to the EU. Indicating an acceptable reduction number for the second period and for a third period might be helpful. Early start provisions may be attractive, including providing a specific date that national implementation systems would be in place and subject to review by the Parties. Indicating in the agreement a provisional long term, quantified concentration goal would build credibility with the EU. Acceptance of the bubble would accommodate a critical EU position. Any movement toward credit trading would be favorably received. Dropping or limiting JI would be attractive to the EU. Finally, acknowledging that the U.S. favors a Kyoto Mandate and dropping our insistence on evolution would assist.

Key Players within the G-77:

China, India and Brazil are the most powerful players within the G-77. China and India appear to be most concerned with the level of the target. The weaker the budgets, the less they are under pressure to do in the next negotiations. Brazil seems more driven by other issues, particularly the treatment of sinks.

There are a second tier of important actors which are unwilling to buck the big three, but are nevertheless opinion makers on some issues. Those include: Malaysia, Philippines, Indonesia. Technology transfer issues are particularly important to them.

AOSIS as a group our important within the G-77. Their principle concern are the stringent budgets.

Saudi Arabia on behalf of OPEC are the final major actor. They appear to favor no agreement in Kyoto. There are few options for changing or mollifying their position.



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

OFFICE OF
AIR AND RADIATION

January 12, 1997

MEMORANDUM

SUBJECT: International Greenhouse Gas Emissions Trading under Kyoto Protocol

TO: David Wilcox, Treasury
Jonathan Gruber, Treasury
Ray Squitieri, Treasury
Jeff Frankel, CEA
Randy Lutter, CEA
Joe Aldy, CEA
Mark Mazur, DOE
Abe Haspel, DOE
Jeffrey Hunker, Commerce
Larry Campbell, Commerce
Rafe Pomerance, State
Sue Biniarz, State
Victoria Greenfield, State
Jim Rubin, DOJ
David Gardiner, EPA

FROM: Sharon Saile for David Doniger, EPA

Attached is a draft Emissions Strategy Paper (pages 1-3) and a background paper which covers the issues raised during the Kyoto negotiations in more detail (pages 4-9). Please read the draft paper and bring your ideas for the final paper for the Assistant Secretary's meeting to a meeting tomorrow:

Emissions Trading Meeting
9:30 - 10:45 am
Judiciary Square Building
501 Third Street, N.W.
4th floor conference room

If you have any questions about the meeting or the paper, please contact Sharon Saile of EPA at 202-564-9156.

EMISSIONS TRADING STRATEGY PAPER

What Flexibility Did We Get in the Kyoto Protocol?

Article 3: Budget addition and subtraction (in accordance with relevant provisions).

Article 4: "Bubble" or "Umbrella" Agreements among Annex I Parties (this article was developed to allow the EU burden sharing arrangement, but explicit discussion of interest in forming an "umbrella" was discussed with Russian Federation, Ukraine, Japan, New Zealand, Australia, Canada, and Norway).

Article 6: "Joint Implementation" among Annex I Parties (might be more aptly named "emission reduction credit trading" because it allows credit trading among Annex I Parties for specific projects which demonstrate emission reductions).

Article 12: Clean Development Mechanism allows "certified emission reductions" credit for projects which benefit non-Annex I Parties (what we meant by "joint implementation" with non-Annex I Parties) The text specifically allows credits to count for Annex I commitments, allows private party participation, creates an executive board, sets aside a share of the proceeds for administrative costs and adaptation costs for vulnerable countries, and allows "early" certified emission reductions from 2000-2007 to assist in achieving compliance.

Article 16bis: Emissions Trading allows Parties included in Annex B to participate in emissions trading for the purposes of fulfilling their commitments under Article 3 of this Protocol. The text also calls for the Conference of the Parties to define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The article also contains the restriction that trading be supplemental to domestic emission reduction actions.

How will the trading text be interpreted?

A strict legal reading of the text indicates that emissions trading is allowed now under the protocol, even if "principles, modalities, rules, and guidelines" are never developed. In a separate decision document, it is clear that the focus for the Fourth Conference of the Parties is only on developing the "definition of relevant rules and guidelines for verification, reporting, and accountability of emissions trading".

However, we had hoped to have a longer article on emissions trading which would have spelled out the link to monitoring, reporting, and compliance provisions more specifically and also would have explicitly authorized private sector participation. Unfortunately, we never agreed on final language within Annex I because we could not agree on restrictions proposed by the EU, primarily because they wanted the US to agree to a deeper emission reduction target but also to address various concerns about competitiveness.

The strongest objections came from China, India, Saudi Arabia, and many other developing countries. The stated objections include a fear that emissions trading would obstruct the achievement of real emission reductions. In addition, China and India in particular raised concerns that emissions trading will result in an unfair allocation of pollution entitlements to the industrialized countries. Finally, these countries may have objected to emissions trading because they were not included in the intense consultations on this issue (in other words, they objected to the idea that developing countries should just accept emissions trading because it would only apply to Annex I countries).

It is likely that most countries will believe that the compromise reached at the Kyoto Conference with this text means that relevant "principles, modalities, rules, and guidelines" must be developed before emissions trading can start.

How should we proceed to develop international emissions trading?

Any effort to have additional text adopted at COP4 will require that substantial progress be made during the SBSTA/SBI meetings to be held in June.

Ideally, we would want to add a few very specific rules to the protocol text and to develop guidelines which would clarify the accounting and reporting provisions. The specific rules to add to the protocol text would explicitly provide the link to monitoring, reporting, and compliance provisions and authorize private sector participation (specific language suggested in background paper). We are likely to get strong support for this approach from our key allies on the emissions trading issue: New Zealand, Australia, Canada, Norway, (and probably the Russian Federation and Ukraine). In addition, Mexico and some of the AOSIS states may be helpful. Japan also supports emissions trading, although they may try to pursue market restrictions.

However, we can expect to meet substantial resistance. China, India, and Saudi Arabia may try to block adoption of any further text; they would be very likely to object to the idea that additional text need only address "verification, reporting, and accountability" and would probably want any further text to focus on "principles" of emissions trading. We can also expect that the EU countries, (particularly France) will want to propose many additional restrictions (see attached background paper for the types of restrictions proposed at Kyoto).

Options (not mutually exclusive):

1. Pursue development of our ideal rules and guidelines for emissions trading for discussion by SBSTA/SBI in June and adoption by COP4 in November, recognizing that it may be difficult to get agreement because of strong opposition from some Parties. Advantages: codifies the universal emissions trading rules in the protocol text, which provides certainty that trades will count, and ensures strong and consistent incentives for compliance. Disadvantages: Provides opposition with another opportunity to reject text all together or add unpalatable restrictions.

2. Pursue development of an emissions trading system with key partners, for implementation under an "umbrella", which can then be expanded into a fully international system. Advantages: only need agreement from allies, so no need for accommodating unnecessary restrictions or blockage. Disadvantages: There is no explicit language under this Article to include participation from private sector (is this a legal problem?). May increase concerns from opposition, particularly developing countries, because they will be left out of the initial design phase, and thus may result in stronger opposition both to trading and on other negotiation issues).

(NOTE: it may be advantageous to use the umbrella mechanism to separate government-government exchanges from the emissions trading system, which would then primarily cover firm-firm trading with government authorization. This would allow us to be more flexible on accepting the government-government restrictions that others may want to propose under emissions trading provisions.)

Recommendation:

The emissions trading strategy should be developed as part of an integrated diplomatic strategy. Key partners are listed below along with what they might be looking to achieve:

1. New Zealand, Australia, Canada, Norway - want emissions trading, no restrictions
2. Russian Federation, Ukraine, (Poland) - will benefit from emissions trading with no restrictions, but want to achieve more concrete commitments for investment
3. Japan - wants emissions trading but had expressed support for restrictions to ensure "transparency of market" - apparently to prevent U.S. monopoly power
4. European Union
 - United Kingdom - generally wants emissions trading, but has to represent EU
 - France - wants to require domestic allocations by auction to disadvantage US
 - Belgium, Netherlands - very concerned about small countries' access to market

We may be able to address their concerns about small countries' access by developing a "set aside for auction" concept, which will both guarantee access and provide an early price signal to jumpstart the market. We also have to find other ways to assure them that emissions trading really will be supplemental to domestic action in the United States.

5. China, India, and Saudi Arabia - we need to find out more about their objections to see if we can diffuse them
6. Other Developing Countries - may want to spend some time explaining emissions trading to some key countries (Mexico, Samoa, Marshall Islands, Costa Rica, Argentina, Zimbabwe, Uganda)

EMISSIONS TRADING BACKGROUND PAPER - NEGOTIATIONS TO DATE

Quick Summary of the key negotiating positions expressed in Kyoto on emissions trading

The strongest objections came from several developing countries, including China, India, Saudi Arabia, Nigeria, Kenya, Vietnam, Togo, Gambia, and United Arab Emirates. These countries objected to inclusion of any set of provisions on emissions trading until Chairman Estrada brokered the final deal.

Developing countries who spoke up with reservations about emissions trading but still favored a compromise in order to ensure the passage of the protocol included Indonesia, Burkino Faso, Mali, Zimbabwe, Malawi and Sri Lanka.

The "weak supporters" of restricted emissions trading were lead by the EU (where France was the country with strong objections). The "EU position" was characterized by the idea that international rules and guidelines for emissions trading would have to be established through further negotiations before emissions trading could begin. This position was supported by Hungary; the Czech Republic; Slovenia; Switzerland; some AOSIS countries - Nauru, Tuvalu, Seychelles, and Carabaos; Philippines; Chile; Uruguay; and Uganda.

The strong supporters of emissions trading were led by the US and included New Zealand, Australia, Canada, Norway, Japan, Russian Federation, Ukraine, Romania, Poland, Mexico, South Korea, Israel, Argentina, Costa Rica, and Samoa.

What were the objections to emissions trading expressed by other countries?

I. Strong Opposition to Emissions Trading

The strongest objections came from several developing countries, including China, India, Saudi Arabia, and several other nations. The stated objections include a fear that emissions trading is a new and little known scheme that will not ensure real emission reductions. In addition, China and India in particular have raised concerns that emissions trading will result in an unfair allocation of pollution entitlements to the industrialized countries. Finally, an unstated reason may be that some developing countries would prefer that no greenhouse gas protocol ever take effect, and rather than openly blocking the entire protocol, such countries may believe that they may achieve their objective of avoiding a meaningful protocol by strenuously objecting to emissions trading, a set of provisions which the United States and other industrialized countries have made clear is a key element for reducing costs of implementing a protocol.

Strategy: It will be difficult to quell these strenuous objections; it may be worthwhile to try some bilateral communication on emissions trading with these key countries. In the end it will probably be most productive to ensure we have agreement among the countries who supported some form of emissions trading (note: including some developing countries), and to rely on multilateral pressure to include such provisions as part of the entire package at the Buenos Aires meeting of the Conference of the Parties.

II. Supporters of Restricted Emissions Trading

Among Annex I Parties, the most limited support for emissions trading came from the European Union. Japan raised similar concerns early in the Kyoto session, but desisted after other issues, including the differentiated targets and baseline adjustments, were resolved. All the other key Annex I countries shared our position that emissions trading is a cost-saving mechanism which is vital to achieving the emission reductions called for by the Kyoto Protocol.

Although the "EU position" was that international rules and guidelines for emissions trading would have to be established through further negotiations before emissions trading could begin, we heard many more specific objections and proposed solutions during our extensive bilateral discussions with the EU negotiators.

It is important to note that different member states had different views on emissions trading (the United Kingdom is fairly supportive, France was raising the most strenuous objections). The rest of this section will examine the various issues raised by the EU negotiators.

1. Each Party should be required to make domestic emission reductions, even if those reductions are not as cost effective as reductions through emissions trading. The overall concern was that emissions trading provisions should not be allowed unless the United States agreed to an aggressive emission reduction target. This objection primarily was translated into a concern that every industrialized Party should be required to implement a certain fraction of its emission reduction obligations at home. The protocol states that emissions trading must be "supplemental" to domestic action; the UK had proposed translating this qualitative text into a quantitative requirement that at least 50% of emission reductions take place domestically.

The EU had indicated one of the causes for this concern was their view that a 1990 uniform target would have allowed a significant amount of "hot air", or emissions reductions which would have occurred anyway in the absence of a protocol, to count toward US reductions. In other words, their argument was that we shouldn't get emissions trading if the target was lax enough that the U.S. could meet a significant portion of its emission reduction obligation by buying emission reductions from Russia which would have occurred anyway. However, now that the US and most other Annex I Parties have agreed to significant reductions below 1990 levels, the EU should be more convinced that Parties will be taking aggressive actions at home without the need for an arbitrary restriction on the percentage of emission reductions to be taken at home.

Practical implications of a quantitative restriction: (plug in the SGM results here, which show that the US is likely to make xx% reductions at home anyway)

Strategy: We should argue strenuously against any quantitative domestic emission reduction requirement, because this restriction may severely inhibit an allowance-based private sector emissions trading system. Important arguments to stress are a) the US is taking on an aggressive emission reduction target, b) the protocol contains an Article to ensure that Parties will undertake domestic policies and measures; c) this restriction can directly prohibit cost effective global emission reductions, and d) this is difficult to implement and unfair to private sector participants

(which private sector participant should be identified as the one that caused the country to fail its domestic restriction?)

- 2 a. **Emission trading may result in competitive advantage for large countries like the United States.** Some smaller countries (such as Belgium or the Netherlands) are concerned that even if robust emissions trading results in a global market price, it may be difficult for smaller countries to have equal access to the sellers. However, this issue was often subsumed in the next objection:
- b. **Emissions may result in trades for non-economic reasons.** Some countries openly expressed concern that the United States and Russia might cut a deal based on something other than the market price. This was thought to be particularly unfair, despite the obvious comparison to the EU bubble arrangement.

Thus, the overall concern expressed by both these issues is that the United States in particular would have unfair competitive advantage or monopoly power over the market price of allowances. As a result, the first solution proposed by the EU was a requirement that all transactions be conducted through some required exchange at the market price. Failing a requirement for all transactions, the EU proposed that all bilateral transactions between governments (although the EU bubble government-government trading would of course be exempt) be required to go through this public exchange mechanism. Another proposal was that at least some percentage of trades be required to go through a public exchange mechanism.

Strategy: We should continue to object to this requirement for some sort of public exchange mechanism because it would exempt the transactions to be conducted under the EU Bubble and because requiring disclosure of price might prevent the emergence of a robust emissions trading market (companies will be reluctant to trade in a market where the buyer, the seller, and the quantity must already be publicly recorded for compliance purposes - being required to also disclose the exact price reveals too much competitive information - in big exchanges where prices are disclosed, generally the buyer and seller remain anonymous).

However, small potential buyers will still be worried about being frozen out of the market by big buyers. The Acid Rain Program dealt with this concern by holding back a very small fraction of allowances from each market participant to offer an annual auction - small players were guaranteed access to this annual public auction, the market was ensured of a mechanism for disclosing a public price, and the market participants were reimbursed with the proceeds. Although the original fear that big electric utilities would hoard emission allowances to create monopoly power never materialized, the auction was useful for two reasons: 1) it was better to allay small buyer fears with this mechanism than to create other more onerous restrictions, and 2) the auction did provide an early price signal and jump started the market for these new emission allowances - the EPA held auctions in 1993 and 1994 before private brokerage firms emerged which both sold allowances and publicly tracked prices. It might be possible to apply this idea to the international greenhouse gas system.

During the negotiations, we offered to address this concern by ensuring that the COP would do a review of all emissions transactions to determine that there wasn't improper monopoly power.

3. Requirement for harmonization for domestic allocation of allowances. The French negotiators clearly indicated their preference for all Parties to undertake any domestic allocation of allowances by auction rather than through grandfathering provisions. Their argument was that U.S. industry could be subsidized if it was allocated allowances without charge by the U.S. Congress. This, in turn would undercut the French government's ability to require its firms to pay for allowances through an auction.

Strategy: We should spend more effort on bilateral discussions with the French negotiators and their industry - [we should discuss with Treasury to see if there is a legitimate concern about tax subsidies, and if so, if there is a pre-existing international forum for addressing these issues]. There is definitely a national sovereignty argument - this international treaty should not dictate how a country chooses to set up its domestic mechanisms (and it singles out countries choosing to do domestic emissions trading, without speaking at all to domestic subsidies that other countries could choose through their own policies and measures).

4. Buyer versus seller liability. (This section needs more work). Basically, the US position favors a seller-liability approach, where the seller is responsible for demonstrating the legitimacy of the allowances by maintaining a good monitoring and reporting system. We believe that compliance problems can be addressed through the automatic consequences of restriction or prohibition of sales of allowances. The advantage of this system is that it provides an incentive for good monitoring by making that a requirement for participation in the trading system, encouraging investment in both monitoring and emission reduction technology in places where cheap emission reductions are available. Accurate, standardized monitoring is the key to ensuring accountability with emission reduction requirements and for quantifying the environmental impact of the emissions and any further steps to reduce them.

The European Union negotiators suggested a preference for a buyer liability approach. In a buyer liability approach, the buyer would be responsible if the seller's allowances turned out to be non-legitimate. The idea is that allowances from Parties with questionable monitoring or emission reduction tracking would be worth less than allowances from Parties with good monitoring. Thus, the idea is that cheap emission reductions which may be inadequately monitored will be so risky that buyers will avoid buying these allowances unless the seller improves its quality. From an implementation perspective, if the seller turns out to be in default, then the buyer's allowances would be deducted retroactively (if the buyer's allowances were not deducted retroactively, there would be a perverse incentive to buy cheap, bad allowances and use them up before the seller was determined to be in default), which could throw the buyer into non-compliance or force the buyer to buy further allowances elsewhere. However, this approach may not provide sufficient investment to the countries which need to improve their monitoring; and may perpetuate poor monitoring by offering some (albeit small) market value for poor quality allowances. The seller beware approach provides an incentive to develop standardized, accurate monitoring in all countries. (Still needs work!)

5. National certification and verification mechanism. The US concern was to ensure that each Party would identify an authorized representative to account for allowances (prevention of rogue agencies from selling allowances) - the concern is that other countries may use this terminology to justify extensive government intervention in the market. This is where additional guidelines should be developed to focus on the mechanism needed to ensure that transactions are officially authorized, and to specify procedures to ensure good accounting and reporting.

6. Link with monitoring, accounting, and reporting requirements. We need to reinstate the protocol text which was deleted from the Kyoto protocol, but outlines the vital components for a good emissions trading system - there was general agreement on this text from all Annex I Parties, but this "good stuff" was dropped when the Annex I Parties couldn't agree on the complete emissions trading text because of the disagreements about restrictions outlined above.

III. Additional Text for the important monitoring and compliance provisions:

New text should be added to reinstate the essentially agreed upon text from Chairman Estrada's proposed text:

1. For the purpose of meeting its commitments under Article 3, any Party included in Annex B may transfer to or acquire from any other Party included in Annex B any of its emissions allowed under Article 3, provided that each such Party is in compliance with its obligations under this Article and Articles 5 and 8, and has in place a national mechanism for the official authorization of emission trades.
 2. A Party may authorize intermediaries to participate, under the responsibility of that Party, in actions leading to the transfer or acquisition, under this Article, of emissions allowed.
 3. A Party whose emissions are in excess of its emissions budget in any budget period may acquire, but may not transfer, emissions allowed.
 4. If a question of a Party's implementation of the requirements of this Article or Articles 5 or 8 is identified in accordance with the provisions of Article 9, transfers and acquisitions of emissions allowed may continue to be made, provided that any such emissions allowed may not be used by any Party to meet its obligations under Article 3 until any issue of compliance is resolved. If a question of a Party's implementation of paragraph 3 above is identified in accordance with the provisions of Article 9, the provisions of this paragraph shall apply only to transfers of emissions allowed by that Party.
- 2 II

Attachment: Parties Views on Emissions Trading Expressed at Kyoto Negotiations

Core Supporters (US Position - emissions trading allowed, further guidelines to be elaborated)	Weaker Supporters (EU Position - COP to define rules before emissions trading allowed)	Supporters of Compromise	Opposition
USA Japan New Zealand Australia Canada Norway Russian Federation Ukraine Romania (Poland - had previously expressed support) Mexico South Korea Israel Argentina Costa Rica Samoa	(UK for the EU had previously expressed support) Hungary Czech Republic Slovenia Switzerland Nauru Tuvalu Seychelles Carabaos Phillippines Chile Uruguay Uganda	Indonesia Burkino Faso Mali Zimbabwe Malawi Sri Lanka	China India Saudi Arabia Togo Nigeria Vietnam Kenya Gambia United Arab Emirates

EMISSIONS TRADING STRATEGY PAPER

What Flexibility Did We Get in the Kyoto Protocol?

Article 3: Budget addition and subtraction (in accordance with relevant provisions).

Article 4: "Bubble" or "Umbrella" Agreements among Annex I Parties (this article was developed to allow the EU burden sharing arrangement, but explicit discussion of interest in forming an "umbrella" was discussed with Russian Federation, Ukraine, Japan, New Zealand, Australia, Canada, and Norway).

Article 6: "Joint Implementation" among Annex I Parties (might be more aptly named "emission reduction credit trading" because it allows credit trading among Annex I Parties for specific projects which demonstrate emission reductions).

Article 12: Clean Development Mechanism allows "certified emission reductions" credit for projects which benefit non-Annex I Parties (what we meant by "joint implementation" with non-Annex I Parties) The text specifically allows credits to count for Annex I commitments, allows private party participation, creates an executive board, sets aside a share of the proceeds for administrative costs and adaptation costs for vulnerable countries, and allows "early" certified emission reductions from 2000-2007 to assist in achieving compliance.

Article 16bis: Emissions Trading allows Parties included in Annex B to participate in emissions trading for the purposes of fulfilling their commitments under Article 3 of this Protocol. The text also calls for the Conference of the Parties to define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The article also contains the restriction that trading be supplemental to domestic emission reduction actions.

How will the trading text be interpreted?

A strict legal reading of the text indicates that emissions trading is allowed now under the protocol, even if "principles, modalities, rules, and guidelines" are never developed. In a separate decision document, it is clear that the focus for the Fourth Conference of the Parties is only on developing the "definition of relevant rules and guidelines for verification, reporting, and accountability of emissions trading".

However, we had hoped to have a longer article on emissions trading which would have spelled out the link to monitoring, reporting, and compliance provisions more specifically and also would have explicitly authorized private sector participation. Unfortunately, we never agreed on final language within Annex I because we could not agree on restrictions proposed by the EU, primarily because they wanted the US to agree to a deeper emission reduction target but also to address various concerns about competitiveness.

The strongest objections came from China, India, Saudi Arabia, and many other developing countries. The stated objections include a fear that emissions trading would obstruct the achievement of real emission reductions. In addition, China and India in particular raised concerns that emissions trading will result in an unfair allocation of pollution entitlements to the industrialized countries. Finally, these countries may have objected to emissions trading because they were not included in the intense consultations on this issue (in other words, they objected to the idea that developing countries should just accept emissions trading because it would only apply to Annex I countries).

It is likely that most countries will believe that the compromise reached at the Kyoto Conference with this text means that relevant "principles, modalities, rules, and guidelines" must be developed before emissions trading can start.

How should we proceed to develop international emissions trading?

Any effort to have additional text adopted at COP4 will require that substantial progress be made during the SBSTA/SBI meetings to be held in June.

Ideally, we would want to add a few very specific rules to the protocol text and to develop guidelines which would clarify the accounting and reporting provisions. The specific rules to add to the protocol text would explicitly provide the link to monitoring, reporting, and compliance provisions and authorize private sector participation (specific language suggested in background paper). We are likely to get strong support for this approach from our key allies on the emissions trading issue: New Zealand, Australia, Canada, Norway, (and probably the Russian Federation and Ukraine). In addition, Mexico and some of the AOSIS states may be helpful. Japan also supports emissions trading, although they may try to pursue market restrictions.

However, we can expect to meet substantial resistance. China, India, and Saudi Arabia may try to block adoption of any further text; they would be very likely to object to the idea that additional text need only address "verification, reporting, and accountability" and would probably want any further text to focus on "principles" of emissions trading. We can also expect that the EU countries, (particularly France) will want to propose many additional restrictions (see attached background paper for the types of restrictions proposed at Kyoto).

Options (not mutually exclusive):

1. Pursue development of our ideal rules and guidelines for emissions trading for discussion by SBSTA/SBI in June and adoption by COP4 in November, recognizing that it may be difficult to get agreement because of strong opposition from some Parties. Advantages: codifies the universal emissions trading rules in the protocol text, which provides certainty that trades will count, and ensures strong and consistent incentives for compliance. Disadvantages: Provides opposition with another opportunity to reject text all together or add unpalatable restrictions.

2. Pursue development of an emissions trading system with key partners, for implementation under an "umbrella", which can then be expanded into a fully international system.
Advantages: only need agreement from allies, so no need for accommodating unnecessary restrictions or blockage. Disadvantages: There is no explicit language under this Article to include participation from private sector (is this a legal problem?). May increase concerns from opposition, particularly developing countries, because they will be left out of the initial design phase, and thus may result in stronger opposition both to trading and on other negotiation issues).

(NOTE: it may be advantageous to use the umbrella mechanism to separate government-government exchanges from the emissions trading system, which would then primarily cover firm-firm trading with government authorization. This would allow us to be more flexible on accepting the government-government restrictions that others may want to propose under emissions trading provisions.)

Recommendation:

The emissions trading strategy should be developed as part of an integrated diplomatic strategy. Key partners are listed below along with what they might be looking to achieve:

1. New Zealand, Australia, Canada, Norway - want emissions trading, no restrictions
2. Russian Federation, Ukraine, (Poland) - will benefit from emissions trading with no restrictions, but want to achieve more concrete commitments for investment
3. Japan - wants emissions trading but had expressed support for restrictions to ensure "transparency of market" - apparently to prevent U.S. monopoly power
4. European Union
 - United Kingdom - generally wants emissions trading, but has to represent EU
 - France - wants to require domestic allocations by auction to disadvantage US
 - Belgium, Netherlands - very concerned about small countries' access to market

We may be able to address their concerns about small countries' access by developing a "set aside for auction" concept, which will both guarantee access and provide an early price signal to jumpstart the market. We also have to find other ways to assure them that emissions trading really will be supplemental to domestic action in the United States.

5. China, India, and Saudi Arabia - we need to find out more about their objections to see if we can diffuse them
6. Other Developing Countries - may want to spend some time explaining emissions trading to some key countries (Mexico, Samoa, Marshall Islands, Costa Rica, Argentina, Zimbabwe, Uganda)

EMISSIONS TRADING BACKGROUND PAPER - NEGOTIATIONS TO DATE

Quick Summary of the key negotiating positions expressed in Kyoto on emissions trading

The strongest objections came from several developing countries, including China, India, Saudi Arabia, Nigeria, Kenya, Vietnam, Togo, Gambia, and United Arab Emirates. These countries objected to inclusion of any set of provisions on emissions trading until Chairman Estrada brokered the final deal.

Developing countries who spoke up with reservations about emissions trading but still favored a compromise in order to ensure the passage of the protocol included Indonesia, Burkino Faso, Mali, Zimbabwe, Malawi and Sri Lanka.

The "weak supporters" of restricted emissions trading were lead by the EU (where France was the country with strong objections). The "EU position" was characterized by the idea that international rules and guidelines for emissions trading would have to be established through further negotiations before emissions trading could begin. This position was supported by Hungary; the Czech Republic; Slovenia; Switzerland; some AOSIS countries - Nauru, Tuvalu, Seychelles, and Carabaos; Philippines; Chile; Uruguay; and Uganda.

The strong supporters of emissions trading were led by the US and included New Zealand, Australia, Canada, Norway, Japan, Russian Federation, Ukraine, Romania, Poland, Mexico, South Korea, Israel, Argentina, Costa Rica, and Samoa.

What were the objections to emissions trading expressed by other countries?

I. Strong Opposition to Emissions Trading

The strongest objections came from several developing countries, including China, India, Saudi Arabia, and several other nations. The stated objections include a fear that emissions trading is a new and little known scheme that will not ensure real emission reductions. In addition, China and India in particular have raised concerns that emissions trading will result in an unfair allocation of pollution entitlements to the industrialized countries. Finally, an unstated reason may be that some developing countries would prefer that no greenhouse gas protocol ever take effect, and rather than openly blocking the entire protocol, such countries may believe that they may achieve their objective of avoiding a meaningful protocol by strenuously objecting to emissions trading, a set of provisions which the United States and other industrialized countries have made clear is a key element for reducing costs of implementing a protocol.

Strategy: It will be difficult to quell these strenuous objections; it may be worthwhile to try some bilateral communication on emissions trading with these key countries. In the end it will probably be most productive to ensure we have agreement among the countries who supported some form of emissions trading (note: including some developing countries), and to rely on multilateral pressure to include such provisions as part of the entire package at the Buenos Aires meeting of the Conference of the Parties.

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Among Annex I Parties, the most limited support for emissions trading came from the European Union. Japan raised similar concerns early in the Kyoto session, but desisted after other issues, including the differentiated targets and baseline adjustments, were resolved. All the other key Annex I countries shared our position that emissions trading is a cost-saving mechanism which is vital to achieving the emission reductions called for by the Kyoto Protocol.

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Practical implications of a quantitative restriction: (plug in the SGM results here, which show that the US is likely to make xx% reductions at home anyway)

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Shelley, Katie, David, Elliott

To:

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Fax:

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Pages (including cover):

Date:

From:

Steve Seidel

Phone:

Message:

Sent to OMB 2 PM

Redraft 2/1

McGinty Science Committee Testimony

I am pleased to be here today to describe the agreement reached in Kyoto and our activities, both at home and abroad, to follow-up on the substantial progress achieved in these negotiations. The Kyoto Protocol is an enormous first step in what will undoubtedly be a long term global effort to safeguard our earth's climate system from unprecedented human-induced harm and our children and grandchildren from the unconscionable tragedies that could unfold if we fail to heed the warnings from the world's leading scientific experts.

I am very pleased to report that we made tremendous progress in putting into place most of the key building blocks for a sustainable, market-based system for achieving reductions in greenhouse gases. All Americans can be proud of our achievement: U.S. leadership made the difference; the power and integrity of U.S. ideas won the day. On behalf of the President and Vice-President, I would like ~~publicly~~ to commend the skills, perseverance, and dedication of the United States delegation at Kyoto. Nine agencies were represented in Kyoto. Led by our very able State Department team and Undersecretary Eisenstat, the U.S. team served our country well and honorably.

Our efforts following up on Kyoto are directed at achieving further progress in obtaining meaningful participation by developing countries and in implementing the President's plan to harness market forces at home and abroad to enhance energy efficiency, environmental quality, and economic prosperity.

Because this committee's jurisdiction focuses on science, I thought it would be useful, before discussing the outcome in Kyoto, to focus briefly on two noteworthy scientific developments that occurred at the end of last year. Based on extensive ground-based measurements, National Oceanic and Atmospheric Administration -- our lead national agency for collecting weather statistics -- reported that 1997 was the warmest year based on records that date back over a century. While the temperature in any one year cannot prove or disprove anything about global warming, this year's statistics, further confirmed by the two other sources of global surface temperatures (the Goddard Institute for Space Studies/NASA and the researchers at East Anglia University in the U.K.), follow a clearly emerging pattern. The nine warmest years of the century have occurred in the past 11 years. This pattern of warm years, led the head of research at NOAA to issue a statement that reaffirms a key conclusion contained in the latest international scientific assessment prepared by the Intergovernmental Panel on Climate Change -- that "the balance of evidence suggests a discernible human influence on global climate." Put another way, in the view of the vast majority of U.S. and international climate scientists, it is highly unlikely that the trends in global temperatures we have experienced are the result of the natural variability inherent to our climate system.

A second development relates to a study published in November in the medical journal Lancet. Most studies have examined the impacts of climate change on human health in terms of increased fatalities due to heat stress or the spread of infectious diseases. While by themselves, these areas represent considerable human health risks, this new study by the Working Group on Public Health and Fossil Fuel Combustion looked at the short-term impacts on mortality from air-borne particulate matter assuming no changes in estimates of energy use from fossil fuels. The

analysis found that an estimated 8 million deaths globally from respiratory deaths from fine particulates could be avoided between 2000 and 2020 if steps were taken to limit greenhouse gas emissions from burning fossil fuels. In the United States alone, the study reports that an estimated 500,000 deaths could be avoided during the 2000-2010 period. This study presents an important near-term benefit from actions to reduce greenhouse gas emissions that must be considered in addition to the long-term benefits of avoiding climatic disruptions.

THE KYOTO PROTOCOL

Although the agreement reached in Kyoto will not reverse the build-up of greenhouse gases in the atmosphere, it will begin slowing the rate of increase. Equally important, it puts in place a solid foundation upon which the global marketplace can increasingly be engaged in reducing greenhouse gas emissions. The agreement draws heavily from the proposals advanced by the United States and effectively rejects alternatives proposed by others that would have substantially increased the costs of action.

In October of last year, the President outlined a number of elements critical to achieving an effective agreement. He underscored that any agreement had to contain: 1) realistic medium-term, legally binding targets for developed countries; 2) flexible, market-based implementation mechanisms; and 3) measures to secure the meaningful participation of key developing countries. I am pleased to report that we fully achieved our first two objectives, and through the innovative clean development mechanism secured the tools necessary to begin work on the third. In addition, next steps must include further work on operational details and compliance mechanisms. The President has made it clear that he does not intend to send the Kyoto Protocol to the Senate

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Key elements of the U.S. proposals that were adopted as elements of the Kyoto Protocol include the following:

-- Legally binding emission targets: The agreement calls for legally binding targets for developed countries. By advancing from the existing non-binding aim contained in the Framework Convention to a binding target, we believe efforts to address global warming will take on greater significance and commitment. Moreover, our insistence on a legally binding regime encouraged other countries to think more soberly about their reduction proposals. Ultimately, the U.S. agreed to a target of a 7% reduction from baseline levels. Given the changes in the definition of the baseline for the three long-lived chemical compounds (HFCs, PFCs and SF6) from 1990 to 1995 combined with a change in the way sinks are accounted for in the baseline, the actual reduction required in the U.S. is about 2-3% more than the President originally proposed as the U.S. negotiating position.

Are we sure?

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emissions based on fluctuations in energy prices, economic activity, business cycles, or weather.

-- First budget period beginning in 2008 and ending in 2012: The U.S. proposal for a budget period beginning in 2008 was accepted. This provides a full decade for redirecting efforts toward greater energy efficiency, allowing for substantial changes in investment decisions and turnover in capital stock. Other proposals calling for reductions to begin as early as 2003 were rejected. Action during this time period appears critical to redirecting emissions toward a pathway that allows for stabilization of greenhouse gases at a doubling of prehistoric levels.

-- Market-basket approach including all 6 gases: The U.S. proposal held sway on including all 6 major greenhouse gases in the calculation of a target. Moreover, we secured trading among these gases so that the lowest cost reductions can be secured.

-- Inclusion of sinks: We also supported, and the Parties agreed, to allow actions that capture and sequester greenhouse gases (sinks) to be included as part of the target. Carbon sequestration, such as reforestation programs, offers potentially attractive low cost opportunities to reduce greenhouse gas emissions.

-- International Emissions Trading: The U.S. secured acceptance of emissions trading as a flexible, free market approach to lowering the costs of meeting a target. While the U.S. has experience with emissions trading in the acid rain and lead phase-out programs, it was a new concept to the international community and incorporated for the first time in the Kyoto agreement. Early studies suggested that the costs of compliance can be reduced by around 90% if

4th of January 1998

flexible implementation were permitted. One recent study by Battelle Labs suggests that costs can be reduced by 75% alone through the use of international emissions trading.

-- Clean Development Mechanism: Under this innovative provision, project-specific trading can occur between developed and developing countries and their industries. This provides both a mechanism to secure low cost reductions throughout the world and a powerful economic incentive to lead developing countries toward more greenhouse friendly technologies. This represents an important avenue for developing country actions to reduce emissions in cooperation with U.S. private sector firms that have the technology, resources and know-how to make such reductions in ways that save energy, reduce emissions and improve performance. This provision effectively embodies the U.S. proposal for joint implementation with credit for activities in developing countries. It also provides, again at U.S. insistence, an incentive for early action by permitting credit for reductions that occur beginning in the year 2000.

-- Emission from the Military: The U.S. obtained agreement on its proposal for an exemption for emissions from multilateral operations pursuant to the United Nations charter. This provisions will insure that nations do not hold back from participating in sanctioned multinational peacekeeping efforts due to concerns about greenhouse gas emissions.

NEXT STEPS -- INTERNATIONAL ACTIVITY

While the Kyoto agreement secures major elements that the U.S. sought to ensure a market-based, sustainable basis for addressing concerns about global warming, future

negotiations will still need to address several important issues. The Parties now move forward with a working group meeting scheduled for June and the next meeting of the Climate Convention scheduled for November in Buenos Aires. Issues that will be addressed at that and subsequent meetings include the following:

- guidelines for implementing the clean development mechanism;
- additional provisions related to compliance and enforcement;
- continued progress advancing commitments of developing countries;
- further refinement of how sinks will be treated; and
- guidelines for implementing the emissions trading provisions included in the Protocol.

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NEXT STEPS -- DOMESTIC ACTIONS

1. In his State of the Union message, the President described his proposed tax cut and research initiative aimed at jump-starting efforts to enhance our nation's energy efficiency and economic competitiveness. This program -- targeted at over \$6 billion over the next five years -- will provide incentives for our industry, businesses and consumers to make and purchase more energy efficient products. It challenges the innovative abilities of the private sector and ensures that those that succeed in developing energy saving products will have a substantial market in which to sell those products. For consumers, it provides a double bonus. First it helps reduce the initial costs of purchasing energy saving products. Second, throughout the lifetime of the product, consumers will benefit from reduced energy costs. The President's proposals include \$3.6 billion over five years in tax credits aimed at encouraging broader use of existing energy saving technologies and spurring

further innovations. It also includes \$2.7 billion in new research and development support to ensure that greenhouse gas reducing innovative products continue to flow through the pipeline and into the market-place in the coming years.

Examples of specific provisions contained in the President's budget include the following:

-- Tax credits for fuel efficient vehicles: This credit would be \$4,000 for each vehicle that gets three times the base fuel economy for its class beginning in 2003. A credit of \$3,000 would be available beginning in 2000 for vehicles that get double the base fuel economy for its class. These credits would be available to jump start these markets and would be phased out over time.

-- Tax credits for energy efficient equipment: This credit would include a 20% credit (subject to a cap) for purchasing energy efficient building equipment, a 15% credit for the purchase of solar rooftop systems, and a 10% credit for the purchase of combined heat and power systems.

-- Research and development support: Additional resources are provided for the Partnership for a New Generation of Vehicles including the expansion of activities to include more efficient diesel engines for both light and heavy duty trucks, for key areas of renewable energy, and for carbon sequestration.

These budget proposals implement one of the key commitments made by the President in his October 22nd speech at the National Geographic. In that speech the President also pledged:

that the federal government, as the largest user of energy, would take the lead in enhancing our efforts at improving energy efficiency; that we would work closely with the private sector in developing voluntary programs to reduce emissions; that we would grant early credit for reductions that occur prior to a binding target; and that we would help shape utility restructuring in ways that contribute to reductions in greenhouse gas reductions.

Beyond the President's budget proposals, a number of encouraging developments have taken place in both the public and private sectors in the short time since Kyoto. Let me briefly mention four of them today.

1. VCR/TV Energy Star Program: TV and VCRs represent one of the fastest growing sources of electricity demand. Consumers spend over \$1 billion annually to power VCRs and TVs that are switched off. In early January the Vice President announced a pathbreaking partnership between EPA and the major manufacturers of these electronic goods. The program is quite ambitious with a goal of achieving a 70% reduction in energy use without sacrificing product quality, utility or increasing costs. The average household could cut their energy bills by 40% or \$300 per year if they switched to the full line of Energy Star products.

2. Compressed Air Challenge: Air compressors represents about 3% of total industrial electricity use and 1% of total U.S. electricity consumption. In mid-January, DOE and major equipment manufacturers announced a new agreement aimed at significantly enhancing efficiency in this sector. Under the agreement, changes in equipment and operating practices are anticipated to reduce energy use in this category by 10% by 2010 at a cost savings of \$150 million per year while reducing greenhouse gases by 700,000 metric tons of carbon.

3. Fuel Efficient Vehicles: At the recent automobile show in Detroit, GM announced that it has developed a hybrid-based vehicle that can achieve fuel efficiency of 80 miles per gallon and that this car could be in commercial production within a few years. Ford also exhibited a prototype of a light weight, highly fuel efficient sedan that could be in commercial production by the middle of the next decade. These announcements followed an earlier breakthrough announced by DOE and its partners of a fuel cell that would run on gasoline and double current fuel economy while reducing conventional air pollution emissions by 90 percent. These technological advances have been made possible through the efforts of the Partnership for New Generation of Vehicles between the Administration and the U.S. auto companies and their suppliers.

4. BP Solar Opening: In late January, BP Solar opened its first manufacturing plant in the United States. Located outside San Francisco, this facility will produce a new generation of thin film photovoltaic cells. Spurred by DOE's recently announced Million Solar Roof Initiative, planned plant expansions and openings by other solar cell manufacturers, as well as the President's budget request for enhanced funding for renewable technologies, demonstrate that efforts to increase market penetration based on harnessing the sun's energy are now making significant advances.

These examples further underscore the potential for energy and cost saving opportunities to reduce our emissions of greenhouse gases. A more detailed economic analysis of the impact of the targets reached in Kyoto is currently nearing completion. [The Administration's intends to present this analysis in testimony at a hearing next week before the Senate Foreign Relations Committee].

In sum, the Kyoto Protocol represents a significant diplomatic achievement for the United States and a key contribution to the critical effort to safeguard our children from the effects of potentially severe climatic disruption. At the same time, this effort is a work in progress. Much remains to be done if we are fully to seize the environmental and economic benefits of action on this pressing issue. We in the Administration look forward to working with Congress in the months and years ahead to further our efforts to address the risks associated with global warming in a way that enhances our environmental and economic well being.

I welcome the opportunity to visit with you today and look forward to our continued dialogue and exchange.



Joseph E. Aldy

02/03/98 01:23:14 PM

Record Type: Record

To: Robert J. Tuccillo/OMB/EOP

cc: Michele Jolin/CEA/EOP, Jeffrey A. Frankel/CEA/EOP, Randall W. Lutter/CEA/EOP, Adele C. Morris/CEA/EOP

Subject: comments on McGinty testimony

We appreciate the opportunity to review Katie McGinty's testimony, and found it to be an excellent overview of climate change issues and the Kyoto Protocol. We have three comments:

1) On page 3, a reference is made to a recent study that indicates that reducing greenhouse gas emissions could result in avoiding 500,000 deaths associated with particulate matter pollution between 2000 - 2010. Since the Administration recently promulgated a fine particulate matter standard, it would be appropriate to make some reference to it. Specifically, it might appear awkward that the Administration proposed an air quality rule, and yet hundreds of thousands of people would still die prematurely. We suggest adding language such as "however, the recently promulgated fine particulate matter standard will ~~achieve a significant amount of these avoided~~ *avoid a large part of* deaths."

2) On page 4, the discussion on legally binding emission targets states that the U.S. target in Kyoto is about 2-3% more stringent than what the Administration proposed in October. This estimate assumes sinks equal zero. While we are confident about the sign of the sinks, we are still quite uncertain about their magnitude. We suggest changing the language such that it reads "the actual reduction required in the U.S. is no more than about 2-3% more than the President originally proposed as the U.S. negotiating position."

3) On pages 5-6, in the discussion of international emissions trading, there are two references to the percentage change in compliance costs associated with flexibility measures. Since decisions have not been made about what the economic analysis will look like, nor have final decisions been made about what will be presented at the Senate Foreign Relations hearing next week, we think it is premature to provide estimates of cost savings. While qualitative statements about cost savings are fine, we suggest that the percentage change estimates should not be included.

Feel free to give me a call (x51455) if you have any questions about our comments.

Redraft 2/1

McGinty Science Committee Testimony

I am pleased to be here today to describe the agreement reached in Kyoto and our activities, both at home and abroad, to follow-up on the substantial progress achieved in these negotiations. The Kyoto Protocol is an enormous first step in what will undoubtedly be a long term global effort to safeguard our earth's climate system from unprecedented human-induced harm and our children and grandchildren from the unconscionable tragedies that could unfold if we fail to heed the warnings from the world's leading scientific experts.

I am very pleased to report that we made tremendous progress in putting into place most of the key building blocks for a sustainable, market-based system for achieving reductions in greenhouse gases. All Americans can be proud of our achievement: U.S. leadership made the difference; the power and integrity of U.S. ideas won the day. On behalf of the President and Vice-President, I would like publicly to commend the skills, perseverance, and dedication of the United States delegation at Kyoto. Nine agencies were represented in Kyoto. Led by our very able State Department team and Undersecretary Eisenstat, the U.S. team served our country well and honorably.

Our efforts following up on Kyoto are directed at achieving further progress in obtaining meaningful participation by developing countries and in implementing the President's plan to harness market forces at home and abroad to enhance energy efficiency, environmental quality, and economic prosperity.

Because this committee's jurisdiction focuses on science, I thought it would be useful, before discussing the outcome in Kyoto, to focus briefly on two noteworthy scientific developments that occurred at the end of last year. Based on extensive ground-based

measurements, National Oceanic and Atmospheric Administration -- our lead national agency for collecting weather statistics -- reported that 1997 was the warmest year based on records that date back over a century. While the temperature in any one year cannot prove or disprove anything about global warming, this year's statistics, further confirmed by the two other sources of global surface temperatures (the Goddard Institute for Space Studies/NASA and the researchers at East Anglia University in the U.K.), follow a clearly emerging pattern. The nine warmest years of the century have occurred in the past 11 years. This pattern of warm years, led the head of research at NOAA to issue a statement that reaffirms a key conclusion contained in the latest international scientific assessment prepared by the Intergovernmental Panel on Climate Change -- that "the balance of evidence suggests a discernible human influence on global climate." Put another way, in the view of the vast majority of U.S. and international climate scientists, it is highly unlikely that the trends in global temperatures we have experienced are the result of the natural variability inherent to our climate system.

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These budget proposals implement one of the key commitments made by the President in his October 22nd speech at the National Geographic. In that speech the President also pledged that the federal government, as the largest user of energy, would take the lead in enhancing our efforts at improving energy efficiency; that we would work closely with the private sector in developing voluntary programs to reduce emissions; that we would grant early credit for reductions that occur prior to a binding target; and that we would help shape utility restructuring in ways that contribute to reductions in greenhouse gas reductions.

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These examples further underscore the potential for energy and cost saving opportunities to reduce our emissions of greenhouse gases. A more detailed economic analysis of the impact of the targets reached in Kyoto is currently nearing completion. [The Administration's intends to present this analysis in testimony at a hearing next week before the Senate Foreign Relations Committee].

In sum, the Kyoto Protocol represents a significant diplomatic achievement for the United States and a key contribution to the critical effort to safeguard our children from the effects of potentially severe climatic disruption. At the same time, this effort is a work in progress. Much

remains to be done if we are fully to seize the environmental and economic benefits of action on this pressing issue. We in the Administration look forward to working with Congress in the months and years ahead to further our efforts to address the risks associated with global warming in a way that enhances our environmental and economic well being.

I welcome the opportunity to visit with you today and look forward to our continued dialogue and exchange.

(Draft #4: 9 February 1998: 4:00 p.m.)

**Statement of
Stuart Eizenstat
Under Secretary of State
for Economic, Business and Agricultural Affairs
before the
Senate Foreign Relations Committee
February 11, 1998**

Thank you, Mr. Chairman.

At the outset, let me thank those members of Congress, in this chamber and in the House of Representatives, who participated with us in the Kyoto Conference and who lent their advice and support to our efforts there. In particular I wish to thank Senators Hagel, Baucus, Chafee, Enzi, Kerry and Lieberman for taking the time to be present. I must also thank Senator Byrd, who could not be with us in Kyoto, for his interest and leadership. Rarely has there been an environmental issue more important or complex than global warming, and rarely has there been a greater need for the Executive Branch and the Congress to work closely together.

It is with great pleasure that I appear here today to explain the Administration's position on global warming. To this end, I will divide my testimony into three parts: (1) a short discussion of the science – the driving force for all the efforts we have taken to date to mitigate a significant and growing global environmental problem; (2) a discussion of the results of the recent Kyoto Conference and key features of the Kyoto Protocol; and (3) a brief review of the President's Climate Change Technology Initiative. I hope to leave you with a clear understanding of why we believe that it is necessary to act, of and how we intend to proceed internationally, and of what the President plans to do here at home.

The Science

Human beings are changing the climate by increasing the global concentrations of greenhouse gases such as carbon dioxide, methane and nitrous oxide. Burning coal, oil and natural gas to heat our homes, power our cars and illuminate our cities produces carbon dioxide and other greenhouse gases as by-products – more than 6 billion metric tons worth of carbon in the form of carbon dioxide annually. Similarly, deforestation and land clearing also release significant quantities of such gases -- another 1 to 2 billion tons a year. Over the last century, greenhouse gases have been released to the atmosphere faster than natural processes can remove them. There is no ambiguity in the data; since 1860, concentrations of carbon dioxide have risen 30 percent, from 280 parts per million (ppm) to 365 ppm.

The authoritative Intergovernmental Panel on Climate Change (IPCC), representing the work of more than 2,000 of the world's leading climate change scientists from more than 50 countries, concluded the balance of evidence suggests a “discernible human influence on global climate.”

The 1995 IPCC Assessment represents the best synthesis of the science of climate change. It concludes:

- Concentrations of greenhouse gases could exceed 700 ppm by 2100 under “business as usual” -- levels not seen on the planet for 50 million years. The projected temperature increase of 2 to 6.5 degrees Fahrenheit over the next 100 years, could exceed rates of change for the last 10,000 years. (For perspective, the last ice age was 9 degrees cooler than today.)
- Increased temperatures are expected to speed up the global water cycle. Faster evaporation will lead to a drying of soils and increased drought, but overall, there will be an increase in precipitation.
- Sea levels will rise between 6 and 37 inches over the next century. A 20 inch sea level rise could double the global population at risk from storm surges -- from roughly 45 million to over 90 million, even if coastal populations do not increase. Low-lying areas are particularly vulnerable (e.g., much of coastal Louisiana and the Everglades).

- Human health is likely to be affected. Warmer temperatures will increase the chances of heat waves (like the Chicago event in 1995 that killed over 400 people) and can exacerbate air quality problems such as smog, and lead to an increase in allergic disorders. Diseases that thrive in warmer climates, such as dengue fever, malaria, yellow fever, encephalitis, and cholera are likely to spread due to the expansion of the range of disease carrying organisms. By 2100, there could be an additional 50-80 million cases of malaria each year.
- Agriculture, forests, and natural ecosystems will also be affected. The poorest countries, already subject to food production and distribution problems, will likely suffer the greatest agricultural impacts. Doubling current carbon dioxide concentrations could lead to a dramatic change in the geographic distribution of one-third of the Earth's forests. (For example, the ideal range of some North American forest species would shift by as much as 300 miles to the north in the next 100 years -- far faster than their ability to migrate on their own.) Such changes could have profound effects on parks and wildlife refuges, lead to reduction in species diversity.

What Changes Have We Seen to Date?

The earth's temperature is increasing: Scientists from NOAA (National Oceanic and Atmospheric Administration), the U.K. Meteorological Office and NASA's GISS (National Aeronautics and Space Administration's Goddard Institute of Space Studies) all recently announced that 1997 was the warmest year on record. In fact, nine of the last 11 years are among the warmest ever recorded.

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Some have argued that we can wait -- and only act once all the details of the climate system have been fully understood. The science tells us that this is a recipe for disaster. We will only fully confirm predictions when we experience them. At that point it will be too late. The concentrations of greenhouse gases in the atmosphere continue to rise each year, and because these gases will persist for many decades to centuries, this problem is only slowly reversed. The earth will continue to warm and the seas continue to rise as long as we continue to load the entire atmosphere of the earth with greenhouse gases. The problem has developed over the course of a century and it will take many decades to solve. Already, we have another 0.5 degrees Fahrenheit of warming in the pipeline from emissions that have previously occurred, so some impacts will happen no matter what actions we take. Nevertheless, we can still forestall many others if we begin taking cost-effective actions now.

Many speak of the need for an insurance policy. I agree. But there is a critical difference in the case of the climate system. In most insurance policies, the loser can be made whole -- restitution is possible; the building can be rebuilt, the stolen car replaced, the fire or flood damage repaired. In the case of global warming, we will not have a second chance. We are committing ourselves, our children and our grandchildren to a very different planet.

The totality of our scientific information, including that on vulnerability and impacts of global warming, provides a compelling reason to act.

Let me now turn to the recent Kyoto Conference.

Kyoto Protocol

Last December in Kyoto, Japan, the nations of the world reached agreement on an historic step to control greenhouse gas emissions which cause global warming -- one of the profound environmental challenges of our time. No sooner had the marathon negotiating session ended, however, than some critics on sides of the political spectrum, without a full examination of the results achieved, denounced the agreement as either too little too late or

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In order to secure an effective agreement that is environmentally strong and economically sound, and to protect the unique worldwide interests of the U.S. military, President Clinton and Vice President Gore established three major objectives. As a result of the Kyoto negotiations, we achieved the first two – sound targets and timetables for reducing greenhouse gas emissions among the world's major industrial nations; and flexible market-based mechanisms for achieving those targets. The third, meaningful participation of developing countries, will be the focus of our work in the coming months and years, but with the Kyoto Protocol we have made an important down payment.

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- The President's specific time frame of 2008-2012, rather than earlier periods preferred by the European Union, Japan and others, giving us more time to phase in change gradually and deploy new technologies cost-effectively, and thereby to cushion the effects on our businesses and workers.

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Flexible Market Mechanisms

Our second broad Presidential objective was to make sure that countries can use flexible market mechanisms to reach their targets rather

than the mandatory “policies and measures,” such as carbon taxes, favored by the E.U. and many other developed countries.

The Kyoto Protocol enshrines a centerpiece of this U.S. market-based approach – the opportunity for companies and countries to trade emissions permits. In this way, companies or countries can purchase less expensive emissions permits from countries and companies that have more permits than they need (because they have met their targets with room to spare). This is not only economically sensible, but environmentally sound. By finding the least expensive way to reduce emissions, we will be providing a strong incentive for achieving the maximum level of emissions reductions at the least cost. The U.S. has had a very positive experience with permit trading in the acid rain program, reducing costs by 50 percent from what was expected, yet fully serving our environmental goals.

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We went even further by reaching a conceptual agreement with several countries, including Australia, Canada, Japan, New Zealand, Russia and Ukraine, to trade emissions rights with each other. This ‘umbrella group’ could further reduce compliance costs.

Ensuring that we can meet our target reductions cost-effectively will depend significantly on access to the flexibility mechanisms we fought hard to include in the Kyoto Protocol. Let me be very clear: The commitment we made in Kyoto would not have been made -- could not have been made -- were it not for the flexibility mechanisms that were also agreed there. Until we are satisfied with the rules and procedures yet to be established, the promise of Kyoto will never be realized.

Meaningful Participation of Developing Countries

Our third objective was to secure meaningful participation of key developing countries, a concern that the Senate obviously shares, as evidenced by last summer's Byrd-Hagel Resolution. Global warming is, after all, a global problem which requires a global solution – not only from the developed world but also from key developing countries. Now let us not

forget that per capita emission rates are low in the developing world and will remain so for some time, and 75 percent of today's atmospheric concentrations of greenhouse gases attributable to human activities are the result of emissions by the industrialized world. At the same time, it is also true that by around 2015 China will be the largest overall emitter of greenhouse gases, and by 2025 the developing world will emit more greenhouse gases in total than the developed world. So from an environmental perspective, this problem cannot be solved unless developing countries get on board. We encountered fierce resistance in Kyoto by some developing countries to meaningful participation in solving the global warming problem.

Some developing countries believe – wrongly – that the developed world is asking them to limit their capacity to industrialize, reduce poverty and raise their standard of living. We have made clear that we support an approach under which developing countries would continue to grow – but in a more environmentally sound and economically sustainable way, by taking advantage of technologies not available to countries that industrialized at an earlier time.

The Kyoto agreement does not meet our requirements for developing country participation. Nevertheless, a significant down payment in the form of a provision advanced by Brazil and backed by the United States and the Alliance of Small Island States. This provision defines a “Clean Development Mechanism,” which embraces the U.S.-backed concept of “joint implementation with credit.” The goal is to build a bridge – with incentives – between developed, industrialized countries, and developing nations. This new mechanism will allow companies in the developed world to enter into cooperative projects in the developing world – such as the construction of high-tech, environmentally sound power plants – for the benefit of both parties. The corporations in developed countries will get emission credits at lower costs than they could achieve at home, while the developing countries will share in those credits, receive the kind of technology that can allow them to grow without ruining their environment, and have access to funds from a small share of the proceeds to help them adapt to the impact of climate change.

The Clean Development Mechanism has great potential, but developing countries will need to do more in order to participate meaningfully in the effort to combat global warming. In determining what

developing countries ought to do, we should be aware that the circumstances of developing countries vary widely, along a kind of continuum. Some today are very poor; their greenhouse gas emissions are negligible and are likely to remain so for the foreseeable future. Others, whose greenhouse gas emissions are not substantial, are relatively well off. Some are poor on a per capita basis, but their greenhouse gas emissions today rival or surpass those of the most advanced industrialized nations. Still others have already joined ranks with the industrialized world in the OECD but have not yet fully accepted the added responsibility for protection of the global environment that comes with their new status.

Any 'one-size-fits-all' approach to the 'meaningful participation of developing countries' and to satisfy the Byrd-Hagel Resolution is unlikely to prevail. We found in Kyoto that even among the industrialized countries it was necessary to recognize the individual national circumstances faced by those differently situated in order to reach agreement, notwithstanding our common purpose. Similarly, any uniform, inflexible approach to the 'meaningful participation of developing countries' is unlikely to prevail.

Recognizing our "common but differentiated responsibilities and respective capabilities" it will be necessary to develop an approach that provides for a meaningful global response to the threat of global warming, while acknowledging the legitimate aspirations of developing countries to achieve a better life for their peoples. To succeed, we will need to ensure that those responsible for a significant share of global emissions accept their responsibility to protect the global environment. We will also need to ensure that those who are able to do so contribute according to their means and stage of development.

Framework for Action

Where do we go from here? While historic, the Kyoto Protocol is only one step in a long process. It is, in essence, a framework for action, and a number of challenges still lie ahead.

Rules and procedures must be adopted to ensure that emissions trading rights, joint implementation and the Clean Development Mechanism operate efficiently and smoothly. The Kyoto Protocol establishes emissions trading, but leaves open the specifics of operations. We will work hard to ensure that the rules and procedures adopted enable emissions trading, joint

implementation and the Clean Development Mechanism to work smoothly and efficiently, thereby encouraging the private sector to engage.

Let me be unmistakably clear – while trading rules must be established internationally to have emissions trading work – as our SEC must set rules for equity trading – there will not be an international body which must give prior approval to emissions trading. Trading will be done between interested companies, based on market principles. We will work closely with our industries to be sure they are satisfied with the system which is developed.

We will also be working to elaborate the non-compliance regime under the Protocol.

Most significant, we must work to secure the meaningful participation of key developing countries. We must be creative in initiating bilateral agreements. We have made a promising start with an agreement we reached with China during last fall's Summit. We must also use regional and multilateral fora to achieve our objectives -- such as the Summit of the Americas process, in the Asian Partnership for Economic Cooperation (APEC) process, the President's forthcoming trip to Africa, and the G-8 Summit in the United Kingdom. We will put on a full court diplomatic press to bring developing nations into a meaningful role in helping solve the global climate challenge. We will accept nothing less.

The Administration also plans to examine how international financial institution policies affect greenhouse gas emissions growth in developing countries. Multilateral bank and export credit agency policies, including those of the Global Environment Facility, strongly influence international lending and private capital flows for energy, industrial and transportation investments. Policies that favor clean technologies and environmentally-friendly approaches will make implementing the Kyoto Protocol easier and will speed the development of markets for new technologies. Policies that do not will block the flow of clean technologies, and worse, will erode the benefits of our efforts at home.

We have two main goals in this effort. First, we want to ensure that implementation of existing international financial institution policies is not harming the atmosphere. Second, we want to advance policies that favor investments in clean technologies that help reduce emissions in developing

nations. We will work with [and use our vote in – check with Treasury] the international financial institutions themselves – from the World Bank to the regional development banks -- and with other countries, especially other developed countries, to achieve these goals in the coming years.

The Kyoto agreement does not solve global warming, but it represents an important step in dealing with a problem that we cannot wish away. A premature decision to reject the Protocol would deprive us of the opportunity to complete its unfinished business. If we fail to take reasoned action now, our children and grandchildren will pay the price.

Mr. Chairman, let me now turn to our domestic efforts.

President's Climate Change Technology Initiative

In his State of the Union address, President Clinton said that global warming is "the gathering crisis that requires worldwide action." We need to begin now to launch the sensible, cost-effective efforts that will help us avoid the high future cost of inaction. We should look at the Kyoto Protocol as an insurance policy against the potentially devastating and irreversible impacts of global warming. This insurance policy is fully justified today, based solely on our current understanding of the science. If we act now the premium will be reasonable and far less expensive than if we delay and hope the problem created by greenhouse gases will go away. It is like a life insurance policy whose costs grow significantly if we delay year after year insuring ourselves. In the case of climate change failure to act will lead to irreversible consequences. Unless we are prepared to act, our children and grandchildren will never forgive us.

But the premium for this insurance policy must be reasonable. For this reason we rejected unrealistic targets in Kyoto; we insisted on full recourse to market-mechanisms such as emissions trading and joint implementation; and we opposed mandatory policies and measures – like carbon taxes -- that ignore the particular circumstances we face in this country.

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The President last October outlined a three-stage approach to addressing climate change at home. The first stage consists of immediate actions to stimulate development and use of technologies that can minimize the cost of meeting U.S. goals in reducing greenhouse gas emissions. Stage

two will review options created through ongoing technology development and lead to detailed plans for a domestic, market-based permit trading system for carbon emissions. Stage three will begin to implement a market-based emissions-trading system.

As a first installment on this plan, President Clinton announced two weeks ago his proposal for a \$6.3 billion Climate Change Technology Initiative over five years to cut U.S. greenhouse gas emissions \$1.3 billion higher than the President announced in his initial plan in October. This vigorous initiative calls for tax cuts coupled with research and development (R&D) to take cost-effective, practical steps that will position us well to meet the challenge we face early in the next century.

This initiative consists of two parts -- \$3.6 billion in tax credits for energy-efficient purchases and renewable energy, and \$2.7 billion in new R&D spending.

The tax package includes tax credits of \$3,000 to \$4,000 for consumers who purchase advanced technology, highly fuel efficient vehicles. These are expected to total \$660 million over the next five years. It is exciting to see our U.S. automakers already planning for the cars of the future, not as pipe dreams but as achievable greenhouse gas friendly products. [Mention GM CEO Smith's statement?]

The tax package provides a 15 percent credit (up to \$2,000) for purchases of rooftop solar electricity and hot water systems to provide incentives for meeting the Million Solar Roofs goal. It also includes a 20 percent credit (subject to a cap) for purchasing energy-efficient building equipment, a \$2,000 credit for purchasing energy efficient new homes, extension of the wind and biomass tax credit, and a 10 percent investment credit for the purchase of combined heat and power systems.

The R&D component covers the four major carbon-emitting sectors of the economy (buildings, industry, transportation and electricity), plus carbon removal and sequestration, Federal facilities, and cross cutting analysis and research. Examples of this R&D effort include the Partnership for a New Generation of Vehicles (PNGV). PNGV is a government-industry effort to develop attractive, affordable cars that meet all applicable safety and environmental standards and get up to three times the fuel efficiency of today's cars. In 1999, the combined proposal for PNGV is \$277 million, up

from \$227 million appropriated for 1998. Our PNGV effort is clearly paying off – the developments about higher mileage cars announcement by the Big Three last month were assisted by research supported under PNGB.

Similar government-industry efforts are proposed to develop cleaner, more efficient diesel engines for both light trucks and heavy trucks. The R&D effort also includes expanded research partnerships for key renewable technologies such as wind, photovoltaics, geothermal, biomass, and hydropower to accelerate price reductions and improve performance. The President's 1999 budget proposes a \$100 million increase in Department of Energy appropriations for solar and renewable energy R&D – a 37 percent increase over 1998.

We hope that the Congress will view the President's initiative favorably and appropriate the funds that he has requested. We look forward to working with you to put the President's proposals into action.

The President and his Administration are committed to working with you in the Congress, both to realize the potential of the Climate Change Technology Initiative and to craft the ongoing U.S. approach to climate change. The United States has the power to lead the global effort, and Congress holds the key. What is done or not done today will determine the kind of world we will leave to future generations and the conditions of life they will face.

Sustained Effort Required

Mr. Chairman, I have mentioned that Kyoto produced a framework for future action, and I have listed a number of the steps that await us.

Coming to grips with the threat of global warming is no small task. We must tackle it in a vigorous, sober and determined manner, understanding that it represents a challenge but also an opportunity. And as we have always done in the face of global challenge, we must assume the responsibilities of American leadership.

Thank you.

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Total Pages: 15

LRM ID: EHF371

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
Washington, D.C. 20503-0001

Monday, February 9, 1998

LEGISLATIVE REFERRAL MEMORANDUM

TO: Legislative Liaison Officer - See Distribution below

FROM: Ronald K. Peterson (for) Assistant Director for Legislative Reference
OMB CONTACT: Robert J. Tuccillo
PHONE: (202)395-5609 FAX: (202)395-5836
SUBJECT: STATE Oversight Testimony on Kyoto Climate Agreement

DEADLINE: 2:00 PM Tuesday, February 10, 1998

In accordance with OMB Circular A-19, OMB requests the views of your agency on the above subject before advising on its relationship to the program of the President. Please advise us if this item will affect direct spending or receipts for purposes of the "Pay-As-You-Go" provisions of Title XIII of the Omnibus Budget Reconciliation Act of 1990.

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(Draft #4: 9 February 1998: 4:00 p.m.)

**Statement of
Stuart Elzenstat
Under Secretary of State
for Economic, Business and Agricultural Affairs
before the
Senate Foreign Relations Committee
February 11, 1998**

Thank you, Mr. Chairman.

At the outset, let me thank those members of Congress, in this chamber and in the House of Representatives, who participated with us in the Kyoto Conference and who lent their advice and support to our efforts there. In particular I wish to thank Senators Hagel, Baucus, Chafee, Enzi, Kerry and Lieberman for taking the time to be present. I must also thank Senator Byrd, who could not be with us in Kyoto, for his interest and leadership. Rarely has there been an environmental issue more important or complex than global warming, and rarely has there been a greater need for the Executive Branch and the Congress to work closely together.

It is with great pleasure that I appear here today to explain the Administration's position on global warming. To this end, I will divide my testimony into three parts: (1) a short discussion of the science -- the driving force for all the efforts we have taken to date to mitigate a significant and growing global environmental problem; (2) a discussion of the results of the recent Kyoto Conference and key features of the Kyoto Protocol; and (3) a brief review of the President's Climate Change Technology Initiative. I hope to leave you with a clear understanding of why we believe that it is necessary to act, of and how we intend to proceed internationally, and of what the President plans to do here at home.

Julie Norton
647-7936

The Science

Human beings are changing the climate by increasing the global concentrations of greenhouse gases such as carbon dioxide, methane and nitrous oxide. Burning coal, oil and natural gas to heat our homes, power our cars and illuminate our cities produces carbon dioxide and other greenhouse gases as by-products -- more than 6 billion metric tons worth of carbon in the form of carbon dioxide annually. Similarly, deforestation and land clearing also release significant quantities of such gases -- another 1 to 2 billion tons a year. Over the last century, greenhouse gases have been released to the atmosphere faster than natural processes can remove them. There is no ambiguity in the data; since 1860, concentrations of carbon dioxide have risen 30 percent, from 280 parts per million (ppm) to 365 ppm.

The authoritative Intergovernmental Panel on Climate Change (IPCC), representing the work of more than 2,000 of the world's leading climate change scientists from more than 50 countries, concluded the balance of evidence suggests a "discernible human influence on global climate."

The 1995 IPCC Assessment represents the best synthesis of the science of climate change. It concludes:

- Concentrations of greenhouse gases could exceed 700 ppm by 2100 under "business as usual" -- levels not seen on the planet for 50 million years. The projected temperature increase of 2 to 6.5 degrees Fahrenheit over the next 100 years, could exceed rates of change for the last 10,000 years. (For perspective, the last ice age was 9 degrees cooler than today.)
- Increased temperatures are expected to speed up the global water cycle. Faster evaporation will lead to a drying of soils and increased drought, but overall, there will be an increase in precipitation.
- Sea levels will rise between 6 and 37 inches over the next century. A 20 inch sea level rise could double the global population at risk from storm surges -- from roughly 45 million to over 90 million, even if coastal populations do not increase. Low-lying areas are particularly vulnerable (e.g., much of coastal Louisiana and the Everglades).

- Human health is likely to be affected. Warmer temperatures will increase the chances of heat waves (like the Chicago event in 1995 that killed over 400 people) and can exacerbate air quality problems such as smog, and lead to an increase in allergic disorders. Diseases that thrive in warmer climates, such as dengue fever, malaria, yellow fever, encephalitis, and cholera are likely to spread due to the expansion of the range of disease carrying organisms. By 2100, there could be an additional 50-80 million cases of malaria each year.
- Agriculture, forests, and natural ecosystems will also be affected. The poorest countries, already subject to food production and distribution problems, will likely suffer the greatest agricultural impacts. Doubling current carbon dioxide concentrations could lead to a dramatic change in the geographic distribution of one-third of the Earth's forests. (For example, the ideal range of some North American forest species would shift by as much as 300 miles to the north in the next 100 years -- far faster than their ability to migrate on their own.) Such changes could have profound effects on parks and wildlife refuges, lead to reduction in species diversity.

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This was a new concept for developed and developing countries alike -- some of whom fought it vigorously. But we have it firmly enshrined in the Kyoto Protocol and it is a critical way of reducing excessive burdens on U.S. industry. Its inclusion was a major victory for us.

We went even further by reaching a conceptual agreement with several countries, including Australia, Canada, Japan, New Zealand, Russia and Ukraine, to trade emissions rights with each other. This 'umbrella group' could further reduce compliance costs.

Ensuring that we can meet our target reductions cost-effectively will depend significantly on access to the flexibility mechanisms we fought hard to include in the Kyoto Protocol. Let me be very clear. The commitment we made in Kyoto would not have been made -- could not have been made -- were it not for the flexibility mechanisms that were also agreed there. Until we are satisfied with the rules and procedures yet to be established, the promise of Kyoto will never be realized.

Meaningful Participation of Developing Countries

Our third objective was to secure meaningful participation of key developing countries, a concern that the Senate obviously shares, as evidenced by last summer's Byrd-Hagel Resolution. Global warming is, after all, a global problem which requires a global solution -- not only from the developed world but also from key developing countries. Now let us not

forget that per capita emission rates are low in the developing world and will remain so for some time, and 75 percent of today's atmospheric concentrations of greenhouse gases attributable to human activities are the result of emissions by the industrialized world. At the same time, it is also true that by around 2015 China will be the largest overall emitter of greenhouse gases, and by 2025 the developing world will emit more greenhouse gases in total than the developed world. So from an environmental perspective, this problem cannot be solved unless developing countries get on board. We encountered fierce resistance in Kyoto by some developing countries to meaningful participation in solving the global warming problem.

Some developing countries believe -- wrongly -- that the developed world is asking them to limit their capacity to industrialize, reduce poverty and raise their standard of living. We have made clear that we support an approach under which developing countries would continue to grow -- but in a more environmentally sound and economically sustainable way, by taking advantage of technologies not available to countries that industrialized at an earlier time.

The Kyoto agreement does not meet our requirements for developing country participation. Nevertheless, a significant down payment in the form of a provision advanced by Brazil and backed by the United States and the Alliance of Small Island States. This provision defines a "Clean Development Mechanism," which embraces the U.S.-backed concept of "joint implementation with credit." The goal is to build a bridge -- with incentives -- between developed, industrialized countries, and developing nations. This new mechanism will allow companies in the developed world to enter into cooperative projects in the developing world -- such as the construction of high-tech, environmentally sound power plants -- for the benefit of both parties. The corporations in developed countries will get emission credits at lower costs than they could achieve at home, while the developing countries will share in those credits, receive the kind of technology that can allow them to grow without ruining their environment, and have access to funds from a small share of the proceeds to help them adapt to the impact of climate change.

The Clean Development Mechanism has great potential, but developing countries will need to do more in order to participate meaningfully in the effort to combat global warming. In determining what

developing countries ought to do, we should be aware that the circumstances of developing countries vary widely, along a kind of continuum. Some today are very poor; their greenhouse gas emissions are negligible and are likely to remain so for the foreseeable future. Others, whose greenhouse gas emissions are not substantial, are relatively well off. Some are poor on a per capita basis, but their greenhouse gas emissions today rival or surpass those of the most advanced industrialized nations. Still others have already joined ranks with the industrialized world in the OECD but have not yet fully accepted the added responsibility for protection of the global environment that comes with their new status.

Any 'one-size-fits-all' approach to the 'meaningful participation of developing countries' and to satisfy the Byrd-Hagel Resolution is unlikely to prevail. We found in Kyoto that even among the industrialized countries it was necessary to recognize the individual national circumstances faced by those differently situated in order to reach agreement, notwithstanding our common purpose. Similarly, any uniform, inflexible approach to the 'meaningful participation of developing countries' is unlikely to prevail.

Recognizing our "common but differentiated responsibilities and respective capabilities" it will be necessary to develop an approach that provides for a meaningful global response to the threat of global warming, while acknowledging the legitimate aspirations of developing countries to achieve a better life for their peoples. To succeed, we will need to ensure that those responsible for a significant share of global emissions accept their responsibility to protect the global environment. We will also need to ensure that those who are able to do so contribute according to their means and stage of development.

Framework for Action

Where do we go from here? While historic, the Kyoto Protocol is only one step in a long process. It is, in essence, a framework for action, and a number of challenges still lie ahead.

Rules and procedures must be adopted to ensure that emissions trading rights, joint implementation and the Clean Development Mechanism operate efficiently and smoothly. The Kyoto Protocol establishes emissions trading, but leaves open the specifics of operations. We will work hard to ensure that the rules and procedures adopted enable emissions trading, joint

implementation and the Clean Development Mechanism to work smoothly and efficiently, thereby encouraging the private sector to engage.

Let me be unmistakably clear -- while trading rules must be established internationally to have emissions trading work -- as our SEC must set rules for equity trading -- there will not be an international body which must give prior approval to emissions trading. Trading will be done between interested companies, based on market principles. We will work closely with our industries to be sure they are satisfied with the system which is developed.

We will also be working to elaborate the non-compliance regime under the Protocol.

Most significant, we must work to secure the meaningful participation of key developing countries. We must be creative in initiating bilateral agreements. We have made a promising start with an agreement we reached with China during last fall's Summit. We must also use regional and multilateral fora to achieve our objectives -- such as the Summit of the Americas process, in the Asian Partnership for Economic Cooperation (APEC) process, the President's forthcoming trip to Africa, and the G-8 Summit in the United Kingdom. We will put on a full court diplomatic press to bring developing nations into a meaningful role in helping solve the global climate challenge. We will accept nothing less.

The Administration also plans to examine how international financial institution policies affect greenhouse gas emissions growth in developing countries. Multilateral bank and export credit agency policies, including those of the Global Environment Facility, strongly influence international lending and private capital flows for energy, industrial and transportation investments. Policies that favor clean technologies and environmentally-friendly approaches will make implementing the Kyoto Protocol easier and will speed the development of markets for new technologies. Policies that do not will block the flow of clean technologies, and worse, will erode the benefits of our efforts at home.

We have two main goals in this effort. First, we want to ensure that implementation of existing international financial institution policies is not harming the atmosphere. Second, we want to advance policies that favor investments in clean technologies that help reduce emissions in developing

nations. We will work with [and use our vote in - check with Treasury] the international financial institutions themselves - from the World Bank to the regional development banks -- and with other countries, especially other developed countries, to achieve these goals in the coming years.

The Kyoto agreement does not solve global warming, but it represents an important step in dealing with a problem that we cannot wish away. A premature decision to reject the Protocol would deprive us of the opportunity to complete its unfinished business. If we fail to take reasoned action now, our children and grandchildren will pay the price.

Mr. Chairman, let me now turn to our domestic efforts.

President's Climate Change Technology Initiative

In his State of the Union address, President Clinton said that global warming is "the gathering crisis that requires worldwide action." We need to begin now to launch the sensible, cost-effective efforts that will help us avoid the high future cost of inaction. We should look at the Kyoto Protocol as an insurance policy against the potentially devastating and irreversible impacts of global warming. This insurance policy is fully justified today, based solely on our current understanding of the science. If we act now the premium will be reasonable and far less expensive than if we delay and hope the problem created by greenhouse gases will go away. It is like a life insurance policy whose costs grow significantly if we delay year after year insuring ourselves. In the case of climate change failure to act will lead to irreversible consequences. Unless we are prepared to act, our children and grandchildren will never forgive us.

But the premium for this insurance policy must be reasonable. For this reason we rejected unrealistic targets in Kyoto; we insisted on full recourse to market-mechanisms such as emissions trading and joint implementation; and we opposed mandatory policies and measures - like carbon taxes -- that ignore the particular circumstances we face in this country.

The President last October outlined a three-stage approach to addressing climate change at home. The first stage consists of immediate actions to stimulate development and use of technologies that can minimize the cost of meeting U.S. goals in reducing greenhouse gas emissions. Stage

two will review options created through ongoing technology development and lead to detailed plans for a domestic, market-based permit trading system for carbon emissions. Stage three will begin to implement a market-based emissions-trading system.

As a first installment on this plan, President Clinton announced two weeks ago his proposal for a \$6.3 billion Climate Change Technology Initiative over five years to cut U.S. greenhouse gas emissions \$1.3 billion higher than the President announced in his initial plan in October. This vigorous initiative calls for tax cuts coupled with research and development (R&D) to take cost-effective, practical steps that will position us well to meet the challenge we face early in the next century.

This initiative consists of two parts -- \$3.6 billion in tax credits for energy-efficient purchases and renewable energy, and \$2.7 billion in new R&D spending.

The tax package includes tax credits of \$3,000 to \$4,000 for consumers who purchase advanced technology, highly fuel efficient vehicles. These are expected to total \$660 million over the next five years. It is exciting to see our U.S. automakers already planning for the cars of the future, not as pipe dreams but as achievable greenhouse gas friendly products. [Mention GM CEO Smith's statement?]

The tax package provides a 15 percent credit (up to \$2,000) for purchases of rooftop solar electricity and hot water systems to provide incentives for meeting the Million Solar Roofs goal. It also includes a 20 percent credit (subject to a cap) for purchasing energy-efficient building equipment, a \$2,000 credit for purchasing energy efficient new homes, extension of the wind and biomass tax credit, and a 10 percent investment credit for the purchase of combined heat and power systems.

The R&D component covers the four major carbon-emitting sectors of the economy (buildings, industry, transportation and electricity), plus carbon removal and sequestration, Federal facilities, and cross cutting analysis and research. Examples of this R&D effort include the Partnership for a New Generation of Vehicles (PNGV). PNGV is a government-industry effort to develop attractive, affordable cars that meet all applicable safety and environmental standards and get up to three times the fuel efficiency of today's cars. In 1999, the combined proposal for PNGV is \$277 million, up

from \$227 million appropriated for 1998. Our PNGV effort is clearly paying off -- the developments about higher mileage cars announcement by the Big Three last month were assisted by research supported under PNGB.

Similar government-industry efforts are proposed to develop cleaner, more efficient diesel engines for both light trucks and heavy trucks. The R&D effort also includes expanded research partnerships for key renewable technologies such as wind, photovoltaics, geothermal, biomass, and hydropower to accelerate price reductions and improve performance. The President's 1999 budget proposes a \$100 million increase in Department of Energy appropriations for solar and renewable energy R&D -- a 37 percent increase over 1998.

We hope that the Congress will view the President's initiative favorably and appropriate the funds that he has requested. We look forward to working with you to put the President's proposals into action.

The President and his Administration are committed to working with you in the Congress, both to realize the potential of the Climate Change Technology Initiative and to craft the ongoing U.S. approach to climate change. The United States has the power to lead the global effort, and Congress holds the key. What is done or not done today will determine the kind of world we will leave to future generations and the conditions of life they will face.

Sustained Effort Required

Mr. Chairman, I have mentioned that Kyoto produced a framework for future action, and I have listed a number of the steps that await us:

Coming to grips with the threat of global warming is no small task. We must tackle it in a vigorous, sober and determined manner, understanding that it represents a challenge but also an opportunity. And as we have always done in the face of global challenge, we must assume the responsibilities of American leadership.

Thank you.

Total Pages: 16

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LRM ID: EHF384

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
Washington, D.C. 20503-0001

Monday, March 2, 1998

LEGISLATIVE REFERRAL MEMORANDUM

TO: Legislative Liaison Officer - See Distribution below
FROM: *Ron Peterson*
Ronald K. Peterson (for) Assistant Director for Legislative Reference
OMB CONTACT: Mark A. Weatherly
PHONE: (202)395-4696 FAX: (202)395-4941
SUBJECT: AGRICULTURE/CONG AFFAIRS Oversight Testimony on Kyoto Climate Treaty

DEADLINE: 10:00 AM Tuesday, March 3, 1998

In accordance with OMB Circular A-19, OMB requests the views of your agency on the above subject before advising on its relationship to the program of the President. Please advise us if this item will affect direct spending or receipts for purposes of the "Pay-As-You-Go" provisions of Title XIII of the Omnibus Budget Reconciliation Act of 1990.

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LRM ID: EHF384
Climate Treaty

SUBJECT: AGRICULTURE/CONG AFFAIRS Oversight Testimony on Kyoto

**RESPONSE TO
LEGISLATIVE REFERRAL
MEMORANDUM**

If your response to this request for views is short (e.g., concur/no comment), we prefer that you respond by e-mail or by faxing us this response sheet. If the response is short and you prefer to call, please call the branch-wide line shown below (NOT the analyst's line) to leave a message with a legislative assistant.

You may also respond by:

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- (2) sending us a memo or letter

Please include the LRM number shown above, and the subject shown below.

TO:

Mark A. Weatherly Phone: 395-4696 Fax: 395-4941
Office of Management and Budget
Branch-Wide Line (to reach legislative assistant): 395-3446

FROM:

____ (Date)
____ (Name)
____ (Agency)
____ (Telephone)

The following is the response of our agency to your request for views on the above-captioned subject:

- ☐ Concur
- ☐ No Objection
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**STATEMENT OF RICHARD ROMINGER
DEPUTY SECRETARY OF AGRICULTURE
BEFORE THE U.S. SENATE
COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY
March 5, 1998**

Mr. Chairman and members of the Committee, I welcome the opportunity to discuss the implications of global climate change and the Kyoto Protocol for U.S. agriculture and forests. I would like to begin with a discussion of how global climate change will likely affect U.S. agriculture and forests. I will then discuss the Kyoto Protocol's implications for agriculture and forests and the potential flexibility offered through carbon sequestration of forests and soils. I will also describe the Administration's FY 1999 budget proposal for climate change, with emphasis on the so-called biomass initiative. Finally, I will outline the Department's recent organizational actions to address climate change issues in the future.

The Impacts of Climate Change on U.S. Agriculture and Forests

Climate is a major determinant of agricultural productivity, defining to a large extent where crops are grown. Weather aberrations cause significant losses in agriculture and can place a heavy burden on natural resources and the environment. One recent study estimated that the average loss to U.S. agriculture from an El Nino period--one source of variability--was \$2.5 billion. Federal agricultural programs fund research to develop and assess new practices and technologies, develop programs and know-how to reduce soil loss and erosion. Part of the Federal response is to offer crop insurance as a means to cope with financial losses when practices and technology fail to prevent physical losses. USDA and the National Weather Service (NWS) have also been intensely interested in ensuring availability of meteorological data, providing better monitoring and forecasts of short-term weather events. The NWS is attempting to develop the

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ability to provide useful forecasts in the 6-18 month range.

There are contradictory views about how long-term climate change may affect agriculture in the United States and around the world. One view is, given that almost all of agriculture is sensitive to weather and climate and locally tuned to the long-term climatic average, any change in climate will necessarily be disruptive and costly. The other view is that the expected changes in temperature--a global average increase of perhaps 2 to 6 degrees Fahrenheit by 2100 as estimated by the Interagency Panel on Climate Change--is small relative to what farmers see from day-to-day and season-to-season. Further, the change will occur slowly so choices among new farming practices and crop varieties will adjust to gradually changing climate with minimal disruption.

The connection between climate and forests is stronger. Climate defines forest and range systems in the long run. All major systems of classifying the range and composition of forests are based on climatic data. As climate changes, forest components change in response. Climate is known to have changed in the past with resultant changes in forest cover, type and location. All current climate model projections will result in significant migration of forests.

The greatest economic impacts on forest management result from weather occurrences grouped over periods of time, from days to weeks to months to years. For example, the severity and cost of forest fires are mainly determined by weather and fuel conditions. Vegetation desiccated by drought and weather bringing low humidities and high winds combine to cause our most costly, severe and dangerous forest fires. Almost every aspect of forest management is heavily affected by climate variability and change.

Climate variability increases forest disturbances. After disturbances occur, forests may not return to their previous condition if the climate has changed or if invasive species gain a foothold

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and out-compete native vegetation. Regional variability in climate and resultant forest impacts will determine the environmental, social, and economic impacts, which may be positive in the long run but negative during rapid climate change. Unlike agricultural systems, forests grow over much longer time periods and are not amenable to year-to-year changes in species. Moreover, the economics of forest management prohibits some of the safeguards available to agriculture, such as irrigation.

A key determinant for the future of our forests will be the importance of growth and carbon sequestration enhancement from elevated carbon dioxide levels relative to negative impacts resulting from water and other climate-related stresses. Carbon, nitrogen, and other elements are cycled through forests and the atmosphere and are the primary indicator of forest productivity and health. Many processes important to forest health occur below ground, where 60 percent of forest carbon is stored. Forests and forest soils are the major terrestrial sink for actively sequestering carbon and removing carbon dioxide from the atmosphere. Healthy, well managed forests are a key factor in mitigation of carbon dioxide increases in the atmosphere. Conversely, negative climate change impacts on forests have the potential of limiting sequestration and increasing the release of stored carbon.

Forests and grasslands are of great economic, environmental and social importance. These naturally systems react to many stresses and change constantly, with changes often occurring rapidly as a result of weather and climate impacts. Although forests are global in extent, they are basically regional in their make-up, history, use and value. We will require a regional perspective to understand the impacts of climate change in forests and to manage those impacts.

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Despite the significant research effort on agricultural and forest impacts of climate change, there are three main sources of remaining uncertainty. First, while there is a strong consensus that human activities are affecting the global climate, climate scientists cannot provide a precise forecast of how climate will change at regional levels or over time. Second, more work is needed to understand and model the complex relationships of climate and carbon dioxide effects on biological functions of plants, soil microorganisms, insect prey and predators, and pathogens, as well as effects on physical resources, such as soil structure, river flows and snow melt, coastal inundation due to sea level rise. Third, investigating in a comprehensive and compelling way the ability of farmers, plant breeders, water managers, forest managers and others to adapt and adjust to changing climate is an ongoing research effort. At issue is the ability of farmers to adapt when it is difficult to determine whether weather-related events such as the floods of the Red River last spring were part of normal variability or evidence of the onset of a period of more frequent and intense floods.

Quantitative studies have investigated the impacts of global warming of the magnitude of about 5 to 9.4 degrees Fahrenheit, based on widely available scenarios of climate change as modeled by 4 major general circulation models. In these scenarios, precipitation increases globally in the range of 6 to 15 percent, reflecting the acceleration of the hydrological cycle that occurs with warmer temperatures. Geographic and seasonal variation in these projections occur with greater warming toward the poles. The basic results of these simulations and related research to date are that:

- **For agriculture:** World production of cereals and of agricultural goods in general change very little, assuming that farmers and markets adapt to the changing climate. The most

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recent work shows world cereal production to change on the order of +1 to -1 percent, without the direct effects of carbon dioxide which generally enhances crop growth.

Without adaptation, cereal production falls and estimated 18 to 29 percent.

For forests: Forest conditions are expected to change significantly. Major displacements of current forest locations are projected by all models. Impacts will vary by region, some positive, some negative. The biggest uncertainty is how fast climate will change and how that will shape regional impacts. Adaptation is not as hopeful for forests as agriculture. Forests grow over longer periods and are managed less intensively. Unlike crops planted and harvested annually, trees planted today must adapt to climatic conditions over the next 50 to 300 years.

- **For agriculture:** Tropical agriculture is more severely affected than temperate agriculture. The poorest countries, those with per capita annual incomes below \$500, suffer the largest economic losses.

For forests: Temperate and boreal forests are likely to be more strongly affected than tropical forests. Climate change will be greater at the higher latitudes and the role of fire, insect outbreaks and other disturbances will be greater in those forests. Balancing this will be the greater potential for longer growing seasons and elevated carbon dioxide levels.

- **For agriculture:** At smaller regional scales, such as individual countries, states, or substate regions, there is not a consistent set of winners or losers across different climate scenarios, but as the scale is reduced, the effects can be much larger than indicated by more aggregate scales. For example, crop studies show that wheat yields at some U.S. sites would essentially fail completely but could increase 180 percent in other areas. So

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while agricultural production and food availability in the world does not appear threatened, the livelihoods of some farmers and regional economies are vulnerable without alternative economic opportunities. For the United States, recent studies show impacts ranging between +\$6 to -\$11 billion per year, with southern areas tending to suffer from drier conditions while northern regions gain from longer growing seasons. The net U.S. effect depends as much or more on changes in global prices than what happens to the volume of U.S. production.

For forests: Regional scale forest impacts also vary widely, with changes in water regimes the primary determinant in changing forest productivity. High elevation forests will be driven from their current habitats and will find migration difficult. Forests of regional importance, such as Vermont sugar maples, could migrate out of their current range.

- For agriculture and forests: Increasing carbon dioxide in the atmosphere directly benefits plant growth, but there is much scientific uncertainty about how large this gain will be under commercial production conditions. At doubled carbon dioxide levels, many crops register a 30-percent increase in yields under controlled conditions where there are no nutrient limitations. For a variety of reasons, the realized productivity gain for agriculture may be more on the order of 5 to 12 percent. We can expect many physical changes but research has not quantified them or their economic impact. Insect pests and diseases may increase, water resources for irrigation will decline in some areas even as demand for water is increasing, flooding and severe weather may increase, intensity of droughts may increase, soil erosion may increase due to more intense rainfall, coastal inundation or saltwater intrusion due to sea level rise may endanger production near

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coastal areas.

The above results reflect the best attempt to assess impacts in quantitative terms. Because of the uncertainties in the climate scenarios and the complex ways in which climate affects agricultural and forest production capacity—from effects on pests and soils to water resources and direct effects on plant growth—the quantitative impacts are illustrative of what could happen rather than forecasts of likely impacts.

Likely Effects of the Kyoto Protocol on Agriculture

As a sector, agriculture accounts for a small share of total U.S. energy use. However, agricultural production is energy intensive. Energy related expenditures account for about 20 percent of total production expenditures, and for many economically important crops and livestock operations energy accounts for more than 40 percent of variable production expenses. For every \$1.00 spent on direct energy costs in U.S. agriculture, more than \$3.50 is spent on indirect energy supplied by agricultural chemicals and fertilizers.

USDA has not conducted an analysis of the effects of the Kyoto Protocol on U.S. agriculture. Based on the Administration's initial estimates of an emission price in the range of — to — (to be released March 4) per ton of carbon equivalent, which excludes the positive effects of electricity deregulation, the likely impacts on U.S. agriculture will be modest. Moreover, American farmers have become more energy efficient as new technologies and farming methods are developed. Since 1975, the amount of agricultural output produced by a unit of energy input has increased by more than 50 percent. Farmers use less fuel than they did 20 years ago because they use farming methods like no-till to reduce machinery use, and because farm equipment is more fuel efficient.

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Forests play a critical role in the global carbon cycle, both as sources and sinks. When trees and other biomass are removed from forests and new trees take their place, the net benefit for carbon sequestration depends on how much carbon is emitted by removal procedures, how long the carbon in the removed fiber remains out of the atmosphere, and how long the regrown forest is left intact to sequester carbon. Forests become a source when carbon is rapidly lost to the atmosphere through fires and when forests are converted to other uses that are less effective at carbon sequestration. Forests are a prominent factor in the Kyoto protocol, with specific attention paid to reforestation, afforestation, and deforestation. Forests are also a significant potential factor in both the joint implementation and emissions trading arenas. Because forests are a key factor in overall carbon sequestration, opportunities to maintain or increase sequestration by forests are many.

Opportunities to Mitigate Greenhouse Gas Emissions

The Kyoto Protocol allows for a number of methods to lower the costs of achieving the targeted levels of greenhouse gas emissions. These include flexibility in what gasses are reduced, credit for actions that sequester carbon, international trading of emissions, joint implementation and the Clean Development Mechanism. Costs can also be reduced with meaningful developing country participation, electric power deregulation, and various actions that improve technology and conserve energy. I would like to illustrate some of the types of opportunities for U.S. agriculture that are likely to be generated by actions to reduce greenhouse gas emissions, notably carbon sequestration and the production of biomass as a substitute for fossil fuels.

Carbon Sequestration—Forests Under the Kyoto agreement, removal of carbon dioxide by certain forestry related activities will be used to offset emissions targets. By way of

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perspective on the scope of the opportunity, increases in biomass and organic matter on U.S. forest lands over the past 40 years have stored the equivalent of 25 percent of U.S. carbon emissions during the period. Reforestation of harvested acres continues the sequestration process. Not only do forests sequester carbon while growing, many timber products continue to sequester carbon. Of the carbon harvested in trees since 1900, 35 percent remains in products and landfills, 35 percent was burned for energy and 30 percent was emitted to the atmosphere without producing energy for consumption.

The area of forest land has stabilized and there is every expectation that our forest resource will continue to be a net sink for carbon. One estimate places future sequestration by U.S. forests at 177 million metric tons per year, equal to 15 percent of U.S. base year emissions. The forest cover can also be increased and altered through forest management and thereby increase the role of forests in achieving the targeted reduction in emissions.

An obvious way of increasing carbon sequestration by forests is to increase tree planting. For example, converting 22 million acres of marginal cropland and pasture land in the South to forest would increase carbon accumulation by about 32 million metric tons per year--enough to offset about 3 percent of U.S. emissions of carbon dioxide. Other management practices that would contribute to carbon sequestration include:

- Replanting in order to fully stock poorly stocked forest land.
- Applying intermediate stand treatments to improve stand growth rates
- Managing for longer rotation lengths.

Carbon Sequestration--Soils Consensus has not been reached on the role of carbon sequestration in soils for the first reporting period under the Kyoto agreement. For agriculture,

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this is an important issue to be resolved because soil is a key storehouse for carbon. The principal strategy for increasing the use of soil as a carbon sink is to enhance and maintain high soil quality. Increases in soil carbon, commonly referred to as organic carbon, improves soil quality.

Soil conservation practices increase the soil organic matter content. Principal conservation strategies which sequester carbon include converting marginal lands to compatible land use systems, restoring degraded soils, adopting best management practices. For example, removing agriculturally marginal land from production and adopting an ecologically compatible land use, such as wildlife habitat, can lead to increases in total biomass production and in increase in carbon content in the soil.

USDA programs such as the Conservation Reserve Program (CRP), the Wetland Reserve Program (WRP) and the Secretary's conservation buffer strip initiative all help to improve soil quality and decrease atmospheric carbon. More importantly, though, are the advances in agricultural technologies for sustainable management of the soil, such as 1) conservation tillage, 2) management of crop residue and other organic materials, 3) soil fertility enhancements through site-specific management and nutrient cycling techniques, 4) elimination of summer fallow, 5) use of winter cover crops, and 6) other techniques that improve crop yields. The carbon sequestration potential of these practices in the United States has been estimated at 126 million metric tons of carbon per year.

The total carbon sequestration and fossil fuel offset potential of US cropland is 154 million metric tons of carbon per year or 133 percent of the total emissions of greenhouse gases by agricultural activities.

USDA's conservation programs and many conservation practices available to and being

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used by farmers today represent a multifaceted opportunity in light of climate change. Adoption of appropriate conservation strategies lead to 1) carbon sequestration in soil, helping to mitigate greenhouse gas emissions, 2) improvement in soil quality, raising agronomic productivity and contributing to sustainable land use, and 3) enhancement of overall environmental quality, providing benefits of improved wildlife habitat, water quality and erosion reduction.

The President's Climate Change Budget Initiative--USDA's Role The President's Climate Change Initiative is a \$6.3 billion dollar program of tax cuts and research and development activities. Farmers will be able to benefit from the \$3.6 billion in tax reductions for purchases that reduce energy use and utilize renewable energy sources. In addition, USDA's climate change research program will identify a range of new opportunities for farmers and rural areas. Current annual spending for climate change research is \$57 million. This supports a variety of research initiatives across many program areas, including the Forest Service, the Natural Resources Conservation Service, the Agricultural Research Service, the Cooperative State Research Extension and Education Service and the Economic Research Service. USDA's FY 1999 budget proposal requests an additional \$10 million for climate change research, of which \$6 million is for biomass research. While USDA has done work over the years on biomass, much of it has been financed by the Department of Energy's (DOE) ambitious program. The focus of USDA's initiative, developed in partnership with DOE, will be on improving the productivity of biomass crops such as herbaceous grasses and fast growing trees, harvest and processing systems, and conversion of cellulosic material to fuels.

Biomass crops are being promoted as feedstocks for the production of electric power, liquid fuels, and other bioproducts, such as chemicals. Biomass feedstocks have environmental

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advantages compared to fossil fuels. For example, they would not add greenhouse gasses to the atmosphere during their life cycle. These crops might be grown on fragile lands and could perform other environmental tasks such as the filtration of fertilizer and pesticide runoff.

Research suggests that yields of biomass crops such as poplar, willow, and switchgrass could be increased significantly. If new generation efficient gasification systems and turbines were developed for power production and cellulosic conversion technologies to make ethanol, biomass might become competitive with fossil fuels as an energy source. Such a development would benefit farmers by adding energy crops to traditional food and fiber production. Rural communities would benefit from jobs created by biomass production and utilization.

Initial feasibility work by DOE, USDA, and the Environmental Protection Agency examined the long-run domestic prospects for the use of commercial biomass energy crops in electricity generation, using a unique set of optimization models of the agriculture, forestry, and electricity utility sectors. In the most optimistic scenario, a modest research and development program carried out over the next decade could lead to a significant competitive biomass market in the United States. This scenario assumed that energy crop yields can be dramatically improved, that biomass-fired electricity generation technologies can be engineered to compete favorably against fossil technologies, and that fossil fuel prices rise modestly over the next 25 years. Given these assumptions, we estimated that biomass grown on some 40 million acres would account for some 10 percent of all fuel used in electricity generation, displacing about 90 million metric tons of carbon emissions annually by 2025. A domestic biomass industry of this magnitude could provide roughly 20 percent of the cumulative reductions needed to stabilize emissions at 1990 levels over the entire 2000-2025 period.

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Some low-cost biomass production and biomass wastes, such as wood, make a niche biomass power industry possible now. Successful biomass research programs, rising fossil fuel prices, and/or biomass incentive policies could expand the biomass industry. However, our optimistic U.S. biomass analysis assumes that improved production, harvesting, delivery, and utilization systems are in place. Much hard engineering, organizational, and research work will be required to demonstrate the workability of these systems. Future biomass farmers and processors need to see practical and successful demonstration projects on the ground before they begin to participate on a large scale. That is why the Department is cooperating with DOE on "Biomass Power for Rural Development" projects in Iowa, Minnesota, and New York to do just that.

Global Climate Change Program Office

The enormous risks posed by climate change and the substantial challenge presented by Kyoto make it clear that USDA must escalate its level of activity in the area of global climate change. Consequently, the Department has recently advised the House and Senate Appropriations Committees that we are reorganizing our Global Change Program Office. The new Office will be located under the Office of the Chief Economist which reports directly to the Secretary and me. The new Director of the office will be _____. The Office will be responsible for coordinating the wide range of climate change activities across the Department, supporting the activities of the executive branch and working with the agricultural and rural communities to help them address the challenges of climate change and realize the opportunities that Kyoto will present.

Our goal is to ensure U.S. agriculture is well represented in climate change activities both within and outside of government. We encourage you and your staff to work closely with our

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office. That completes my testimony and I would be pleased to respond to questions.