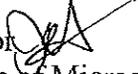


DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220

February 20, 2001

MEMORANDUM FOR SECRETARY O'NEILL

FROM: John C. Hambor 
Director, Office of Microeconomic Analysis

SUBJECT: Background for Briefing on Climate Change Policy

Briefing Date: February 21, 2001
Time: 1 to 2 p.m.
Location: Secretary's Small Conference Room

The State Department's Acting Assistant Secretary for Oceans, Environment and Science, Ken Brill, will chair the briefing. He will begin by outlining upcoming events that will require U.S. climate policy preparation. For example, the current round of international negotiations will reconvene in late June or early July. Although this schedule represents a slight delay pursuant to a U.S. request, we understand that the State Department will suggest early commencement of an interagency policy process.

Rosina Bierbaum, from the White House Office of Science and Technology Policy, will present a brief update on the latest scientific conclusions of the Intergovernmental Panel on Climate Change.

Dan Bodansky and Nigel Purvis of the State Department will present the history and status of international negotiations, some of the major obstacles to progress, and general options going forward.

Adele Morris, with Treasury's Office of Economic Policy, will describe the economics of greenhouse gas abatement policy. She will give special attention to estimates of the costs of complying with the Kyoto Protocol.

A complete agenda is attached under Tab A. Tab B presents some succinct conclusions on the economics of climate change mitigation. Tab C is a preview of the economics presentation.

A

TAB A

**Climate Change Briefing
February 21, 2001**

Agenda

1. Introduction, Action Forcing Events: Acting Assistant Secretary Ken Brill (State Department)
2. Update on science: Rosina Bierbaum (Office of Science and Technology Policy)
3. History and status of climate negotiations: Dan Bodansky (State Department)
4. Options and challenges going forward: Nigel Purvis (State Department)
5. Economics of climate change mitigation: Adele Morris (Office of Economic Policy)
6. Conclusion: Ken Brill

TAB B

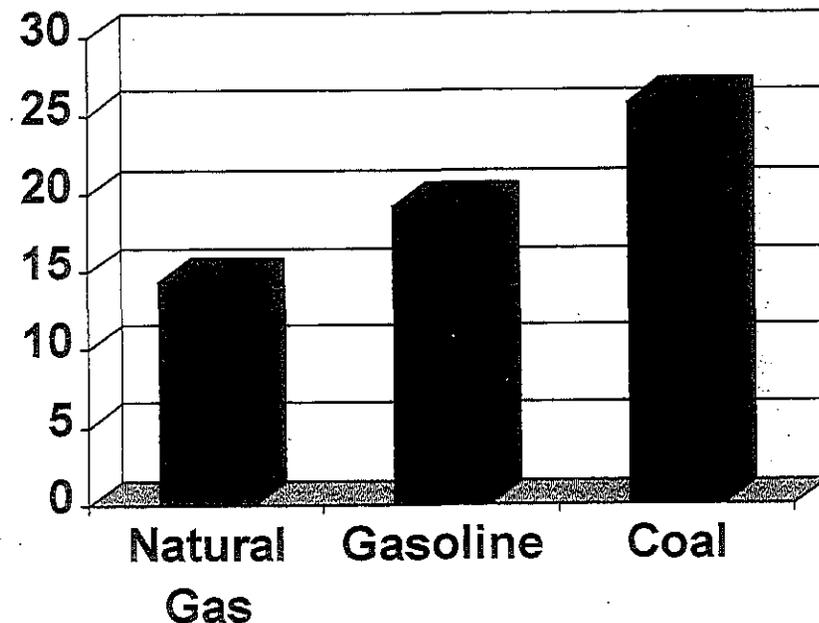
Economics of Climate Change Mitigation

- The key policy is to put a price on carbon-equivalent emissions, so that economic activity incorporates the environmental cost of greenhouse gas emissions.
- To be efficient, the price signal should broadly affect all sectors, gases, sources and sinks.
- Country-specific targets, such as under the Kyoto Protocol, can produce equal price signals across countries through emissions trading.
- The US has a very ambitious target under Kyoto, but so do others.
- Emissions reductions are much more costly if they must be done quickly, requiring premature scrapping of capital.
- Emissions trading and sinks can dramatically lower compliance costs. Kyoto provides scope for this, although negotiating for a lot of sink credits would be very hard.
- Russia makes out well under Kyoto because its target is well above its projected emissions.
- Developing country participation can greatly lower our costs and benefit them. Nonetheless most are opposed on principle to taking even modest, growth targets.
- Options for major changes from Kyoto, in particular more modest targets and a cost cap, could greatly lower costs.

Pricing Greenhouse Gas Emissions

- Put a price on carbon-equivalent emissions
- Changes relative prices of inputs and outputs
- Economic activity incorporates cost of emissions

Emissions in Kg C/mBTU



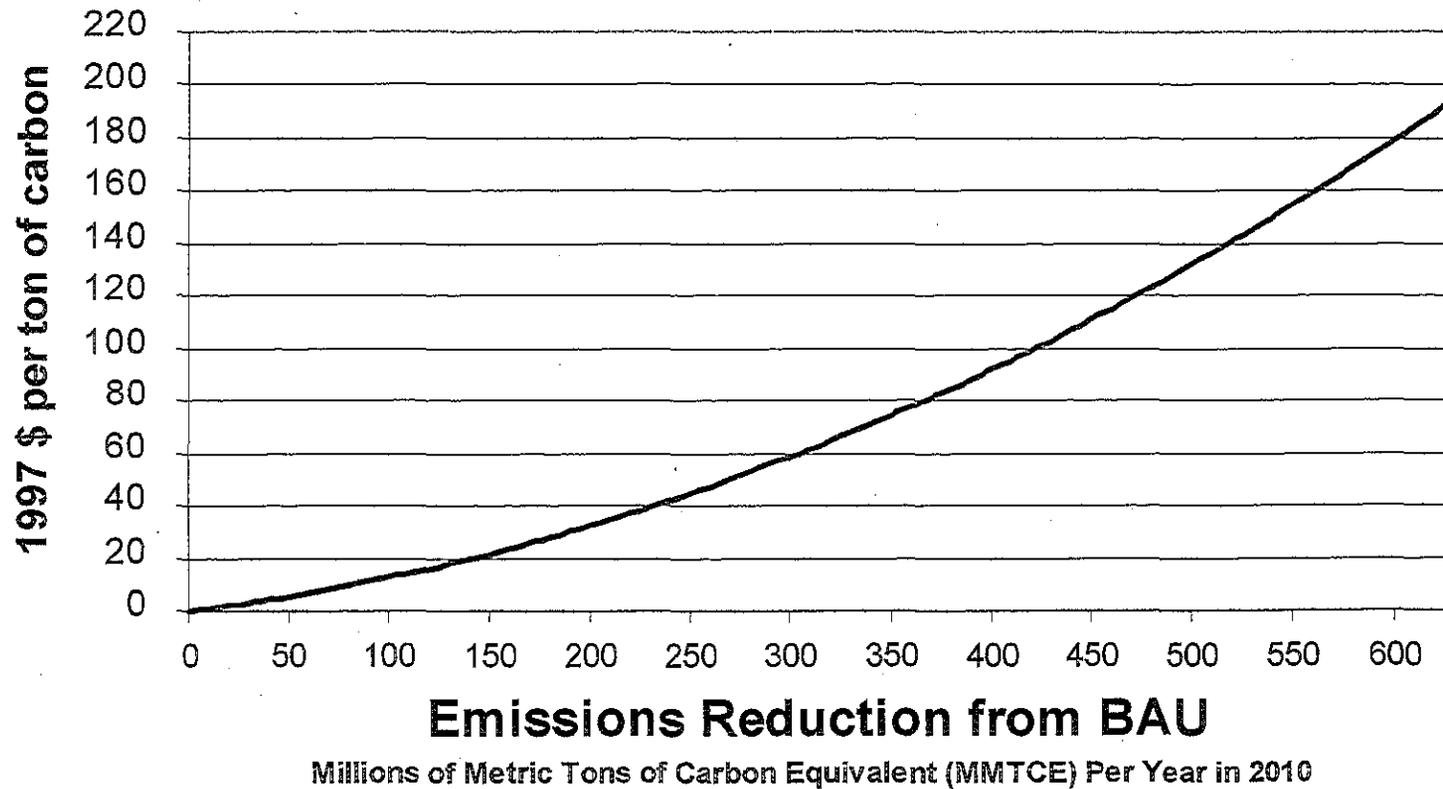
Cap and Trade vs. Carbon Tax

- **Economically very similar**
- **Cap provides environmental certainty and tax provides economic certainty**
- **Both systems transmit price signal**
- **Efficient to provide equal price signal across sectors, gases, sinks and sources**

Economic Models

- **Marginal costs of abatement increase**
- **Cost of a given reduction is lower in long run than short run**
- **Range of models: different assumptions drive large range of results**
- **Higher confidence in comparing model results across different scenarios**
 - **e.g., emissions trading lowers costs dramatically in all models**

US Marginal Cost Curve for 2010



Illustrative Model: Batelle's Second Generation Model

US Emissions

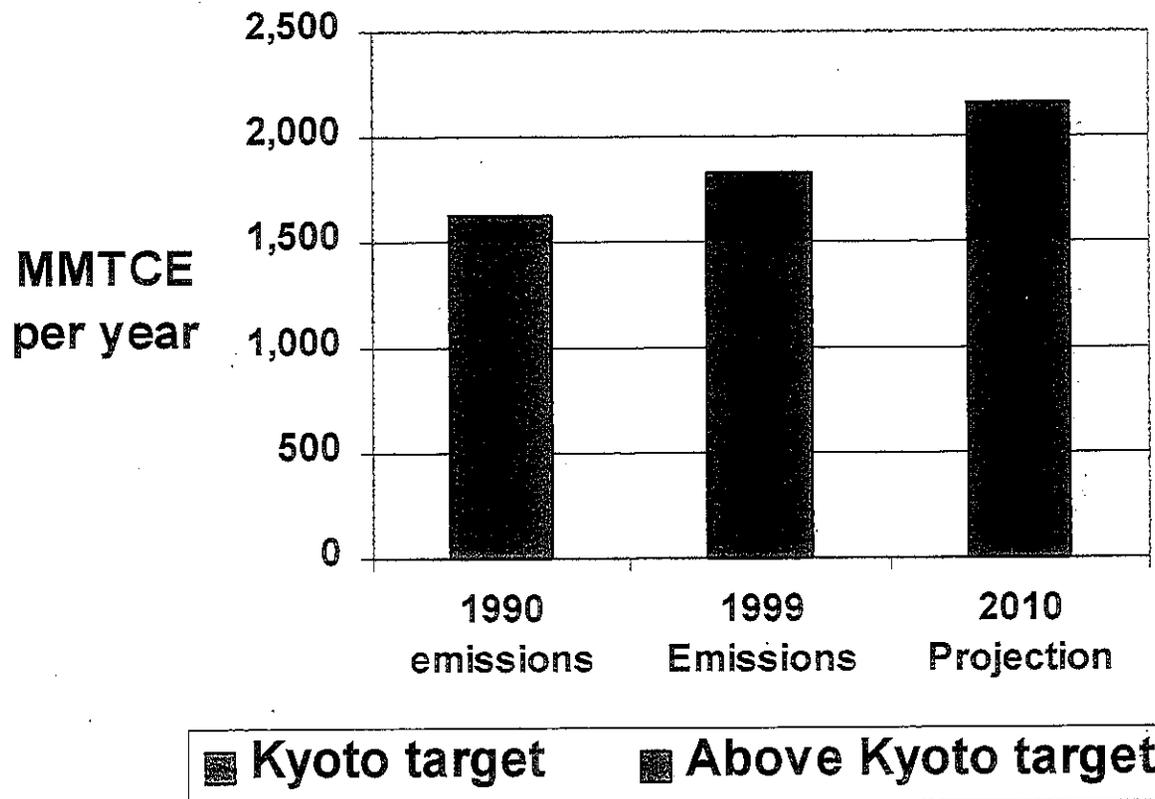
**Kyoto target
approximately:**

**7% below 1990
emissions**

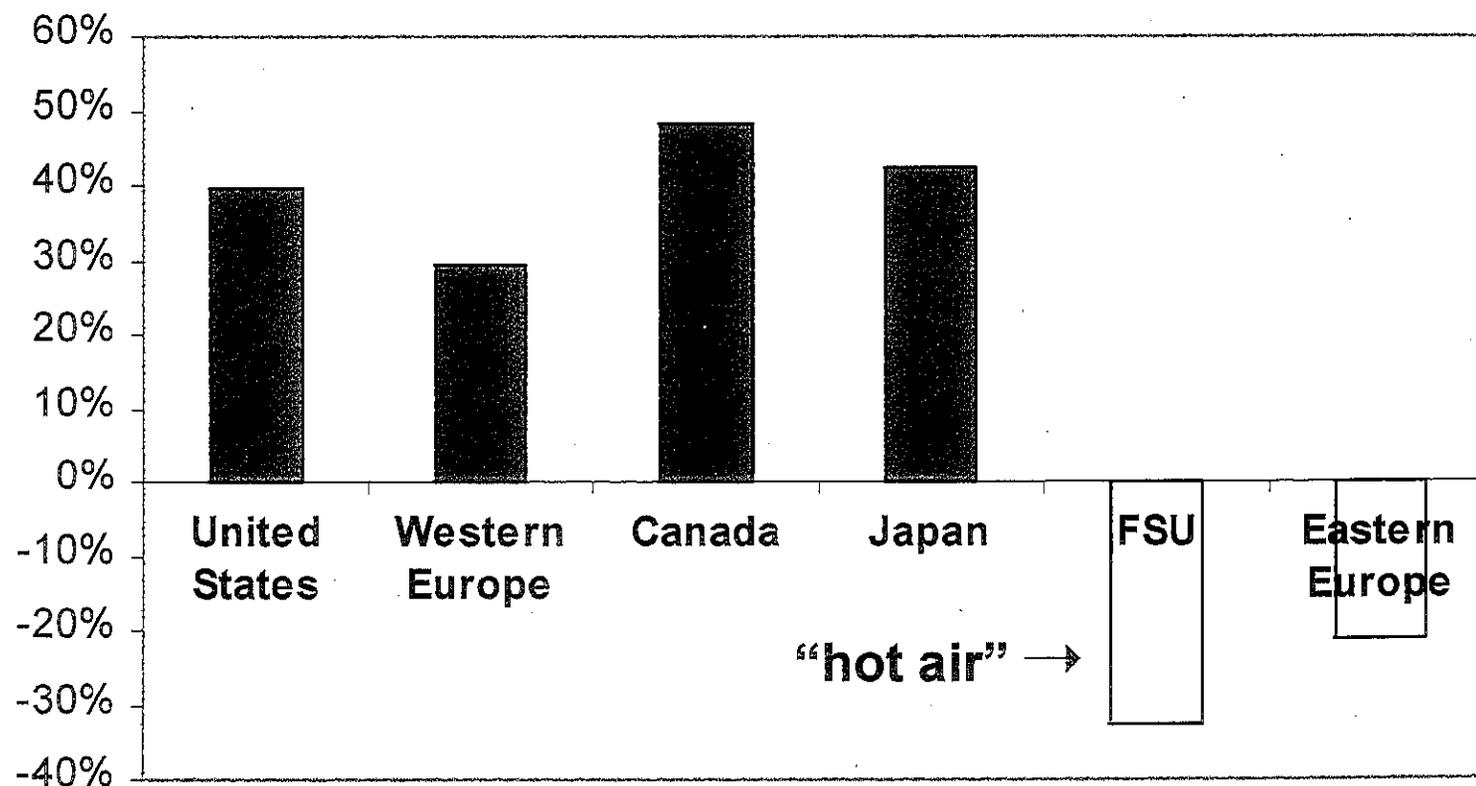
**17% below current
emissions**

**30% below 2010
projection**

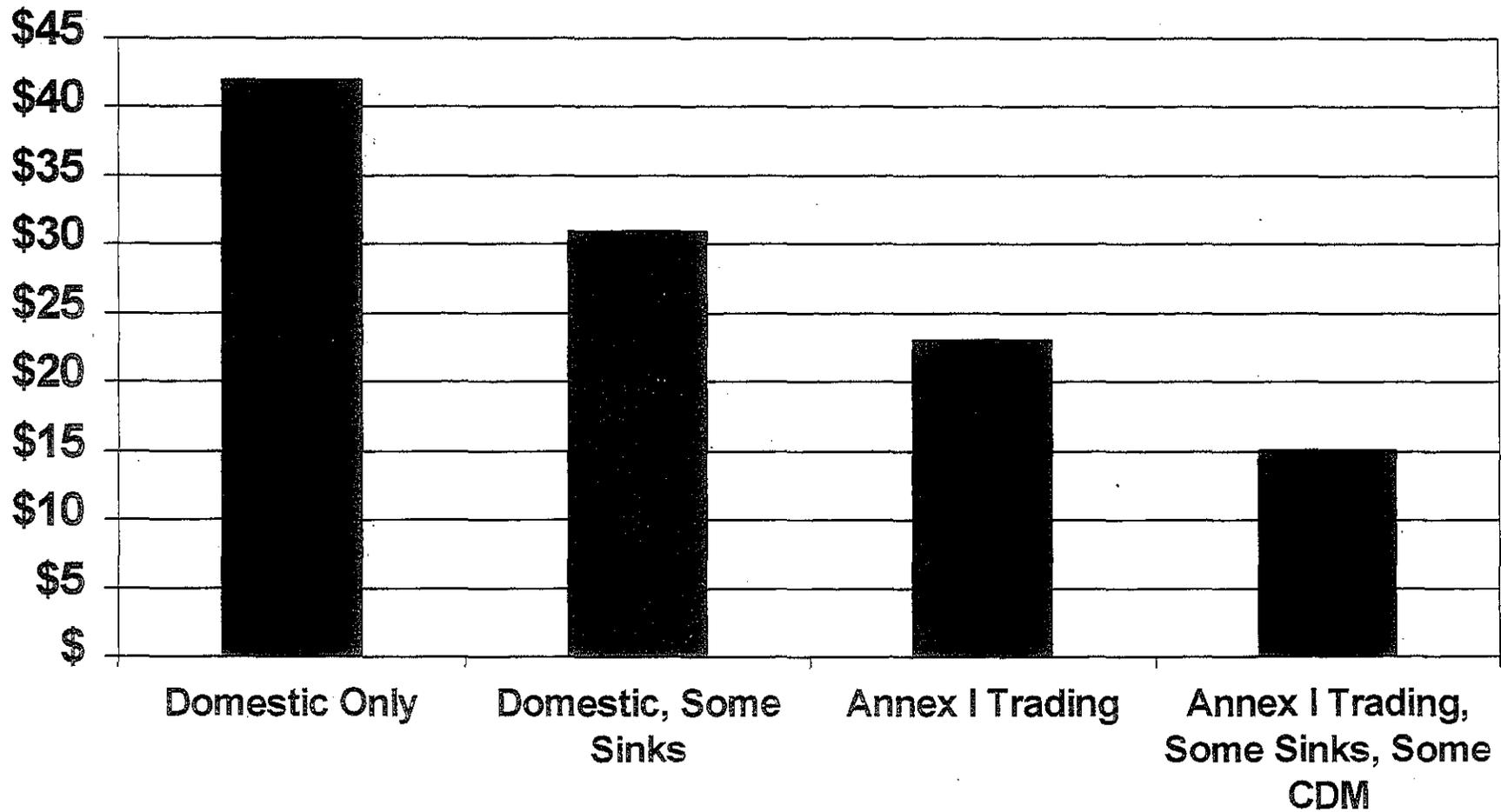
**600 to 650 MMTCE
target reduction
(difference between
projection and
target)**



Projected GHG Emissions in 2010 Compared to Kyoto Target

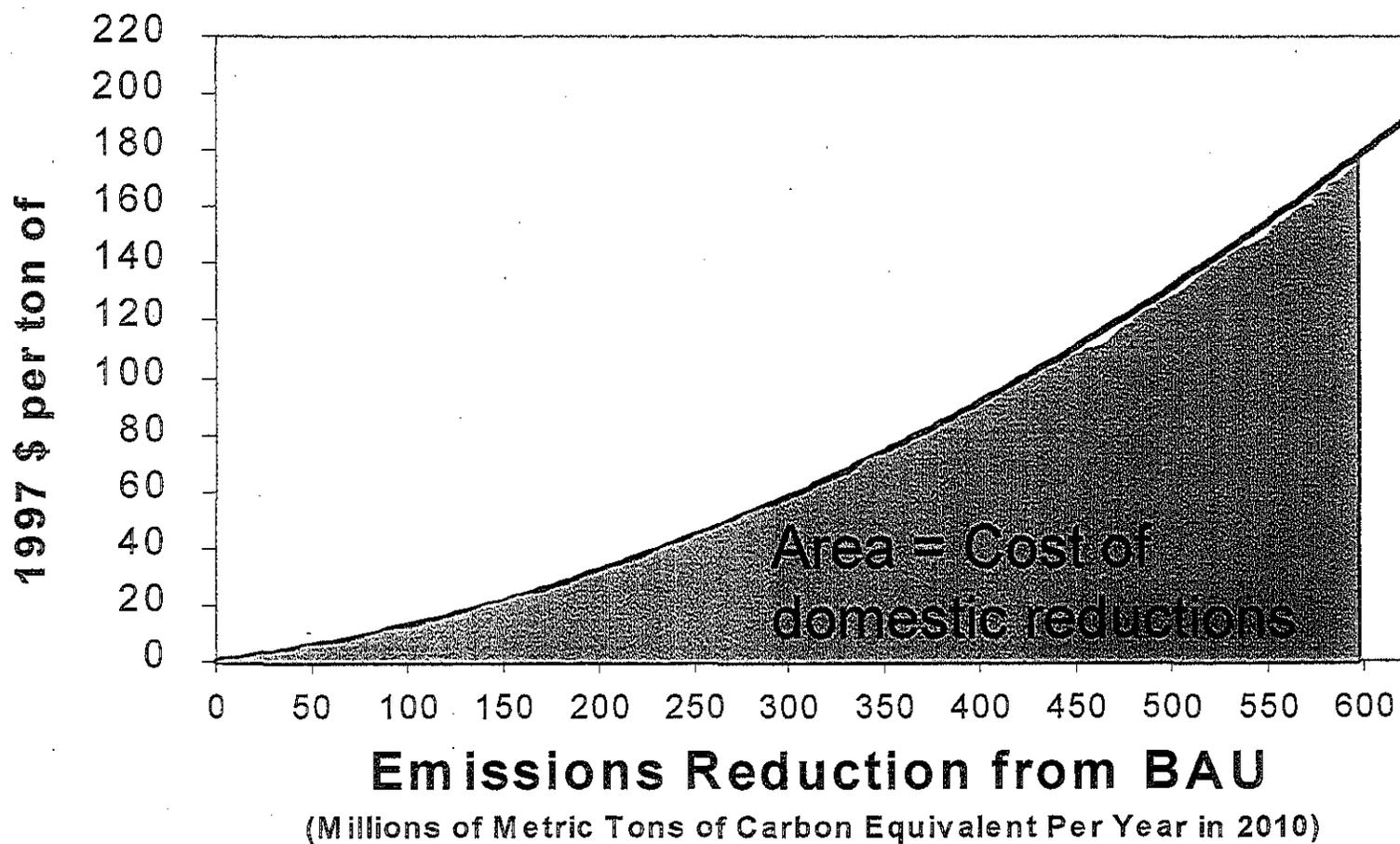


Estimated Compliance Costs for US (billions of 1997 \$ per year, 2010)



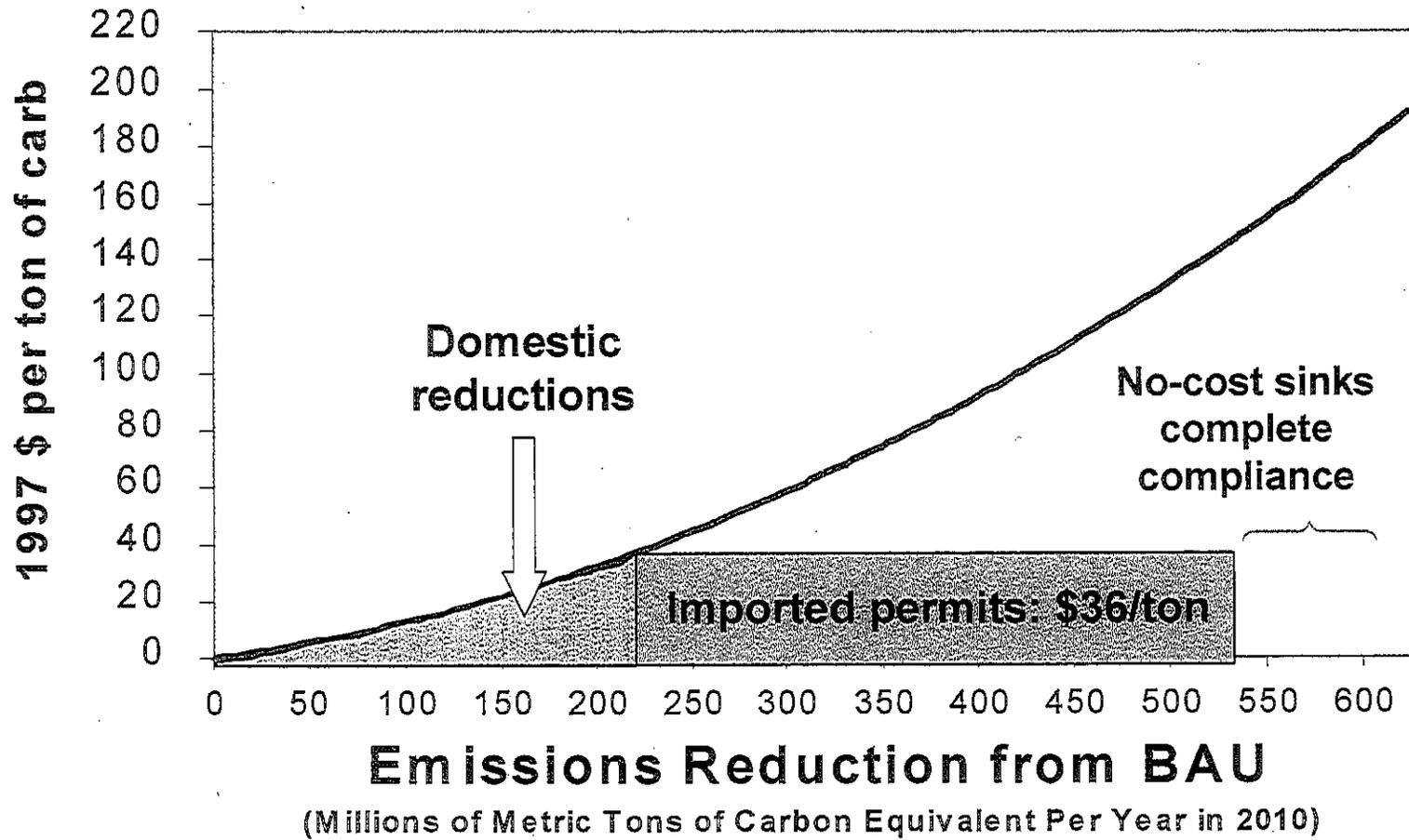
Illustrative Model: Batelle's Second Generation Model

US Compliance Costs High Cost Scenario



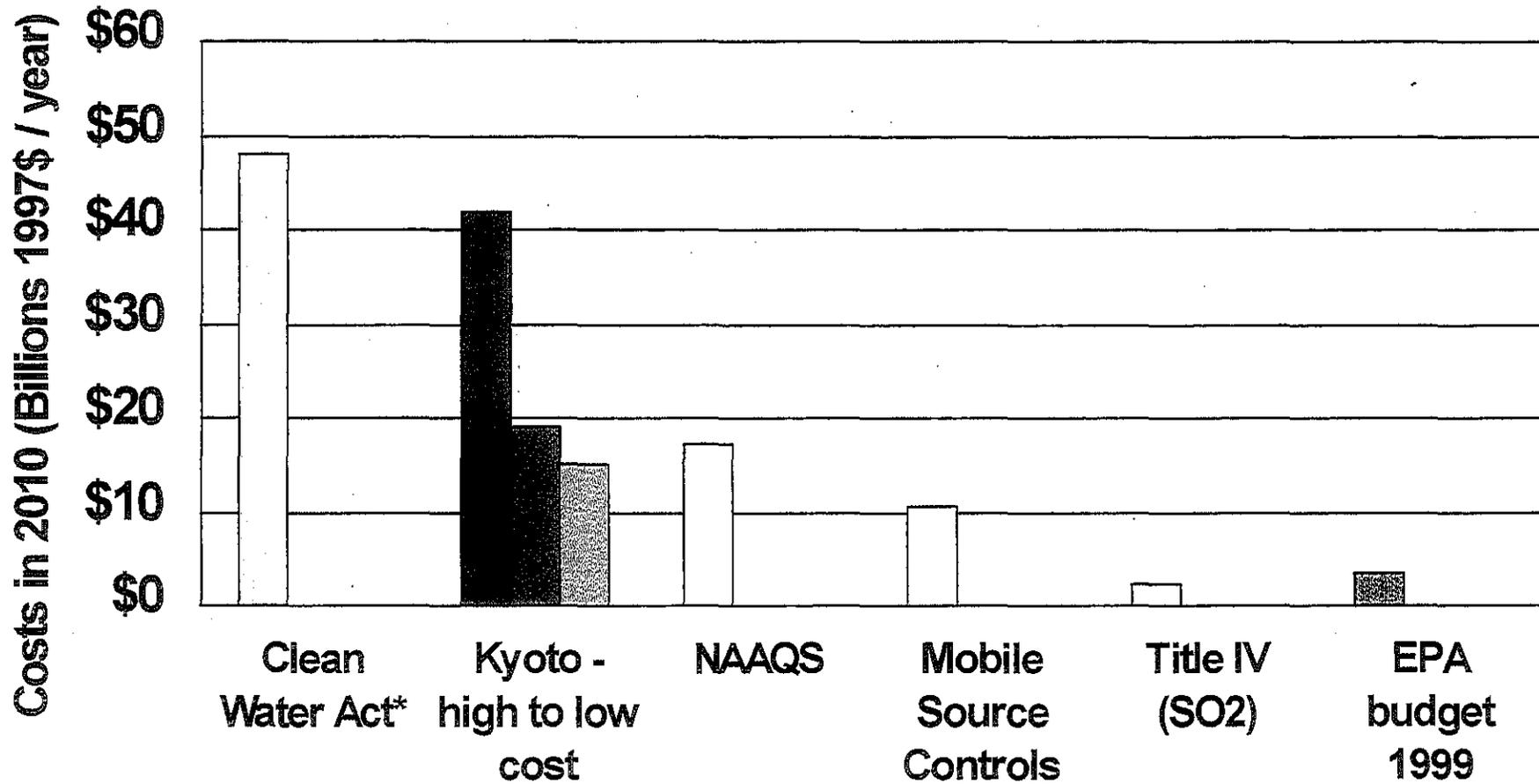
Illustrative Model: Batelle's Second Generation Model

US Compliance Costs Low Cost Scenario



Illustrative Model: Batelle's Second Generation Model

Kyoto Protocol Costs vs. Other Domestic Environmental Programs



*Clean Water Act costs are for 1997, not 2010

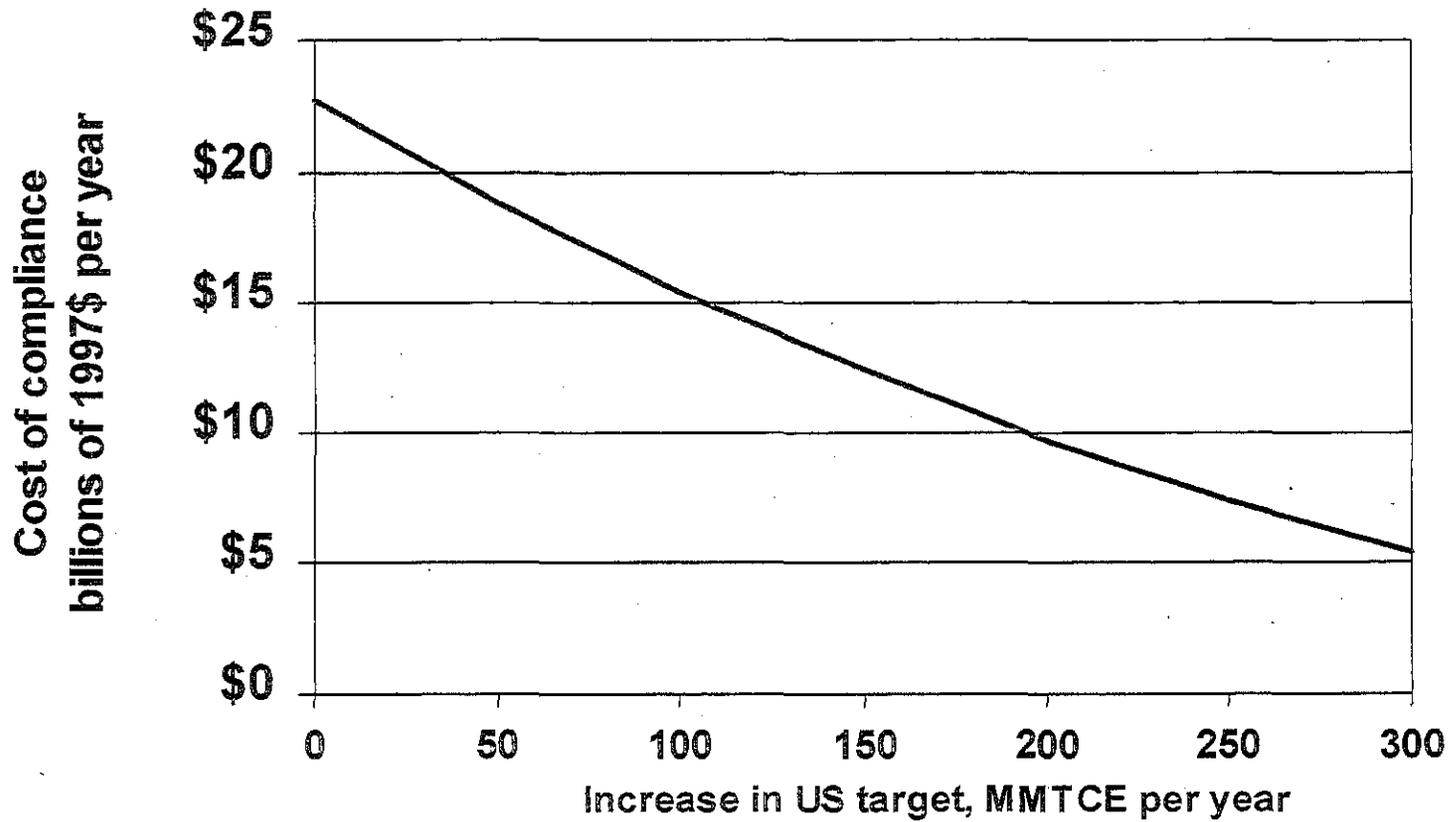
Flexibility Mechanisms

- **Trading under Kyoto could produce large transfers to Russia (about \$21 billion per year).**
- **If Russia doesn't participate or trading is otherwise impeded, costs escalate**
- **Developing country participation can lower our costs a lot**
- **Developing countries impervious to their own potential gain**

Sinks

- **US has a very large BAU sink**
 - **About 300 MMTCE per year, or 50% of target reductions**
- **Credit for BAU sinks ⇒ Less stringent US target**
- **Credit for above-BAU sinks ⇒ Possible cost-effective abatement opportunities**
- **Large sinks for US and Russia, smaller sinks for EU**

Economics of Major Changes to Kyoto: Increasing US Target (US costs under Annex I Trading Scenario)



Illustrative Model: Batelle's Second Generation Model

Safety Valve

- **Extra allowances available at predetermined price**
- **Sets upper bound on cost**
- **Economic effect depends on who gets the money**
- **Not as dramatic at lowering costs as easing targets, but possibly easier to negotiate**

~~~~~

**NATIONAL  
SECURITY  
ARCHIVE**

This document is from the holdings of:

The National Security Archive

Suite 701, Gelman Library, The George Washington University

2130 H Street, NW, Washington, D.C., 20037

Phone: 202/994-7000, Fax: 202/994-7005, [nsarchiv@gwu.edu](mailto:nsarchiv@gwu.edu)