

CEA WORK-PROGRAM ON GCC

Jeff Frankel

8/20/97

WHO (and when)

Targets and timetables (TOP PRIORITY)

*The importance of allowing time for capital turnover --**Case-study illustration:*

Graph of replacement chronology of US power-generating plants
(make stylized assumptions on plant life if necessary).

of plants, and cost of replacement, against year.

> CS+KF

The economically-optimal path.

. JA

In what year is peak of US emissions?

Of other Annex I?

In what year do they return to 1990 levels?

(1) Minimizing cost/benefit balance
(minus uncertainty or credibility problems).

=> no peak at all? Just slowed rise in emissions?

Need results from Integrated Assessment Models.

> JS + RL

- Nordhaus, Manne-Richels?
- Edmonds (SGM)? “
- Wigley? Other EMF models?
- Cline?

(2) Minimizing cost of a given level of stabilizing concentrations at 550 ppmv

- Manne-Richels (global peak in 2050; Annex I peak in __?)
- Others (as above)?
- Any in-house models: SGM, Markal-Macro?

(3) Compare costs and benefits of “1990 by 2010”

to “peak in 2015 and return to 1990 by 2040”

and to doing nothing (“business as usual”).

> JS + RL +CS

Costs are (I) price of carbon, gasoline, coal...

(ii) effects on income and consumption

(iii) likely volume of int.purchases of permits

Benefits are (I) emissions and concentration

(ii) implied effect on temperature in 2050 or 2100

(using simple linear interpolation from IPCC estimate)

- Any of the IA/EMF models
- Any of the IAT models (DRI, MarkalM, SGM)
- Shackleton and G-cubed
- Other?

>CS+QF

> Prelim. table DONE.

Analogies with 1970s oil shocks

Is magnitude the same? > JA + RL DONE

How much difference does it make that this would be pre-announced? (+CS)

" That there would be no transfer to OPEC?

Any bogus reasons why the IAT models did not find such adverse effects?

Did they assume that the Fed could somehow offset supply shocks?

Technology and "free lunches"

- Critique 5-Labs Study > JA

DRAFT DONE

Comments to EPA (coordinated with Gillingham)

- More general critique of the "technology" free lunch > RL + JA

Assumption that people ignore money-saving opportunities, that govt. Pgms. Help (e.g., can change discount rates and AEEIs), that common people are as capable as engineers, that people systematically over-consume energy but not other things, that they live in ideal homes, that energy-price uncertainty plays no role.... Double-counting pgms (in baseline and policy path).

- We're "technology optimists":
Historical relationship between prices and EEI > JF+CS+QF

DONE

Replicate it and extend (e.g., lag structure; total energy spending) > JR

Analyze escape clause proposals

- What would be appropriate carbon prices for ceiling? > JS+RL

If 2015 emissions peak and

(e.g.) 1990 levels in 2040

(Relatively less aggressive)

If 1990 levels in 2010

(Relatively more aggressive)

- What do other agencies have in mind? > RL+JF
(Victoria G, State Dept. Paper 8/15)
- Global price cap and sales, rather than country-by-country?

Uncertainty > JS

To move timetable forward: Allow for a probability of climate disaster > MT

- and apply expected welfare,
- add risk-aversion
- Allow for imperfect political credibility of promises

Domestic Implementation

- Incidence of increase in energy prices >
- Has there been a "reluctance to trade" in SO2 pgm? > JF. Answer:
no
- Should revenues be used to finance soc.sec.? >
Compute likely amount and path of revenue thru 2075 > CC + JA
- Tradeoff between stringency and flexibility > JS

LDCs

Need proposed formulas for LDC participation > RL + JF

- What is threshold income level for blueprint proposal?
defined so as to include only State Dept.'s "Annex B" countries
- What is a reasonable emissions path formula for future LDC participation?
= F(income, population, 1990 emission levels)?
Or as reduction of emissions growth rate?

US competitiveness if LDCs don't participate
8/10

> PO+JF memo of

- Anyone care to take on a N-factor, N-good, N-country trade model?
N=2, or N=3

> JH

Other

Monitor incoming papers /reports from negotiations (coming via State) >

Joint Treasury/CEA Climate Change Agenda - August 21, 1997

I) Domestic Emissions Trading

- A) Strategy: should we permit EPA to include third option? GRUBER is checking with LS
- B) SQUITIERI continues to work with EPA to refine the options that are included (at least auction and allocation, perhaps hybrid depending on (A)).
- C) SQUITIERI arranges discussion of auction mechanism with Kwerel and/or other auction experts as soon as possible.

Product Goal: First draft of options paper by 8/29

II) Technology

- A) GILLINGHAM and SHOGREN send comments to DoE on 5 labs study
- B) GILLINGHAM, SHOGREN, and FRANKEL peruse DoE's response to our comments, and give signoff (or not) to 5 labs study
- C) GILLINGHAM and SHOGREN work on broader technology paper.
- D) Try to check in with TJ Glauthier to see what he envisions for technology options paper - make sure that it reflects our concerns, as laid out in our broader paper - GILLINGHAM

Product Goal: Finalized version of broader technology paper by 8/29

III) Targets and Timetables

- A) FRANKEL, SHOGREN, SQUITIERI, and ROBERTS work with modellers to get runs of different paths of emissions, producing data on concentrations, temperatures, and costs to the economy.
- B) JONES writes up a summary of the Nordhaus argument that 1990 by 2010 is worse than nothing.

Product Goal: Have rough drafts of memo on targets and timetables by 8/29

IV) Other Analytics

- A) LUTTER works on effects of policies on the typical family, although he doesn't return until September. Question: Can someone else at CEA or Treasury work on this in the meantime?
- B) SANTEBASAN works on age distribution of plants, coal and nuclear

C) GRUBER and JONES work on incidence

D) ROBERTS works on memo on size of financial flows

E) MULDOON works on political economy lessons from BTU tax and Carter oil allocation scheme.

Product Goal: Have at least rough drafts of memos on each of these topics by 8/29

V) Other Papers

A) Developing country commitments - GRUBER comments passed on 8/22

B) JI and additionality - GRUBER comments passed on 8/22. Meeting on 8/22 with state to discuss further - SQUITIERI to attend.

C) International Trading - GRUBER comments passed on 8/22

D) Escape Clause - GRUBER comments passed on 8/22. ROBERTS working on analytics of when we would need escape clause.

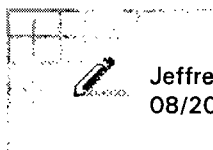
E) Paper by USTR on Domestic Implementation and Trade - ROBERTS and WILCOX to provide comments by 8/29.

F) Paper by Justice on relationship between international and domestic trading - WILCOX to check on status and provide comments early in week of 8/25.

G) Competitiveness paper - WILCOX to check on status and provide comments by 8/29

H) Pomerance and Hunker have been tasked to produce a paper on negotiating implications of different targets and timetables by 8/22 - WILCOX to check on status and provide comments by 8/29 (perhaps tied to what we find from analysis in III)

I) Federal Undertakings paper due 8/29 - WILCOX and/or GRUBER to provide comments week of 9/1



Jeffrey A. Frankel
08/20/97 12:15:29 PM

Record Type: Record

To: See the distribution list at the bottom of this message
cc: Michele Jolin/CEA/EOP, Francine P. Obermiller/CEA/EOP
Subject: targets and timetables paper: top priority !!



Here GCC-T&T6.C is a very very rough draft of our targets and timetables paper. This is not to be shared with any other agency, as yet.

Getting it into shape, particularly filling in the many blanks, is top priority. Especially for the next 24 hours.

Let's try to meet at 4:00 or so, to discuss the tasks assigned below (and anything else urgent; if we can't dispose of the 5-labs study comments at 1:30, that may have to be put on a backburner for a short while.). Thanks.

The logical assignments seem to me:

- Cristian: "turnover" in section 1, and the extended version of your table that will go in end, Section 4.
- Mike (and Jay): Can you fill out section 2, integrated assessment models?
- Joe and others: the most crucial section is 3, where we will be relying very heavily on Manne-Richels. Having read their paper again, I note that the optimal path (peaking in 2050) doesn't seem to give the break down between Annex I countries and developing countries. (Rather, it is their graphs showing the WRE results that give the breakdown, e.g., Annex I peaking in the decade 2010-2020.) If this is correct, it is crucial that we get the breakdown from Richels right away!! All the other blanks in this section are high priority too.
- Jay and Mike: read the whole thing over; any help/suggestions are welcome (on top of what Mike sent earlier today).

Message Sent To:

Jason Shogren/CEA/EOP
Joseph E. Aldy/CEA/EOP
TOMAN_M @ A1 @ CD @ LNGTWY
Cristian J. Santesteban/CEA/EOP
Randall W. Lutter/CEA/EOP

Targets and timetables (TOP PRIORITY)*The importance of allowing time for capital turnover --**Case-study illustration:*Graph of replacement chronology of US power-generating plants
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Other

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THE WHITE HOUSE
WASHINGTON

August 15, 1997

CC: JS
JA
Luther

NOTE FOR CLIMATE CHANGE POLICY OVERSIGHT GROUP

FROM: PETER ORSZAG
DAVID SANDALOW

Subject: Summer Reading

Attached is a summary of workgroup activity underway.

Also attached are papers on:

1. Joint Implementation "Additionality"
2. International Emissions Trading, and
3. Developing country commitments.

CLIMATE CHANGE POLICY ANALYSIS

(Lead authors indicated in parentheses)

1. Domestic Emissions Trading (Gardiner, Gruber)
Paper delivered to WH oversight group.
 - WTO/MAI issues (Haverkamp)
Paper due Aug. 29
 - Relationship to international trading (Simon)
Draft distributed to Assistant Secretaries group. Final due Aug. 29.
2. International Emissions Trading and Joint Implementation (Doniger, Gruber)
Paper delivered to WH oversight group.
 - joint implementation/additionality (Doniger, Gruber)
Paper delivered to WH oversight group.
 - payment/trade account questions (Hunker, Shogren)
Draft distributed to Assistant Secretaries group.
 - WTO/MAI issues (Haverkamp)
Paper due Aug. 29
3. Technology (Glauthier/Bierbaum)
Discussion paper delivered to WH oversight group. Options memo due Aug. 29.
President's Committee of Advisers on Science and Technology (PCAST) and DoE Labs preparing reports to the President for October 1 delivery.
4. Developing country commitments (Pomerance, Hunker)
Paper delivered to WH oversight group.
 - escape clause (Pomerance, Gruber)
Draft distributed to Assistant Secretaries group. Final due Aug 22.
 - competitiveness/trade issues (Orszag)
Draft distributed to Assistant Secretaries group. Revisions underway.
5. Federal undertakings (Goodman, Glauthier)
Paper setting forth major policy options due Aug. 29.
6. Negotiating implications of different targets and timetables (Pomerance, Orszag)
Paper due Aug. 22

Agenda for Climate Change

- ✓ Get Ray and Randy coordinated with EPA on drafting the "options" paper on domestic emissions paper. Representatives for EPA will be Mike Shelby (auctions) and Brian McLean (allocation). In addition to EPA, CEA, and Treasury, each team will include a representative of DoE.
- ✓ Get Toman and Hassett on board
- ✓ Paper: analogy between Kyoto and OPEC oil shocks¹
- ✓ Emissions trading "questions" paper
- ✓ Paper: relative favorability of 1990 by 2010, 1995 by 2010, 2000 by 2010, etc.

Highest priority

- Technology paper
- Trading "options" paper

Medium priority

- Get copy of latest draft of international trading paper (Doniger), and pass it to OASIA and General Counsel's office
- What is "federal undertakings" paper about? (Goodman and Glauthier)
- Meetings with industry representatives (Lara)
- Decide how we want to use heavyweight consultants (and who they are). Candidates include Dick Schmalensee (MIT), Bill Nordhaus (Yale), Richard Richels (Electric Power Research Institute), Tom Rutherford (University of Colorado), John Weyant (Stanford).

¹We need to be sure that we are in step with CEA thinking on this issue. They point out a couple of distinctions: that OPEC involves a transfer of wealth abroad whereas Kyoto doesn't, except in circumstances where it is better for us to transfer than not; also, the constraints imposed by Kyoto will be known long in advance rather than hitting as a surprise.

Papers related to the Interagency Process

1. Domestic emissions trading: options paper (DW, RG)
2. Developing country commitments (RG)
3. Joint implementation and additionality (JF)
4. International emissions trading (JF)
5. Technology (RG, JS)
6. Transition assistance (?)
7. Federal undertakings (Goodman [DoD] and Glauthier [OMB])

Other miscellaneous interagency papers

7. Relation between domestic and international emissions trading systems paper by Jim Simon of DoJ (DW)
8. Escape clauses paper by Harris (DW)
9. According to David Gardiner, Victoria Greenfield in Eisenstat's office is working on a separate paper dealing with *economic* aspects of escape clauses. We need to engage on this.
10. An escape clause paper to be written by OEP
 - if price of carbon permit goes too high
 - if LDCs aren't participating by year x.
 - if new scientific evidence indicates that cost of increased concentration isn't as high as previously thought
11. Competitiveness/trade issues paper by Orszag

1. Domestic emission trading

Squitieri (with Toman as backup) to draft with EPA. Target date for a rough draft: Aug 25.

2. Developing country commitments

a. Construct a set of baselines that will neither constrain growth greatly nor transfer an enormous volume of resources abroad. (This would start by constructing a “business as usual” baseline.) (LARA)

b. Is this the place to make a strong case on eliminating subsidies? Coordinate with JF.

3. Joint implementation and additionality

a. Is World Bank working on this issue? (BEN)

4. International emissions trading

a. We are also listed as co-authors on this, again along with Doniger. Have we engaged? A draft allegedly will be distributed August 13.

b. Does a preliminary draft exist? If so, critique it.

5. Technology (RG, JS)

Tasks

- Get Bob Boorstin involved in this.
- Get more reviewers: Kevin Hassett for sure, possibly Gib Metcalf, who else?

Proposed outline of paper

Message: Technology is good; here's what technology can realistically be expected to accomplish.

- a. Explain why we think the "Five Labs" study is not credible
- b. Define the proper scope for government involvement in the development of technology (essentially what Robert has already written)
- c. Discuss why we think the enthusiasts claims are wrong: hurdle rates *should* be high (Pindyck in irreversible investment), and engineering estimates routinely promise too much (Metcalf and Rosenthal).
- d. Very sketchy (and possibly confused) notes of conversation with LS:
 - i. OMB paper substantially overstates...
 - ii. Doesn't recognize that there would be major questions of implementation; e.g., any effort to mandate adoption would run into a variety of problems;
Need some concrete examples: tangible bad consequences
 - iii. Call Paul Portney, Schmalensee, Joskow, others who understand why CAFE is bad, and get them to help us transfer arguments to this case.
 - iv. Talk to industry

10. Economic aspects of escape clauses (DW with Ukockis)

Tasks

- a. Make contact with Victoria Greenfield, and see what she's doing.
- b. Points to be made: escape clause utilization should be short-lived: If you find that you're "escaping" every year for 10 years in a row, the mechanism probably isn't designed correctly.
- c. How do we think about the cyclical aspects of this? If the economy booms, it can be argued that (i) that would be the time that we could *best* afford to control carbon emissions, so a high price is appropriate; (ii) the high price of permits would help restrain the economy.

Miscellaneous Memos not related to the Interagency Process

* indicates high priority

*1. (*Randy, Ben, Lara, Ray*) What would Kyoto mean for real families? Suppose we do 1990 by 2010; how much will the annual bill for fuel oil go up for the average family that heats by fuel oil in the Northeast? How much will the annual bill for electricity go up for the average family that has central air conditioning and lives in the South or Southwest? How much will the annual bill go up for the average family that heats with natural gas and lives in Michigan or Wisconsin?

What will Kyoto mean for average annual driving expenses?

What will Kyoto mean for the average price of a flight from New York to LA? From Chicago to Houston?

*2. (*Lutter and Squitieri*) What is the age distribution of coal-fired electricity generating plants? How much does it cost to retrofit a coal-fired plant so that it can burn natural gas? How much would it cost to retrofit every existing coal-fired plant this year? Suppose we extend the horizon to five years, and retrofit only the plants that remain in service at the end of that period? Ditto for 10 years, 20 years. In general, the goal is to explain why giving a long lead time helps: Synchronizing with the normal turnover of the capital stock. Any other information you can provide that is relevant to "tracing out the marginal cost curve" would be great.

In the near term, produce a graph; work on full memo for medium term

3. (*Ray to acquire data, Randy to analyze*) What is the age distribution of nuclear plants? How much will carbon emissions increase if every nuclear plant currently in operation is retired from service according to current schedule and is replaced by a natural-gas-fired plant of equal capacity?

4. (*Gruber*) Nordhaus's argument that achieving 1990 levels by 2010 is worse than doing nothing.

*5. (*Jay*) For a given *concentration* level in 2100, calculate

- i. the optimal unconstrained path
- ii. the optimal path conditional on returning emissions to 1990 levels by 2010
- iii. the optimal path conditional on stabilizing emissions in 2015

*6. (*CEA — done, I believe*) Calculate the path of temperature under the Frankel plan, and compare it to (i) baseline, (ii) return emissions to 1990 levels by 2010

*7. (*Gruber and Squitieri*) How large will the financial flows be between Annex I countries?

DRAFT — UNDER CONTINUOUS REVISION

Jeff suggests looking at what models say about other countries (more robust than results for US).

8. (JF) Options to increase credibility

e.g., talking about permits and their implications

9. (JG, Boorstin, Williams) Issues of political economy

What are the politics of auctions versus administrative allocation? What are the politics of alternative methods of administrative allocation? Who are the various constituencies, and what are their relative strengths? Will a politically feasible scheme end up looking like the “windfall profits” tax of the 1970s?

10. What will the incidence be of a permits program? What does it imply, for example, for the utility bills of the poor? Who will bear the cost in utilities sector: stockholders? Workers? Ratepayers?

11. A study of the EU bubble and the advantage it gives them.

Agenda for Climate Change

1. Very near term

- Briefing for Rubin before he meets with POTUS
- Get Ray and Randy coordinated with EPA on drafting the "options" paper on domestic emissions paper. Representatives for EPA will be Mike Shelby (auctions) and Brian McLean (allocation). In addition to EPA, CEA, and Treasury, each team will include a representative of DoE.
- Get a copy from Gruber of earlier work on how to use auction proceeds
- Get Toman and Hassett on board
- Decide how we want to use heavyweight consultants (and who they are)
 - Dick Schmalensee (MIT)
 - Bill Nordhaus (Yale)
 - Richard Richels (Electric Power Research Institute)
 - Tom Rutherford (University of Colorado)
 - John Weyant (Stanford)
- Paper: analogy between Kyoto and OPEC oil shocks

We need to be sure that we are in step with CEA thinking on this issue. They point out a couple of distinctions: that OPEC involves a transfer of wealth abroad whereas Kyoto doesn't, except in circumstances where it is better for us to transfer than not; also, the constraints imposed by Kyoto will be known long in advance rather than hitting as a surprise.
- Paper: relative favorability of 1990 by 2010, 1995 by 2010, 2000 by 2010, etc.

LS: "We need to lay bare that anything with 1990 is plausibly a transfer of billions of dollars to Europe and Japan relative to 1995." (Is this right?)

"Can the costs of 1990 by 2010 be substantially reduced by pushing attainment back to 2020, 2030, or 2040?" (Note that this is a different question from the preceding one because it focuses on sliding the attainment date rather than the reference date.)
- Get draft of paper on competitiveness/trade issues from Orszag
- What is "federal undertakings" paper about? (Goodman and Glauthier)
- Get copy of latest draft of international trading paper (Doniger), and pass it to OASIA and General Counsel's office
- Short paper: impact of \$100/ton price of carbon permit on energy prices

2. Somewhat longer term

- Meetings with industry representatives (Lara)

Papers related to the Interagency Process

1. Domestic emissions trading: options paper (DW, RG)
2. Developing country commitments (RG)
3. Joint implementation and additionality (JF)
4. International emissions trading (JF)
5. Technology (RG, JS)
6. Transition assistance (?)

Other miscellaneous interagency papers

7. Relation between domestic and international emissions trading systems paper by Jim Simon of DoJ (DW)
8. Escape clauses paper by Harris (DW)
9. According to David Gardiner, Victoria Greenfield in Eisenstat's office is working on a separate paper dealing with *economic* aspects of escape clauses. We need to engage on this.
10. An escape clause paper to be written by OEP
11. Competitiveness/trade issues paper by Orszag

1. Domestic emission trading

Tasks

- a. Get Toman and Boorstin plugged in on this ASAP (DW)

Proposed outline of paper:

Throughout, the paper must lay bare the costs associated with each of the options in a hard-headed fashion.

- a. Should be a national market for a homogeneous commodity: x tons of CO2 equivalent (explain why)
- b. Specification of GHGs to be covered
- c. Permit-holding requirement should be imposed far upstream (explain why)
- d. Possible methods of initial distribution
- i. Auction: must make the argument that with pre-existing distortions, a program of control will be extremely costly unless permits are auctioned and revenues are recycled.
 - ii. Administrative
 - iii. Re: performance standards: this is not being presented as an option because there is a consensus that either of the first two methods is superior (give a strong statement why, drawing on the Executive Summary of the first paper)
- e. Trading: central exchange *à la* SO2
- f. Length of permits: one year (?)
- g. What to do with auction revenue
- i. Get Tax Policy participation on this
 - ii. Include rationale for why auction proceeds should not be used to promote R&D or diffusion of existing technologies (borrow from paper RG is writing on Technology)
- h. Monitoring/compliance issues?

2. Developing country commitments

Tasks

- a. A draft of this is supposed to be distributed by August 13 (Pomerance and Hunker). Should we be participating in the preparation of this draft? (RG)
- b. Construct a set of baselines that will neither constrain growth greatly nor transfer an enormous volume of resources abroad. (This would start by constructing a "business as usual" baseline.) (LARA)
- c. Is this the place to make a strong case on eliminating subsidies? Coordinate with JF.

3. Joint implementation and additionality

Tasks

- a. We are listed as co-authors on this, along with Doniger. Are we in fact supposed to be doing anything? A draft allegedly is due August 13. Is there a pre-draft that we can look at?
- b. Is World Bank working on this issue? (BEN)
- c. Make sure that the paper adequately states the concern with JI, namely that in the absence of realistic baselines, one possible outcome is that developing countries emit as much as, or more than, they would have otherwise, and developed countries emit strictly more.

4. International emissions trading

Tasks

- a. We are also listed as co-authors on this, again along with Doniger. Have we engaged? A draft allegedly will be distributed August 13.
- b. Does a preliminary draft exist? If so, critique it.

5. Technology (RG, JS)

Tasks

- a. Get Bob Boorstin involved in this.
- b. Let T.J. know we will be writing our own paper.
- c. Is there any point in having a further conversation with Gotbaum?
- d. Find out who economics reviewers were. We think Abe Haspel was one, but we need to know who the others were, and get their comments if possible.
- e. Get more reviewers: Kevin Hassett for sure, possibly others including Dale Jorgenson, Howard Gruenspecht, ...
- f. **We really need to get moving on this topic. As you know, PCAST and DoE Labs are preparing reports to the President for October 1 delivery. We need to see drafts of these reports.**

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- c. How do we think about the cyclical aspects of this? If the economy booms, it can be argued that (i) that would be the time that we could *best* afford to control carbon emissions, so a high price is appropriate; (ii) the high price of permits would help restrain the economy.

Miscellaneous Memos not related to the Interagency Process

1. (*Squitieri and Lutter*) What would Kyoto mean for real families? Suppose we do 1990 by 2010; how much will the annual bill for fuel oil go up for the average family that heats by fuel oil in the Northeast? How much will the annual bill for electricity go up for the average family that has central air conditioning and lives in the South or Southwest? How much will the annual bill go up for the average family that heats with natural gas and lives in Michigan or Wisconsin?

What will Kyoto mean for average annual driving expenses?

What will Kyoto mean for the average price of a flight from New York to LA? From Chicago to Houston?

2. (*Lutter and Squitieri*) What is the age distribution of coal-fired electricity generating plants? How much does it cost to retrofit a coal-fired plant so that it can burn natural gas? How much would it cost to retrofit every existing coal-fired plant this year? Suppose we extend the horizon to five years, and retrofit only the plants that remain in service at the end of that period? Ditto for 10 years, 20 years. In general, the goal is to explain why giving a long lead time helps: Synchronizing with the normal turnover of the capital stock. Any other information you can provide that is relevant to "tracing out the marginal cost curve" would be great.

3. (*Lutter and Squitieri*) What is the age distribution of nuclear plants? How much will carbon emissions increase if every nuclear plant currently in operation is retired from service according to current schedule and is replaced by a natural-gas-fired plant of equal capacity?

4. (*Gruber*) Nordhaus's argument that achieving 1990 levels by 2010 is worse than doing nothing.

5. (*Kitchen, Squitieri, Shogren*) For a given concentration level in 2100, calculate

- i. the optimal unconstrained path
- ii. the optimal path conditional on returning emissions to 1990 levels by 2010
- iii. the optimal path conditional on stabilizing emissions in 2015

6. (*Kitchen, Squitieri, Shogren*) Calculate the path of temperature under the Frankel plan, and compare it to (i) baseline, (ii) return emissions to 1990 levels by 2010

7. (*Kitchen, Squitieri, Lara, Ben*) How large will the financial flows be between Annex I countries?

8. (JF) Options to increase credibility
e.g., talking about permits and their implications

9. (JG, Boorstin, Williams) Issues of political economy

What are the politics of auctions versus administrative allocation? What are the politics of

alternative methods of administrative allocation? Who are the various constituencies, and what are their relative strengths? Will a politically feasible scheme end up looking like the "windfall profits" tax of the 1970s?

10. What will the incidence be of a permits program? What does it imply, for example, for the utility bills of the poor? Who will bear the cost in utilities sector: stockholders? Workers? Ratepayers?

11. A study of the EU bubble and the advantage it gives them.

WORK-PROGRAM

JF 8/9/97

WHO (and when)

Targets and timetables (TOP PRIORITY)

The importance of allowing time for capital turnover --

Case-study illustration:

Graph of replacement chronology of US power-generating plants

(make stylized assumptions on plant life if necessary).

of plants, and cost of replacement, against year.

TH
retire entire
stock in yr 1, 2, ...

Randy, Christian

Ray Sg.

The economically-optimal path.

In what year is peak of US emissions?

Of other Annex I?

In what year do they return to 1990 levels?

(1) Minimizing cost/benefit balance
(minus uncertainty or credibility problems).

=> no peak at all? Just slowed rise in emissions?

Need results from Integrated Assessment Models.

See
IPCC chp
on IA models >

Jay, Randy

- Nordhaus
- Manne-Richels? Have Gillingham/Shogren called them?
- Wigley, Richels, Edmonds? "
- Other EMF models?
- Cline?

→ Quadi

will all
help it } Andy

(2) Minimizing cost of a given level of 2100 concentrations

- Manne-Richels (peak in 2050)
- Others (as above)? Wigley, Richels, Edmonds (?)
- Can any in-house models (as below) do it? - SGM (Jay Edmonds)

(3) Compare costs and benefits of "1990 by 2010"
to "peak in 2015 and return to 1990 by ____"
and to doing nothing ("business as usual").

Costs are (i) price of carbon, gasoline, coal...

(ii) effects on income and consumption

Benefits are (i) emissions and concentration

(ii) implied effect on temperature in 2050 or 2100

(using simple linear interpolation from IPCC estimate)

- Any of the IA/EMF models
- Any of the IAT models (DRI, MarkalM, SGM) >
- Shackleton and G-cubed >
- Other?

(Christian

Analogies with 1970s oil shocks

Is magnitude the same?

(7/28 memo from Jay) >

How much difference does it make that this would be pre-announced?

" That there would be no transfer to OPEC?

Any bogus reasons why the IAT models did not find such adverse effects?

Did they assume that the Fed could somehow offset supply shocks?

send over to Ray Sg.

Randy +

Steve, Chris, Christian

2 Tinas.

catch them w/ double-counting

get summary of insulation/NBER paper

2 pg bullet summary

set up mtg w/ Gillingham - call tomorrow

calc discount rates
→ how subsidies affect liquidity
constraint but not disc rate
→ tell to Chris about
> JQ (w/ Randy)

Elucidate the dangers of Wishful Thinking

- Critique 5-Labs Study Coordinate with Treas.
- More general critique of the "technology" free lunch

Assumption that people ignore money-saving opportunities, that govt. Pgms. Help (e.g., can change discount rates), that common people are as capable as engineers, that people systematically over-consume energy but not other things, that they live in ideal homes, that energy-price uncertainty plays no role.... Double-counting pgms (in baseline and policy path). - get copy of mlt barriers to everyone

- Historical relationship between prices and EEI (Frankel-Sant.-Franco memo)
↳ will redo w/ CCAP, green lights finding } details + footnotes

Analyze escape clause proposals

- What would be appropriate carbon prices for ceiling?

If 2015 emissions peak and

(e.g.) 1990 levels in 2040

(As under blueprint)

If 1990 levels in 2010

(As enviros want)

> link w/ earlier models
Jay + Randy

- What do other agencies have in mind? Coord. With Treasury > Jay will talk to Ray Sq.
("Pomerance-Gruber paper due Aug. 8")

- What else did Summers have in mind?

Global price cap, rather than country-by-country? - need best guess of what price will be?
escape clause if CDCs are in when they're supposed to be, annex I can bail out
if science on CA is found out to be wrong in future

Uncertainty

Is there anything to be done in the way of assuming probabilities

- and applying expected welfare,
- with or without risk-aversion
- and option analysis (with irreversible investment)
- allowing for imperfect political credibility

→ OSTP impacts papers
- draw up 1 pg matrix
probability, timing, irreversibility,
availability of substitutes

Domestic Implementation

- Incidence of increase in energy prices only long-run may be first to decide what to do > Randy + Zach
- Has there been a "reluctance to trade" in SO2 pgm? - JF will call Varian > Dan follow up w/ JF
- Should revenues be used to finance soc. sec.? > Chris, Joe

Compute likely amount and path of revenue
use other models in addition to MAF
- Manner + Richels
- Nordhaus

LDCs

Need proposed formulas for LDC participation

- What is threshold income level for blueprint proposal?
defined so as to include only State Dept.'s "Annex B" countries
- What is a reasonable emissions path formula for future LDC participation?
= F(income, population, 1990 emission levels)

E.g., Nordhaus proposal

US competitiveness if LDCs don't participate - get trade economist to do

As in Orszag-Frankel-Shogren memo of 8/10/97

- Anyone care to take on a N-factor, N-good, N-country trade model?
N=2, or
N=3

Trade-off b/t flexibility + stringency Jay

Other

Monitor reports from negotiations (coming via State)

Monitor _____

395-
COI X

WONG By 3:15

8/1

CLIMATE CHANGE POLICY ANALYSIS

(Lead authors indicated in parentheses)

1. Domestic Emissions Trading (Gardiner, Gruber)

Revised paper to be distributed Aug. 4. Includes analysis of auctions (FCC, other experiences) and administrative issues. → need new stuff with phasing in

-WTO/MAI issues (Haverkamp)

Paper due Aug. 8

-Relationship to international trading (Simon)

Draft being circulated for comment.

2. International Emissions Trading and Joint Implementation (Doniger, Gruber)

Revised int'l emissions trading paper to be distributed Aug. 13. Will include additional analysis of institutional and compliance/monitoring issues.

-joint implementation/additionality (Doniger, Gruber), DOE

Paper due Aug. 13

-payment/trade account questions (Hunker, Shogren)

Paper due Aug. 13

-WTO/MAI issues (Haverkamp)

Paper due Aug. 8

3. Technology (Glauthier/Bierbaum)

Sectoral paper distributed. Paper setting forth major policy options to be developed in August. (First draft Aug. 13). President's Committee of Advisers on Science and Technology (PCAST) and DoE Labs preparing reports to the President for October 1 delivery.

4. Developing country commitments (Pomerance, Hunker)

Paper setting forth policy options due Aug. 13

-escape clause (Pomerance, Gruber)

Paper due Aug. 8

-competitiveness/trade issues (Orszag)

Paper drafted.

5. Federal undertakings (Goodman, Glauthier)

Paper setting forth major policy options due Aug. 22. (First draft Aug. 13).

lots of ways to do this & can
negotiate with country commitments
comp & loan &

overview

new if
would
work

Shogren
Europe,
paper

why not
etc

Background → Not a principal
discussion

Comments by
Wong

what should their
commitment be? would
we live up to that
what is trigger?
not in draft

**Climate Change Working Groups
Core Members
July 14, 1997**

I. Domestic emissions trading

1. EPA (Gardiner and Doniger)
2. Treasury (Wilcox and Gruber)
3. OMB (Minarik)
4. CEA (Shogren)

II. Developing country commitments

1. State (Pomerance)
2. AID (Hales)
3. Treasury (Geithner)
4. Commerce (Hunker)
5. WH Task Force (Forrister)

III. International emissions trading and joint implementation

1. State (Pomerance)
2. AID (Hales)
3. Justice (Simon)
4. CEA (Frankel)
5. OMB (Gotbaum)
6. DOE (Reicher)
7. Commerce (Hunker)
8. WH Task Force (Forrister)

IV. Technology programs

1. OMB (Glauthier)
2. DoE (Reicher and Romm)
3. OSTP (Henry Kelly and Rosina Bierbaum)
4. EPA (Gardiner and Doniger)
5. Treasury (Gillingham)
6. CEA (Frankel)
7. DoT (Kruesi)
8. USDA (Rawls)
9. Commerce (Hunker, Good)

V. Regulations and Standards

1. OMB (Glauthier)
2. EPA (Gardiner and Doniger)
3. DoE (Reicher and Romm)
4. Treasury (Gruber)

VI. Transition Assistance

1. Labor (Montgomery)
2. EPA (Gardiner)
3. NEC (Robyn)

CC: [illegible]

DW
[illegible]

OFFICE OF THE LEGAL ADVISER
UNITED STATES DEPARTMENT OF STATE



TELEFAX COVER SHEET

Mr. John Gruber - phone 622-0563 - fax 622-2633

TO: Col. Roy Salzman - phone (703) 604-1628 - fax (703) 607-3124

FROM: Mr. Robert K. Harris & Sue Biniaz
Telefax Number: (202) 736-7115
Telephone Number: (202) 647-1370

DATE: 8/5/97

SUBJECT: Climate Change: Clearance/Comments on Paper on Escape Clause

Number of Pages Including This Cover Page: 4

Message: In the interagency process on Climate Change, State is tasked with presenting a paper on August 8 on the issue of "escape clauses". Attached is a draft, for your clearance and/or comments. Please give us any thoughts by COB, Wednesday, August 6. Thanks.

DRAFT

Climate Change: "Escape Clause"

Issue

Whether, in the current negotiations on a follow-on protocol/other legal instrument, the United States should press for an "escape clause" whereby a Party would be discharged from its legal obligation to meet an emissions target if certain conditions existed.

Background

- o Concerns have been raised concerning a future scenario under which the United States would be legally bound to a particular emissions limitation/reduction target even if achievement of the target would cause harm to U.S. competitiveness or national security.
- o There appear to be a number of ways in which such a scenario could potentially be addressed, not all of which are mutually exclusive, e.g.,
 - Agreeing to a non-legally binding, rather than legally binding, target.
 - Agreeing to a binding target at a level that is not likely to result in the above scenario.
 - Agreeing to a binding target, with substantial flexibility in terms of implementation (through, for example, multi-year targets, emissions trading, legal "borrowing" of emissions allowances from future budget periods).
 - Ensuring that the agreement allows for withdrawal upon reasonably short notice. The Climate Change Convention requires three years' notice; an amendment to the Convention would be covered by this requirement. A protocol could vary the notice requirement, for example, by allowing withdrawal upon one year's notice.
 - Having the agreement provide for discharge of the legal obligation to meet a target upon certain conditions; unlike withdrawal, such a clause would allow a country to remain a Party to the agreement.

This paper focuses on the last approach.

DRAFT

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Discussion

- o Apart from policy issues (see below), devising a clause providing for the discharge of the legal obligation to meet a target raises a number of legal questions:
 - What would the substantive condition(s) be that would trigger the discharge of obligation (for example, harm to national security)?
 - o Given the U.S. position that the agreement should dictate the target but not the policies/measures to achieve it, how would one deal with the situation in which the target itself is not necessarily the cause of the condition, but the particular Party's chosen method(s) of implementation?
 - Who would decide whether the substantive condition(s) had been met, i.e., would it be self-judging (by the Party in question) or would it be the subject of a decision by other Parties to the agreement or a third party? If the latter, what kind of institution would decide?
 - What would the temporal aspects be: in the case of a multi-year target, when could a Party invoke the clause? in the case of more than one budget period, what would the Party's obligation be with respect to subsequent budget periods?
 - What would be the relationship between the international "escape" clause and the domestic legislation necessary to implement the target (e.g., how would the domestic regime reflect the international clause)?
- o Policy considerations in connection with a possible "escape" clause include, e.g.,
 - likely domestic reaction (Senate, industry, environmental NGOs);
 - likely international reaction;
 - likelihood of being able to negotiate such a clause;
 - likelihood of "escape" clauses being demanded by other countries (for example, by developing countries seeking to subject their environmental obligations to their need for economic development and/or the receipt of financial and technical assistance);
 - in the case of a clause excusing environmental performance based on harm to the economy, extent of its consistency with the U.S. conception of and worldwide goals regarding "sustainable development."

DRAFT

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- o Examples of types of agreements that provide for non-performance of obligations under conditions related to national security/economic impacts include:
 - Investment: The typical Bilateral Investment Treaty provides that it does not preclude the application of measures necessary, inter alia, "for the protection of its own essential security interests."
 - Trade: Certain trade agreements provide for suspension of certain obligations (e.g., tariff concessions) in response to qualifying import surges. Further, in the GATT, for example, there is a clause providing that nothing in the agreement prevents a Party from "taking any action which it considers necessary for the protection of its essential security interests relating to [three defined areas, including the traffic in arms]...."
 - FCN: The model bilateral Friendship, Commerce, and Navigation Treaty provides that it does not preclude the application of measures necessary to protect a Party's "essential security interests." Note that the International Court of Justice, with respect to the U.S.-Nicaragua FCN Treaty, found that this clause was not self-judging.
 - Arms Control/Nonproliferation: These agreements generally contain a withdrawal clause along the following lines: "Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme national interests of its country." A Party must give three months' notice, along with a statement of the extraordinary events. Note, however, that this type of "escape" clause does not provide a Party with an additional basis for non-performance; on the contrary, it is written as a limitation on a Party's ability to withdraw from the Treaty.
- o Note that the above examples appear to involve a Party's ability to take certain measures vis-a-vis another Party that would otherwise violate the agreement, rather than a total discharge of the agreement's core obligation vis-a-vis all other Parties. (The arms control provision does discharge the totality of obligations, but only in the context of withdrawal.)

Drafted:L/OES:SBiniaz

GCC

Items to bring up in principals/principles meeting with Treasury

Targets and timetables:

Develop evidence against radical options:

- Optimal path for 2100 concentration targets
from Manne-Richels, G-cubed?...
- Analogy with 1970s oil shocks

Formulate language for possible moderate option in treaty, e.g., "eliminate emissions growth by 2010-2020, and reduce below 1990 levels by a later date."

Formulate possible language for an escape clause, e.g., setting a ceiling on price of carbon.

The dangers of Wishful Thinking (high AEEI)

- critique 5-labs study
- historical relationship between price and EEI

Implementation

Do not wait until we have a treaty (or until negotiations break down) to spell out domestic implementation (e.g., tradable permits). Reasons:

- internal deliberations
- public dynamics

An argument against grandfathering emissions permits: the incidence doesn't fall entirely, or even primarily, on the coal and oil companies where the permit requirements would (most efficiently) be imposed. We should estimate where incidence does fall.

International dimension

Formulate ~~proposal~~ for serious LDC participation (making "evolution" more concrete, while recognizing that there may in fact ~~be no~~ common ground between Congress and rest of world), e.g., a formula that specifies emissions requirements as a function of GDP/capita.

Treasury/CEA Agenda on Climate Change for August
Lead Person in caps

I) Leftover Tasks

- A) OPEC Memo - RAY, David, Jon - by COB Friday
- B) Equitability Memo - LARA, Ben, Ray, Jon - whenever data is available
- C) Principles Memo - JON - ASAP
- D) Rubin Briefing on climate change - RAY, John, Lara - by COB Monday

II) Domestic Emissions Trading

- A) Issues/Background paper - JON, Robert, David - by Aug 5
 - work with EPA to polish off - get revision from them Monday
 - incorporate any comments from Summers
 - prepare jointly with EPA for presentation at Asst. Secretary meeting next Thursday
- B) Straw man/questions - RAY & ROBERT - by COB Monday - show to everyone else for comments

MEETING: Next Monday at 4:30 to go over straw man, and set up strategy for meetings with consultants.

- C) Washington consultants - meeting **next Wednesday** to go over straw man/questions
 - Robert Hahn - JAY
 - Robert Litan - ROBERT
 - Mike Toman - DAVID

Can these folks please make calls TODAY to see if we can get this meeting for Wednesday?

- D) Outside consultants - get reactions to our straw man
 - Dick Schmalensee - JON
 - Bill Nordhaus - DAVID
- E) Industry contacts - LARA
 - **set up meeting for next THURSDAY to ask questions about trading strategies and hear their thoughts**

III) International Emissions Trading

- A) Critique Justice paper - DAVID, Jay - should be in this afternoon
 - this paper is on broader question of integrating domestic and international trading

B) Critique EPA/Commerce paper on how international trading would work

- get copy of latest draft from EPA - JON

- do critique - DAVID, Jay, John

C) Engage OASIA (on this and other things) - JON - by COB Monday

D) Get paper to GC when it comes in - JON

E) What is the magnitude of the international flows - RAY, Jay, Ben, Lara, John - by Aug 8

- in this context, get to know the pros and cons of models

IV) JI/Additionality, Developing Country Commitments, and Escape Clauses

A) Engage with EPA and state on where they are, get past paper - JON - ASAP

B) Contact Mike Toman for comments & thoughts - JAY - Monday

C) Engage World Bank to see where they are - BEN, Jay - Monday

D) Work on analysis - ROBERT, Jay, David, Lara, Ben, Jon, John - drafts by Aug 8

V) Technology

A) Get 5 labs study to Treasury - JAY - ASAP

B) Find out who reviewers are, possibly get comments - JAY

C) Figure out appropriate reviewers - RAY, Robert, David - by Aug 5

D) Work on details of paying reviewers - JON - ASAP

E) Detailed review/rewrite of technology paper - DAVID, Robert - by Aug 5

CD ntg @ ERS 8/1/97

San Ag interested in how climate policy affects ag competitiveness

FARM - static cge, global

energy in it, simply as input-output

→ does have intl competitiveness

won't capture much in terms of intersectoral Δ

several grain crops, livestock sector

→ 3 crop sectors

2 process food sectors

6-7 other sectors in economy

8 regions

G-TAP (global G-E) - FARM built off of it

- greater sectoral

- 37 regions

- 24 sectors

GRAP

→ talk to Ag. pers. in CD

→ may be better to look @ climate policy effects than FARM

USMP - US ag based model

~ 850 prod practices

energy enters as fixed cost expenditure

→ can get some energy substitution

→ substitution across practices, regions

(cost varies w/ practice)

Darrin Kennedy - Megabare model

Carbon sequestration in soils - NREL coop w/ ERS

Century model - try to link w/ USMP

EPA-DOE biomass research

Neil Leary + Howard Gruenspecht - decent analysis

(oil needs to be ~ 80 (bbl/barel))

see Roger Conway @ some of this analysis

Manne + Richels - polled experts on AEEI

Energy Journal ~ 93 or 94