

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the William J. Clinton
Presidential Library Staff.**

Collection/Record Group: Clinton Presidential Records
Subgroup/Office of Origin: Council on Environmental Quality
Series/Staff Member: Kathleen (Katie) McGinty
Subseries:

OA/ID Number: 2619
FolderID:

Folder Title:
Economics/Jobs [2]

Stack:
S

Row:
61

Section:
5

Shelf:
8

Position:
2

Withdrawal/Redaction Sheet

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. memo	Rick to Katie et al re The Message [political, pre-presidential] (3 pages)	07/20/1992	Personal Misfile
002. memo	Tim Weiskel to Brett Hulsey re Surrogates and Support [pre-presidential, political] (2 pages)	08/13/1992	Personal Misfile
003. memo	Kenneth Berlin to Jeremy Rosner and Katie McGinty re list [pre-presidential, political] (4 pages)	08/13/1992	Personal Misfile

COLLECTION:

Clinton Presidential Records
Council on Environmental Quality
Kathleen "Katie" McGinty
OA/Box Number: 2619

FOLDER TITLE:

Economics/Jobs [2]

2012-0769-F

kc1983

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. memo	Rick to Katie et al re The Message [political, pre-presidential] (3 pages)	07/20/1992	Personal Misfile

COLLECTION:

Clinton Presidential Records
Council on Environmental Quality
Kathleen "Katie" McGinty
OA/Box Number: 2619

FOLDER TITLE:

Economics/Jobs [2]

2012-0769-F
kc1983

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

"USA TODAY hopes to serve as a forum for better understanding and unity to help make the USA truly one nation."

—Allen H. Neuharth
Founder, Sept. 15, 1982



Peter S. Prichard
Editor
Karen Jurgensen
Editor of the
Editorial Page
Thomas Curley
President and Publisher

Today's debate is on **PROTECTING THE ENVIRONMENT**
and the role that should play in the presidential campaign.

Let's not lose sight of environmental priorities

OUR VIEW A strong environmental stance could be part of a winning strategy in this presidential campaign.

Perhaps you were hoping for an "environmental president" next year?

Doesn't look like a sure thing. While Bush claims credit for the Clean Air Act amendments of 1990, Dan Quayle's Council on Competitiveness is undoing some of the pollution rules it calls for.

Bill Clinton, after naming environmentalist Al Gore as running mate and endorsing a strong environmental platform, has fallen silent on the subject. He's made no environmental speeches since the convention.

Clinton's reticence and Bush's backdoor assaults are both flawed campaign strategies. Environmentalism could be a winning platform if it were sold as it should be — an important component, not the enemy, of jobs and economic progress.

What the candidates should be saying:

► Destroying the environment does not preserve jobs over the long term.

ELECTION '92

An occasional series

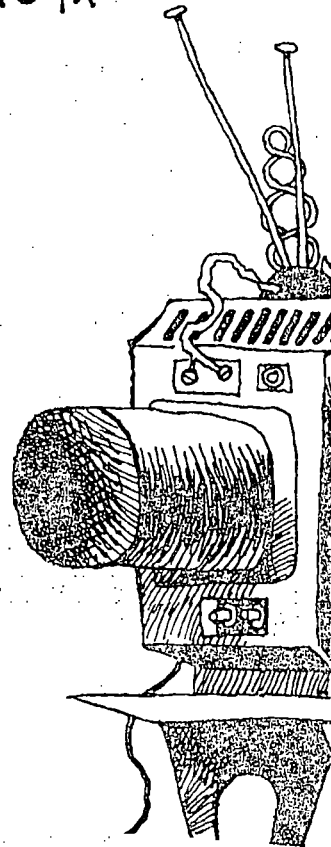
Many of the jobs in industries that resist environmental regulation, like timber and fishing, would disappear without conservation of their raw materials.

► Protecting the environment can create jobs. The Environmental Protection Agency estimates that the Clean Air Act alone will create up to 25,000 new jobs over the next three years. After that, an average 20,000-40,000 full-time positions a year will be created during the last half of the 1990s for engineers, construction workers and equipment-manufacturing workers in jobs to meet the new regulations.

► Ignoring the environment will put the U.S. behind in the global marketplace. Foreign competitors already have beefed up environmental laws and are developing technology to satisfy their new rules. Japan is leading the way in new energy-saving technologies. The U.S. will have to scramble or lose out on jobs and profits from similar products.

The first step toward a winning environmental strategy: Clinton should speak up, and Bush should muzzle the Competitiveness Council. That way, the environment just might win one of them the election.

ROGER ©1992



More safety studies are needed on hormone-treated products, USA TODAY said Aug. 11 in an editorial. Two readers respond:

Helping Mother Nature

"Improving on Mother Nature" isn't new, and its positive impacts have already affected us: the recipients of genetically engineered vaccines; users of antibiotics such as penicillin or tetracycline obtained from genetically engineered microbes; and eaters of garden-variety fruits and vegetables.

For decades, genes have been transferred from one species to another to yield commonly available foods like oats, rice, pumpkins, potatoes, tomatoes...

about
and g



M

Mother
her a l

Food a

Protec

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
002. memo	Tim Weiskel to Brett Hulsey re Surrogates and Support [pre-presidential, political] (2 pages)	08/13/1992	Personal Misfile

COLLECTION:

Clinton Presidential Records
Council on Environmental Quality
Kathleen "Katie" McGinty
OA/Box Number: 2619

FOLDER TITLE:

Economics/Jobs [2]

2012-0769-F
kc1983

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

Critique of CO₂ / CAFE portions of Republican Critique of Clinton Economic Plan.

Environmental Regulation

I. Stabilizing CO₂ Emissions at 1990 levels by 2000.

Stabilization: The Republican study apparently does not believe the Bush Administration. According to the Administration document "U.S. Views on Global Climate Change" the current policy of voluntary programs will nearly achieve the stabilization goal at a net profit to the economy. By relying on outdated studies which ignore the handful of progressive environmental initiatives undertaken by the Administration, the JEC/GOP analysis has no credibility. Moreover, a variety of analyses from the Office of Technology Assessment, the National Academy of Science, the Natural Gas Association, and other sources indicate that profitable CO₂ emission reductions are still available in the U.S. economy. The only missing ingredient for successful implementation is environmental leadership that recognises the job creating potential of energy efficiency and renewable energy.

Carbon Tax: The platform does not call for a carbon tax. In Earth in the Balance Senator Gore proposes a long run goal of reducing taxes on labor and investment by shifting the tax burden to pollution. However, none of the studies cited in the JEC/GOP report fully incorporate the potential tax shifting benefits. Other analyses (including those of the Bush Administration) have indicated that a tax shifting strategy could reduce CO₂ emissions, increase economic growth, and create jobs. It is amazing that after years of hectoring about fiscal policy, the Republicans analysts chose to ignore studies that indicate that tax cuts on labor and investment can increase economic growth.

II. Increase CAFE Automobile Fuel Efficiency Standards

Targets: Again, the JEC/GOP study does not agree with Administration analyses. According to the National Energy Strategy, new car fuel efficiency will rise to 33 MPG by 2000 and 37 MPG by 2010 (from the current level of 28 MPG) without new standards. The Bryan Bill (S 279) was introduced in the spring of 1989, and mandated a 40 MPG fleet average by 2001. Given the passage of time, the comparable bill would achieve 40 MPG by 2004 -- a modest acceleration of fuel efficiency technology that would be achievable without major disruption. The studies that purport to show large job losses fail to account for Administration forecasts of fuel efficiency increases.

Impacts: If Administration forecasts of fuel efficiency hold up, then proposed CAFE standard increases will not significantly impact the U.S. automobile industry. If the forecasts do not hold up, then oil imports will grow substantially, no matter what domestic oil supply strategy is implemented. In that case, the CAFE standards will be an essential weapon to maintain energy security. The current Administration energy policy arguably does create jobs -- albeit

risky jobs -- in our armed forces. But infantry employment is hardly an attractive energy policy.

Additional Critique of JEC/GOP study.

Carbon Dioxide Stabilization Policy

From the Appendix --

1) The basecase CO₂ emissions growth described by the JEC/GOP study is between 1.4 percent and 2.7 percent annually. The NES basecase has 1.8 percent annual increase between 1990 and 2000, and the NES policy case has 1.4 percent. There is no credible source for 2.7 percent annual increase in the basecase. For example, the AGA basecase has CO₂ emissions rising at an annual rate of 0.2 percent between 1990 and 2000. The DRI-Commerce Department study Basecase has 0.7 percent annual growth over the same period. The 2.7 percent figure is imaginary -- and paints an overly pessimistic picture about the potential for stabilization.

2) There are many instruments available to reduce CO₂ emissions. True, a carbon tax has many economic advantages. But EPA Administrator Reilly has successfully pushed some corporate voluntary programs such as Green Lights, that offer the prospect of profitable CO₂ reductions. According to the Administration's own analysis -- agreed to by DOE and OMB -- these programs will nearly stabilize CO₂ emissions from projected levels. See "U.S. Views on Global Climate Change" and a Washington Post article about that study "Memo Shows Emission Cuts By U.S. Are Within Reach" (April 25, 1992). However, these innovative and promising programs are not supported nearly enough in Administration budget requests -- even though they constitute our first line of defense against global climate change.

3) The Jorgenson and Wilcoxon study cited in the Appendix does not recycle revenues in the most productive manner. From the study:

"In all simulations we held the real value of government spending constant and allowed the average tax on labor to adjust to keep the difference between government spending and government revenue equal to the budget deficit, which was held constant. At the same time we held the marginal tax on labor constant, so adjustments in the average rate reflect changes in the implicit zero tax threshold. [Emphasis in the original]

This exercise, like the CBO study cited, is useful to isolate the potential impacts of carbon taxes on economic performance. However, more recent analysis [cites..EPA, DRI, WRI] suggests that tax recycling options that lower marginal tax rates on investment and labor boost economic performance enough to more than offset the deleterious impacts of carbon taxes. So these studies only offer one side of the ledger, and do not adequately portray the policies that Senator Gore has advocated.

An Administration Commerce Department study was even more interesting in its implications. The consulting firm DRI/McGraw-Hill took great pains to explain that DOC had stipulated a non-growth recycling alternative. From the study:

Revenue Recycling The short- and long-run economic repercussions of carbon taxes are quite sensitive to the manner in which such revenues are recycled. Cuts in other taxes or increased public spending can be shown to have a decisive influence on the long-run standard of living and the distribution of income. The DOC mandated that all carbon tax revenues be recycled through reductions in personal income tax revenues. However, this choice rules out a large variety of positive alternatives that could be superior in their abilities to buffer the cyclical and trend losses in national income flowing from new carbon taxes. Tax incentives could be provided to accelerate investment in more efficient production and transportation equipment, payroll tax cuts could be granted to business to offset higher operating costs and thus minimize the inflation shock, or some combination of recycling options could be used. [p. 8]

4) The 616,300 jobs lost figure is from a CONSAD study that has not been reviewed by any prominent energy economists. Not only does it fail to reflect positive policy developments (i.e. Administration programs that nearly attain the stabilization target) it is severely flawed in design and execution. The study uses a static 1982 input-output relationships with questionable assumptions about the incidence of carbon taxes. While it is widely cited by those who oppose CO₂ policy, it is widely ignored by most economists.

CAFE Policy

1) The JEC/GOP study inaccurately describes S. 279 by stating that it advocates 40 MPG by 1996. In fact, it advocates roughly 34 MPG by 1996 and 40 MPG by 2001. Thus, it would have no appreciable effect in President Clinton's first term. Because of that mistaken characterization, combined with the false assertion that the platform calls for a 45 MPG standard, the study massively overestimates any impact in later years.

2) The job loss data by the Motor Vehicle Manufacturing Association is not referenced or cited.

3) The JEC/GOP study in the appendix says that the full cost of increased MPG will be borne by employment: "Firms confronting these costs will reduce employment still further." Later on they state "The costs of a more stringent CAFE standard will be [sic] partly passed on to consumers of automobiles. Based on Crandall and Graham (1989), increasing the CAFE standard to 45 MPG will result in added costs to car consumers of \$17.5 billion." In

this passage they assign the full cost of their inflated view of the CAFE proposal to consumers. They should make up their mind about who will pay the "added cost" to prevent double counting.

3) Safety issues are important, and the JEC/GOP paper cites Crandall and Graham article. In Congressional testimony, Dr. J. Daniel Khazzoom, an econometrician at San Jose State University, seriously questioned the validity of the Crandall-Graham model. [Hearing 4/11/91 before the Subcommittee on the Consumer of the Senate Committee on Commerce, Science, and Transportation]. Moreover, other studies have questioned the presumed relationship between weight and safety when other factors are taken into account. For example, the General Accounting Office surveyed the technical literature and concluded "Our findings support the view that the automobile weight reductions since the mid-1970s have had virtually no effect on total highway fatalities. Fatality rates for all cars have declined in recent years, but the rate for light cars has improved more than that for heavier cars." [Highway Safety: Have Automobile Weight Reductions Increased Highway Fatalities? GAO, October 1991, p. 2]

The issue of automobile safety must be taken seriously. Interestingly, a book by Crandall, et. al. found that automobile safety regulation was among the most cost-effective and beneficial interventions into the market. With continued success, aggressive safety regulation will offset potential reductions in vehicle safety from CAFE-related downweighting.



August 7, 1992

Mr. Roy Neal
Press Assistant for Senator Gore
112 West 3rd St.
Little Rock, AR 72201
VIA FAX 501-399-3798

PHOTOCOPY PRESERVATION

Times Mirror
Magazines, Inc.
1705 De Sales Street, N.W.
Suite 801
Washington, DC 20036
(202) 467-4949
Fax (202) 467-4858
(212) 779-5000

David B. Rockland, Ph.D.
Executive Director
Conservation Council

Dear Mr. Neal:

Times Mirror Magazines, Inc. is conducting its National Environmental Forum. The purpose is to inform our 30 million readers and the general public of the environmental positions of the candidates in the November elections. This will be accomplished through the publication of a Voters' Guide two weeks prior to the elections. The Guide will appear in Field & Stream, Golf Magazine, Popular Science, Outdoor Life, Home Mechanix, Ski Magazine, Skiing Magazine, Yachting and Salt Water Sportsman, reaching 30 million people. In addition, reprints will be distributed through the Times Mirror newspapers including the Los Angeles Times and the Baltimore Sun.

We have devoted a page to the Vice-Presidential candidates. To present their environmental position, we request a response to following questions:

"What is the relationship between domestic economic progress and the protection of this nation's natural resources? Can economic progress and environmental protection co-exist or should we favor one over the other?"

The response from Senator Gore should be in an essay of no more than 250 words. And, to be able to make the closing date for the Guide, it must be in my office no later than the close of business on August 21.

Please call me at your convenience to discuss this request and our Voters' Guide. I will be happy to answer any questions you might have and provide any assistance you need. Thank you in advance for your participation.

Sincerely Yours,

David B. Rockland, Ph.D.

cc: Marla Romash

Field & Stream
Golf Magazine
Home Mechanix
Outdoor Life
Popular Science
Salt Water Sportsman
Ski Magazine
Skiing
Skiing Trade News
Sports Marketing Gr
Yachting

Draft

George B. & Nor Q

Times Mirror Essay

~~Voo-doo economics~~ ^{are} is still alive. ^{forcing} The current myth -- environmental protection is incompatible with economic growth. The truth: sound environmental policies are a precondition of economic growth, not a brake on it. In ~~fostering~~ ^{the} this false choice, the Bush/Quayle team ~~threaten~~ ^{threaten} our economic ~~viability~~ ^{future, or even it} and the quality of life our children will enjoy.

^{we} Environmental protection is an investment ^{in the} in our future that creates jobs and enhances productivity. ^{the env't creates} Protecting ^{investing} natural resources ^{in the} preserves the foundation for economic progress. ^{approved} Natural systems ^a support goods and services in every sector of the economy. And, ^{growing} environmental efficiency helps ^{business} firms become more competitive. After all, pollution really is waste -- what's left over from the production of goods. ^{reduction} Reducing economic waste ^{increases profits} makes our industries more competitive and profitable. A recent report from the chemical industry, for example, shows that investments in pollution prevention pay off -- firms dramatically cut costs by reducing waste, saving energy and streamlining their operations.

Our competitors have gotten the message. ^{and future} The global market for ^{action} environmental technologies is currently at about \$270 billion a year and is growing at 7% a year. Openly proclaiming this to be the biggest opportunity in the history of world business, Germany and Japan are poised to seize the opportunity. Are we?

^{presented by G & A between} We do indeed have a choice to make -- but it is not the false choice ^{of} of jobs ^{and} versus the environment. The real question is whether we will cling desperately to the tired polluting ways of the past or move forward aggressively to produce the ~~high-tech, high-wage,~~ ^{high-tech, high-wage,} globally competitive goods and services that will enhance our productivity, create good and challenging jobs, and ensure a healthy environment for our children. Bill Clinton and I think the choice is clear.

Strengthen our economy, create jobs, & productivity



The
ALLIANCE
To Save Energy



July 13, 1992

Dear Al:

Please accept my
heartfelt congratulations
on your selection as
the Democratic candidate
for Vice President.

Your presence on the
ticket has already given
a tremendous boost to
Gov. Clinton's chances.
It is truly wonderful

to finally have a national
candidate who has a
real commitment to
addressing the global
environmental challenge.

Enclosed is a letter
from 24 companies to
President Bush and a
copy of a reply from
Bill Ruddy that may
give you some useful
ideas for working with
the business community
as the campaign progresses.
I would be happy to
brief you or your
staff on any future



The
ALLIANCE
To Save Energy



Plans for the Business
Council.

Give my love to
Tippie. I hope she
is as excited about
your venture into
national politics as
the rest of us.

With warm regards,
Bill



The Administrator
Washington, D.C. 20460

JUL -6 1992

Mr. William A. Nitze
The Alliance to Save Energy
1725 K Street NW Suite 509
Washington, DC 20006-1401

Dear Bill:

Thank you very much for your note and for sharing with me a copy of the letter to the President from the Business Council for a Sustainable Energy Future. I apologize for not getting back to you before the conference but I'm sure you understand what a hectic time it was!

I want to thank you also for your own valiant efforts on the climate issue. I'm glad the Council sent their thoughts to the President. It's important to underscore the corporate support for energy efficiency.

Again, many thanks and I hope to see you soon.

Sincerely yours,

William K. Reilly

P. S. Business interests opposed to a climate treaty with commitments were emphatic and effective at communicating their views. Did you get a reply?

Business Council for a Sustainable Energy Future

1725 K Street, N.W. • Suite 509 • Washington, D.C. • 20006-1401 • (202) 857-0666

May 6, 1992

The Honorable George Bush
President of the United States
The White House
Washington, D.C. 20500

Dear Mr. President:

We are writing to urge you to announce a U.S. goal for limiting the nation's emissions of carbon dioxide and other greenhouse gases not covered under the Montreal Protocol. We believe that the compromise treaty language now being discussed at the United Nations in New York is a first step toward stronger efforts to limit greenhouse gas emissions.

Global warming is now a real threat to the future of the world economy and to future generations. We cannot afford for the United States, the largest greenhouse gas producer, to lag behind other industrial nations in addressing this problem. Meaningful steps to limit carbon dioxide emissions will enable the United States to lead in shaping a new world order that includes a healthier global economy and environment.

As leaders of companies concerned about the impact of U.S. energy policy on the environment and on U.S. competitiveness, we have come to the conclusion that the U.S. can achieve substantial reductions in its carbon dioxide emissions with existing technologies by relying on market-based policies. Just as the United States led in the development and distribution of oil technology, we must once again become the leader in clean, sustainable, 21st century technologies.

U.S. industry has steadily reduced its emissions of carbon dioxide per unit of output during the past two decades, and can do even better in the years ahead. We believe that the shift to a more sustainable energy economy is now inevitable, and that the United States must move quickly to avoid missing one of the biggest investment opportunities in history. The three strategies that can help us stabilize the climate, reduce oil imports, and improve economic competitiveness are: improved energy efficiency; increased reliance on natural gas; and accelerated use of renewable energy resources.

As industry leaders, we plan to invest in cost-effective technology that will improve energy efficiency and minimize pollution, including carbon dioxide emissions. We will also work to build partnerships with state governments, non-governmental organizations, and the public to achieve environmental goals. However, we need to have your cooperation to be successful. We ask you to join us, demonstrating the

kind of leadership you showed in introducing clean air legislation during your first year in office.

As you said in your National Energy Strategy announcement last year, improved energy efficiency is our cheapest and least environmentally damaging domestic energy resource. We already have the insulation, lighting, heating, air conditioning, variable speed motor controls, and other technologies to greatly reduce U.S. energy use per unit of output. Similarly, we have the technologies to make automobiles and trucks far more efficient and less polluting. What we need is more aggressive federal research and development, government procurement of efficient technologies, and most importantly, market-based incentives for greater efficiency.

We also urge a major increase in the production and use of our cleanest fossil fuel—natural gas—which is already providing the country with more energy than domestic oil. Based on new resource estimates, we believe that the use of gas could be increased 50 percent during the next two decades, providing more energy for heating and cooling buildings, running power plants, and fueling automobiles. The private sector is ready to take the lead in using more natural gas, but we would like to see more federal research on technologies such as fuel cells and natural gas vehicles. This would not only help reduce pollution at relatively low cost, but will get more drilling rigs started in the southwest, boosting employment in that region.

Renewable energy technologies offer another abundant and increasingly economical domestic energy resource. Increased support for federal programs in solar (thermal, photovoltaic and passive), wind, biomass, and geothermal energy will help us harness the pollution-preventing, high-technology energy sources that our European and Japanese competitors are already pursuing aggressively. Renewable energy technologies have advanced to the point that they are being commercialized worldwide, but still face formidable market barriers in the United States. We urge you to respond to this challenge by launching an aggressive research and market development program, including federal incentives for renewable thermal and electric applications similar to those studied during the National Energy Strategy process. Such support can allow these new sources to provide a large share of the energy the country needs.

We believe that government and industry should adhere to two principles in devising a cost-effective sustainable energy strategy. First, all policy decisions must reflect the full-cycle economic and environmental costs and benefits of each technology. Second, we should rely on market-based incentives such as pollution taxes, feebate systems, or tradeable permits to achieve our objectives, avoiding where

possible "command-and-control" regulation. We urge the Administration to examine options for offsetting taxes on carbon dioxide or other pollutants by reducing taxes on income, capital, or labor. This would help to internalize and ultimately reduce the environmental and national security costs associated with today's energy economy, while boosting incentives for capital formation and job creation.

We urge you to convene a working group of administration officials and industry, consumer, and environmental leaders, to report to you by the end of 1992 on how the above market-based policy options could best be incorporated into a cost-effective strategy for reducing U.S. carbon dioxide emissions.

A national strategy for stabilizing the climate by harnessing cleaner domestic energy sources could be lasting legacy of your administration. Such a strategy would help reduce our dependence on imported oil, create jobs, and improve national competitiveness. Equally important, it would provide leadership by example to other countries whose cooperation is essential in any long-term strategy to reduce the risks of global warming. In that respect, it could become the cornerstone of a truly sustainable new world order.

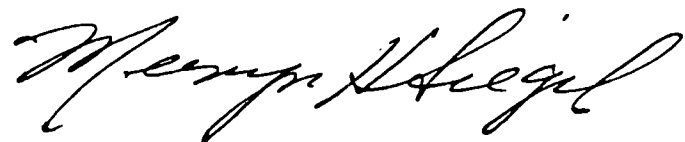
Respectfully yours,



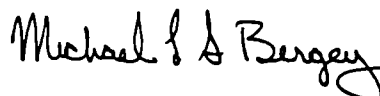
Roger W. Sant
Chairman and CEO
The AES Corporation



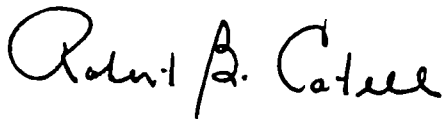
Steven K. Gorman
President
American Energy Technologies Inc.



Mervyn H. Siegel
President and CEO
Advanced Photovoltaic Systems Inc.



Michael L.S. Bergey
President
Bergey Windpower



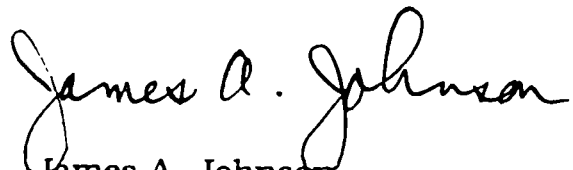
Robert B. Catell
President and CEO
Brooklyn Union Gas Company



Harry R. Halloran Jr.
Chairman
Energy Unlimited Inc.



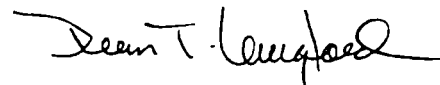
Walter J. Hesse
President
ENTECH Inc.



James A. Johnson
Chairman and CEO
Fannie Mae



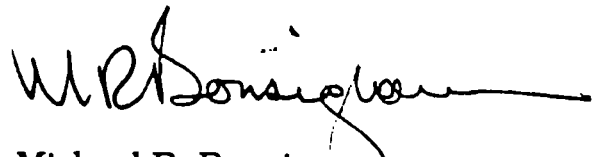
Robert A. Hefner III
Chairman
The GHK Company



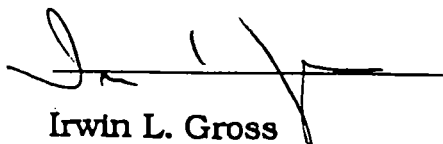
Dean T. Langford
President
GTE Electrical Products Group



Anthony J.F. O'Reilly
Chairman, President and CEO
H.J. Heinz Company



Michael R. Bonsignore
Executive Vice President and COO
Honeywell Inc.



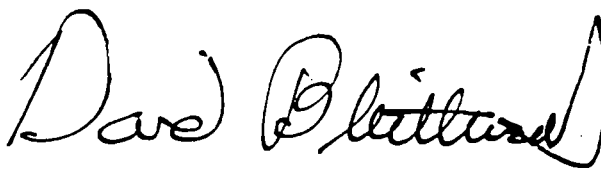
Irwin L. Gross
Chairman
ICC Technologies



Theodore Blumenstock
Vice President, Business Development
Integrated Power Corporation



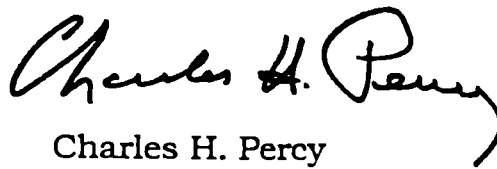
Robert Lynette
President
R. Lynette & Associates Inc.



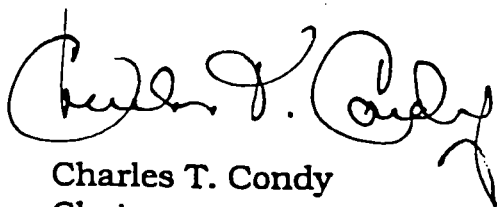
David Blittersdorf
President
NRG Systems



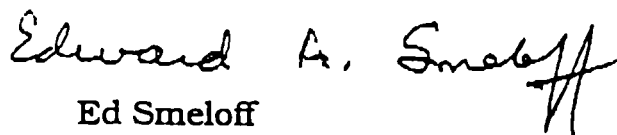
David Olsen
President
Peak Power Corporation



Charles H. Percy
President
Charles Percy & Associates Inc.



Charles T. Condry
Chairman
Proven Alternatives Inc.



Ed Smeloff
Chairman
Sacramento Municipal Utility District



Ben Bennett
Executive Vice President
Stirling Technology Company



S. Lynn Sutcliffe
President and CEO
SYCOM Enterprises



Subhendu Guha
Vice President, Research & Technology
United Solar Systems Corporation



Kenneth C. Karas
President and CEO
Zond Systems Inc.



THE RIGHT CLIMATE FOR CARBON TAXES:

CREATING ECONOMIC INCENTIVES TO
PROTECT THE ATMOSPHERE

Roger C. Dower
Mary Beth Zimmerman



WORLD RESOURCES INSTITUTE

I. INTRODUCTION

International concern over the potential for carbon dioxide and other "greenhouse gas" emissions to change the world's climate has generated national and international debate over the most appropriate policy responses for reducing these emissions. In particular, countries are searching for emission-reduction tools that are cost-effective, consistent with continued economic growth, and equitable with respect to both costs and benefits.

Any number of studies have shown that a pollution tax on carbon dioxide, a "carbon tax," is the most cost-effective means of reducing carbon dioxide emissions, the major greenhouse gas.¹ But the United States and many other countries have resisted pollution taxes in general, and carbon taxes in particular, as environmental policy tools. Much of this reticence stems from the alleged impacts of a tax-based pollution control strategy—in the case of a carbon tax, slower national economic growth, reduced international competitiveness, and a disproportionate burden on certain income groups and regions.

In fact, virtually all of the basic approaches to controlling CO₂ emissions entail economic costs and make some people or regions better off than others. Certainly, any effective CO₂-reduction program will raise the price of goods and services produced from carbon-based fuels. Like carbon taxes, regulatory strategies (often called "command and control" policies), and pollution permits for carbon emissions can reduce economic output and generate regional and income disparities.² These effects may be harder to trace in a regulation or permit system than in the case of carbon taxes, but they are no less real.

Compared to alternative approaches, however, carbon taxes have several clear economic benefits. In particular:

- Carbon taxes offer a practical and administratively manageable means of encouraging a "least cost" approach to achieving any given level of reduction in carbon dioxide emissions. Compared to

regulatory alternatives, they could save significant economic resources.

- A portion of the revenues generated by a carbon tax can be returned to the economy by lowering other taxes, providing net gains for the U.S. economy; and

- Some of the revenues from a carbon tax can also be used to compensate groups adversely affected by the tax.

Of course, dollars diverted to compensation programs may not be available to finance tax reform initiatives, and desires for economic efficiency must be balanced against those for fairness or equity. In the end, how tax revenues are allocated between the competing goals is a political call. Nevertheless, researchers can and should narrow the range of choices. Current economic modelling work helps policy-makers grasp the economic implications of recycling a large part of the revenues from a carbon tax and leaving the rest for other programs. In the future, a better understanding of how various allocations would affect various states could help build a firmer policy foundation and make it easier to determine the size and allocation formula for a block-grant scheme.

All the economic merits of a pollution or carbon tax notwithstanding, political barriers impede their implementation. The public is leery of new taxes. But pollsters' findings that the American public is willing to pay more for environmental protection imply that a pollution tax might be more politically acceptable than other types of taxes. A pollution tax that offsets other taxes would presumably be even more tolerable.

The biggest hurdle to more sensible tax policy is an underlying distrust of the system. The public does not believe that the government will raise one set of taxes only to lower another. Instead, it expects that any increase will result in more net spending. Any pollution tax strategy must be accompanied by policy initiatives for addressing this suspicion.

Houston Chronicle 8/19/92

EPA: Carbon tax would help cut carbon dioxide emissions

Reuters News Service

WASHINGTON — Environmental Protection Agency studies show carbon taxes would help reduce emissions of carbon dioxide, the chief cause of global warming, while boosting economic output, a top EPA official said Tuesday.

Alexander Cristofaro, director of EPA's air and energy policy division, told a conference on greenhouse gases that any plan to implement carbon taxes should be part of a tax reform package to cut taxes on labor and capital.

"We tax a lot of things that are productive for the economy . . . but our studies show it's better for the economy to tax bad things, such as carbon dioxide emissions," he said.

"Shifting taxation away from capital and labor to energy will not only reduce carbon dioxide but make the

economy grow faster," he added.

Cristofaro said the White House had not responded directly to the EPA's research on carbon taxes but indicated such a tax could be a long time coming.

"The administration believes now is not an opportune time to address global climate change, partly because the research is not conclusive . . . or to reform taxes," he said.

There were also some concerns about the equity of carbon taxes, in light of the fact that the country's richest 20 percent spent 4.5 percent of the annual income on energy expenses, compared with 7 percent spent by the poorest 20 percent.

Cristofaro also noted any carbon tax programs would need to be coordinated worldwide, since they could prompt industries facing high tax bills to flee to developing countries.

okay

DISINCENTIVES FOR POLLUTION AND WASTE

BUSH-QUAYLE CHARGE: Al Gore favors taxes on oil and gas and manufacturing materials which will hurt consumers and force companies to layoff workers.

ANSWER: The Bush-Quayle Administration, through Dan Quayle's Competitiveness Council, has sought to protect polluters. This administration passed the second largest tax increase in history, and the burden fell squarely on workers and their savings. Instead of taxes that discourage investment and encourage waste, Al Gore has proposed that polluters be forced to pay at least a portion of the cost of the damage they cause. If polluters are forced to pay for actions that pollute and create vast amounts of garbage, then pollution and waste will be reduced in the manufacturing process instead of simply forcing taxpayers to pay to clean up the mess after the fact. We cannot afford a continuation of more of the same Bush-Quayle policies which have resulted in the borrowing of billions of dollars and protection of polluters with no thought about the consequences for our children and future generations.

A Few Comments on "Jobs v. Environment"

President Bush's notion that somehow gutting environmental laws will resurrect our moribund economy is a reflection of how poorly he understands the economic devastation that he has brought to this country.

The President has tried to justify his furious backpeddling on environmental issues on the ludicrous basis that somehow illegal loopholes in environmental laws will create jobs. I don't think he's fooling anyone. Working Americans aren't helped one bit by illegal loopholes that allow them to be exposed to dangerous levels of toxics and smog in our air supply. The record shows clearly that those loopholes are there for big Republican campaign contributors with special access to Dan Quayle and his anti-environment cabal.

The new programs in the Clean Air Act could create many thousands of jobs, if only the "environmental President" would stop caving in to big polluters and carry them out. In fact, a recent study by "Smith Barney" concluded that the clean air legislation would create between 20 and 40 thousand permanent new jobs.

ECONOMIC GROWTH

Environmental regulation protects the economy from the damaging effects on pollution. A clean environment is an important productive asset which is often overlooked.

HUMAN HEALTH:

Sick people are not productive workers. However, even with the strides made in the U.S. in controlling exposure to pollution, serious health problems remain.

- "The need for environmental infrastructure is important in terms of public health, a point made painfully clear by the recent cholera outbreak in South America and beach closings in San Diego." [A Report on Clean Water Investment and Job Creation]
- Lead poisoning continues to afflict children -- especially poor children. The resulting nervous system damage will surely impede educational progress and impair employment opportunities for these citizens.

AGRICULTURAL DAMAGE:

According to one estimate, if (terrestrial) ozone pollution levels were cut in half, income from agricultural crops such as wheat, soybeans, corn, and peanuts would increase by over \$5 billion per year. [Breathing Easier, WRI] While pollution-related agricultural losses are currently high, damages would be much higher in the absence of existing pollution controls. The costs of environmental control on one industry will provide economic benefits in another sector. While harder to measure and account for, these benefits are nevertheless quite real.

WETLANDS VALUE:

Once considered useless swampland, wetlands are now understood to be very valuable for flood control, water purification and other valuable functions. One study estimated that one acre of coastal wetland in Louisiana provides between \$2,500 and \$17,000 worth of value in the form of commercial fish hatchery and habitat, trapping, recreation and protection from storm damage (in 1983 dollars). The market price of the coastal wetlands averages about \$500 per acre. Wetland protection makes economic sense, even though the benefits are not immediately obvious. ["Ecological Economics" by Costanza & Wainger; values in 1991 dollars would range between \$3,200 and \$22,800 per acre.]

RECREATION:

Americans spend billions of dollars to visit our outstanding wilderness areas, to hunt, fish, hike, camp, photograph, or just to experience nature. These areas are important economic assets.

COMPETITIVENESS

According to Michael Porter of the Harvard Business School, environmental regulation can be a source of competitive advantage because it challenges firms to innovate, examine production processes for inefficiencies, and nurtures the domestic environmental equipment industry which can then compete vigorously in this expanding global market. ["America's Green Strategy," Scientific American, April 1991; see entire article for examples. Porter also argues that regulations should be reformed in some cases to stimulate competitive responses.]

Contrast this progressive attitude to the Council on Competitiveness Chaired by Vice President Quayle. The firms that seek relief in the Council are those firms trying to shield themselves from competition.

The Council on Competitiveness is really defending the Maginot Line -- trying to fight the last war with outmoded and reactionary thinking. The polluters who petition the Council are simply captive to their own inertia and do not represent the growing segments of the U.S. economy that eagerly respond to environmental challenges.

The Clinton/Gore approach will nurture the progressive alliances between business, environmentalists, government, and citizens to bring environmental competitiveness into the 21st century, not to defend the industry sentimentalists who yearn for a world before environmental responsibility.

had not organized a genuine consultative forum" (8/9).

*11 EC: BRITAIN CHARGED WITH FAILING TO ASSESS ENVIRO IMPACT

"Europe has decided to prosecute Britain for permitting a conifer-planting scheme to destroy an area of Scottish moorland" reports the DAILY TELEGRAPH. The European Commission concluded that the British Forestry Commission "should have published an environmental assessment of a 2,000-acre planting scheme" on the estate of Sir William Gladstone, former Chief Scout and Lord Lieutenant of Clwyd, that will "spoil the views over one of the most beautiful parts of Deeside [in Scotland]. If [Britain] refuses [to do the assessment], the case will go to the European Court." Forty percent of the plan has already been completed, "which has involved deep ploughing of the site." David Minns of the Royal Society for the Protection of Birds: "This case will hopefully result in much greater care being taken over the siting of large-scale commercial plantations in Scotland's important upland areas" (8/6).

*12 JAPAN: MITI PROPOSES "GREEN CODE" FOR COMPANIES ABROAD

"Japanese businesses operating abroad are likely to be requested to adopt tougher environmental protection measures than those already in force in host countries," officials of the International Trade and Industry Ministry said 8/4 (DAILY YOMIURI). The proposed "green code" by MITI was prompted by the recent order by Malaysia to shut down the "Asian Rare Earth" chemical company there, "in which Japan's Mitsubishi Kaisei Corp. has a stake." The plan also includes a "key measure" that would encourage Japanese importers to "assume some responsibility for protecting the environment of exporting countries." Tax breaks would be used to encourage businesses to actively partake in environmental preservation abroad and possibly as an incentive to establish business there to aid Third World development (8/5).

===== STATE REPORTS =====

*13 COLORADO: ENVIROS SCORE "HALF-VICTORY" WITH "NO DAMS" BILL

After having fought since 1986 to have the North St. Vrain Creek classified as a national Wild and Scenic area, conservationists will have to settle for a proposed law that would prohibit dams along much of the river (Gregory Todd, Boulder DAILY CAMERA). Rep. David Skaggs (D-CO) will introduce the legislation, which represents the "consensus" reached after environmentalists and developers were unable to agree on "complex water rights issues." For environmentalists, the no-dam agreement is only a "half-victory" because it "leaves the door wide open for development on the creek's tributaries." Boulder County Commissioner Sandy Hume: "We have precious little time to

GLOBAL WARMING NETWORK ONLINE TODAY

A Daily Executive Summary Covering World News on Climate Change

INDUSTRY REPORT

PROJECTIONS SHOW GLOBAL WARMING WILL IMPACT ELECTRIC UTILITY DEMAND

If the earth's surface temperature increases as models project, not only will it cause significant impact on weather variability and humidity factors, but will also increase demands for electricity. Critical applications of air conditioning and irrigation pumping today make up nearly a third of the industry's peak demand, so changes could have massive impact on these uses alone.

Some models suggest that climate change and variability could have even greater impact than temperature increase. A study partially sponsored by EPRI and the Edison Electric Institute reported that an increase of less than 2 degrees F by 2015 could boost peak demand for the New York Power Pool by 3.3% while it would raise peak demand by over 7% in the Southeast. The study urged utility planners to start now to use projected climate change estimates in planning analyses and decisions.

Another conclusion by two economic consulting firms was that climate change will increase industry peak demand by about 4% by the year 2000 translating into a need for a 25% increase in utility capacity. A third study undertaken for the EPA found that climate change could increase the need for new plants by 14-23% by mid-century, meaning several hundred billion dollars in power plant construction investment. Regionally, the study predicted capacity requirements rising by up to 30% in the Southwest, Southeast and Southern Plains while actually decreasing in a few areas in the Northeast and Northwest because of reduced heating needs.

(ELECTRICITY JOURNAL: JULY 1992)

=====

INTERNATIONAL REPORT

JAPAN PLANS \$12 BILLION COMMITMENT TO REDUCING GREENHOUSE GASES

Japan got an eager start on energy conservation with the oil crisis of 1973. But many of its projects stalled out in the '80's, when oil prices plummeted.

The country will be gearing up again in a big way. Its Ministry of International Trade and Industry (MITI) is planning to devote \$7.1 billion to development of clean energy, \$3.9 billion to work on energy-saving systems, and \$1.2 billion to transfer energy-related technologies to developing nations.

A MITI official says that these projects, taken together, will help Japan cut emissions of greenhouse gases by 10% over the next 30 years.

One likely focus: mass production of hydrogen to generate power and to fuel transportation. The projects will also try to develop energy-saving systems nationwide to extract heat from sewage or waste and supply it to homes and offices.

(REUTER: 8/5)

=====

EDITORIALS, REVIEWS AND ASIDES

CO2 TAX WILL BE RUINOUS TO GLOBAL ECONOMY, SAYS SINGER

The following are excerpts from a letter to the editor written by S. Fred Singer of the Science and Environmental Policy Project. The letter, entitled "The Economic Costs of a Tax on CO2," appeared in the August 7 Wall Street Journal:

"...economists generally agree that CO2 control will be very costly; they favor a carbon tax only because it allows for an economically efficient solution that lowers this cost somewhat.

"Stabilizing emissions at the 1990 level - the general goal announced by European Nations - will not stabilize atmospheric concentration; it merely reduces its rate of growth slightly. According to the United Nations scientific reports on climate change, stabilization requires that CO2 emissions be reduced world-wide by 60% to 80%. No one has yet dared to estimate the economic cost of such drastic measures - never mind the political cost. In 1990 the Congressional Budget Office reported costs to the U.S. economy of about \$150 billion a year for only a 20% emissions reduction. Additionally, consumers would face doubled electric bills and a doubling of gasoline prices.

"... the greatest problem for any carbon tax proposal is how to divide up an agreed-to emissions level into national quotas. Relating them to 1990 emissions (which are roughly equivalent to national gross domestic products) is clearly unfair to developing countries and won't fly. It would stunt their development and keep them forever poor. Third World nations would rightly consider any quota that's locked into 1990 emissions as a form of 'eco-imperialism.'

"On the other hand, applying emission limits to only major industrial countries - comprising less than 20% of the current world population - means that their emissions would soon become insignificant compared with those of rapidly growing developing nations.

"If carbon tax revenues from rich countries are used to buy emission permits for poor countries, what's to stop Third World kleptocrats from keeping their subjects poor and encouraging rapid population growth to maximize this income transfer?"

(WALL STREET JOURNAL: 8/7)

=====

May 13, 1992

MEMORANDUM

To: Senator Gore

From: Marc Chupka

cc: Katie McGinty

Subject: Labor and CO₂ reduction

You are apparently meeting tomorrow with labor leaders concerned about the impact of CO₂ reductions and jobs. They have probably been fed a steady diet of propaganda from Department of Commerce, Global Climate Coalition, Western Fuels Association, etc. A study was released yesterday (by Wilbur Steger) showing big job losses -- I haven't seen it but I understand that it is an extension of the gloom and doom carbon tax scenarios so it is not a surprise. You may wish to emphasise that the jury is still out on the economic impacts and that many analyses point to improved employment from modest CO₂ emission strategies.

You may want to point out that in many industries, there will be opportunities for labor. Conservation activities are more labor intensive than energy production (see attached Worldwatch paper discussion). In fact, electricity sector is very capital intensive, and demand-side programs are more labor intensive. Gas industry will benefit (cite American Gas Association study). Building more fuel-efficient cars may be just as labor intensive as gas-guzzlers.

However, CO₂ stabilization will probably continue to limit coal employment. But they are in sad shape under any scenario -- shifts to western strip mined coal (which is capital intensive and non-union) and technological changes (longwall mining methods) have really hurt coal employment. If Richard Trumka (United Mine Workers) is there, you will have to deal with transitional issues. UMW may have learned a lesson from the acid rain debate, however: get to the bargaining table early or risk getting shut out of the process when deals are struck. UMW may want to hear more about what could be done for them under a CO₂ stabilization policy rather than absolutely refusing to hear about it.

Clean-Air Battle: Unusual Cast of Courtroom Foes

1-8 *NYT* 4/24/92
By MATTHEW L. WALD

When Federal courts hear a case involving pollution regulations, the parties are usually an industrial company seeking to overturn the rules and an angry state regulator. But the politics of the 1990 Clean Air Act are so convoluted lately that the polluters are years away from court. Instead, in Federal district court in Albany, the states are suing the Federal Government to establish rules in the first place.

Nine states are suing the Environmental Protection Agency because they fear that the Federal Government is planning to offer polluters too soft a deal. And the environmental agency has come close to saying it agrees.

If it sounds unfamiliar and confusing, that is because it is.

States Sought Law

This is not a states' rights case, in which a state sues to be free of Federal mandates. These states want mandates, and the stricter the better. The Clean Air Act was approved two years ago largely because of heavy lobbying by states that are now suing.

At first glance, it is a states' masochism case, in which the environmental commissioners are pleading, "beat me, whip me, make me clean up my air." It is the kind of suit that may be possible only in a pollution case.

When Congress approved the Clean Air Act as the nation's basic air pollution statute, it did not so much lay out the rules as establish a forum for a continuing battle between industry and the states.

"There was a lot very high-stakes horse-trading" leading up to the bill, said Susan F. Tierney, Secretary of Environmental Affairs in Massachusetts. Now the bill is law, she said, but "the horse-trading didn't stop."

The law gave the environmental agency until last Nov. 15 to tell the

states how to issue pollution permits to 35,000 companies around the nation, but the agency has yet to issue the regulations. The states cannot start issuing permits until they have the regulations in hand.

The law also sets goals for how clean the air must be by certain deadlines. There are sanctions against states that miss deadlines, including the loss of highway money and bans on construction of new pollution sources like factories and businesses.

A No-Win Situation

Here's the rub: No regulations, no permits. No permits, no progress on clean air. No progress, and the states miss their deadlines.

Companies presumably cannot be penalized for not complying with per-

Further delay on pollution rules could be costly to the states.

mits that do not yet exist. But the states are still on the hook if the air is still dirty.

In addition, the states find themselves relying on Washington to enforce equality among them. Any one of them could order its industries to spend hundreds of millions of dollars, or even billions, to cut pollution, but air drifts back and forth across state lines, and the result would be a little like being the first in the neighborhood to rake the fallen leaves out of the yard on a windy day; if no one else follows, then in a few hours the work will have been done in vain. That is why the states lobbied so hard for the law and the deadlines in the first place.

Why did the agency miss its deadline? The agency says that Congress assigned too much homework. The Clean Air Act of 1970 was 68 pages long. William Rosenberg, the environmental agency's deputy administrator for air, said. The 1990 version was 788 pages, and the regulations will run to 10,000.

Delays From White House

But another reason is a renewed debate over the merits of the law within the executive branch. The Office of Management and Budget and the Competitiveness Council, which has the explicit purpose of relieving industry of burdensome regulation, have held up some rules required by law.

Those two White House agencies "get information from anyone who wants to give it to them," said Mr. Rosenberg, "and we don't always know where the information comes from." In a roundabout way, the agency is saying that industry is making a last, unrebuttable pitch, an unfair advantage.

The holdups, he said, "are not productive and are going to lead to costly litigation." In fact, they may result in regulations coming about by court order because the administrative process broke down.

Scott A. Weiner, the New Jersey Commissioner of Environmental Protection and Energy, called the Competitiveness Council "a back door" through which industry can affect the regulations. The result, he said, is regulatory stalemate.

Outside government, environmentalists complain that the council is simply a checkpoint where the White House gives industry an opportunity to bury regulations it does not like.

Eric Goldstein, a clean air specialist at the New York office of the Natural Resources Defense Council, a plaintiff, said, "I suspect there are many people in E.P.A. who are pleased by this suit, who would secretly applaud it."

Congress seems to have foreseen what has happened, putting provisions in the law that allow the states, or private citizens, to sue if deadlines are not met, allowing the struggle before passage to continue afterward.

The suit, filed on April 9, takes on an added significance in the face of the 90-day regulatory moratorium announced by President Bush in his State of the Union Message. The moratorium may be extended by the White House beyond its expiration on Tuesday, but on this issue that would be made moot by a court order to comply with the law.

The same provision allows citizens to sue the states if the states do not achieve clean air by the deadlines established for each. That is very much on the minds of state administrators like Mr. Weiner of New Jersey.

"Whatever dispensation the E.P.A. gives the states in terms of implementation, we face the prospect of third-party citizen suits," he said, calling the suit against the environmental agency, to which New Jersey is a party, a "defensive offensive" to forestall such suits. The others are New York, Connecticut, Maine, Massachusetts, Minnesota, New Hampshire, Rhode Island and Vermont, and the Sierra Club.

This is not the model of legislation, which is passed by Congress, signed by the President and carried out by the relevant Federal agencies.

"The thing is broken," William I. Roberts, chief lobbyist of the Environmental Defense Fund in Washington said of the lawmaking process. "Getting a law enacted is arduous, complex, and controversial," he said. "But it really gets you to only about the third inning of the ball game. There are a lot more innings to play, some in courtrooms, some in the political arena, some locally and some nationally."

"Whether it's the best way to make policy or not is an open question, but all of us take it as a given," he said.

Bush Curbs Clean Air Provision

EPA Is Overridden On Public Notice Rule For Emission Increases

By Ann Devroy
and Michael Weisskopf
Washington Post Staff Writers

President Bush has overruled the Environmental Protection Agency and approved a major concession to industry in one of the most important regulations of the new Clean Air Act.

The decision, made last week by the president but not publicly announced, would ease and speed up the approval process for industries when changes in plant operations would increase emissions of pollution beyond those specified in their permits.

According to a senior administration official, White House Chief of Staff Samuel K. Skinner notified EPA Administrator William K. Reilly that the president had not accepted Reilly's argument that the 1990 law required that the public be notified and given an opportunity to challenge changes in emissions. Industry officials had argued that such changes would be relatively small, and should not be open to public challenges.

Reilly has agreed to issue the no-notice regulation only after the Justice Department renders a formal opinion supporting its legality, officials said. But the EPA chief appears to have given up any hope of winning the battle.

Officials said that with the nation just emerging from a recession, and the White House emphasis this spring on deregulation, the president was loath to impose burdens on industry that virtually all his advisers, with Vice President Quayle in the lead, thought were too heavy.

The dispute is the latest test of Bush's pledge to be "the environmental president," with environmental activists arguing that he is using the rule-making process to gut a law he took so much pride in pushing through Congress. Bush pledged during the 1988 campaign to revise the Clean Air Act and has cited the revisions as one of his major domestic achievements.

But since then, the economy has gone sour and, as he runs for reelection, Bush has given far more attention to helping business and industry, which lobbied heavily against EPA's original interpretation that the public must be notified of emission changes.

In its Clean Air Act Amendments of 1990, Congress set out broad guidelines for control of urban smog, acid rain and toxic emissions. The EPA was delegated responsibility for drafting the detailed rules for bringing industry in compliance with the law.

See CLEAN AIR, A14, Col. 1

President Overrules EPA on Clean Air, Approving Major Concession to Industry

CLEAN AIR, From A1

One of the provisions most hotly debated in Congress required industry to obtain permits that include limits on the pollution emitted by each plant. Industry fought in vain for the right to exceed the limits after "minor" changes in plant operations, without going through the costly and time-consuming process of obtaining a new permit.

Congress considered permits an essential enforcement tool, and the law was explicit in its requirements for changes in emission limits. State governments, which implement the law, were required to notify the public and assure an opportunity for public participation.

In initial drafts of the permit rule, the EPA adhered to the congressional mandate. But the agency was overruled by several White House advisers, and it put out a proposal in April 1991 allowing industry to increase emissions, potentially without limit, so long as state authorities were notified seven days in advance. No provision was made for public notification, review and comment.

Environmental groups objected loudly to the proposal, and Reilly has attempted in administration debates since then to require a 45-day review process and public notification.

He was armed with a legal opinion from the EPA's general counsel, E. Donald Elliott, concluding that "it is highly unlikely that the courts would uphold as 'reasonable' an interpretation of the statute that would authorize environmentally significant changes to be made in emissions without appropriate opportunities for public notice and opportunities to participate."

The U.S. comptroller general later concurred with the Elliott opinion.

White House officials said the Justice Department has produced a competing legal opinion saying the government could proceed with its regulation. However, other administra-



ASSOCIATED PRESS

EPA's Reilly wants formal opinion from Justice Department on legality of rule.

tion officials said the opinion was informal and inconclusive and that Reilly has told the White House that it would not withstand a court test.

A senior administration official said yesterday he would not comment on the legal opinion dispute. Reilly, the official said, "understands what the president's decision on this is."

Asked when Reilly would issue a final rule, the official said, "That is up to Reilly. . . he is technically in charge of these regulations."

The decision is bound to set up a protest in Congress and legal challenges. White House officials have said they expect legal challenges, from one side or the other, on almost every regulation they write.

A3

WSJ

5/18/92

Bush Sides With Industry in Overruling The EPA on Clean Air Act Regulations

By ROSE GUTFELD

Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON — President Bush's decision to overrule the Environmental Protection Agency on a key issue of the Clean Air Act means that two rules vigorously sought by industry probably will be finalized soon.

Mr. Bush, as expected, sided with the White House Competitiveness Council and against his top environmental official on the controversial air-permits rule. The rule would have required businesses with air pollution permits to seek regulatory approval when they change operations in ways that could increase emissions.

At issue was how much public participation should be required. EPA Administrator William Reilly had argued that the law requires citizens groups to have ample opportunity to challenge such changes. The competitiveness council, headed by Vice President Quayle, disagreed, arguing that the requirement would cost industries billions of dollars.

While it is highly unusual for a such a seemingly technical rule to go to the president for a decision, the permits became a major test of the president's deregulatory initiative. Mr. Bush's involvement followed months of intense debate within the administration, with Mr. Reilly virtually alone in calling for a strong regulation. The president's decision was first reported in the Washington Post.

Now that Mr. Bush has made his decision, the permits rule should be finalized shortly. The EPA also is likely to issue another that had been pushed by the White House and the utility industry that would ease the environmental standards that

apply when utilities upgrade their plants. The agency had been waiting to issue the rule in order to increase its leverage in the permits dispute.

Officials are still discussing whether a formal legal opinion from the Justice Department is required before the permits rule can be issued. Mr. Reilly continues to argue that such an opinion is necessary. With the president's decision, however, EPA officials believe the EPA administrator is satisfied that he has pushed his case as far as possible. Individual states could still require public participation, but they wouldn't have to do so.

In a statement yesterday, Rep. Henry Waxman argued that the changes accepted by the president would be illegal, and he urged Mr. Reilly not to issue a permits rule that includes them. Noting that the law gives the EPA administrator ultimate authority for carrying out the Clean Air Act, the California Democrat said, "I urge Mr. Reilly not to take the illegal action called for by the president, and not to sign the rule with this loophole."

The rule is expected to give environmental regulators 45 days to review operating changes that businesses want to make under their permits. It would be up to the states to decide if businesses could start making the changes before the review was complete. If a state decided to disallow a change that was already under way, the company would have to stop and, possibly, to temporarily reduce emissions elsewhere in the facility to make up for the excess emissions that had been caused by the disallowed change. The competitiveness council had pushed for a shorter review period.

Bush Between Push and Pull of Clean Air

President Being Compelled to Choose Strict Enforcement of Law or Eased Rules for Industry

A18 By Ann Devroy
Washington Post Staff Writer 1/26/92

Caught between competing political imperatives, President Bush is being forced to choose sides in a bitter debate over a proposal championed by Vice President Quayle that opponents say could cripple enforcement of the Clean Air Act of 1990.

The clash over how to enforce the law, the major environmental legislation enacted during Bush's presidency, pits the advocates of easing regulations on industry, spearheaded by Quayle and the president's Council on Competitiveness he chairs, against those promoting strict regulation of air pollution, led by William K. Reilly, administrator of the Environmental Protection Agency.

With Bush having embarked Friday on what aides called "Deregulatory Week," highlighting the need to end burdensome regulations as part of his effort to spur the economy, White House officials predict Quayle and his allies will prevail.

The issue underscores a broader debate over the need for tougher environmental controls that has existed since Bush took office. While Bush proclaimed that he would be "the environmental president," the danger posed to his reelection campaign by the faltering economy has pushed him "toward the economic argument more than he might have," as one aide put it.

"At the heart of this debate is really a different world view inside this administration," one senior official said. "One view is extremely suspicious of business and industry and feels that government must watch it at all costs and that goals like clean air must be pursued to the final inch. Another view is that watching has to be balanced and that goals to be achieved have to be balanced by the cost to business and ultimately the consumer."

The 1990 reauthorization of the Clean Air Act left it up to the EPA to write the rules used to enforce it, a process that has been going on for more than a year. But administration officials, principally through the Competitiveness Council, have become involved in the rule-making process, and, according to critics, are using the process to achieve exceptions rejected by Congress.

The issue that has brought this struggle to a head is a proposed rule that would allow large industries to forgo public notice, hearings or EPA review and simply notify federal and state pollution control authorities when changes in their operations will increase emis-



VICE PRESIDENT QUAYLE
... notice requirements burdensome

sions beyond the levels specified in their permits.

A key provision of the Clean Air Act requires industry to obtain the permits. During debate over the legislation, industry representatives fought unsuccessfully for more flexibility on the limits specified by the permits and the ability to exceed the limits without going through the process of obtaining new permits.

But the Competitiveness Council has said the public notice requirements are burdensome and expensive for what it says would be only minor changes in emission levels. It has vehemently pushed the limited notice, insisting that the Clean Air Act does not require such potentially broad and expensive review of minor emission changes.

Reilly says the Clean Air Act in fact stipulates that any revisions in emission levels require a public review process, and he has two legal opinions, environmental groups and the congressional authors of the act on his side.

From 30,000 to 40,000 large businesses, including utilities, oil companies and manufacturing plants, would be affected by the decision, with the EPA estimating the cost to each of the public hearing requirement to be \$500,000, but with industry officials arguing that billions would be spent over small amounts of increased pollution.

Quayle, Reilly and other senior officials met Wednesday on the issue, one of a series of contentious sessions in recent months, and were unable to reach a resolution. The conclusion was the sides were so far apart that Bush would have to make the choice, a distasteful outcome for a president who prefers governing by consensus.



WILLIAM K. REILLY
... law sets public review process

Asked if there is a middle ground in the debate, one official said, "If there is, George Bush will find it."

Most of those involved in the debate say there is no middle ground. Rep. Henry A. Waxman (D-Calif.), one of the authors of the legislation, said in an interview that the law requires such notification and that if

"At the heart of this debate is really a different world view inside this administration."

—a senior official

Bush sides with Quayle, the president is violating the law and opening a huge loophole in it.

"The decision on this permit goes to the very heart of the Clean Air Act," Waxman said. "It is the key, the linchpin to the whole thing working that industries have to get a permit on these emissions and that they not go beyond that without a full public examination. What they want to do is allow industries to increase pollutants through the back door."

Beyond that, Waxman accused Bush of a "cynical manipulation" in hailing the Clean Air Act as a major achievement and using it as his premier environmental credential while administration officials are gutting it through the rule-making process. "He has a responsibility to enforce this law and his own expert lawyers" say the Quayle position has no legal standing, Waxman said.

Waxman's reference is to an August memo by Donald Elliott, then the EPA's general counsel, which stated, "It is highly unlikely that the courts would uphold as 'reasonable' an interpretation of the statute that would authorize environmentally significant changes to be made in emissions without appropriate opportunities for public notice and opportunities to participate."

In addition, the comptroller general, asked for a legal opinion, found in December that "revisions to permit requirements must be subject to public oversight."

According to administration officials, the Justice Department communicated to the Competitiveness Council that either the EPA approach or the Quayle approach was legally defensible. Challenged to produce a written, signed legal opinion, department lawyers did so last week, administration officials said. "We did not think it would go this far, but obviously it has and Bush will now have legal opinions on both sides," one official said.

The issue has reached critical mass at a time Bush is emphasizing his efforts to ease the burden of regulations on business, not his environmental credentials. He has scheduled a series of events to highlight that theme this week, including extending the 90-day moratorium on new regulations that was announced in his State of the Union address, a new effort to ease regulatory burdens on the securities and transportation industries, and several others.

To buttress their case that Americans believe government regulation is too onerous and is hurting them, officials last week were circulating a Penn-Schoen poll done March 23-25 for an industry group that shows strong anti-regulation sentiment.

The poll findings are that a "significant majority" in the 605-person nationwide sample feels government regulators have "gotten out of control," that the country has too many unnecessary and costly regulations, and that regulators do not take into account the cost to consumers.

But the questions are couched in language that seems to play directly into the current anti-Washington mood: "Do you think right now that the country has a lot of unnecessary and costly regulations or not?" asks one question, to which 83 percent replied yes. The poll does not ask if government should make strong efforts to strictly limit industrial pollution.

Bush to Back Weakening Clean Air Act, Plans to Extend Regulation Moratorium

A18

By ROSE GUTTFELD
And MICHEL McQUEEN

4/24/92

Staff Reporters of THE WALL STREET JOURNAL

WASHINGTON — President Bush is expected to side with the White House Competitiveness Council and against the Environmental Protection Agency on an air-pollution rule that has become the biggest test of his deregulatory initiative.

While Mr. Bush hasn't made a formal decision, administration officials said he supports the council's effort to weaken the important rule included in the 1990 Clean Air Act.

The issue comes to a head as the administration plans to start a big public relations effort today to highlight its commitment to oppose what administration officials call "excessive" government regulation.

The administration plans to extend the 90-day moratorium on new regulations that was announced by Mr. Bush in his State of the Union address in January and that expires Tuesday. But aides have also planned a series of announcements through the week — including plans for streamlined banking rules as well as adjustments to transportation and securities regulations — that are intended to reassure the administration's conservative and business allies.

Victory for Quayle

Mr. Bush's decision on the air-pollution rule would mark the biggest victory yet for Vice President Dan Quayle in his effort to weaken environmental regulation and would be a major gain for the regulatory moratorium. It would be a significant loss for EPA chief William Reilly, and critics are likely to use the decision to attack Mr. Bush's claim to be an environmentalist.

"Of course we will abide by a presidential decision," an aide to Mr. Reilly said. "But as of yet we have not been notified."

At a White House meeting Wednesday, top officials failed to resolve their differences over the Clean Air Act rules, which would require businesses with pollution permits to seek regulatory approval when they change operations in ways that could increase emissions. The Competitiveness Council has been looking at the rules as part of a larger review of regulations aimed at reducing burdens on business.

Mr. Reilly had argued that citizen groups, by law, must have ample opportunity to challenge such changes. Mr. Quayle and the council disagreed and have apparently won the president's support for their position, which would weaken public-notice requirements for small changes.

Deregulatory Push

Although the dispute over the permits rule has drawn the most attention, Bush aides over the past few weeks have put together a host of measures to underscore their deregulatory push. The effort will be anchored by a speech at the White House Wednesday in which Mr. Bush will extend the regulatory moratorium for several months.

Today, the White House plans to announce a package of banking initiatives designed to streamline financial regulation, according to administration officials.

One new initiative is an agreement between the Federal Deposit Insurance Corp. and the Conference of State Bank Supervisors to end duplicate bank exams for 6,000 state-chartered banks. Many of these banks now are examined by FDIC and state agents each year. Under the accord, the FDIC and state examiners will alternate years in examining the healthiest banks and will work together to devise exam schedules for weaker banks. If they decide

that both state and federal examiners must look at a bank, they will try to do so at the same time. Such coordination is rare now.

The package also includes some proposals the administration had sought in banking legislation rejected by Congress. For example, it would combine various bank regulators into a single agency.

Agency Alternatives

As an alternative, officials will announce that the comptroller of the currency, the FDIC, the Federal Reserve Board and the Office of Thrift Supervision will move toward uniform examination forms to cut paperwork. Moreover, the Federal Reserve will waive some bank holding company applications if they have already been approved by other federal regulators.

In an move particularly attractive to some small banks, the Fed will begin to review paperwork requirements under the Community Reinvestment Act, which is designed to ensure that banks provide adequate credit to poor and minority-group areas.

At the same time, the Fed plans to authorize banks to broaden their operations by expanding its list of permitted bank activities to include full-service brokerage as well as financial and investment advisory services. Until now, these activities have been approved on an individual basis.

The administration package will include two measures to stimulate real estate lending. The EPA, in an action it previously signaled, will announce a final rule shielding banks from liability if they lend money for projects involving environmentally contaminated Superfund sites. In addition, the Fed will give banks added leeway to avoid real estate appraisals that bank officials regard as unnecessary.

Meanwhile, the Securities and Exchange Commission is drawing up a list of several dozen regulations destined for the chopping block. Many of the most significant proposals, which would be subject to full commission approval, already have been brought forward by the agency. For example, the SEC is including steps to make it easier for small businesses to raise capital in the public securities markets — proposals that already have been advanced in rule-making and legislation.

Many of the proposals represent attempts to streamline document filings by companies. In some cases, the agency would like to expand the list of those who can use simpler means of raising money. For example, one proposal attempts to expand the commission's Rule 144a, which offers a simpler way for large companies to sell debt to large holders.

The agency also proposes to allow mutual fund companies to introduce "interval funds," which would increase a fund manager's flexibility by limiting the time in which holders could cash out. Rules affecting brokers and underwriters also would be eased, particularly for international offerings of securities.

Some SEC officials like the idea of the rule changes but question what they see as election-year motives. "If this were not a year divisible by four, would all this be happening?" an SEC official asked rhetorically. "I don't think so."

— Kenneth H. Bacon contributed to this article.

DPC Daily Report

Wednesday, June 10, 1992

Latest Schedule

Senate Convenes at 9:00 A.M.

Today, the Senate will convene at 9:00 a.m. Time for the leaders will be reserved.

Morning business will extend no later than 12:30 p.m. The first hour will be equally divided between Senators Simon and Thurmond; the second hour will be under the control of the Majority Leader; the third hour will be under the control of Senator Byrd; and Senator Jeffords has 20 minutes.

Roll call votes are not anticipated today.

From the DPC

Issue Alert on Passage of NIH Reauthorization

Today, the DPC will deliver via inside mail an Issue Alert on the adoption of the NIH reauthorization conference report, focusing on women's health programs. (DPC Staff Contact: Mary Ann Hill, 4-3232)

Balanced Budget Topic of Thursday's DPC Lunch

At Thursday's DPC lunch (12:30 p.m., S-211, Capitol) there will be a pro/con discussion on the balanced budget amendment. For reservations call Nancy or Pierre, 4-5551, by Wednesday evening. (*Senators only*)

Floor Information/Unanimous Consent Agreement

Senate to Consider to Consider Striker Replacement

Today, the Senate will begin consideration of **S. 55**, the *Workplace Fairness Act* ("strikebreaker" bill). Last evening, a cloture petition was filed on the bill. In accordance with Senate rules, germane first degree amendments must be filed by 1:00 p.m. today. The cloture vote will be set tomorrow by the Majority Leader following consultation with the Republican Leader. In floor discussion last evening, the Majority Leader indicated that the Thursday cloture vote could be scheduled between 4:00 and 5:00 p.m. **An announcement can be expected on the exact time of the vote.**

Recent Highlights

ADAMHA Conference Report Agreed To

Yesterday, during debate on the conference report on **S. 1306**, the *Alcohol, Drug Abuse, and Mental Health Administration Reorganization (ADAMHA) bill*, the Senate tabled a Graham motion to recommit by a 79-14 vote, and voted 84-90 to invoke cloture on the conference report. The conference report was then agreed to by a vote of 88-8.

**Democratic
Daybook**

Today's Committee Hearings

Budget Cte.: Constitutional amendment to balance the budget. 10 a.m., SD-608.

Banking Cte.: banking industry and Bank Insurance Fund. 10 a.m., SD-538.

Armed Services Cte: European security issues. 2 p.m., SR-222.

Commerce Subcte. on Aviation: airline industry competition. 9:30 a.m., SR-253.

Finance Cte.: *Child Welfare and Preventative Services Act*. 9:30 a.m., SD-215.

Labor Cte.: OSHA reform to ensure safe & healthy workplaces. 10 a.m., SD-430.

Most Americans See the Connection

***Environmental Goods and Services
Viewed as a Worldwide Growth Industry***

Growing evidence supports what most Americans believe: a clean environment and economic growth are not an either/or proposition.

There is substantial growth ahead for the already robust international environmental protection industry according to at least three informed sources.

- The Organization for Economic Cooperation and Development calculates that environmental goods and services is a \$200 billion industry expected to grow at an annual rate of 5-1/2 percent.
- Another study, by the Office of Technology Assessment, estimates that environmental protection goods and services — in which the U.S. currently controls a 40 percent market share — will grow to a \$300 billion global industry by the year 2000.
- Yet another study, by the International Finance Corporation (IFC), last month reported that the worldwide market for environmental goods and services is expected to grow rapidly during the next decade, doubling from roughly \$300 billion to \$600 billion by the year 2000. This is based on projections for the United States, Canada, Europe, Japan, and the rest of the world. Annual market growth already ranges from 5 to 25 percent in developing countries, according to the IFC.

These projections corroborate the connection between clean environment and economic growth that is seen by most Americans.

Americans see protecting the environment as an economic benefit, not a cost, according to a market survey released in June 1991 by the Environment Opinion Study (EOS).

In the EOS study, which was designed and conducted jointly by a Democratic firm and a Republican firm, 71 percent of respondents agreed with this statement: *"Improving the quality of the environment can create jobs and help the national economy."*

The Democratic firm of Frederick/Schneiders and the Republican firm of Market Strategies, Inc., conducted the survey.



Democratic Policy Committee
United States Senate
Washington, D.C. 20510

George J. Mitchell, Chairman
Thomas A. Daschle, Co-Chairman
Monica Healy, Staff Director

George J. Mitchell
U.S.S.

Wednesday, June 10, 1992

Hon. Albert Gore
Ms. Lee Ann Brackett
393 RUSSELL

**THE
DAILY
REPORT**

fit -
economy

NYT 8 SEPTEMBER 1992

Environmental Rules May Spur Innovation

By WILLIAM K. STEVENS

DO strict environmental standards enhance or harm America's ability to compete in the global economy? Conservatives typically insist that the standards hurt. Environmentalists and their allies argue that the standards force companies to develop more efficient practices and technologies, thereby gaining an edge in the worldwide marketplace.

Some economists say neither point of view is wholly correct. Environmental regulation can spur innovation and enhance competitiveness, they say, but only when regulations provide the right incentives.

"Regulation can trigger innovative activity that may not only nullify the cost of a cleaner environment, but may also go beyond that and create a competitive advantage," says Dr. Michael E. Porter, the leader of the Harvard Business School's Competition and Strategy Group. "But if that kind of win-win outcome is to happen, you have to be very careful about how you structure your regulations."

'Environmental Shakeout'

The key is to set goals without prescribing the means. If this is done, Dr. Porter said, companies will choose the most efficient technology. Too often, he said, Washington has set specific remedies, like scrubbers for reducing air pollution from coal-fired power plants, which have thwarted the search for innovative solutions.

In an era when environmental regulation appears here to stay, some economists and even some businessmen contend, companies that are able to reap maximum profits while using few resources and producing little pollution will benefit. Companies and countries that are unable to do this "will soon lose competitive advantage to their more eco-efficient rivals," says Stephan Schmidheiny, a Swiss industrialist who is the chairman of an international business group, the Business Council for Sustainable Development.

At the Earth Summit in Rio de Janeiro in June, Mr. Schmidheiny predicted "a coming environmental shakeout for business and industry."

Environmentalists argue further that regulation creates new markets for companies that make pollution-control equipment and provide environmental services, and that the United States is in danger of conceding the export-market advantage in this area to Japan and Germany.

But again, Dr. Porter says, American regulations must be carefully written to achieve maximum effect. If they are too much stricter than those of other countries, he says, American companies may end up making equipment that the other countries cannot use.

But if American regulations "are on the strict end but still in sight of other countries," he said, "it may enable them to leapfrog their competitors abroad." The key is for the United States to be "a little bit ahead but in sync with the way international standards are evolving."

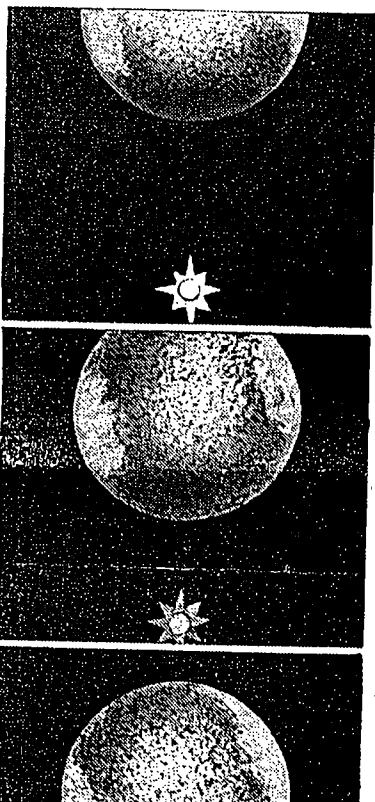
light
top

Charon,
until
noticed a

Pluto

A mission to Pluto would complete a space survey of the solar system and answer many questions about the smallest and most distant planet. Pluto is unlike the other outer planets, although it resembles Neptune's moon, Triton.

Pluto travels around the Sun every 248 years in an orbit that crosses the path of Neptune, its nearest neighbor, but also takes it 4.6 billion miles from the Sun.



Clues to the Features of a Faraway World

Scientists have slowly learned about Pluto by noting differences in their observations as the planet and its moon changed position relative to other planets and stars. For example, astronomers discovered Pluto's atmosphere by observing changes in a star's light when Pluto passed in front of it in 1988. The starlight dimmed gradually, then abruptly, as light does when it is refracted and absorbed by gases in an atmosphere. Now scientists hope to learn how the atmosphere forms and exactly what it contains.

Economists Strive to Find Environment's Bottom Line

Regulations can be money-savers, but the benefits are harder to add up than the costs.

By WILLIAM K. STEVENS

DOES environmental protection hurt the economy or help it?

The question is under hot dispute in the Presidential campaign. The Democratic Vice-Presidential nominee, Senator Al Gore, argues that environmental protection boosts the economy and creates jobs. Vice President Dan Quayle, whose White House Council on Competitiveness has sought to reduce environmental regulations, says the Democrats' environmental policies would cost jobs.

But the answer to the economy-vs.-ecology question, says an emerging group of environmental economists, is far more elusive.

An Environmental Protection Agency analysis, for example, puts the cost of controlling and cleaning up pollution under Federal regulations at more than \$100 billion a year, or about 2 percent of the nation's total annual output of goods and services. But like a number of other analyses, the study does not take into account the economic benefits of cleaner air and water. An analysis of benefits is under way, but not yet complete.

Nor does the study include protection measures that do not involve pollution control, like conserving the ecosystems that underlie all economic activity, such as water, soil, forests, fisheries, wetlands, wild plant species and the complex biological web that supports life itself. Gauging the costs and benefits of such measures is hard but essential.

Environmental economists argue that the economy is merely a subsystem of the planet's ecology, on which it depends for materials, energy and general sustenance. "To me it's just as plain as the nose on your face," says Herman Daly, an economist at the World Bank and a proponent of the view that economies can flourish at steady state, without growth. Traditional economists, he and others contend, ignore this relationship, and with it the economic cost of depleting natural resources, degrading soils and otherwise insulting nature.

Until these "external" costs are reflected both in company balance sheets and calculations of national wealth, say Mr. Daly and his allies, the benefits of environmental protection will be seriously underestimated and the basic health of the economy will be overestimated.

This line of thought is starting to make some headway, as both the United Nations and the United States

Continued on Page C8

Techy to Trendy, New Products

Economists Trying to Find the Environment's Bottom Line

Continued From Page C1

Department of Commerce move to include the costs of natural resource depletion as an adjunct to conventional accountings of national wealth. Also, regulatory commissions in New York and other states are starting to require electric utilities to factor in the cost of emitting heat-trapping carbon dioxide when deciding how to generate energy.

Including such external costs favors Mr. Gore's side of the argument. But economic studies in general are not so clear cut. A number of economists say the value of environmental protection measures can be assessed only on a case-by-case basis.

Benefits That Exceed Costs

"I don't think you can make a broad, sweeping conclusion" about the economic value of environmental protection, said Dr. William Nordhaus of Yale University. "There are some net pluses and some net minuses."

Among the "good buys" are the air pollution controls enacted in the first

Clean Air Act of 1970, according to a cost-benefit analysis by Dr. Paul R. Portney, an economist at Resources for the Future, a Washington research institute. The act placed the first limits on air pollution from smokestacks and motor vehicles. Dr. Portney found the benefits of the Clean Air Act have exceeded the costs.

His preliminary estimate suggests that the same is not true of the 1990 amendments to the Clean Air Act, designed to curb acid rain and air pollution in urban areas. Costs will be \$29 billion to \$36 billion a year by the year 2005, but benefits will probably range from \$6 billion to \$25 billion, he found. Since the analysis is preliminary, Dr. Portney does not rule out a different final result.

Another good buy, in Dr. Portney's view, is the phasing out of chlorofluorocarbons that destroy the earth's protective ozone layer, which he calls "a small price to pay for insurance against what could be a pretty serious problem." Bad buys, in his book, include some toxic waste sites that pose little risk but will require tens of millions of dollars

apiece to clean up.

The issue of economy vs. ecology is also complicated by the fact that environmental regulation distributes both costs and benefits unevenly.

Disproportionate Burden

On costs, for instance, Dr. Dale W. Jorgenson of Harvard University and Dr. Peter J. Wilcoxon of the University of Texas estimate that all Federal environmental regulations adopted before 1990 will reduce the national economic output by 2.5 percent by the year 2000. But the economy does not suffer uniformly, they found; the burden is being borne disproportionately by the chemical, coal mining, motor vehicle, refining, primary metals and paper industries.

Dr. Jorgenson and Dr. Wilcoxon calculate, for instance, that the long-run output of the automobile industry has been cut by about 15 percent as a consequence of controls on motor vehicle pollution.

"The flip side of that is that some industries are going to benefit," Dr. Jorgenson said. An example is companies that produce pollution-control equipment and services, a market

Pollution controls may cost jobs in one industry, but help another.

estimated at more than \$100 billion a year.

Mr. Quayle says thousands of auto workers could be thrown out of work if automobile fuel-efficiency standards are raised, as Gov. Bill Clinton favors, to 40 miles per gallon, from 27.5 miles, to reduce emissions of carbon dioxide. Dr. Jorgenson agrees that achieving the standard would impose substantial costs and thereby cause industry employment to shrink. But this does not take into account whatever environmental and economic benefits might result.

Another difficulty in drawing up an economy-vs.-ecology bottom line is that there may be different answers for the short term and the long term, said Dr. H. Ronald Pulliam, an ecologist at the University of Georgia. "In the short term, there are certainly job losses" in some cases of environmental protection. "But in the long run, decades, there is probably very little conflict between maximizing economic goals and ecological goals."

For instance, he said, some jobs would be lost if logging was prohibited in the old-growth forest habitat of the spotted owl in the Pacific Northwest. But if the old-growth forest is clear-cut "those jobs are going to be lost anyway in a decade or two," he said, while limiting logging so that biological diversity is preserved over the long haul "is going to provide for the needs of both the local economy and biodiversity."

Looking for Short-Term Success

In a study of the costs of global warming, Dr. William R. Cline of the Institute for International Economics finds that costs would roughly match benefits for the first 20 to 30 years but would then far outstrip them after the easy ways of abating carbon dioxide emissions had all been exploited. But in time, Dr. Cline found, the benefits would begin to outweigh the costs — in the second half of the next century if the predicted warming were severe, a century later if it fell in the middle range of the predicted warming.

Politicians, of course, do not generally look too far beyond the next election, a predilection that may be shared by their constituents. In a recent study by Resources for the Future and the University of Maryland, researchers asked people in 1,000 households which of two pollution-control programs they preferred, one that saved fewer lives now or one that saved more lives in the future. The researchers found that the respondents considered six

lives saved 25 years in the future a 44 lives saved 100 years in the future equivalent to one life saved today.

Economists find that it is especially hard to assign dollar values to some benefits of environmental protection — for instance, saving threatened species or ecosystems. They are trying but "I don't think anyone is particularly comfortable with how far they've gotten," Portney said.

Environmental benefits have often been portrayed as harder to measure than costs. But Dr. Portney said "Economists have been much too concerned about how easy it is to nail down cost; there are some economists who make it seem like there's nothing there that we can't slap a dollar value on. We're making progress on some things, but there is a whole range of things that we're never going to be able to express comfortably in dollars."

Dr. A. Myrick Freeman 3d of F. du S. College, an expert on measuring environmental benefits, acknowledges the difficulties. But, he said, "We have methods that are able to measure within an order of magnitude, or within a factor of two, the benefits of many environmental improvements, and plus or minus percent in some cases. The error bounds, around cost estimates, are arguably just as large."

Dr. Freeman notes a philosophical objection raised by some critics: the use of cost-benefit analysis values the environment only in terms of its usefulness to people by giving "independent weight to non-human species or ecological systems in their own right."

Nevertheless, he said, the some information that says "something about policy, imperfect as it is. And it's better than making policy in the dark, without any reference to costs and benefits," he said.

Need A Break On A Quality Desktop? Look No Further!

LABOR DAY SPECIALS!

MICRO EXCHANGE™

"Earning A Quality Reputation One Customer At A Time."

PRICES JUST REDUCED!

Every System Includes a FREE Color VGA Monitor!

IBM PS/2 Model 30 (286-25)

286/10MHz • 20mb Hard Disk Drive • 1mb RAM • 1.44 MB Floppy Disk Drive

\$2000

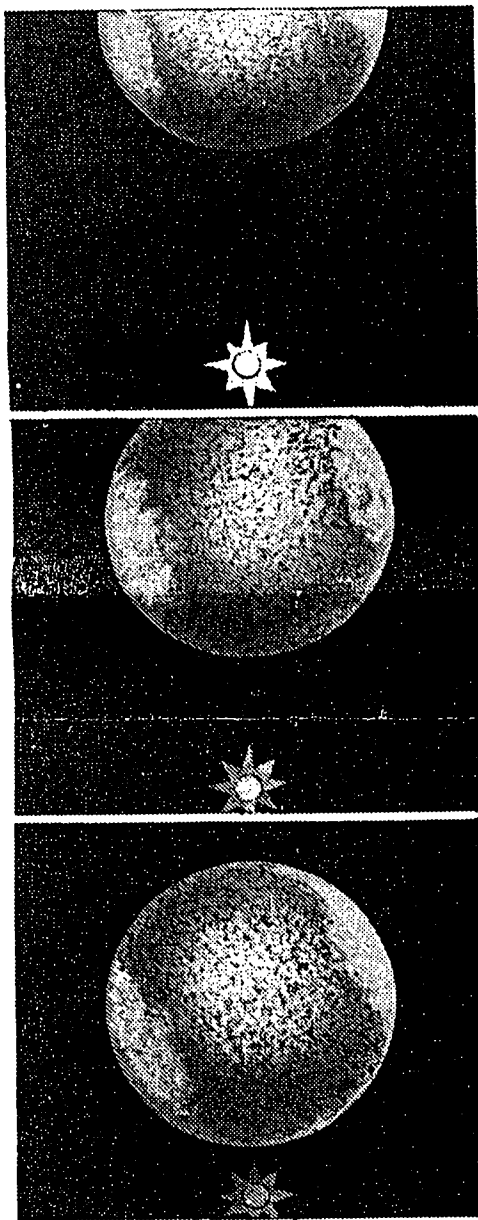
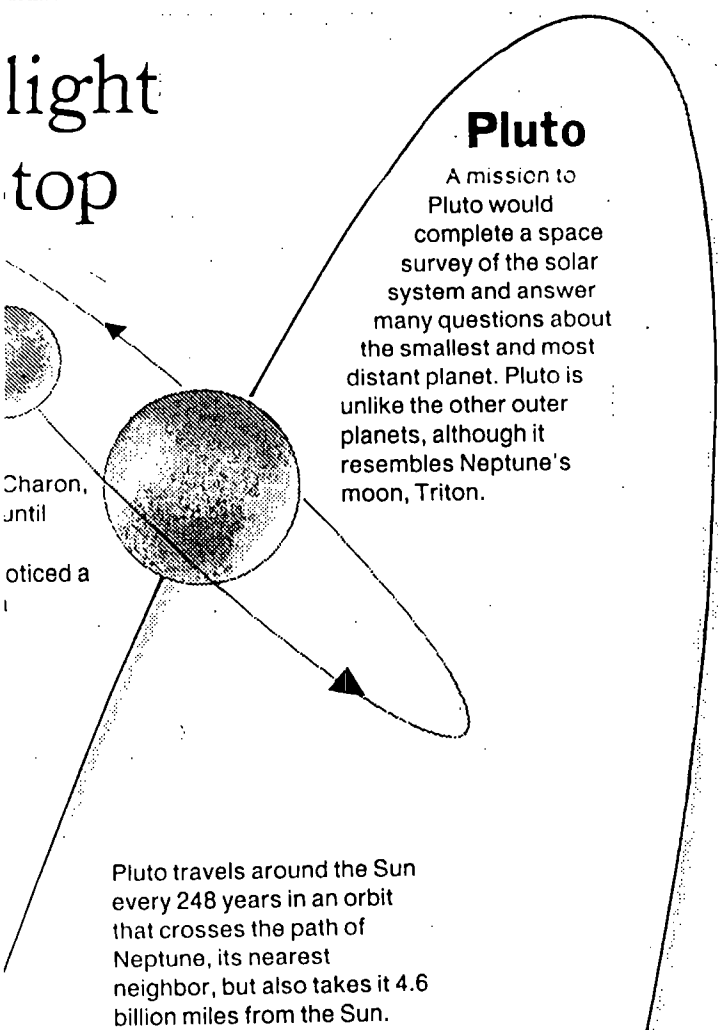
IBM PS/2 Model 65 (286-33)

386/16MHz • 120mb Hard Disk Drive • 2mb RAM • 1.44 MB Floppy Disk Drive

\$1250

Environmental Rules

light
top



Clues to the Features of a Faraway World

Scientists have slowly learned about Pluto by noting differences in their observations as the planet and its moon changed position relative to other planets and stars. For example, astronomers discovered Pluto's atmosphere by observing changes in a star's light when Pluto passed in front of it in 1988. The starlight dimmed gradually, then abruptly, as light does when it is refracted and absorbed by gases in an atmosphere. Now scientists hope to learn how the atmosphere forms and exactly what it contains.

PLUTO'S
ATMOSPHERE

Clear upper layer
Hazy lower layer
Sharp boundary

Economists Strive to Find Environment's Bottom Line

Regulations can be money-savers, but the benefits are harder to add up than the costs.

By WILLIAM K. STEVENS

DOES environmental protection hurt the economy or help it?

The question is under hot dispute in the Presidential campaign. The Democratic Vice-Presidential nominee, Senator Al Gore, argues that environmental protection boosts the economy and creates jobs; Vice President Dan Quayle, whose White House Council on Competitiveness has sought to reduce environmental regulations, says the Democrats' environmental policies would cost jobs.

But the answer to the economy-vs.-ecology question, says an emerging group of environmental economists, is far more elusive.

An Environmental Protection Agency analysis, for example, puts the cost of controlling and cleaning up pollution under Federal regulations at more than \$100 billion a year, or about 2 percent of the nation's total annual output of goods and services. But like a number of other analyses, the study does not take into account the economic benefits of cleaner air and water. An analysis of benefits is under way, but not yet complete.

Nor does the study include protection measures that do not involve pollution control, like conserving the ecosystems that underlie all economic activity, such as water, soil, forests, fisheries, wetlands, wild plant species and the complex biological web that supports life itself. Gauging the costs and benefits of such measures is hard but essential.

Environmental economists argue that the economy is merely a subsystem of the planet's ecology, on which it depends for materials, energy and general sustenance. "To me it's just as plain as the nose on your face," says Herman Daly, an economist at the World Bank and a proponent of the view that economies can flourish at steady state, without growth. Traditional economists, he and others contend, ignore this relationship, and with it the economic cost of depleting natural resources, degrading soils and otherwise insulting nature.

Until these "external" costs are reflected both in company balance sheets and calculations of national wealth, say Mr. Daly and his allies, the benefits of environmental protection will be seriously underestimated and the basic health of the economy will be overestimated.

This line of thought is starting to make some headway, as both the United Nations and the United States

Continued on Page C8

Techy to Trendy, New Products Hum DNA's Tune

Designers work molecular frequencies into wind chimes, ink and the song of insulin.

By RICK WEISS

Economists Trying to Find the Environment's Bottom Line

Continued From Page C1

Department of Commerce move to include the costs of natural resource depletion as an adjunct to conventional accountings of national wealth. Also, regulatory commissions in New York and other states are starting to require electric utilities to factor in the cost of emitting heat-trapping carbon dioxide when deciding how to generate energy.

Including such external costs favors Mr. Gore's side of the argument. But economic studies in general are not so clear cut. A number of economists say the value of environmental protection measures can be assessed only on a case-by-case basis.

Benefits That Exceed Costs

"I don't think you can make a broad, sweeping conclusion" about the economic value of environmental protection, said Dr. William Nordhaus of Yale University. "There are some net pluses and some net minuses."

Among the "good buys" are the air pollution controls enacted in the first

Clean Air Act of 1970, according to a cost-benefit analysis by Dr. Paul R. Portney, an economist at Resources for the Future, a Washington research institute. The act placed the first limits on air pollution from smokestacks and motor vehicles. Dr. Portney found the benefits of the Clean Air Act have exceeded the costs.

His preliminary estimate suggests that the same is not true of the 1990 amendments to the Clean Air Act, designed to curb acid rain and air pollution in urban areas. Costs will be \$29 billion to \$36 billion a year by the year 2005, but benefits will probably range from \$6 billion to \$25 billion, he found. Since the analysis is preliminary, Dr. Portney does not rule out a different final result.

Another good buy, in Dr. Portney's view, is the phasing out of chlorofluorocarbons that destroy the earth's protective ozone layer, which he calls "a small price to pay for insurance against what could be a pretty serious problem." Bad buys, in his book, include some toxic waste sites that pose little risk but will require tens of millions of dollars

apiece to clean up.

The issue of economy vs. ecology is also complicated by the fact that environmental regulation distributes both costs and benefits unevenly.

Disproportionate Burden

On costs, for instance, Dr. Dale W. Jorgenson of Harvard University and Dr. Peter J. Wilcoxon of the University of Texas estimate that all Federal environmental regulations adopted before 1990 will reduce the national economic output by 2.5 percent by the year 2000. But the economy does not suffer uniformly, they found; the burden is being borne disproportionately by the chemical, coal mining, motor vehicle, refining, primary metals and paper industries.

Dr. Jorgenson and Dr. Wilcoxon calculate, for instance, that the long-run output of the automobile industry has been cut by about 15 percent as a consequence of controls on motor vehicle pollution.

"The flip side of that is that some industries are going to benefit," Dr. Jorgenson said. An example is companies that produce pollution-control equipment and services, a market

Pollution controls may cost jobs in one industry, but help another.

estimated at more than \$100 billion a year.

Mr. Quayle says thousands of auto workers could be thrown out of work if automobile fuel-efficiency standards are raised, as Gov. Bill Clinton favors, to 40 miles per gallon, from 27.5 miles, to reduce emissions of carbon dioxide. Dr. Jorgenson agrees that achieving the standard would impose substantial costs and thereby cause industry employment to shrink. But this does not take into account whatever environmental and economic benefits might result.

Another difficulty in drawing up an economy-vs.-ecology bottom line is that there may be different answers for the short term and the long term, said Dr. H. Ronald Pulliam, an ecologist

at the University of Georgia. "In the short term, there are certainly job losses" in some cases of environmental protection. "But in the long run, decades, there is probably very little conflict between maximizing economic goals and ecological goals."

For instance, he said, some jobs would be lost if logging was prohibited in the old-growth forest habitat of the spotted owl in the Pacific Northwest. But if the old-growth forest is clear-cut "those jobs are going to be lost anyway in a decade or two," he said, while limiting logging so that biological diversity is preserved over the long haul "is going to provide for the needs of both the local economy and biodiversity."

Looking for Short-Term Success

In a study of the costs of global warming, Dr. William R. Cline of the Institute for International Economics finds that costs would roughly match benefits for the first 20 to 30 years but would then far outstrip them after the easy ways of abating carbon dioxide emissions had all been exploited. But in time, Dr. Cline found, the benefits would begin to outweigh the costs — in the second half of the next century if the predicted warming were severe, a century later if it fell in the middle range of the predicted warming.

Politicians, of course, do not generally look too far beyond the next election, a predilection that may be shared by their constituents. In a recent study by Resources for the Future and the University of Maryland, researchers asked people in 1,000 households which of two pollution-control programs they preferred, one that saved fewer lives now or one that saved more lives in the future. The researchers found that the respondents considered six

lives saved 25 years in the future and 44 lives saved 100 years in the future equivalent to one life saved today.

Economists find that it is especially hard to assign dollar values to some benefits of environmental protection — for instance, saving a threatened species or ecosystem. They are trying but "I don't think anyone is particularly comfortable with how far they've gotten," Dr. Portney said.

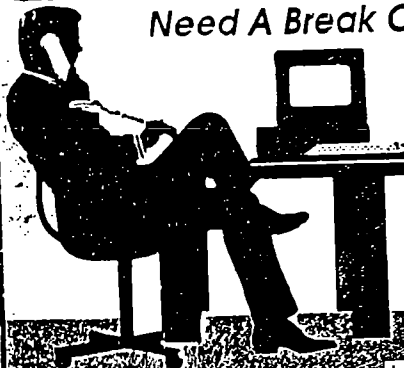
Environmental benefits have often been portrayed as harder to measure than costs. But Dr. Portney says: "Economists have been much too glib about how easy it is to nail down the cost; there are some economists who make it seem like there's nothing out there that we can't slap a dollar value on. We're making progress on some things, but there is a whole range of things that we're never going to be able to express comfortably in dollar terms."

Dr. A. Myrick Freeman 3d of Bowdoin College, an expert on measuring environmental benefits, acknowledges the difficulties. But, he said: "We have methods that are able to measure within an order of magnitude, or within a factor of two, the benefits of many environmental improvements, and plus or minus 25 percent in some cases. The errors, the bounds, around cost estimates are arguably just as large."

Dr. Freeman notes a philosophical objection raised by some critics to the use of cost-benefit analysis: it values the environment only in terms of its usefulness to people without giving "independent weight to nonhuman species or ecological systems" in their own right.

Nevertheless, he said, there is some information that says something about policy, imperfect as it is. "And it's better than making policy in the dark, without any reference at all to costs and benefits," he said.

Need A Break On A Quality Desktop? Look No Further!



LABOR DAY SPECIALS!

MICRO EXCHANGE™
"Earning A Quality Reputation One Customer At A Time."

PRICES JUST REDUCED!

Every System Includes a FREE Color VGA Monitor!*

SUPERSPORT SX 386SX/16MHz • 120mb Hard Disk Drive 1mb RAM • 1.44mb Floppy \$1295	IBM PS/2 Model 30 (286-E21) 286/10MHz • 20mb Hard Disk Drive • 1mb RAM • 1.44 MB Floppy Disk Drive \$395	IBM PS/2 Model 65 (121) 386/16MHz • 120mb Hard Disk Drive • 2mb RAM • 1.44 MB Floppy Disk Drive \$1250
---	---	---

*Laptop!

Environmental Rules

Environmentalists For



MEMORANDUM

TO: Environmentalists for Clinton/Gore
FROM: Brooks Yeager, Coordinator
RE: Briefing Packet on Jobs and the Environment
DATE: October 7, 1992

National Advisory Committee

Lee Botts
Joan Campbell
Ben Chavis
Michael L. Fischer
Denis Hayes
Roger P. Hoffman
Jim Maddy
Wilma Mankiller
Raylord Nelson
Russell W. Peterson
Steven C. Rockefeller
John J. Sheehan
Cathleen Douglas Stone
Susie Tompkins
Bailus Walker, Jr.
Edward O. Wilson
Brooks B. Yeager
Coordinator

George Bush and Dan Quayle are telling the American public that environmental protection and economic prosperity are mutually exclusive. Whether they are talking about ancient forest protection in the Northwest or energy efficiency standards for automobiles, the message is the same: protection and efficient use of natural resources cost jobs.

This is a false choice. Environmental protection helps retain jobs in multi-billion dollar industries such as fishing and tourism. Reducing waste, saving energy and decreasing the use of toxic chemicals helps companies become more efficient, lowers their costs and increases their competitiveness. This helps save jobs and, in many cases, has resulted in the creation of new jobs. In addition, environmental laws have spawned the development of the American environmental technology and services industry which employs approximately 2-3.5 million people nationwide and contributes more than \$130 billion to the economy.

This packet is designed to help you spread the good news about the environment and jobs. Enclosed you will find background information, sample letters to the editor and op-eds, talking points on jobs and environment issues, and a list of green businesses in your state. Please note that the sample letters to the editor and the op-eds should not be sent to your newspapers as enclosed. They should be paraphrased or used as outlines to draft your own letters or op-eds. We stress that a direct and rapid response is the priority here, so please do not feel that you have to produce a perfect journalistic piece. You may want to try to set up a meeting with the editorial board of your newspaper. This will increase the probability that the editors will publish the proposed Op-Ed.

In addition, please note that this is a rough green business list; those on it have not been contacted by us and we do not know if they support Clinton/Gore. However, with additional effort, you may be able to interest them in jobs and environment events or encourage them to write letters to the editor, etc.

There is a very powerful, positive story to be told about jobs and the environment. I urge you to review these materials, get them out to the members of your organization, and use them when you talk with local newspaper, t.v. and radio reporters.

If you have questions, or need further information, please feel free to call Molly, Rebecca or Paul at 202-466-8154.

TABLE OF CONTENTS

- I. Sample Letters to the Editor**
 - Jobs and the Environment
 - A Business Person's Perspective on Environmental Protection and Jobs
 - Jobs and the Ancient Forest Debate
 - Letter to the Editor from the Seattle Post-Intelligencer
- II. Sample OP-EDs**
 - The Environment and Job Growth: Will the U.S. Lead or Follow?
 - Making Cleaner Cars: An Economic Opportunity for U.S. Car Companies
 - "Don't Blame the Owl"--New York Times Editorial, 9/21/92
- III. Talking Points**
 - Environmental protection and U.S. competitiveness
 - Environmental protection and jobs creation
 - American environmental companies: opportunities for exports
 - Fuel efficiency and autoworker jobs
 - Fuel efficiency and national security
- IV. Sample Press Releases**
- V. Background Information**
 - Jobs and the Environment
 - Ancient Forests Background Information
 - Clean Cars Background Information
- VI. List of Green Businesses**

JOBS AND ENVIRONMENT

SAMPLE LETTER TO THE EDITOR

Dear Editor:

Pitting jobs against the environment is a false choice and a cynical distortion of the facts. Both are essential for a healthy economy, healthy workforce, and an enhanced quality of life. Both are critical and, in fact, dependent upon one another.

In continuing to cast these issues as wholesale tradeoffs, an either/or situation, the Bush-Quayle ticket is perpetuating an unnecessary and harmful division between these needs. Even more intolerable, this rhetoric shirks the vital responsibility of providing leadership in encouraging and creating opportunities to pursue these critical and interdependent goals. Instead of promoting a "can do" attitude that prompts community, industry and environmental leaders into action and working together to find solutions with mutual benefits, the Bush administration has chosen to waste time and energy in dividing people in an unproductive debate that prevents focusing on the true needs of this country.

This is not the kind of leadership we need.

The premise that environmental laws destroy jobs is false. Many industries, including fishing and tourism, depend upon protection of our natural resources. All Americans need clean air and water for good health. When our environment is not thriving, neither is our work force.

- o Polluted waters endanger the commercial and recreational fishing industries, which account for more than \$10 billion annually.
- o Air pollution costs Americans an estimated \$50 billion annually, including lost work days and productivity.
- o Ocean pollution from sewage and medical waste washed up on East Coast beaches in the summer of 1987 and 1988, cost the New Jersey tourism industry billions of dollars, and those employed at the beaches lost their jobs

Opportunities exist for creative actions that fulfill environmental and economic needs.

- o The Clean Air Act amendments, if properly implemented, may create 20,000 - 40,000 permanent new jobs.
- o Major U.S. companies, such as Polaroid and Cummins Engines have been proactive in reducing pollution and waste in order to become more efficient and therefore MORE competitive in the marketplace.

- o Companies have used a more proactive environmental position to enjoy a favorable response by consumers, such as Starkists' dolphin-safe tuna (tuna caught without harming dolphin), and IBM's elimination of CFC's, compounds damaging to the atmosphere and which are used in the production of computer chips.

We need leadership that can promote innovation in stimulating the economy AND protecting the environment. In order to seek solutions to challenges, we first need a leader who sees the opportunities. Bill Clinton has vision and has discussed many possibilities.

- o The Clean Air Act amendments propose market-based approaches, that if encouraged, create incentives for companies to reduce emissions in innovative and least cost strategies.
- o Revenue-neutral incentives that give credits to companies that recover a portion of their wastes, funded by penalties on firms that do not, create competition to do better for the company and the environment.
- o A national bottle bill would encourage consumers and producers to recycle, clean up our roadsides and cities, and reduce unnecessary use of natural resources, as well as create jobs.

We do not need four more years of an administration that divides our most precious natural resources, including our people, over the false choice between a healthy economy and a healthy environment. Each is dependent on the other. The country is dependent upon a president who can lead the way and challenging us to do better in achieving economic and environmental goals.

The economy, the environment, the American people need Bill Clinton.

SAMPLE LETTER TO THE EDITOR

A BUSINESS PERSON'S PERSPECTIVE

Dear Editor:

As a business leader, and someone who cares about the economy of, and environment surrounding this community, I refuse to accept the premise that it is in the best interest of my business, my employees, my community and my country that we must sacrifice a clean and healthful environment in order to protect jobs and stimulate the economy. This argument not only is counterintuitive, but given several statistics and facts could just as well apply to my company as any other, the suggestion of such a tradeoff is plain wrong.

My employees and I are constantly looking for ways to improve our business. We have established recycling programs and cut down on unnecessary use of paper and other resources. (Other examples could be outlined here.) These actions have not only made my company more efficient and competitive, but also have improved the environment of the office. In addition, employee morale is up because people are rewarded for innovative ideas and they are more enthusiastic about working for a company that makes a good product and cares about the community and the environment. Many other companies also have taken the initiative in promoting effective business practices that are environmentally wise and benefit people overall.

National level efforts and initiatives continue to demonstrate the interdependence of a healthy economy and healthy environment:

- o The Clean Air Act amendments, if properly implemented, may create 20,000 - 40,000 permanent new jobs.
- o Major U.S. companies, such as Polaroid and Cummins Engines have been proactive in reducing pollution and waste in order to become more efficient and therefore MORE competitive in the marketplace.
- o Companies have used a more proactive environmental position to enjoy a favorable response by consumers, such as Starkists' dolphin-safe tuna (tuna caught without harming dolphins); IBM's elimination of CFC's, compounds harmful to the atmosphere, from their processing of computer parts; and companies promoting their use of recycled paper.

There are many more examples of opportunities and ideas that, if given a chance, can stimulate job growth and help provide a clean and healthful environment. That chance is determined by leadership that sees the opportunities and challenges this country to pursue the possibilities. Bill Clinton has discussed many ideas and possibilities for promoting job growth AND a clean environment.

As a business leader, I am convinced that this administration has not met these challenges, nor do they plan to meet these needs in another four years. George Bush has shown his colors by his dismal record on the environment and a faltering economy. We need a change in leadership. We need Bill Clinton.

SAMPLE LETTER TO THE EDITOR

HOW ENVIRONMENTAL BUSINESSES HELP THE ECONOMY

George Bush has suggested that Americans must choose between environmental protection and economic prosperity.

As a business person working in America's growing environmental industry, I know from experience that this is a false choice.

The United States is home to a diverse and competitive environmental industry. More than 2.5 million people work in nearly 70,000 environmental companies nationwide. Last year, environmental businesses contributed more than \$130 billion to the U.S. economy and are expected to become one of the major employers in the next decade.

Environmental companies are pioneering cutting-edge technologies that enable U.S. firms to make quality products while protecting the environment. Companies save money when they use energy wisely, reduce the use of toxic chemicals, recycle waste products, decrease packaging and take other steps to help the environment. Lower costs make American products more competitive overseas. The bottom line: environmental companies are helping American firms stay in business and win in global markets.

Companies like mine are helping build a new American economy--based on economic and environmental good sense. We need to work together to develop new environmental technologies and products that will help people throughout the world live better lives. Bill Clinton and Al Gore understand this new approach. We need their leadership to make it a reality.

Sample Letter to the Editor: Jobs and the Ancient Forest Debate.

To the Editor:

President Bush recently stated that environmental laws such as the Endangered Species Act need to be weakened to save timber jobs in the Pacific Northwest. But this is not the only choice. Saving jobs and protecting old growth forests are not mutually exclusive. It is time to stop passing blame around, and bring all parties together to come up with a solution that satisfies the affected workers and communities and preserves the remaining 10% of our nation's old-growth heritage.

U.S. government scientists report that only by permanently protecting the remaining ancient forests, can species dependant on these forests such as salmon, have a good chance to survive another hundred years. Over 60,000 workers depend on the fishing industry in the N.W., but these jobs are now threatened due in part to the damage caused by logging. Tourism and recreation are booming industries that are also threatened by the loss of these unique ecosystems. Clearly more is at stake here than just timber jobs.

Many economists conclude that most timber jobs are being lost as industry automates and increases efficiency, reinvests in the Southeast US and exports raw logs overseas. From 1979 to 1988, employment in the lumber and plywood sector decreased about 19% (more than 25,000 jobs) as a result of industry automation in Washington and Oregon. This 19% employment drop was accompanied by a 12% increase in production and 6.8% increase in timber harvests. This trend is expected to continue regardless of whether the remaining old-growth forests are saved or cut down over the next decade.

Fortunately, there are some immediate solutions to assure the workers and timber communities a smooth transition to a sustainable, second-growth based economy. The first is to stop the export of raw unprocessed logs overseas. One out of four trees cut in the NW are shipped out of the U.S. at the cost of an estimated 16,000 american jobs. Second, we need to create new jobs to undo the damage caused by twenty years of overcutting. Restoring damaged watersheds, and replanting trees in areas that have thus far failed to regenerate will create jobs and increase the value of our forest resources.

President Bush is clearly offering the timber workers and the American people a false choice between jobs and our environment. The jobs he would save today will be lost tomorrow when the last of the old-growth forests are cut down in 10-15 years. This represents a false hope for the workers that would fail to provide for their future and sacrifice our remaining national forest heritage. The citizens of this country clearly deserve better and I think Bill Clinton offers that choice.

Governor Clinton has proposed to convene a Timber Summit in the first hundred days of his administration that would bring all parties to the table to come up with a comprehensive solution. I applaud his courage to take the responsibility to forge a new consensus, that will preserve our ancient forests and our environmental laws, while ensuring a secure future for our workers.

Sincerely,

'Owls vs. jobs' — That simple?

Seattle P-I 9/27/92

Forest health depends on owl staying healthy in NW forests

George Bush arrived in Colville with the old familiar "owl vs. jobs" rhetoric.

But the owl is actually an indicator of timber community health as well as an indicator of the health of ancient-forest ecosystems. If the owls vanish from Northwest forests, loggers and millworkers will not be far behind as extinct species.

The economy in the Northwest is dependent on thoughtful and responsible stewardship of our natural resources. By rendering the timber debate into such a simplistic form, Bush demonstrates a continued lack of "the vision thing" and an unwillingness to provide effective leadership concerning issues vital to Northwesterners.

Dean Griswold
Seattle

Furniture construction may be part of NW jobs solution

Your editorial addressing the issue "Owls and jobs," was the best assessment of the problems pertaining to it I have read.

One possible solution to part of the unemployment dilemma may be to manufacture furniture here in the Northwest, rather than ship so many raw logs and unfinished lumber to foreign markets. North Carolina is not the only location in the United States where quality furniture can be built.



I am sure this is not a new idea, however it deserves more consideration.

Stanley Leemis
Issaquah

On a clearcut day you can't see the forest or the trees

Gosh, it was swell to see our "Environmental President" here in the Northwest. After four years of myopic mush it looks like the "vision thing" is finally kicking in. Bush's solution to the spotted owl mess is brilliant: Re-elect him, gut the Endangered Species Act

and let the good times roll. Why didn't we think of this sooner? It's so simple and everyone wins. In five years we won't have to worry about owls, old-growth or timber industry jobs; there won't be any.

George will be gone, too, living securely on a pension and enjoying the well-preserved natural beauty of his Kennebunkport estate. Meanwhile, if anyone is looking for clear-cut evidence of this "environmental extremism" we've been hearing so much about, I recommend an aerial view of Washington on a clear day.

Christopher Livezey
Seattle

Letters must include signatures, addresses and telephone numbers that can be verified during daytime hours. Letters that cannot be verified will not be published. All letters are subject to editing and should be as brief as possible. Due to the volume of letters received, not all can be published and we are unable to acknowledge their receipt or respond to individual writers. Send letters to Letters to the Editor, Seattle Post-Intelligencer, P.O. Box 1808, Seattle, WA 98111-1808.

Post-It® brand fax transmittal memo 7571		# of pages: 1	
To: Brooks Yager	From: Bill Arth		
On: [blank]	On: [blank]		
Dept: FYI	Phone: [blank]		
Fax: [blank]	Fax: [blank]		

SAMPLE OP-ED: THE ENVIRONMENT AND JOB GROWTH: WILL THE U.S. LEAD OR FOLLOW?

It is time to clear the air on jobs and the environment. Policies that protect the environment create jobs, and Governor Clinton will bring together the country with an economic plan that increases jobs while ensuring a better future for us all. Although the present administration has attempted to divide the country with this issue, the fact remains that future economic growth and competitiveness of the United States is completely intertwined with protection of the environment.

The rest of the world has begun the transition of adopting more environmentally sound policies to manage their economies. Already, the industries of Germany and Japan produce goods at a lower cost than U.S. companies. The tough environmental laws of those countries have created lean, efficient corporations who now understand that pollution equals waste: wasted resources, wasted revenue, and wasted profits. As any economist knows, profits allow expansion, and expansion equals new jobs.

The U.S. will not just lose profits and jobs by failing to modernize its industrial base. A \$300 billion world market for environmental technology and services has been projected for the year 2000. If the U.S. does not take the lead in this high growth industry, then the other giants in the field, Germany and Japan, will win the jobs. In 1990, German exports of pollution control equipment exceeded America's by \$3 billion. Even today, the U.S. must import 70% of its air pollution equipment from Europe; most of it from Germany. Manufacturing such equipment at home would have created hundreds of thousands of jobs. Instead, we send billions of dollars and jobs overseas. We must reverse this situation now, or lose the opportunity to other countries that are moving quickly to capitalize on the rapidly growing environmental industry.

*Insert any local examples here or where appropriate. Some possibilities can be found in the talking points.

President Bush has failed to grasp that reducing pollution increases efficiency and creates a competitive manufacturing industry with stable jobs. Nor does he understand that the U.S. can take advantage of the dynamic environmental industry that will experience explosive growth over the next two decades. Instead, the present administration is content with waste instead of efficiency, and inaction instead of initiative. Governor Clinton recognizes that to create and maintain jobs, we must compete with countries like Germany and Japan by polluting less to lower costs. America must reclaim its position as the number one exporter of environmental technology and services. Only Governor Clinton has demonstrated the foresight, resolve and ability to move America back into the lead.

This election represents a turning point for the competitiveness of America in the coming decades. Millions of American jobs are at stake. Electing Governor Clinton to the White House will ensure that the United States leads the world as an economic superpower as we enter the twenty-first century.

SAMPLE OP-ED: MAKING CLEANER CARS: AN ECONOMIC OPPORTUNITY FOR US CAR COMPANIES

It is time to clear the air on jobs and the environment. Policies that protect the environment create jobs, and Governor Clinton will bring together the country with an economic plan that increases jobs while ensuring a better future for us all. Although the present administration has attempted to divide the country with this issue, the fact remains that future economic prosperity will be completely intertwined with protection of the environment. In particular, the development of more efficient vehicles now provides American car companies with a new opportunity for strong economic growth.

The rest of the world has begun the transition of adopting more environmentally sound policies to manage their economies. Moving forward to utilize more efficient technologies is especially crucial for U.S. auto manufacturers. New policies of Japanese carmakers illustrates a very aggressive approach to developing more efficient, affordable, and practical cars. Honda has made meeting environmental goals a top priority. "If a maker doesn't build more efficient cars," states Honda's president, "it can't survive." Honda has since withdrawn from Formula One racing to concentrate on meeting the growing demand for more environmentally sound vehicles.

An article in Business Week noted that Detroit car companies usually fight new laws that require innovation such as higher mileage and pollution control, only to later utilize such innovations to keep up with the Japanese. Significantly, the major Japanese car companies are all pushing hard to raise fuel efficiency and reduce emissions. The Japanese regard innovative vehicle technology as an opportunity for an investment that will reap large profits. In a stark contrast, Detroit continues to view improving fuel efficiency and developing alternative energy vehicles as a burden.

A recent study indicates that improving the average fuel economy to 40 m.p.g. would create a net gain of 70,000 jobs by the year 2000. Detroit should wake up to the unprecedented economic opportunities that will flow from the development of environmentally sound cars. Current policies clearly are not working: American auto workers have suffered devastating job losses under the Bush administration. GM alone laid off approximately 74,000 workers in 1992. Refusing to adopt policies to move ahead of the Japanese will only continue this trend. It is time to lead instead of follow!

Mexico City provides us with a prime example of the growing need for environmentally sound cars. In 1989, the city banned half of its cars from the streets in an emergency measure to combat health threatening air pollution. Even now, one fifth of the residents cars are not allowed on the streets on each day of the week in a desperate effort to fight the city's pervasive and oppressive air pollution. Clearly, the first car company to produce affordable high mileage or alternative energy cars will have a huge market in Mexico. The key question: who will it be? Japan or Detroit?

*Insert any local examples here or where appropriate. Some possibilities can be found in the talking points.

President Bush has failed to grasp that reducing vehicle pollution will create a competitive automotive industry with stable jobs. Under a Bush administration, Japan would win the business and the jobs while American auto workers continue to suffer. A Clinton administration will work with Detroit to ensure that the American auto industry can effectively compete with the Japanese and keep the auto worker jobs at home.

This election represents a turning point for the competitiveness of America in the coming decades. Thousands of American auto worker jobs are at stake. Electing Governor Clinton to the White House will ensure that the United States leads as the world's most advanced automotive producer as we enter the twenty-first century.

The New York Times

Founded in 1851

ADOLPH S. OCHS, Publisher 1896-1935
 ARTHUR HAYS SULZBERGER, Publisher 1935-1961
 ORVIL E. DRYFOOS, Publisher 1961-1963
 ARTHUR OCHS SULZBERGER, Publisher 1963-1992

ARTHUR OCHS SULZBERGER JR., Publisher

MAX FRANKEL, Executive Editor
 JOSEPH LELYVELD, Managing Editor
 WARREN HOGE, Assistant Managing Editor
 DAVID R. JONES, Assistant Managing Editor
 CAROLYN LEE, Assistant Managing Editor
 JOHN M. LEE, Assistant Managing Editor
 ALLAN M. SIEGAL, Assistant Managing Editor

JACK ROSENTHAL, Editorial Page Editor
 PHILIP M. BOFFEY, Deputy Editorial Page Editor

RUSSELL T. LEWIS, Executive V.P., Deputy Gen. Mgr.
 JOHN M. O'BRIEN, Executive V.P., Deputy Gen. Mgr.
 WILLIAM L. POLLAK, Executive V.P., Sales
 JAMES A. CUTIE, Sr. V.P., Marketing
 ERICH G. LINKER JR., Sr. V.P., Advertising
 RICHARD H. GILMAN, V.P., Systems and Technology
 MICHAEL J. KURTZ, V.P., Human Resources
 KAREN A. MESSINEO, V.P., Controller
 JOSEPH M. MULLEN, V.P., Production
 CHARLES E. SHELTON, V.P., Circulation

MONDAY, SEPTEMBER 21, 1992

Don't Blame the Owl

The northern spotted owl — once described by President Bush as "that little furry-feathery guy" — is not a particularly popular little guy among timber workers in the Pacific Northwest. Listed as an endangered species in 1990, the owl triggered a series of court cases that halted logging in millions of acres of old-growth forests.

Timber workers are furious. They also vote. Which is why Mr. Bush went to Washington State last week and pledged to mend the Endangered Species Act to give "greater consideration to jobs, families and communities." It is time, he declared, "to put people ahead of owls."

Reasonable people may disagree on whether the Endangered Species Act, one of the nation's toughest environmental laws, gives sufficient weight to the economic costs of preserving biodiversity. But to suggest to frightened loggers that changing the act and sacrificing the owl will save their jobs for very long is disingenuous.

The logging industry is undergoing such radical changes that further clear-cutting can only be a stopgap remedy. Mr. Bush correctly noted, for example, that many milling jobs are lost because raw logs are exported to Japan, not sent to local mills.

There are two other powerful forces he did not mention. One is a major shift in investment capital to the South by the big timber companies. The other is automation. In short, business decisions and market forces have done far more to undermine the workers than the owl.

Blaming the owl trivializes the environmental

stakes and diverts attention from the Administration's failures. The issue is not just the owl but the owl's habitat — magnificent old-growth forests that environmentalists wish to save for future generations and loggers wish to cut for today's generation.

Yet the Administration has done virtually nothing to devise a sensible protection plan for the owl, as mandated by the act. Nor has it proposed measures to retrain displaced workers or help distressed communities. With a concerted effort, the Administration might conceivably save most of the forest and more than a few jobs. But nobody, including Congress, seems to have the stomach for such a task in a political year.

The old-growth forests could disappear completely in 15 years if cutting resumed at pre-1990 levels. What would happen to the loggers then? And what would happen to tourism and recreation — industries that can create sustainable jobs as long as the forests last?

These questions require a political perspective that extends beyond Election Day. To his credit, Governor Clinton has talked, albeit vaguely, about a government-business partnership to reconcile environmental and economic needs. For Mr. Bush, who campaigned in the Pacific Northwest four years ago as the next "environment President," the answer is much simpler: get on with the cutting.

That approach will sacrifice not just the "little furry-feathery guy" but an extraordinary environmental resource with its own job potential.

JOBS AND THE ENVIRONMENT TALKING POINTS: U.S. COMPETITIVENESS

Issue

Do strong environmental policies help or hurt the U.S. economy and U.S. company's competitiveness in the world market?

Clinton/Gore

America cannot have a healthy economy without a healthy environment. Environmental protection can be used as a tool for economic growth.

Bush/Quayle

The incumbents still cling to a jobs versus the environment mentality, as demonstrated by President Bush's attempts to help U.S. industries "compete" by suspending the promulgation of some environmental regulations.

Talking Points

- U.S. companies have profitted by implementing environmentally progressive programs.
 - ATT reduced its use of CFCs, and saves \$3 million per year.
 - In Louisiana, Dow invested \$15 million in waste reduction in 1990 and saved \$18 million by mid-1991.
 - DuPont reduced its waste production by two thirds at a Texas plant, and saves \$1 million per year as a result. (Env. and Energy Study Inst., Disc. Paper by J. Romm, 7/21/92)
- Even with the current gains in efficiency, U.S. companies still lag behind those of other nations. For each dollar of goods sold, U.S. companies generate roughly five times more waste than the Japanese and twice as much as the Germans. (Ibid.)
- German workers earn an average of \$6.70 more per hour than Americans, yet German products are competitive on the world market because German industry operates more efficiently (and pollutes less) as a result of more stringent regulations. (Bureau of Labor Statistics)
- [A]nti-environment policies temporarily insulate inefficient producers from the need to innovate and invest in new equipment, while penalizing [the environmental] industry that is arguably the most dynamic element of the entire U.S. economy. (Wall St. J., Silverstein, 5/28/92).
- Pollution places an unnecessary financial burden on society. Air pollution costs the overall U.S. economy over \$50 billion annually in lost work days and productivity. (American Lung Assoc.)
- One hundred million people live in areas with unhealthy air. (NYTimes, 7/3/92)
- Clinton/Gore propose harnessing market forces to stimulate U.S. technological innovation and conserve resources. Their plan will reward consumers and businesses that conserve energy and natural resources, and makes polluters pay for the pollution they create.

JOBS AND THE ENVIRONMENT TALKING POINTS: JOBS CREATION

Issue

Does environmental protection increase or decrease employment in the United States?

Clinton/Gore

Clinton and Gore know that environmental protection can create high paying, high skilled jobs, and have recognized that environmental technology is a growth industry for this country.

Bush/Quayle

Bush and Quayle believe that environmental regulations decrease employment. For example, Quayle's Competitiveness Council has proposed weakening more than 100 Clean Air Act regulations. (Boston Globe, 5/2/91).

Talking Points

- While the U.S. weathered several recessions between 1970 and 1991, the environmental industry experienced an average annual rate of growth of almost 11% per year. (Bezdek, Management Information Services, Background Paper for Symposium, 2/92)
- One estimate indicates that almost 3.5 million jobs rely on the environmental industry. If all the pollution control and abatement firms were one corporation, it would easily rank at the top of the Fortune 500 in sales for 1991. (Bezdek, MIS, 1991).
- About 65,000 to 70,000 U.S. environmental companies collectively earned an estimated \$130 billion in 1991. (Wall St. J., Silverstein, 5/28/92)
- Up to 60,000 jobs will be created by the end of this decade as a direct result of the Clean Air Act, if it is implemented on schedule. (EPA) The Bush administration has already missed numerous statutory deadlines for promulgating required regulations. (DPC Special Report)
- Reforestation and other environmental reclamation activities and small-scale logging operations tend to be highly labor-intensive. (World Watch, Jan./Feb. 1992).
- Polluted waters endanger the commercial and recreational fishing industries, which account for more than \$10 billion annually.
- Ocean pollution from sewage and medical waste washed up on East Coast beaches in the summer of 1987 and 1988, cost the New Jersey tourism industry billions of dollars, and those employed at the beaches lost their jobs.

JOBS AND THE ENVIRONMENT TALKING POINTS: EXPORTS

Issue

Are American environmental companies well positioned to capture a large share of the world's environmental equipment and services market?

Clinton/Gore

Noting that Germany and Japan are moving aggressively to control the lion's share of the world environmental industry, Clinton has stated that the U.S. must be the world's foremost producer and exporter of environmental technology by the end of the decade.

Bush/Quayle

Bush takes a laissez faire attitude towards helping environmental companies capture a share of the world market for environmental equipment and services.

Talking Points

- "In the future, access to international markets will depend on who has the most environmentally sound technologies. If U.S. companies don't move aggressively, we will see the same conflict in environmental technology that we see today between GM and Honda." (quote by the Managing Director of the Japanese company, JGC Corp in Business Week, 5/11/92).
- [A]nti-environment policies temporarily insulate inefficient producers from the need to innovate and invest in new equipment, while penalizing [the environmental] industry that is arguably the most dynamic element of the entire U.S. economy. (Wall St. J., Silverstein, 5/28/92).
- The Department of Commerce estimates the current global market for environmental goods and services at \$370 billion. (Ibid.) Yet in 1990, U.S. exports of environmental goods and services (\$8 billion) were less than German exports (\$11 billion). (OECD)
- Today over 70% of America's clean air technology is imported from overseas, mainly from Germany. Germany has had perhaps the world's tightest regulations in stationary air pollution control. (OpCit. WSJ)

JOBS AND THE ENVIRONMENT

TALKING POINTS: FUEL EFFICIENCY AND AUTOWORKER JOBS

Issue

Will raising auto fuel efficiency standards increase or decrease jobs for auto workers?

Claim

Raising fuel efficiency standards for U.S. vehicles will result in job losses for American autoworkers.

Response

- Rolling back vehicle efficiency standards "did not save the U.S. auto industry from losing ground to Japan since 1985." (Quote by Joseph Romm)
- GM lost approximately 74,000 jobs in 1992. (OECD)
- A study by the American Council for an Energy-Efficient Economy indicates that improving fuel economy to 40 m.p.g. would lead to a net gain of 70,000 jobs by the year 2000. (Time, Oct. 12, 1992).

Claim

Forcing U.S. auto manufacturers to increase average fuel efficiency standards will inhibit their ability to compete with foreign car manufacturers.

Response

- Nobuhiko Kawamoto, Honda's new president, has made meeting environmental goals a top priority. After taking over last June he made 99 speeches in three months to prep Japanese and overseas employees for the challenge. There's a simple answer to why: "If a maker doesn't build more efficient cars," Kawamoto says, "it can't survive." (Business Week, April 8, 1991)
- [T]oday Honda announced it is withdrawing from Formula 1 in order to transfer the 100 engineers who work on racing engines into other more pressing research and development tasks. The move is one of the most visible symbols of the slowdown afflicting Japan's auto industry, and of the looming demand for more environmentally sound vehicles. (Washington Post, September 12, 1992)
- At a time when sales are shrinking and profits are dropping for Honda and other big automakers, they are gearing up to make cars "greener"--that is, low enough in emissions to meet the stricter standards, such as those that California is imposing, and substantially higher in fuel efficiency. (Ibid.)
- Detroit . . . has portrayed most major changes required of it in the past 20 years as impossible, from higher mileage to pollution control. Then, it has met the challenge anyway, in part to keep up with the Japanese. (Business Week, April 8, 1991)
- Experts figure two or three leading world auto makers will grab the lead in alternative cars-- . . . GM may be in front now. But the Japanese won't lag for long, given their exposure in California, where they have 50% of the market. "Some of the Japanese companies are going to treat this as an opportunity," (Quote in Bus. Week, April 8, 1991 by Daniel Roos, of the Mass. Institute of Technology's International Motor Vehicle Program)
- BMW is spending one-third of its \$845 million annual research budget on meeting new clean-air regulations, including alternative cars. (Ibid.)

JOBS AND THE ENVIRONMENT
TALKING POINTS: FUEL EFFICIENCY AND NATIONAL SECURITY

Issue

Will raising auto fuel efficiency requirements help or hurt U.S. national security?

Claim

President Bush claims that the U.S. does not need higher fuel efficiency standards.

Response

- Bush's determination not to increase auto fuel efficiency requirements could increase America's reliance on foreign oil.
- When the Reagan/Bush administration rolled back vehicle efficiency standards in 1985, imports from the Persian Gulf doubled within a year. (Enhancing Econ. Security Through Environmental Leadership, A Discussion Paper by Joseph Romm, publ. by Environmental and Energy Study Institute [EESI], 7/21/92).
- U.S. imports of Persian Gulf oil increased by 500% from 1985 to 1989. (Ibid.)
- The current trade deficit for oil is \$50 billion, roughly half of the total trade deficit. (Ibid.)
- Under the Bush energy plan, the trade deficit in oil alone will reach \$80 billion by the year 2005. (Ibid.)
- The U.S. spends \$60 billion a year on military forces dedicated to the Persian Gulf. This represents a hidden subsidy to Gulf oil amounting to \$100 per barrel. (Ibid.)
- By raising fuel efficiency standards to an average of 40 miles per gallon, the U.S. would save about two million barrels of oil per day--more than we now import from the Persian Gulf, and five times more than the most optimistic projection of oil in the Arctic Reserve. (Ibid.)

Sample Press Release

(DATE)

CONTACT:

AGGRESSIVE ENERGY CONSERVATION WOULD BOOST ECONOMY, STUDY FINDS

According to a new economic study, dramatic boosts in vehicle fuel efficiency, improved appliances, better building insulation, more efficient lighting, and energy savings in manufacturing would boost the U.S. economy, generating 293,000 new jobs by 1995, and nearly 1.1 million new jobs by 2010.

The study, "Energy Efficiency and Job Creation," was co-authored by Howard Geller and John DeCicco of the American Council for an Energy-Efficient Economy in Washington, D.C., and Skip Laitner of Economic Research Associates in Eugene, Ore.

Building on an earlier study, "America's Energy Choices," the researchers looked at how employment and income would be effected by significant reductions in energy consumption, compared to the impact on the economy of "business as usual."

Using sophisticated computer models and dividing the U.S. economy into 25 sectors, they found that:

- An average annual investment of \$46 billion in energy efficiency measures would result in a 20 percent reduction in energy consumption over the next 18 years.

- About 293,000 new jobs would be created by 1995, 471,000 by 2000, and nearly 1.1 million by 2010.

- By itself, a boost in average rated vehicle fuel efficiency from 28 MPG in 1990 to 40 MPG in 2000 and 50 MPG in 2010 would yield 72,000 new jobs by 2000 and 244,000 new jobs by 2010, with 20 percent of the increase coming in the motor vehicle industry.

The researchers said gains in employment and income would result from:

- The shifting of resources out of relatively low labor-intensive energy sectors of the economy to more labor-intensive industries.

- Reductions in consumers' energy bills, which would boost demand for non-energy goods, equipment and services.

According to the researchers, "Most sectors of the economy (would) gain jobs and generate additional income, while a few sectors (would) lose jobs and generate less income" as a result of more aggressive energy-efficiency policies.

"In terms of energy policy objectives," the researchers concluded, "it is unnecessary to choose between either economic benefits and jobs on the one hand or environmental protection on the other.

"We can create more jobs and better protect the environment by adopting policies that enhance energy efficiency."

For Immediate release, Oct. 5, 1992
MIT Study Explodes Jobs vs. Environment Myth

A study released Monday by Massachusetts Institute of Technology Professor Stephen Meyer shows that the health of state economies - in boom and bust times - is only enhanced by strong environmental protection laws.

The study, which surveyed a range of jobs data, economic indicators and environmental regulations between 1970 and 1990, found that the states with the greatest job and economic growth were first to adopt environmental regulations. Conversely, the study also showed that lackluster economic growth in those same states in 1992 was not due to environmental or health and safety regulations, but instead resulted from larger economic factors.

Meyer's study exposes as myth the often-held view that environmental considerations are at odds with economic growth. That conclusion has been the rationale for many White House initiatives, such as the anti-regulation Council on Competitiveness. Instead, the study shows that the obstacles to generating wealth through economic growth are otherwise and more fundamental.

"It asks the question, Is it true that states with stronger environmental policies show poorer economic growth, poorer jobs creation, poorer competitiveness, than states with weaker regulations," Meyer said. "I looked at gross state products, total employment, construction employment, environmental and labor regulations in the 1970s and 80s.

"I expected the results to show no relationship. In fact, what I found was the states with the stronger environmental policies had the stronger labor and jobs growth. It states, categorically, that it isn't true that environmental policies hurt the economy."

In fact, the cost of environmental regulation was a minor factor in the larger forces that shape economic cycles, Meyer said. "The effect is so small that it gets lost in the noise of everything else that's going on."

For more information, Contact: Steven Meyer, 617-253-8078.

BACKGROUND INFO FOR ANCIENT FORESTS AND JOBS

WHAT ARE THE CONSEQUENCES OF LOGGING ANCIENT FORESTS?

Only 10% of this country's ancient forests remain standing. The resultant loss of habitat has driven populations of salmon, the spotted owl and other old growth dependant species to near extinction. This is already having dramatic impact on the fishing industry which is seeing heavy restrictions placed on the salmon catch due to declining stocks. The tourism and recreation industries also are threatened by the loss of these unique ecosystems.

The Pacific Yew tree which is found in old-growth forests is an excellent example of how medicines can be developed from previously unknown sources. The yew tree produces taxol which has proven an effective cancer treatment. By decimating these ancient forests and ecosystems we remove the template for future medical, scientific and biological discoveries: we will have lost forever this part of our natural heritage.

WHAT ARE THE CONSEQUENCES OF REDUCED LOGGING?

Preserving the ancient forests will cost some timber jobs but this is only part of the price of the transition to a more efficient, sustainable second-growth economy that has been in progress for decades. Timber jobs in the PNW have been in steady decline as the industry automates, reinvests in the Southeast U.S., and exports raw logs overseas. From 1979 to 1988, employment in the lumber and plywood sector decreased about 19% (more than 25,000 jobs) as a result of industry automation in Washington and Oregon. This 19% employment drop was accompanied by a 12% increase in lumber and plywood production and a 6.8% increase in timber harvests on all lands in Oregon and Washington. This trend is expected to continue regardless of whether the remaining old-growth forests are saved or cut down over the next decade.

WHAT ARE THE ALTERNATIVES?

To ensure a smooth transition that would see timber jobs reduced through natural attrition rather than by a drastic cutback, Congress must provide economic assistance to timber workers and their families; to timber companies to retool; and technical and financial assistance to communities attempting to diversify their local

economies and other measures, that address the fact that these communities' tax base is largely dependent upon payments from the Federal Treasury.

Investments for the restoration of damaged watersheds could be used to boost employment and to insure our natural resources such as salmon for generations to come. There is also tremendous potential for a retooled timber industry, based on second-growth forests and sustainable management practices, to provide jobs in perpetuity.

Any resolution should address the role lumber exports play in depriving the Northwest of jobs, while our precious national resources are shipped overseas. Currently, 25% of all logs are exported, raw and unprocessed by U.S. mills, costing an estimated 16,000 mill jobs a year. A 1990 Forest Service report concluded that limiting all log exports from the US would more than offset the effect of implementing the government's Interagency Scientific Committee recommendations for protecting the northern spotted owl and its habitat.

BACKGROUND INFORMATION:

CLEAN CARS SUMMARY

With nearly 600 million motor vehicles on the road throughout the world, the introduction of zero emission vehicles may have the single largest impact on environmental clean-up.

The California Low Emissions Vehicle Program legislates cleaner fuels and cleaner cars beginning in 1994. By 1998, auto manufacturers must meet the 2% penetration level for introduction of ZEVs into the consumer market. In addition, New York and Massachusetts have already adopted California standards and New Jersey and Maine are in the public review process. As a result, every leading auto manufacturer in the world has development programs for flexible/transitional fuels, hybrid vehicles and zero emission vehicles (ZEV). Small numbers of these cars are presently on the road - primarily in demonstration/fleet programs.

There are conflicting opinions about the net benefit of battery operated EVs in reducing air pollution without increasing stationary plant emissions. The EPA is taking a neutral position and the California Air Resources Board (CARB) and the Northeast States for Coordinated Air Use Management (NESCAUM) both see direct advantages.

Funding of the Electric and Hybrid Propulsion Division at DOE was \$37 million in 1979. By 1985, it had been systematically reduced to a low of \$8.4 million. Since then, spending has increased - to a current level of \$42 million. (The U.S. Advanced Battery Consortium has been established bringing together the Big Three and the Electric Power Research Institute to intensify research and development of batteries with longer range, increased power and life and faster recharge. A newly announced Hybrid Vehicle Program will fund assembly-line production of hybrid vehicles. Three grants from DOT/FTA Advanced Transportation Systems/Electric Vehicle Program were recently announced. The FY '93 DOD budget contains a \$25 million defense reinvestment project to introduce EV technology to the Army.) Federal spending has risen over the years, but appropriations must increase if the U.S. is to secure large scale market penetration at home and abroad - we are being outspent by our foreign counterparts.

U.S. auto manufacturers are making major commitments to on-time delivery of clean fuel vehicles. Utility companies are pursuing commercialization programs for infrastructure and public education. To help reduce corporate risk, industry is requesting tax credits and consumer incentives.

Internationally, the U.S. is being met by strong competition from foreign manufacturers who see the California market as just the tip of the iceberg. Substantial research, development and demonstration projects are underway - heavily supported by state funding.

Hydrogen powered fuel cells hold the key to the future. This clean and renewable domestic resource combined with advanced technology will provide emission free transportation as well as realistic applications for locomotive, air and space. Today, the U.S. significantly lags behind international research not because of lack of technical expertise but because of an under-funded federal program needing more attention.

U.S. manufactured clean cars and ZEVs will lower pollution causing emissions, provide energy security benefits, reduce the deficit, and make the U.S. economically competitive in the world market.

202 -
Source: Marcia Zalowitz 387-6185



ENVIRONMENT

By Frank Edward Allen

Reducing Toxic Waste Produces Quick Results

REWARDS can come quickly when toxic waste is reduced or prevented at the source.

Inform, a New York-based environmental research group that studied 29 chemical plants in 1985, revisited them this year and found significant gains in pollution prevention. Moreover, it found the changes had produced substantial savings for many of the companies.

More than 1,000 U.S. plants make dyes, adhesives, resins, solvents and other specialty products that generate half of the country's toxic wastes. Inform's latest study suggests such plants can reduce waste streams 50% or more through better "housekeeping" and simple equipment changes.

An Exxon plant in Linden, N.J., had 200 holding tanks with no roofs. "The chemicals were just evaporating off," says Joanna Underwood, Inform's executive director. Exxon installed floating roofs on 16 tanks, cut air emissions of several chemicals by 90% and saved \$200,000 a year in avoided losses of raw materials.

Some improvements cost little or nothing. A Ciba-Geigy plant eliminated discharges of heavy-metal wastes simply by moving the necessary purification steps to an earlier stage of the process.

Among eight plants that kept the most extensive data, the study found each dollar invested to reduce pollution and waste at the source produced an average annual saving of \$3.49. Five plants reported annual savings of \$8 or more per dollar spent. Dow Chemical invested \$250,000 to scrub a waste stream with water. The change allows the plant to reuse some raw materials, saving \$2.4 million a year.

Payback periods often were short. In about seven weeks, Borden recouped costs of a system to collect and distill flushings from filters. To reduce leaks, Monsanto spent \$60,000 to upgrade a resin-filter press. In less than three months, it cut waste 96%, saving \$300,000 a year in incineration.

Hanging Up on Pollution From Telephone Poles

TRANSMISSION poles anchor the lifelines of phone utility companies, but they also are environmental headaches. To prevent decay, the poles are

parts for pentachlorophenol and 200 parts for creosote.

Paper mills and other pulp users buy the treated chips for use in newsprint, paper towels and other products. Microterra, which also sells the reclaimed chemicals, is developing treatments for standing poles to limit leaching.

Election Results May Take On Green Tint

THE "green" vote could become a swing vote in some races this fall.

The Roper Organization finds a steadily rising proportion of U.S. voters rank the environment among their top two or three concerns. In 10 years of annual surveys through 1991, the percentage has more than tripled to 23% from 7%. George H. Gallup International Institute says 57% of voting-age Americans want legislators who favor more environmental restrictions on businesses, while 83% fear environmental problems will affect the health of their children over the next 25 years.

The pollsters describe "green" voters as typically better educated and more affluent than the electorate overall. Roper's studies show more than a third of them have four-year college degrees, compared with less than a fifth of the general public, and their household incomes average 15% more than the national norm.

About 35% of these voters also describe themselves as politically and socially liberal, compared with 19% of the general public. Among respondents surveyed by Gallup, 80% say economic growth and environmental protection aren't incompatible. But if forced to choose, 59% would put the environment first.

Environmental initiatives on November ballots in 16 states could attract more people with such views to the polls. A recent Roper survey of 1,200 registered voters found 22% say they have cast votes because of candidates' positions on environmental issues. Most races are decided by margins much smaller than one-fifth of the total vote, Roper says, so such voters could well influence the outcome of some races.

Environmental concerns are more apt to cause these voters to disqualify a candidate than to support one. Half of Roper respondents say they voted against candidates based on their environmental records, compared with one-third

Sears Goes for Glit

By Francine Schwadel

Staff Reporter of THE WALL STREET JOURNAL

CHICAGO — Sears, Roebuck & Co. surprised the retailing world, by hiring Arthur C. Martinez, an executive from the world of high-fashion department stores, to run its struggling retail business, which caters to middle America.

Industry observers hailed the appointment as a breath of fresh air for Sears and its shareholders, who have watched their stock languish in recent years as the once-dominant Sears retail business slid to third place among the nation's largest chains.

But some questioned whether Mr. Martinez, whose expertise lies in operations and finance, is skilled enough at merchandising to revive Sears. "The com-



Arthur C. Martinez

pany still ne Walter Loeb, publisher of

The 52-year-old, nonetheless, said chairman of in a lifetime

At Sears, executive of Group, which and catalogs ness and int The Merchar of \$31.4 billion Brennan, cha the retailing who reassum job in a mar ago.

Declaring "scriptions" it would spend the company characterized "open" and intends to inv agers at a m

COMPUTERS

Workstations Go Head-to-Head Once Played Solely

By Michael Allen

Staff Reporter of THE WALL STREET JOURNAL

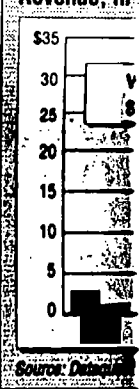
Workstations are turning into kryptonite for the supercomputer industry.

In much the same way that they have taken the oomph out of mainframes and minicomputers, workstations — sophisticated machines that fit on a desk top and typically cost between \$10,000 and \$150,000 apiece — are starting to cut into sales of the multimillion-dollar supercomputers used to tackle the toughest calculations in science and industry.

In recent months, dozens of companies and research organizations have begun experimenting with ways to move applications off supercomputers and onto desks. Some are opting out of supercomputers altogether, preferring to run their programs on large groups of workstations. Others, including Westinghouse Electric Corp., are using workstations to carry them through tough economic times until they can afford to buy a new generation of supercomputer.

"It is clear to me that the bias in the marketplace today is toward the desk top and not the glass house," says Minneapolis supercomputer analyst Gary Smaby, referring to the air-conditioned glass rooms that typically house big, centralized computing systems. "With high-performing computing budgets across the board being constrained as they are, every dollar that gets spent on workstations is a dollar that doesn't get spent on supercomputers."

Workstation Revenue, in \$ billions



of Cray Research Corp., supercomputer manufacturer.

To be sure, tasks that only supercomputers can do adequately perform. But the scientific prot structure of the long-term suggest that will be dead

species if the violations continued. The court ruled that organization members had no claim because they weren't directly harmed.

The conservative judges' caution leads them to say they don't make law, they just interpret it. That means they stick to the words, or "plain meaning," of a law instead of creating rights to accomplish social goals. On July 8, the appeals court in San Francisco tossed out an Environmental Protection Agency rule. The EPA had allowed companies to use pesticides in foods if they created only a minor risk of cancer. But the appeals court decided that a 1958 law plainly forbids the use of pesticides when there is even the slightest risk of cancer after food is processed.

LAISSEZ-FAIRE. The GOP judges use the same approach in deciding whether federal regulations preempt state rules. "Business would rather face one regulatory regime than 50," says Benjamin W. Heineman Jr., General Electric Co.'s general counsel. Unless Congress clearly specifies its intention to oust state regulators from an area, the Supreme Court will leave state regulations alone. In a 1988 ruling, the Supreme Court upheld a California law permitting consumers to file antitrust suits. A cement company had unsuccessfully argued that a federal law, barring consumers from filing antitrust charges against manufacturers for products bought from retailers, preempted the state statute.

Clinton advisers have said his judges would vastly differ from Reagan-Bush appointees. For one thing, Clinton has vowed to appoint a pro-choice justice to the Supreme Court. Additionally, Clinton aides say he would nominate more women and minorities. The Reagan-Bush appointees have been predominantly wealthy white males, says a study by the Alliance for Justice in Washington. It found Bush has named 18 minority judges and Reagan only 20 out of 558 appointments. And, while the GOP judges have focused on economic rights, Clinton judges "will not shift from restraint to activism, but from some constitutional concerns to others," such as civil rights, predicts Harvard Law School Professor Laurence H. Tribe.

Whoever wins the Presidential race, one thing is certain. The Reagan-Bush appointees have ushered in an era of restraint. Liberals and conservatives agree that the judicial activism of the 1950s and 1960s—when the courts pushed for school desegregation and other civil rights causes—is over. As the judiciary takes its place as the third, less assertive branch of government, companies may want to focus more attention on lawmakers to make sure they get clear and favorable rules from the start.

By Catherine Yang in Washington

Environment

POLICY

TREE-HUGGERS VS. JOBS: IT'S NOT THAT SIMPLE

Why the debate over the environment is so complicated

When it comes to the environment, a chasm divides President Bush and Democratic challenger Bill Clinton. To hear the President tell it, the Arkansas governor and his Vice-Presidential nominee, Senator Albert Gore Jr. (D-Tenn.), champion environmental policies that would drive thousands out of work. At a recent campaign stop at a Washington State lumber mill, Bush advocated softening environmental laws and declared: "It is time we worried not only about endangered species, but about endangered jobs."

Clinton, by contrast, argues that policies can be crafted that safeguard ecosystems while avoiding job losses—and even spur growth. The candidate has repeatedly called on audiences to "reject Bush Administration attempts to force a false choice between environmental protection and growth."

The inflamed campaign rhetoric on both sides misses the point. Complying with environmental laws such as the Clean Air Act and the Endangered Species Act cost U.S. businesses more than \$100 billion last year. But it is too simplistic to label the impact as wholly destructive of jobs, or as entirely benign.

PINK SLIPS. Regulations that limit the ecological damage from logging, real estate development, or farming do cost some jobs in those businesses. But they save workers' paychecks in others, such as fishing and tourism. At the same time, curtailling pollution can help manufacturers boost productivity and has created thousands of new jobs. Long-term, clean air and water and sturdy ecosystems can improve public health and yield economic benefits that are hard to measure. The real question, says William D. Ruckelshaus, chairman of Browning-Ferris Industries Inc., is: "Do regulations add to the productivity of society,

public health, the protection of the environment, or the more efficient use of resources?"

The controversy surrounding protection of the northern spotted owl, an endangered species, shows how complicated the answer can be. In the past three years, lawsuits aimed at protecting the owl's habitat in Oregon, Washington, and Northern California have quashed new sales of old-growth timber on public lands. Some 120 mills have closed, furloughing 11,000 workers. The timber industry estimates that continued restrictions could cost up to 45,000 more jobs—directly and indirectly—and \$1.13 billion in annual income by the year 2000.

Painful as that will be for timber-dependent towns, it won't lead to regional economic disaster. Some 6% of those jobs might be lost anyway to automation and consolidation, estimates the National Forest Products Assn. The blow could be softened by increased logging on private lands, which produce 75% of the timber in western Washington. And higher wood prices could offset the economic impact of income lost by out-of-work loggers, says a

University of Washington study.

More important, employment in Oregon and Washington is growing faster than the national average—some 12% since 1988. That prosperity hinges in part on the Northwest's environment and natural beauty, which help draw new industries and residents. High-tech and software companies employ almost as many workers as wood products—90,200 vs. 92,487. And they pay more—a \$3.4 billion total payroll vs. \$2.4 billion. Recreation and tourism employ more, too, though at lower wages. And retirees flocking to Ashland, Ore., and other small towns hit by mill closings are keeping local service industries thriving.



BUSH AT A WASHINGTON MILL: LOGGING THE LUMBER VOTE

ENVIRONMENTAL PROTECTION

THE ECONOMIC PLUSES...

CREATES AN INDUSTRY The \$120 billion environmental services industry accounts for 2.9% of GNP

PROVIDES NEW JOBS Now at 1 million, industry employment may rise by 491,000 in 1996

PRESERVES JOBS Clean water and healthy ecosystems can save jobs in fishing and tourism

BOOSTS PRODUCTIVITY Controlling pollution cuts waste and raises efficiency

SOURCE: ENVIRONMENTAL BUSINESS JOURNAL, ENVIRONMENTAL PROTECTION AGENCY, EPA

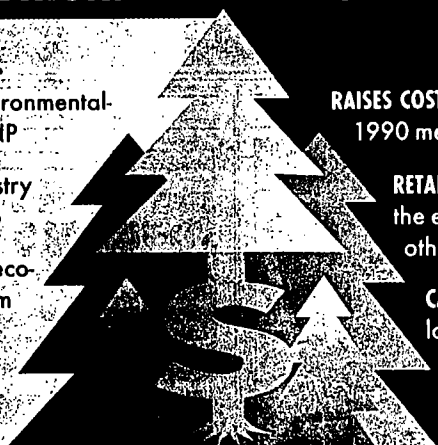
...AND MINUSES

RAISES COSTS Companies spent \$100 billion in 1990 meeting environmental rules, 2.1% of GNP

RETARDS GROWTH Environmental laws will leave the economy 2.59% smaller by 2000 than it otherwise would be

CAN CAUSE REGIONAL UPHEAVAL Northwest logging jobs are disappearing

AFFECTS INDUSTRIES DISPROPORTIONATELY Producers of coal, oil, and cars suffer



Today, the wood-products industry accounts for 2.7% of all jobs in Washington and Oregon, down from 3.6% in 1988. "We have passed the point where the forest standing yields more jobs and higher income than cutting it down," says W. Ed Whitelaw, a University of Oregon economics professor and president of ECO Northwest, a pro-environment consultancy in Eugene, Ore.

EASY SCAPEGOATS. Drawing lessons from a forest region for the overall economy is dicey, though. Harvard University economist Dale W. Jorgenson estimates that the economy in 2000 will be 2.59% smaller than it would have been if environmental laws enacted between 1970 and 1990 weren't passed. He says that producers have diverted resources to such things as retrofitting plants and redesigning production processes. The economy would have grown faster if management had made more productive capital expenditures. "A lot of regulations are written by people who aren't thinking about costs," says Jorgenson.

Critics of such reasoning say conventional economic analysis doesn't consider environmental amenities such as clean air or water as assets—or their destruction as a debit—when calculating national wealth. Were these included, the economic impact of environmental protection would be far less. Most economists also can't pinpoint the number of jobs lost as a result of the costs imposed by environmental laws. Often the regulations are scapegoats for companies that lay off workers for other reasons.

Consider the oil business. Industry leaders have repeatedly blamed restrictions on drilling offshore and in Alaska's Arctic National Wildlife Refuge for 400,000 jobs lost in the 1980s. "We used to invest two-thirds of our exploration and production budgets in the U.S. and one-third abroad," says Charles J. Di Bona, president of the American Petroleum Institute. "Now it's reversed. The companies were thrown out by environmental restrictions." But Di Bona ac-

knowledges that plummeting oil prices and higher drilling costs in the U.S. were also crucial. "A bigger factor in preventing exploration in the U.S. was simply price," he concedes.

No doubt, the economic impact of environmental rules hits regions and industries unevenly. According to studies by Jorgenson and others, the costs of environmental protection have fallen the hardest on resource-extraction industries, such as coal, timber, and oil, and related industries, such as chemicals.

Yet this trend cuts two ways. In the past 20 years, environmental products and service businesses have grown into a \$120 billion industry—about 2.9% of gross national product—that employs nearly 1 million people. Since 1987, industry employment has risen 49%, vs.

Pollution rules can sometimes be catalysts for efficiency and cost-cutting

4.7% in the total private sector. Industry sales are expected to hit \$164 billion by 1996, estimates the *Environmental Business Journal*, a San Diego newsletter, creating 491,000 more jobs.

America's early start on environmental regulation, especially in hazardous-waste treatment, also gives U.S. companies an edge in what the International Finance Corp. expects to be a \$600 billion worldwide market for environmental services by the next decade. "The U.S. has put more effort and dollars into environmental regulations, and the expertise that's bought has given us an advantage," says James O. Edwards, CEO of ICF International Inc., a Fairfax (Va.) environmental consulting firm with \$711 million in revenues last year.

Pollution rules are also catalysts for efficiency and cost-cutting. Dow Chemical Co., for instance, will spend \$10 mil-

lion to minimize waste in 1992 at its Plaquemine facility near Baton Rouge, La. But the investment will save \$20.55 million during the year in toxic waste-disposal fees and raw-material costs. 3M Co. expects to cut costs on some products 5% over 10 years, reflecting savings from new pollution prevention measures.

BIG BANG. Many economists still insist that environmental protection is a net minus. "In the short term, you might create jobs through regulation, but the regulations become costs to someone else," says Paul R. Portney, an economist at Resources for the Future Inc., a Washington, D.C., centrist think tank.

The pivotal issue isn't always cost, however. Military spending is a net drag, too, sucking investment away from other priorities. The country tolerates it because national security is important. Poll after poll of voters has found that they consider environmental protection a top priority, too. The more important issue for Bush and Clinton is how to get the biggest bang for the environmental buck. "The question should be: 'Do our regulations make sense?'" says Ruckelshaus.

The answer could mean a switch from current "command-and-control" regulation, which dictates the technology companies should use to meet environmental standards. Better approaches would let businesses meet specified goals however they wish, or would rely on market incentives such as taxes on pollution that shrink as emissions decline. "You get faster results and much lower emissions" that way, says David T. Buzzelli, Dow Chemical's environmental chief.

Ironically, the Bush Administration and the Clinton campaign champion market-based environmental policy. So why doesn't the debate over jobs and environment focus on the most efficient way to protect the environment? Maybe because the issue is too complex for sound bites on the evening news.

By Peter Hong in Washington and Dori Jones Yang in Seattle

fit -
economy

N4T 8 SEPTEMBER 1992

Environmental Rules May Spur Innovation

By WILLIAM K. STEVENS

DO strict environmental standards enhance or harm America's ability to compete in the global economy? Conservatives typically insist that the standards hurt. Environmentalists and their allies argue that the standards force companies to develop more efficient practices and technologies, thereby gaining an edge in the worldwide marketplace.

Some economists say neither point of view is wholly correct. Environmental regulation can spur innovation and enhance competitiveness, they say, but only when regulations provide the right incentives.

"Regulation can trigger innovative activity that may not only nullify the cost of a cleaner environment, but may also go beyond that and create a competitive advantage," says Dr. Michael E. Porter, the leader of the Harvard Business School's Competition and Strategy Group. "But if that kind of win-win outcome is to happen, you have to be very careful about how you structure your regulations."

'Environmental Shakeout'

The key is to set goals without prescribing the means. If this is done, Dr. Porter said, companies will choose the most efficient technology. Too often, he said, Washington has set specific remedies, like scrubbers for reducing air pollution from coal-fired power plants, which have thwarted the search for innovative solutions.

In an era when environmental regulation appears here to stay, some economists and even some businessmen contend, companies that are able to reap maximum profits while using few resources and producing little pollution will benefit. Companies and countries that are unable to do this "will soon lose competitive advantage to their more eco-efficient rivals," says Stephan Schmidheiny, a Swiss industrialist who is the chairman of an international business group, the Business Council for Sustainable Development.

At the Earth Summit in Rio de Janeiro in June, Mr. Schmidheiny predicted "a coming environmental shakeout for business and industry."

Environmentalists argue further that regulation creates new markets for companies that make pollution-control equipment and provide environmental services, and that the United States is in danger of conceding the export-market advantage in this area to Japan and Germany.

But again, Dr. Porter says, American regulations must be carefully written to achieve maximum effect. If they are too much stricter than those of other countries, he says, American companies may end up making equipment that the other countries cannot use.

But if American regulations "are on the strict end but still in sight of other countries," he said, "it may enable them to leapfrog their competitors abroad." The key is for the United States to be "a little bit ahead but in sync with the way international standards are evolving."

Times Mirror Essay
By Al Gore
8-18-92

Voo-doo economics is still alive. The current myth -- environmental protection is incompatible with economic growth. The truth: sound environmental policies are a precondition of economic growth, not a brake on it. In forcing this false choice, George Bush and Dan Quayle are threatening our economic future, our environment, and the quality of life our children will enjoy.

Protecting the environment means investing in the future and in a growing economy that will produce new jobs and increase productivity. By protecting our natural resources we preserve the foundation for economic progress. Natural systems support the production of goods and services in every sector of the economy. And, environmental efficiency helps businesses become more competitive. After all, pollution really is waste -- what's left over from the production of goods. Reducing pollution -- economic waste -- increases profits and makes our industries more competitive. A recent report from the chemical industry, for example, shows that investments in pollution prevention pay off -- firms dramatically cut costs by reducing waste, saving energy and streamlining their operations.

Our competitors have gotten the message and they're taking action. The global market for environmental technologies is currently at about \$270 billion a year and is growing at 7% a year. Openly proclaiming this to be the biggest opportunity in the history of world business, Germany and Japan are poised to seize the opportunity. Are we?

We do indeed have a choice to make -- but it is not the false choice presented by George Bush and Dan Quayle between jobs and the environment. The real question is whether we will cling desperately to the tired polluting ways of the past or move forward aggressively to strengthen our economy, create jobs, increase productivity, and ensure a healthy environment for our children. Bill Clinton and I think the choice is clear.

MICHAEL SCHRAGE

Japan Is Set to Meet America on the Environmental Products Battleground

TOKYO

The Japan External Trade Organization, this nation's export trade promotion arm, typically loves to show off the latest in Japanese high-tech, high-value-added innovations. But the agency recently gave star treatment to the kind of product that would have been studiously ignored even a year ago: an adhesive tape that's totally recyclable.

Where Japan's Ministry of International Trade and Industry once preached the gospel of relentless industrial productivity, it now pledges to create a large-scale "eco factory" that stresses environmental harmony as much as production efficiency. The model plant would use high-speed robots to dismantle used cars, electrical products and other industrial waste into reusable steel, plastic and other raw materials. MITI's ostensible goal is to encourage Japanese industry to strike a better balance between economic growth and ecological soundness.

"Japanese companies are now becoming much more environmentally aware and innovative with the environment in mind," asserts Tomiaki Nagase, senior managing director at Kao Corp., Japan's household products giant.

To be sure, Japanese companies are giving a lot of lip service to environmental concerns. The Keidanren, Japan's Federation of Economic Organizations, last year adopted a global environment charter calling for its members to behave in ecologically desirable ways.

In reality, Japanese industry is about three years behind the United States and Europe in such areas as recycling, says Christopher W. Hirth, international coordinator for the Nippon Ecology Network, one of Japan's oldest recycling operations. "Most companies think recycling is too costly and they don't want to take the risk," he observes. "The government is just beginning to mandate recycling."

Nevertheless, many Japanese companies sense that the green movement is not a fad and are now preparing to invest in "ecology" with much the same nerve that they invested in "quality" more than 30 years ago.

Toray, Japan's leading textile company, recently put a household water purifier on the market based on its proprietary synthetic fiber technology. Fuji Photo Film Co. has introduced a system that makes its popular "throwaway" cameras recyclable. Less than two years ago, Mitsubishi Petrochemical Co. launched a plastics

disposal initiative to develop clean-burning wrapping materials. Its new Yukra Wrap has subsequently done well both in Japan and abroad. Environmental innovation is gradually becoming linked to industrial competitiveness.

The biggest industrial stakes, of course, revolve around the "green automobile." The 1998 California deadline requiring that at least 2 percent of a carmaker's fleet consist of "zero emission vehicles" has set off a frenzy of research and development in electric vehicles. Sanyo Electric Co. introduced a prototype of a hybrid solar car that blends surface-mounted solar cells, rechargeable batteries and a small fuel cell. Toyota Motor Corp., Nissan Motor Co. and the other major Japanese auto manufacturers are all pushing to meet the deadline. They can't afford to lose their preeminent positions in America's most lucrative car market.

But if Japanese companies do a better job of manufacturing and marketing green automobiles in the United States, what happens to that \$30 billion annual trade deficit in autos and auto parts between America and Japan? Much in the way fuel-efficient cars from Honda Motor Co. and Toyota gave the Japanese

manufacturers a competitive edge in the U.S. market, environmentally superior automobiles could help carve out still greater market shares.

Indeed, if Japanese companies are as successful at creating green innovations and goods as they have been in so many other consumer and industrial markets, we face the real possibility that environmental competitiveness will ultimately exacerbate trade tensions. American policy makers would then be placed in the awkward political position of trying to discourage the domestic sale of environmentally sounder products even as they champion the virtues of clean air, clean water and reduced waste.

Of course, it's not yet clear if green innovations will play a vital role in establishing competitiveness. Or whether European, American or Asian companies will capture the high ground. What's certain, however, is that if Japanese industry can do in ecological engineering what they've done in quality engineering, then American industry is going to find itself in yet another bruising economic battle.

Michael Schrage is a columnist for the Los Angeles Times.

Katie
(Frank)
file - economics
-P.S. we've got the study. This is in the econ file.
-Pan

===== FOCUS =====

*23 INTERVIEW: MIT'S MEYER FINDS TIGHTER REGS LINKED TO GROWTH
Stephen Meyer, professor of political science at the Massachusetts Institute of Technology, recently released a report on the correlation between state-level environmental protection and economic growth.

GREENWIRE: What is the key finding of your study?

MEYER: The data show that there is a positive relationship between state-level environmental policies and regulations on the one hand, and economic growth and development on the other. That's a very counter-intuitive finding -- when I first started the study I expected to find the reverse.

GREENWIRE: What is the evidence that supports that finding?

MEYER: One of the most important indicators in this "jobs vs. the environment" argument is construction employment. That is because if industry were planning to move, construction growth would have to increase in places where they would plan to go. In those states where industry was burdened, you would expect construction employment to slow because industry is spending so much money on pollution abatement it can't afford to pay for renovation and expansion. The study shows that just the reverse is true. In strong environmental states, construction employment well out-paced the same in environmentally weak states.

The answer probably is that the states that invest in environmental protection are also the states that tend to invest in education, transportation, communication, infrastructure, and in all the other things that would make modern industries want to be there. One company executive said to me recently, "You know how the new companies choose where to go to? They choose it based on where the CEO wants to live." It may well be an effect of several things coming together, one of them being that states with stronger environmental regulations are more attractive to modern industry and that leads to construction growth and employment. States with tight controls on land use and endangered species should inhibit construction growth. But, in fact, it is not true. What you end up seeing is a lot of renovations, new constructions going on on top of old places rather than cheap expansion of shopping malls ad infinitum that don't necessarily improve the economy.

GREENWIRE: What do you mean by the claim in the report that environmental controls may have a "Darwinian effect" on industry?

MEYER: Things like pollution, dumping and the extractive industries -- such as strip mining -- that use public lands are all procedures that involve a cost that is not part of the price charged by the company. But what they are is a cost that the public pays through taxes later on. When these companies survive only by unloading their costs on the public, it's like going to a restaurant that kills pets and doesn't have to pay for meat.

What environmental controls do is push those companies over the limit so that they are no longer able to operate profitably. That, on the other hand, encourages firms in the same industry that are in better shape to improve their processes, to modernize their plants, to cut down their pollution waste and to become far more efficient and effective.

GREENWIRE: What changes do you expect under Clinton/Gore?

MEYER: My guess is that the differences aren't going to be as great in terms of environmental controls as people think -- a lot of what the Reagan/Bush/Quayle people have tried to do has been blocked by Congress or the courts. What it does mean is perhaps the people who are looking for more encouragement from Washington in the area of pollution control and environmental preservation won't have to spend so much time paying lawyers to fight the battles and therefore will get a smoother set of policies. The net impact in the longer term may be to encourage the recycling industries, or perhaps to encourage firms to improve their

manufacturing processes so that total waste output goes down. With an administration more positively oriented towards the environment in general, industry may feel it's not worth fighting lots of regulations when it would be cheaper to improve internal processes, eliminate waste and increase their own efficiency. I think the long-term effect of that would be more job creation.

GREENWIRE: Why is the "jobs vs. environment" argument such an effective threat for anti-conservation forces?

MEYER: The "jobs vs. environment" issue has been very potent in the political setting because it's the thing that scares the hell out of people the most. If we had a raging economy with full employment, rising standards of living and rising personal incomes, and people came out saying, "If we improve the environment you will lose your job," everyone would say, "Give me a break, who are you kidding?" But with such high levels of unemployment, even people with jobs are afraid that any day they could receive a notice that they are being laid off. So, there is a latent fear, even among the employed now. The fact that it is not true doesn't really make a difference because in politics, the more often you repeat something -- no matter how stupid or ludicrous -- the more people will believe it, and that is the basis of the power of this argument.

The study suggests that we need to think more about integrating our environmental policies with our jobs training and employment policies as a way of promoting economic growth through environmental preservation and protection.

This debate about jobs and the environment has been going on for well over a decade and yet no one ever even bothered to find out whether the argument had any validity at all. One of the important outcomes of the study is the idea that you can indeed investigate these problems and you can answer questions.

===== MEDIA MONITOR =====

*24 TV MONITOR

THIS MORNING: Former VT Gov. Madeline Kunin, a Clinton-Gore transition advisor whose name has come up as a possible appointee to head the EPA, took viewer call-ins on C-SPAN (11/11).

LAST NIGHT: CBS "Evening News" examined recent criticism of the government's role in researching environmental causes to breast cancer. CBS' Meredith Vieira: "Why is it that the breast cancer rate on Long Island is 13 percent higher than anywhere else in the country? [Women with breast cancer] believe it has to be something in the water or the soil or the air, pesticides maybe, or powerlines." But a NY state study found no link between the environment and the rate of breast cancer "and pointed its finger at the way women here lived their lives." Dr. Samuel Epstein, pathologist/toxicologist: "The cancer establishment -- the National Cancer Institute and the American Cancer Society -- has totally ignored any environmental causes of breast cancer. Until the cancer establishment is forced ... to recognize that, we are not going to get any further" (11/10).

ENVIRONMENTAL PROTECTION AND ECONOMIC GROWTH

("Jobs and the Environment")

I. TOPIC/PROBLEM

The Bush administration has defended its environmental record and attacked the Clinton-Gore ticket by pitting economic growth (particularly jobs) against environmental protection. For example, the administration justified its stance at the Rio Earth Summit, the actions of the Vice President's Competitiveness Council, and its support for old-growth logging in the Pacific Northwest all as steps to defend American jobs. Similarly, the administration Bush allies have accused the ticket, particularly Senator Gore, of environmental extremism. Although the President has said, "in the long run, successful environmental protection is a prerequisite to solid, sustainable economic growth," he is likely to argue throughout the campaign that the two goals directly conflict in the context of a Clinton-Gore environmental program. A key challenge, therefore, is to demonstrate that economic growth and environmental protection are compatible and often mutually re-enforcing.

II. HISTORY OF THE PROBLEM

The economic impact of environmental protection has been an increasingly potent issue over the last fifteen years. Concern for the costs of regulation generally, and environmental regulation in particular, became a serious issue during the Carter Administration. Ronald Reagan made it a centerpiece of his successful election strategy during 1980. The issue played not only to business leaders, who felt that bureaucratic government was responsive to their problems in the environmental arena, but the argument about "environmental extremism" played extremely well in the agricultural states, and in many blue collar areas. The Council on Competitiveness is simply a new form of the Reagan Administration's assault on regulation, which was led by then Vice President Bush.

The Bush campaign's emphasis on this angle reflects the fact that, despite the high number of Americans who consider themselves "environmentalists," many are nonetheless frightened by the prospects of personal change in their lives brought about by the emergence of the "global environmental problem." The annual costs borne by the private-sector to comply with environmental regulations, estimated between \$100 - \$130 billion, are often cited by the administration and its supporters to suggest that these costs retard economic growth.

III. CURRENT STATUS/RECENT DEVELOPMENTS

[Not applicable]

IV. MAJOR PREDICTABLE EVENTS IN THE NEXT FEW WEEKS/MONTHS

In addition to likely rhetorical attacks by the administration and Bush campaign, several events may crystallize this issue over the next several weeks:

- Congress and the Administration may decide to make funding for the Competitiveness Council the focus for a "environment versus economics" debate.
- There may well be a major assault on Gore's book, Earth in the Balance, on the grounds that its solutions, as embodied in a Strategic Environment Initiative and a Global Marshall Plan, are too expensive and economically naive. Bush-Quayle objections on this score are especially likely to be raised in a Quayle-Gore debate.
- It is possible that Bill Reilly could be relieved as EPA Administrator. Reilly may well be positioning himself for the reality that he will be fired, even if Bush wins. His post-mortem memorandum on Rio, while ostensibly supported of the President's position, is artfully crafted to define the major differences between himself and the Administration. Further, his comments in early August, favorable of Gore, could be the last straw that permits every other senior player in the Administration to gang up on him.
- The Administration may issue an Executive Order centralizing the role of risk assessment in the White House, to signal the business community its willingness to take on a major problem that has been a festering sore in the relationship between EPA and the business community.

V. KEY ISSUES & ANALYSIS

A. The Core of the "Jobs vs. Environment" Argument

Industries most affected by environmental regulation include: manufacturing (e.g., autos, textiles, chemicals, paper, electronics, etc.), natural resources extraction (e.g., timbering, mining, energy production, etc.), agriculture, and construction. Many of these industries have joined with the administration in arguing the "jobs vs. environment" case, which tends to have several components:

1. Environmental regulation prevents exploitation of natural resources, such as timber, minerals, and oil. Examples argued: protection of the spotted owl under the Endangered Species Act will cost thousands of jobs in the Northwest lumber industry; the Clean Air Act will kill Western coal mining jobs because

it decreases demand for high-sulfur coal; the Alaska Lands Bill and the Ocean Sanctuaries Law will prevent the creation of new oil industry jobs by preventing drilling in national parks and off the continental shelf.

2. Environmental regulation stops development. Example: the administration supported recent changes weakening the federal wetlands protection law on the grounds that wetlands regulation was stopping the development of housing, shopping malls, office buildings, etc.

3. Environmental regulations raise U.S. product prices and make them less competitive because they force businesses to spend money on activities irrelevant to their line of business. Examples argued: California air pollution control regulations requiring businesses employing more than 100 people to take actions to encourage the use of mass transportation options by their employees -- often cited as an example of extraneous and burdensome environmental regulation. Also: the chemical industry claims it now spends 50% of net income on activities related to environmental protection.

4. Environmental policymakers and regulators don't understand business, and hence issue regulations that needlessly cost money, cause delay, and cause companies to take drastic actions such as shutdowns in order to comply. Example argued: costs of complying with federal hazardous waste clean-up laws and water and air pollution laws are so high that firms have been put out of business.

5. Investments in environmental clean-up do not create net American jobs. While some of the costs that go toward pollution prevention or remediation may go toward products or services that create productive jobs, administration supporters will argue that much goes toward "transaction costs" such as lawyers, accountants, etc. (for example: up to 20% of Superfund expenditures, according to one study); and that, as with other taxes, fewer jobs are created by public regulation or spending on the environment than would be created by the private sector with those same dollars -- spent on research, products, etc.

6. Environmental protection is therefore "elitist," implicitly placing greater value on the aesthetic concerns of wealthier activists than the employment concerns of working Americans, and placing more faith in the planning wisdom of public bureaucrats than in the allocative efficiency of the market.

OCT-13-92 TUE 11:28

filed committee P. 81

Post-It™ brand fax transmittal memo 7671		# of pages >
To <i>Ram & Katie</i>	From <i>Dan Becker</i>	
Co.	Co.	
Dept.	Phone # <i>542-1141</i>	
Fax # <i>228 2611</i>	Fax #	

**Energy Efficiency and Job Creation:
The Employment and Income Benefits from
Investing in Energy Conserving Technologies**

Howard Geller¹
John DeClcco¹
Skip Laitner²

**¹The American Council for An Energy-Efficient Economy
1001 Connecticut Avenue, NW
Washington, DC 20036**

**²Economic Research Associates
1365 Riggs Street
Eugene, OR 97401**

October 1992

785-8683

OCT-13-92 TUE 11:29

P. 02

III. VEHICLE EFFICIENCY SCENARIO

Light duty vehicle (car and light truck) efficiency improvements were identified as one of the major opportunities for cost-effective fossil fuel (namely, petroleum) energy savings in the *America's Energy Choices* study. Vehicle efficiency improvements account for 4.1 Quads (20 percent) of the overall 20.8 Quads reduction in primary energy use obtained in the High Efficiency scenario relative to the Reference scenario.

The issue of potential employment impacts has been frequently raised in the course of policy discussions regarding vehicle efficiency improvement, for example, through strengthened Corporate Average Fuel Economy (CAFE) standards. To directly address the issue, we developed a scenario including only vehicle efficiency improvements in order to isolate the employment impacts associated with these measures.

A. ECONOMIC PARAMETERS FOR THE VEHICLE EFFICIENCY SCENARIO

Light vehicles (including only cars and light duty trucks such as pickups and vans) now represent about 89 percent of motor vehicle sector output in the U.S. economy.³³ The average price increase for an automobile obtaining 40 miles per gallon instead of 28 miles per gallon is about \$600 relative to current new car prices. At this level of improvement, the average incremental cost of conserved energy is \$0.53 per gallon.³⁴ These estimates are based on a detailed analysis of the fuel economy improvements and costs of a wide range of available vehicle efficiency measures.³⁵ Fuel economy improvement cost estimates vary; the automotive industry in particular has cited much higher costs. Important determinants of cost include assumptions regarding the scale of production and whether efficiency improvements cause premature plant or equipment retirement (i.e., requirements for new retooling investments prior to the end of the useful

33. Total 1990 vehicle output is estimated at \$202 billion based on figures of truck and car sales published by the *Survey of Current Business*, Bureau of Economic Analysis, U.S. Department of Commerce, Washington, DC, August 1992. Cars have a 70 percent share and light trucks have a 30 percent share of the light vehicle market, based on R.M. Heavenrich, J.D. Murrell and R.K. Hellman, *Light-Duty Automotive Technology and Fuel Economy Trends through 1991*, EPA/JAA/GTAE/91-02, U.S. Environmental Protection Agency, Ann Arbor, MI, May 1991. Assuming a light truck-to-car price ratio of 88 percent yields an 89 percent share estimate for light vehicles in the motor vehicle sector. Heavy trucks and buses account for the remaining 11 percent of motor vehicle output on a dollar basis.

34. *America's Energy Choices*, op. cit., Table C-8 of the technical appendixes.

35. M. Ross, M. Lofbretter, and F. An, *Options for reducing oil use by light vehicles: an analysis of technologies and policy*, American Council for an Energy-Efficient Economy, Washington, DC, December 1991.

ENERGY EFFICIENCY AND JOB CREATION

OCT-13-92 TUE 11:38

P. 23

life of older tooling investments). The \$600 estimate is adopted here under assumptions of a full scale of production and avoidance of premature plant retirements.

In order to increase fuel economy beyond 40 miles per gallon during 2001-2010, we assume the cost of automotive efficiency improvements will rise further. However, we do not assume static technology and so the additional price increase is modest, with the average incremental cost of \$700 per vehicle (1990\$) for an increase in fuel economy from 28 miles per gallon to 50 miles per gallon.³⁶ In effect, we assume that innovation will allow a rightward shift of the conservation supply curve, so that greater energy savings are achieved at a given level of avoided fuel costs. However, the efficiency investments made in vehicles in the beginning years of the scenario must be repeated in later years to account for vehicle replacement. Thus, the investment costs shown in Table III-1 rise sharply after 2000, but most of the rise is due to replacement costs, not higher incremental vehicle costs.

Table III-1. Summary of Annual Investments and Energy Savings of the Vehicle Efficiency Scenario (Billions of 1990 Dollars)				
Expenditure	1995	2000	2005	2010
Technology Investment	4.8	4.8	17.3	17.3
Fuel Savings	5.5	14.0	33.4	53.8

As with the main analysis described in Chapter II of this report, the Vehicle Efficiency scenario is based upon the projected annual efficiency investments and energy bill savings. These values for 1995, 2000, 2005 and 2010, are shown in Table III-1. By 1995, the fuel savings are comparable in magnitude to annual investments in fuel economy for new cars and light trucks. However, the annual savings grow as the improved vehicles come to dominate the on-road vehicle stock. Thus, by 2010, the fuel cost savings exceed annual investments by a factor of three.

The cumulative energy cost savings during the period 1992 through 2010 amount to \$415 billion while the cumulative vehicle efficiency investments are about \$204 billion.

36. Based on an average added cost of conserved energy of \$0.63/gallon, for increasing from 40 MPG to 50 MPG. See *America's Energy Choices*, op. cit., pp.C-26,27 and I-2.

OCT-13-92 TUE 11:30

P. 04

Consumers and businesses directly realize a net savings of \$211 billion.³⁷ This stream of investments and savings for light vehicle efficiency, then; provided the economic drivers to evaluate changes in GDP, jobs and personal income compared to the Reference scenario.

B. VEHICLE EFFICIENCY RESULTS

Table III-2 summarizes the results of the Vehicle Efficiency scenario for 1995, 2000, 2005 and 2010. As might be expected, the lower level of investment (29 percent of that in the complete High Efficiency scenario in 2010) yields a portion (32 percent) of the energy cost savings and therefore a smaller increase in GDP, jobs and income compared to the complete High Efficiency scenario. But because the investments are cost-effective and the savings still quite significant, and because there is a shift away from the petroleum supply sector with its very low labor intensity; there are net gains in employment in the Vehicle Efficiency scenario, rising steadily from 25,000 new jobs in 1995 to 244,000 new jobs in 2010 on a net basis.

Similar to Table II-7 in the main analysis, Table III-3 lists the net employment gains and losses by economic sector in 2010 for the Vehicle Efficiency scenario. Since vehicle efficiency improvement saves mainly petroleum, the petroleum extraction and refining industries face the largest percentage drops in employment. There is, however, one surprising result in Table III-3. Service sector job losses are the largest in absolute terms (although only 0.2 percent of the total sectoral employment). The reason is that government employees are aggregated within this sector. As oil consumption declines, so do the revenues associated with the various taxes on gasoline. Since our analysis incorporates no offset for the reduced tax revenue, the result is a projection of reduced employment within government agencies throughout the country.

All but three of the 25 sectors show job gains, primarily due to the redirection of expenditures away from the capital-intensive and import-dependent petroleum industry. The motor vehicle industry itself is projected to increase employment by as many as 47,000 jobs. The increase in employment is a function of the retooling needed to provide the more efficient vehicles, the increased costs and therefore larger sales revenues associated with light vehicles, and the significant responding effect resulting from the energy bill savings, which enables greater overall consumption of non-energy goods, including cars and light trucks.

37. As in the main analysis, all monetary values are expressed in 1990 dollars with the net present value established using a three percent real discount rate.

OCT-13-92 TUE 11:31

P. 85

TABLE III-2. SUMMARY OF INPUT-OUTPUT ANALYSIS FOR THE VEHICLE EFFICIENCY SCENARIO

	1990	2000	2010	2020	2030
Reference Scenario					
GDP (Billion 1990\$)	\$5,514	\$6,205.6	\$6,993.0	\$7,889.7	\$8,911.1
Jobs (Thousands)	122,600	129,273	136,494	144,273	152,650
Income (Billion 1990\$)	\$3,290	\$3,712.4	\$4,192.9	\$4,741.0	\$5,366.3
Energy (Quads)	85.02	90.49	95.61	101.20	106.10
Btu/GDP (1990\$)	15,419	14,582	13,672	12,827	11,906
Vehicle Efficiency Scenario					
GDP (Billion 1990\$)	\$5,514	\$6,205.7	\$6,993.3	\$7,890.5	\$8,912.8
Jobs (Thousands)	122,600	129,298	136,566	144,424	152,893
Income (Billion 1990\$)	\$3,290	\$3,713.4	\$4,194.7	\$4,743.7	\$5,372.8
Energy (Quads)	85.02	89.96	94.43	98.57	102.03
Btu/GDP (1990\$)	15,419	14,496	13,502	12,492	11,448
Net Efficiency Gains					
GDP (Billion 1990\$)	n/a	0.1	0.5	0.8	1.7
Jobs (Thousands)	n/a	25.0	72.0	151.0	244.0
Income (Billion 1990\$)	n/a	1.0	1.8	4.7	6.5
Energy (Quads)	n/a	-0.5	-1.2	-2.6	-4.1
Btu/GDP (1990\$)	n/a	-86.0	-170.0	-335.0	-458.0

OCT-13-92 TUE 11:31

P.06

**Table III-3. Differences in Employment Levels in 2010:
Vehicle Efficiency vs. Reference Scenario**

Sector	Net Job Changes	Percent Change
Subtotal Gains	470,645	n/a
Retail Trade	80,372	0.5%
Agriculture	59,090	1.1%
Motor Vehicles	47,216	3.5%
Restaurants	34,373	0.4%
Health Services	31,921	0.3%
Metal Durable Goods	25,188	0.3%
Finance, Insurance, Real Estate	24,182	0.3%
Construction	23,240	0.3%
Other Manufacturing	19,994	0.3%
Hotels and Lodging	11,997	0.5%
Food Processing	10,168	0.7%
Transportation/Communications	8,634	0.1%
Chemicals	7,390	0.6%
Wholesale Trade	6,989	0.1%
Primary Metals	6,300	0.2%
Electric Utilities	5,790	0.3%
Stone, Glass, Clay	3,704	0.6%
Pulp and Paper	2,563	0.4%
Gas Utilities	1,210	0.3%
Coal Mining	851	0.5%
Water/Sewer Utilities	654	0.3%
Miscellaneous Mining	619	0.3%
Subtotal Losses	(167,866)	n/a
Refining	(8,275)	(4.0%)
Oil and Gas Extraction	(68,543)	(15.0%)
Services	(92,842)	(0.2%)
Net Employment Gain	243,985	n/a

OCT-13-92 TUE 11:32

P. 67

C. SENSITIVITY TO VEHICLE IMPORTS

Automobile imports now account for about 30 percent of the total sales of new cars in the United States.³⁸ Projections by the Bureau of Labor Statistics indicate that this relationship is unlikely to change over the next decade.³⁹ A constant import share was assumed in the analysis presented in Tables III-2 and III-3. But what if the level of imports were to change, either positively or negatively, over the 20-year time frame of our analysis? This issue was examined through a series of sensitivity analyses. Table III-4 presents the net change in jobs in the economy as a whole in 2010 with imports increasing or decreasing by 15 and 30 percent from their current levels together with the vehicle efficiency improvements explained above.

We do not believe that measures to promote vehicle efficiency improvement are likely to affect the import market share one way or the other. The level of imports is primarily dependent on broader competitiveness considerations and is further complicated by the significant and growing inter-relationships among automakers. U.S. automakers are presently competitive in all vehicle classes. There are continuing negotiations and agreements regarding motor vehicle trade levels and supply arrangements, particularly for imports from and exports to Japan and within North America. These factors have far greater bearing on net vehicle imports than U.S. domestic energy and environmental policies. Because these competitiveness and trade factors could induce volatility in market shares, an import share sensitivity analysis is of interest.

Under the scenario of a 30 percent rise in imports (that is, automobile import market share rising from 30 percent to 39 percent) together with the assumed efficiency improvements, employment in the U.S. could drop by 6,000 jobs in 2010. On the other hand, reducing the level of imports from 30 percent to 21 percent could increase the employment gain from 244,000 jobs to 492,000 jobs by 2010. A similar beneficial impact might result if the improved efficiency of domestically produced cars enables an increase in U.S. automotive exports to regions (e.g., Latin America) where efficient vehicles are likely to be more competitive than the less efficient cars typical of the present U.S. market.

The results in Table III-4 indicate that unless there is a further large shift towards imported vehicles, there are net U.S. job gains because of the energy savings that accrue

38. L.S. Williams and P.S. Hu, *Highway Vehicle MPG and Market Shares Reports Model Year 1990*, ORNL-6672, Oak Ridge National Laboratory, Table 4, April 1991.

39. *Outlook 2000*, op. cit.

file - Economics

U.S. Companies Plan Alliance On Recycling

Initiative Could Help Boost Demand as Suppliers Told to Boost Content

By FRANK EDWARD ALLEN
Staff Reporter of THE WALL STREET JOURNAL

More than two dozen large U.S. corporations are expected to announce tomorrow the formation of a voluntary alliance to develop and expand markets for recycled products.

The initiative could help spur the demand side of the country's recycling business, which has been plagued recently by distribution bottlenecks and regional gluts of collected materials. A major objective of alliance members will be to require their own suppliers to provide them with higher volumes of recycled raw materials and greater recycled content in finished goods.

The announcement is scheduled to be made in Boston at a conference organized and held by the Washington-based National Recycling Coalition. The group is credited with having recruited many members of the newly formed alliance.

Calling itself the "Buy Recycled Business Alliance," the new group is led by some recognized practitioners of recycling, such as McDonald's Corp., Sears, Roebuck & Co. and Minnesota Mining & Manufacturing Co. But other members, representing such diverse industries as glass, aluminum, rubber, chemicals, paper, banking, publishing and telecommunications, also use huge amounts of recyclable materials in their operations.

Alliance Roster

For example, people familiar with the alliance said its roster includes Coca-Cola Co., Anheuser-Busch Cos., the American Airlines unit of AMR Corp., BankAmerica Corp.'s Bank of America, Du Pont Co., Rubbermaid Inc., Safeway Inc., Media General Inc. and its Garden State Paper Co. unit, James River Corp., Chesapeake Corp.'s Wisconsin Tissue Mills, Moore Corp.'s Moore Business Forms Inc., United Parcel Service of America Inc. and BellSouth. Most member companies have committed senior managers to the effort; at least five are corporate vice presidents.

Few details about the new group's plans could be learned over the weekend. An organizer of the conference said alliance members intend to take a comprehensive approach, examining their purchasing practices for all kinds of products and materials used in their offices and plants, "everything from paper towels and photocopy paper to videotape cartons and roofing tiles."

He also said the companies intend to offer seminars and workshops to help other businesses learn how to convert their manufacturing processes. In addition, the alliance will provide these businesses with lists of vendors of recycled materials.

One alliance member said the group

Estimate of Damage on Hawaii's Kauai From Hurricane Iniki Reaches \$1 Billion

By WILLIAM WOOD
And GREG STEINMETZ
Staff Reporters of THE WALL STREET JOURNAL

Hurricane Iniki's toll on the Hawaiian island of Kauai reached an estimated \$1 billion in damage, with three people confirmed killed and 98 injured, and the storm may yet do harm to Hawaii's tourism industry.

A state civil defense official estimated that more than half the homes and other buildings on Kauai were destroyed or heavily damaged by the hurricane, the worst to hit Hawaii this century. At least 7,000 Kauai residents were left homeless by Iniki and were being sheltered temporarily in state-run evacuation centers.

The brunt of Iniki's force was focused on Kauai, a smaller member of the Hawaiian island chain, narrowly missing the more populous and densely developed neighboring island of Oahu, 100 miles to the southeast. Oahu and other northern

"hopes to lead by example, especially by persuading more of our suppliers to change their ways, as McDonald's has been doing."

If the McDonald's model is widely adopted by alliance members, many other U.S. businesses also could face significant adjustments. About a year ago, the fast-food-restaurant franchiser put many of its 600 suppliers on notice that they must adapt their products and packaging to keep doing business with the company, which serves 18 million customers a day.

Waste-Reduction Targets

Since December, all McDonald's suppliers that deliver goods in corrugated boxes have been required to use containers with at least 35% recycled content. Similarly, all carry-out bags must have at least 50% post-consumer recycled content. The company also asks its suppliers to make regular progress reports on reaching various waste-reduction targets.

Despite such programs, recycling still faces substantial resistance in many parts of the U.S. For example, many businesses still view recycled goods as inferior in quality. In many markets, the price of recycled paper products remains higher than that of virgin stock.

Moreover, supplies of glass, paper, plastics and some other recyclable materials have grown recently at explosive rates, often spurred by mandatory curbside collection programs, while demand for these materials has been slow to develop. Many manufacturers simply haven't geared up to absorb the huge volumes suddenly available.

But policies are changing, and experts say prices should come down as competition grows. At least 12 states now offer low-interest loans, grants or tax credits to companies that make products from recycled materials. Over the past few years, about 35 states have adopted government purchasing programs designed to stimulate demand for paper products and construction materials with recycled content. This summer in Washington, dozens of purchasing managers for federal agencies attended a conference aimed at encouraging them to buy more recycled products.

Hawaiian islands received lesser damage; a fourth hurricane-related death was reported on Oahu.

For insurance companies, the costs from Iniki will be far less than those from Hurricane Andrew, which last month caused \$7.3 billion of insured damages in Florida and \$500 million in Louisiana. There are hundreds of thousands of homes in South Florida, compared with 50,000 on the entire island of Kauai.

Assuming the preliminary \$1 billion damage estimate for Iniki is accurate, insurance companies will pay about \$500 million in claims if historic patterns apply. Insurance companies aren't exposed to the full costs because they don't insure public structures, such as roads and bridges. Federal flood insurance also pays a portion of the bills.

As state and federal authorities yesterday struggled to assess the damage on Kauai and restore services to stricken residents, industry officials worked to stabilize the outlook for Hawaii's \$10 billion tourism industry this winter. If past storms are any guide, the impact of fear on tourism plans could be potent.

A decade ago, Hurricane Iwa, striking just before the Thanksgiving holiday, inflicted about \$216 million in damage on Kauai. But its harshest economic harm came from the residual impact it had on statewide tourism. Vacationers, fearing widespread damage to hotels throughout the state, canceled reservations for the winter season, normally the busiest time of the year for Hawaii resorts.

Rushing to avoid a similar backlash this time, the Hawaii Visitors Bureau issued a statement saying that aside from Kauai, the state's tourist destinations were fully operational. Kauai, with 55,000 permanent residents, receives about one million tourists a year, or about 10% to 18% of Hawaii's total tourist business. By contrast, damage was relatively light on Oahu, the center of the tourism industry.

President Bush, acting on the request of Hawaii Gov. John Waihee Jr., declared the northern Hawaiian islands a federal disaster area, opening the way for financial and other relief. At the Federal Emergency Management Agency — under fire for its handling of the Hurricane Andrew aftermath last month — director Wallace Stick-

Please Turn to Page A6, Column 1

LIFETIME DIVIDENDS.



The Economist	The Economist
The Economist	The Economist
The Economist	The Economist
The Economist	The Economist

file memo

FOR IMMEDIATE RELEASE
TUESDAY, September 15, 1992

CONTACT: Heidi Kukis
(202) 224-7170
(703) 276-8130 (H)

BIDEN-WIRTH-GORE BILL ENCOURAGES EXPORTS OF ENVIRO GOODS, SERVICES
Would Create Jobs for American Workers, Strengthen U.S. Economy
PROMOTES NEW MARKETS FOR ENERGY-EFFICIENT TECHNOLOGIES

WASHINGTON -- Legislation introduced today (9/15) by Sens. Joe Biden, D-DE, Tim Wirth, D-CO, and Al Gore, D-TN, would encourage the export of environmental goods and services, in the process, creating jobs for American workers, building new markets for U.S. products and technologies, and increasing our country's global competitiveness.

"In the United States and around the world, we must commit to greater efficiency in industry and to a reduction in the use of polluting energy systems. This bill moves us toward that goal by encouraging markets for energy-efficient products and technologies that foster economic progress without environmental destruction," said Gore, chairman of the Senate Commerce Committee's Subcommittee on Science, Technology and Space. "In the process, we create jobs, strengthen the U.S. economy and increase our global competitiveness."

The Environmental Aid and Trade Act of 1992, introduced by Biden, Wirth and Gore today, requires agencies, including the Commerce and State departments, the Agency for International Development and the Export-Import Bank, to give special emphasis to promoting the exports of environmental goods and services through better use of existing resources and programs.

"President Bush has said we have to choose between jobs and the environment. But he fails -- refuses -- to see that it is a false choice. The market for new energy-efficient technologies is rapidly expanding, and our competitors are poised to take advantage," Gore said. "The choice is not between jobs and the environment. Rather, the issue is whether we will meet the challenge of creating energy-efficient products, services and technologies in order to take advantage of the tremendous business opportunities opening up in this area."

"Companies with the best environmental strategies will lead business in the 21st Century. They are among the most

competitive and profitable," Gore said. "After all, pollution really is waste -- what's left over from the production of goods. Reducing pollution -- economic waste -- increases profits, creates jobs, makes our industries more competitive, and ensure a healthy environment for our children."

Specifically, the Environmental Aid and Trade Act will require the State Department, the Agency for International Development, the Overseas Private Investment Corporation, the Trade and Development Program, the Commerce Department, and the Export-Import Bank to appoint a senior official to serve as that agency's lead on environmental exports and its liaison with other agencies on export promotion programs.

It would also direct the Export-Import Bank to maximize its loan, guaranty and insurance authority in support of American exports, and authorize the creation of environmental business centers to promote U.S. environmental goods, services and technologies abroad.

"This legislation puts the force of government behind U.S. business efforts to develop and disseminate the technologies of the future. It will help our economy today, and make sure we leave a better, cleaner world for our children tomorrow," Gore said.

##

4-3-92 ■ DEN ■

LEADING THE NEWS

(No. 65) AA - 3

Other deregulatory efforts under discussion by the council include efforts to ensure that regulations do not impede property rights; removal of current federal restrictions on local privatization and investments; new biotechnology rules to allow development of new products; and rulemaking affecting the small business

and transportation sectors, according to an administration official familiar with the council deliberations.

The following text lists the savings expected by the Competitiveness Council from the 90-day regulatory moratorium:

Savings Due to 90-day Regulatory Review
(tentative estimates)

<u>Deregulatory Action</u>	<u>Annual Economic Effect \$ Millions</u>
EPA	
Final WEPCo rule	1,000 - 3,000
Natural Gas Vehicle Emission Standards	NA
Broader Use of Select Pesticides	332
RCRA Toxic Waste Cleanup Revisions	1,000
Gasoline Fume Control Requirements	100
Biotech Scope Document	NA
Mixture and Derived From Rules	2,000
Cash for Clunkers	NA
Market-based Mobile/Stationary Trading Program	100 - 1,000
Superfund Leader Liability	1,000
FDA	
Streamlined Biotech Regs.	NA
Accelerated Drug Approval	1,000 +
Outside Review of Backlogged Appli- cations	NA

End of Text

End of Section



mit
center for
international
studies

292 Main Street
E38-6th
Cambridge, MA 02139

Telephone: 617-253-8093
Telefax: 617-253-9330

FAX TRANSMISSION SHEET

To:

228-2611

FAX

~~202-224-4944~~

To Will Clark

Date October 15, 1992

From Stephen M. Meyer

Phone 617-253-8078

Pages (including this sheet): 8

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF POLITICAL SCIENCE

PROJECT ON ENVIRONMENTAL POLITICS & POLICY
STEPHEN M. MEYER, DIRECTOR

October 15, 1992

Mr. Will Clark
Office of Senator Albert Gore
Russell Senate Office Building 393
Washington DC 20510

Dear Mr. Clark:

Thanks for your interest in my study on the impact of environmental policies on state-level economic performance and prosperity. Quite simply the study conclusively demonstrates that there is no basis for the belief (what I call *the environmental impact hypothesis*) that rigorous environmental management hinders economic growth, employment, or competitiveness at the state level. The argument is a hoax, and unfortunately the joke is on America's workers who are being misled into believing that permitting increased pollution and wasteful use of natural resources will spare their jobs. (A study by the Labor Department found that only one-tenth of one percent of all layoffs in 1988 could be broadly attributed to environmental effects. So if 250,000 people lost their job at most 250 might be attributed to the environmental. In fact, I believe that is an overestimate.)

My study examines the economic performance of each of the fifty states over the past twenty years. It analyzes growth in each state's gross state product, total employment, construction employment, manufacturing labor productivity, and overall labor productivity against the shifting backdrop of each state's environmental efforts.

Thanks to the Reagan administration's New Federalism policies of the 1980s, diversity in environmental policies and enforcement among the states increased significantly over the 1970s. My study takes advantage of that diversity to test two versions of the environmental impact hypothesis. The first and most forceful version asserts that states with weaker environmental policies should experience stronger and more robust economic performance compared to those states choosing to maintain strong environmental efforts. The second and more subtle version posits that over time states that relax their environmental policies will show more robust improvements in their own economic performance, while states that maintain or augment their environmental policies will show less or no improvements. In essence, this second version argues that while weaker environmental states may not do better than stronger environmental states on any given economic indicator, they will close the gap.

The paper presents a battery of statistical and graphical analyses that clearly and unambiguously show that both these versions of the environmental impact hypothesis are false. In fact, the converse turns out to be true: environmentally strong states systematically out-perform environmentally weak states on every economic indicator. This relationship holds even when you control for the size of state economies. In other words, the results are not driven by "big state" economies (such as California or New York).

I have enclosed four graphics that illustrate the findings. For this part of the study the states were sorted into three mutually exclusive categories according to their level of environmental effort: strong, moderate and weak. **FIGURE 1** compares the states in terms of the difference in their individual growth rates in the 1970s (1973-1980) and in the 1980s (1982-1989). Each box depicts the core 50% of the cases that straddle the median (average) value of the environmental category listed below. The central line in each box is the median (average) for that category. The line bisecting the graph is the national median (average).

As you can see, both the strong and moderate environmental states experienced growth rates in gross state product during the 1980s that, on average, ran about 23% above what they achieved in the 1970s. And the strong environmental states surpassed the national average in this respect. In contrast the weak environmental states in the 1980s actually fell -13% behind their performance in the 1970s. The irony is it was precisely these states -- energy states, sage-brush states, etc. -- that the Reagan New Federalism was designed to help. Yet even with deregulation, relaxed control over public lands management, etc. they could not even keep up with their economic performance of the prior decade.

FIGURE 2 examines the relationship between environmental effort and growth in total (non-farm) employment. Again the true relationship totally contradicts the view that environmentalism hurts employment. The strong and moderate environmental states saw job growth rates in the 1980s that exceeded those of the 1970s by about 6%. The weak environmental states saw a drop of -17% in the 1980s compared to their employment growth in the 1970s. Again, the results hold even when you omit all the big economy states from the analysis.

FIGURE 3 is a very compelling graph. It compares construction employment growth among the environmental categories. Those who subscribe to the argument that environmentalism hurts economic growth and development assert that industry will migrate from strong environmental states to weak environmental states. Thus, a good *leading indicator* of the negative effect of environmental regulation on the economy should be growth in construction employment. If industry and labor really do flee states with strong environmental controls, then this should be apparent in construction employment growth.

Incredibly, the strongest systematic relationship found in the study is that the highest rates of growth in construction employment took place in environmentally strong states, not the weak environmental states. In the 1980s environmentally strong states

out-paced their 1970s performance by over 50%. Moderate environmental states saw construction employment growth improve by about 40%. The environmentally weak states saw a drop of -23%. Clearly industry and labor were not fleeing the environmentally strong states.

Lastly, **FIGURE 4** shows how labor productivity growth (measured of dollars of output per worker per year) varies with environmental category. What you see refutes one of the key arguments of the environmentalism hurts competitiveness thesis. Adherents to this view argue that environmentalism may add jobs, but they are low skills, labor-intensive, and low output jobs. They also claim that environmental controls place such heavy burdens on industry that plant modernization is stalled. Thus, productivity suffers.

As you can see this is clearly not the U.S. experience. Environmentally strong states show 1980s productivity growth that is some 14% over 1970s growth. Environmentally moderate states showed 11% improvement. Environmentally weak states show about an 8% improvement. While these differences are comparatively small, it should be kept in mind that a "zero difference" would be sufficient to dismiss the argument of the "environmentalism hurts productivity" thesis. But in fact, environmentally strong states showed almost twice the increase of the weak states.

Let me sum up what I think are the main points. First, the data clearly show that environmentalism does not hurt economic growth and development, employment, or productivity at the state level. Furthermore, it was a surprise to me to see that there is actually a moderately strong *positive* relationship (confirmed by statistical analysis) between environmentalism and economic prosperity. That is to say, stronger environmentalism is associated with stronger economic growth. I had expected to find no systematic relationship of any kind, or perhaps even a small negative relationship. At this point I can only speculate as to why this is true, but the larger point remains: environmentalism goes hand-in-hand with economic prosperity.

Now it is certainly true that environmental regulations can exacerbate economic and employment problems in specific sub-regions of states or industry sectors. No one can deny this and it should not be ignored in the public debate. However, to the extent that there are data available, they suggest that such effects are both short in duration and "darwinian" in their impact. That is to say, firms and industries that are hurt by environmentalism tend to exist at the margin of profitability and are no longer competitive. They can only remain in business by dumping their inefficiencies and byproducts on the public. Basically, they keep their "other costs" out of their price. Taxpayers end up picking up the tab later on -- at greatly increased cost. It is the height of irony that the White House's Council on Competitiveness is in the business of keeping uncompetitive firms afloat, thus preventing the much needed rejuvenation of America's industrial and public infrastructure, and ultimately hurting America's ability to compete.

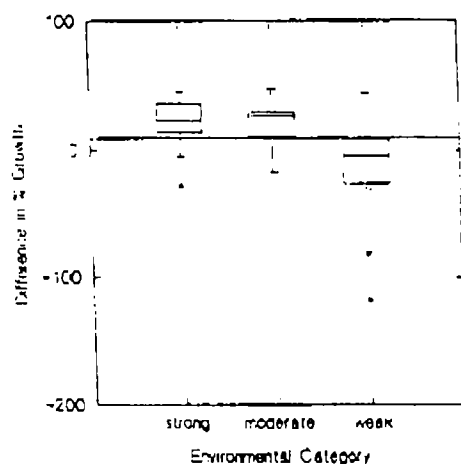
I hope this summary of my study will prove helpful to you. We have mailed you a copy of the full report. Feel free to use and cite the information as you see fit. If I can

be of further assistance do not hesitate to contact me.

Sincerely,

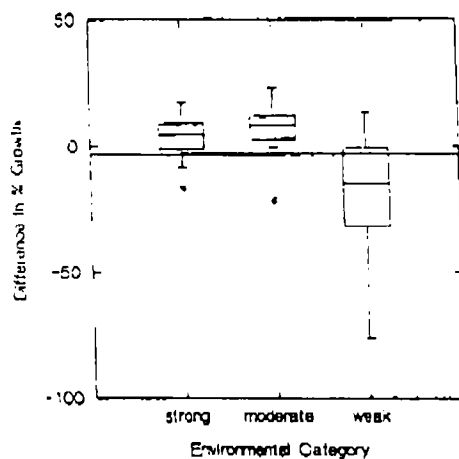
Stephen M. Meyer
Professor in Political Science

Figure 7: Differences in Growth Rates
GROSS STATE PRODUCT: 1970s and 1980s



(a)

Figure 8 DIFFERENCES IN GROWTH RATES
TOTAL (NON-FARM) EMPLOYMENT: 1970s and 1980s

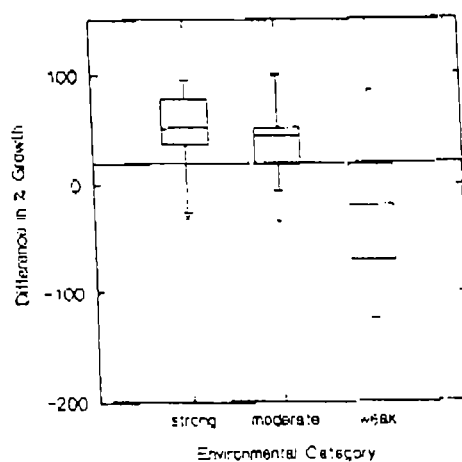


(a)

All of the data (except the environmental ranking) were provided by the Labor and Commerce Departments.

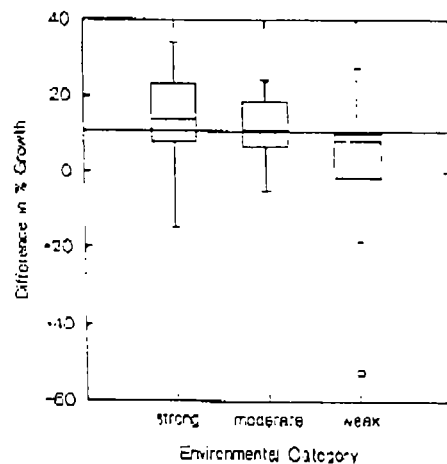
Each box depicts the range of the 50% of the cases that straddle the median (average) value of the environmental category listed below. The central line in each box is the median (average) for that category. The line bisecting the graph is the national median (average).

Figure 9 DIFFERENCES in GROWTH RATES
CONSTRUCTION EMPLOYMENT 1970s and 1980s



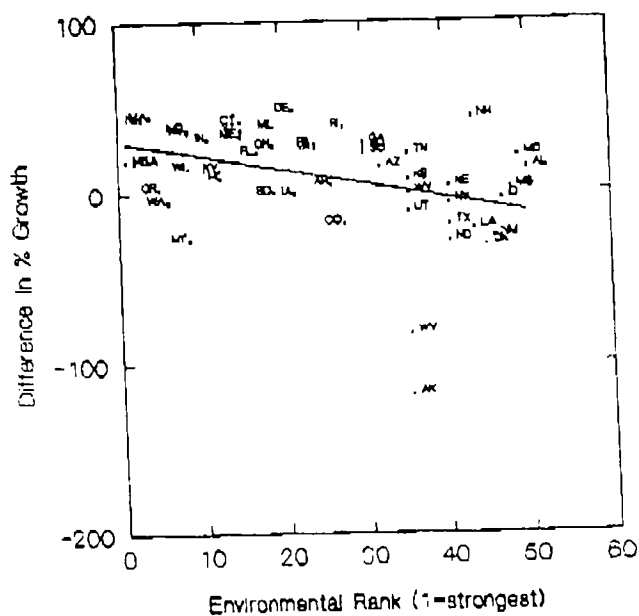
(a)

Figure 11 DIFFERENCES in GROWTH RATES
OVERALL LABOR PRODUCTIVITY 1970s and 1980s



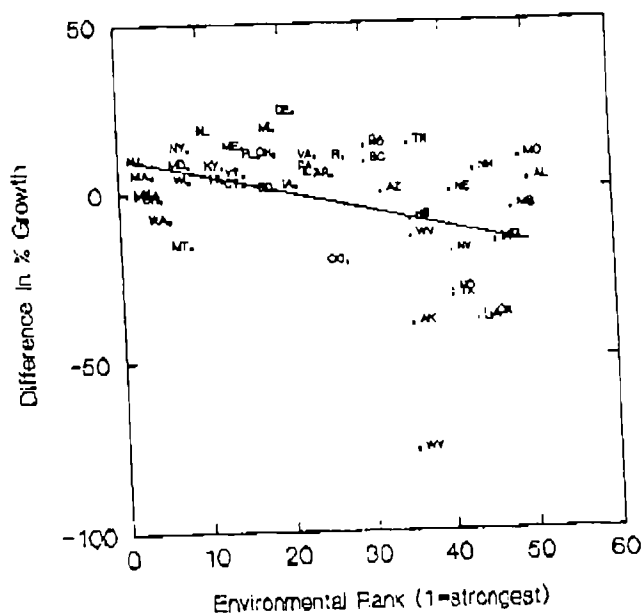
(a)

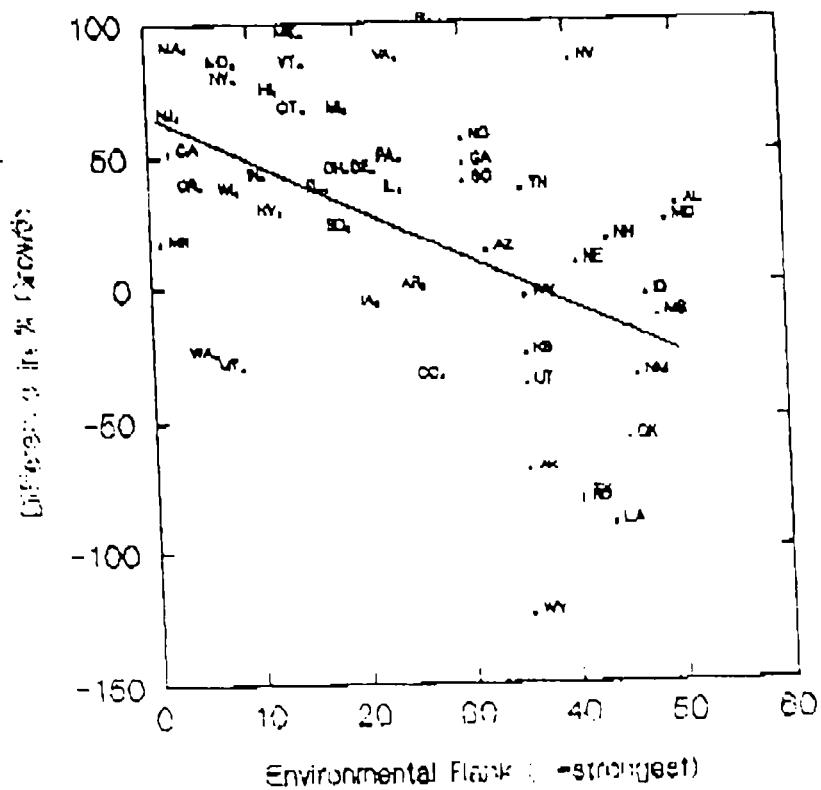
Δ Growth Grains - State Product
between 1970s + 1980s



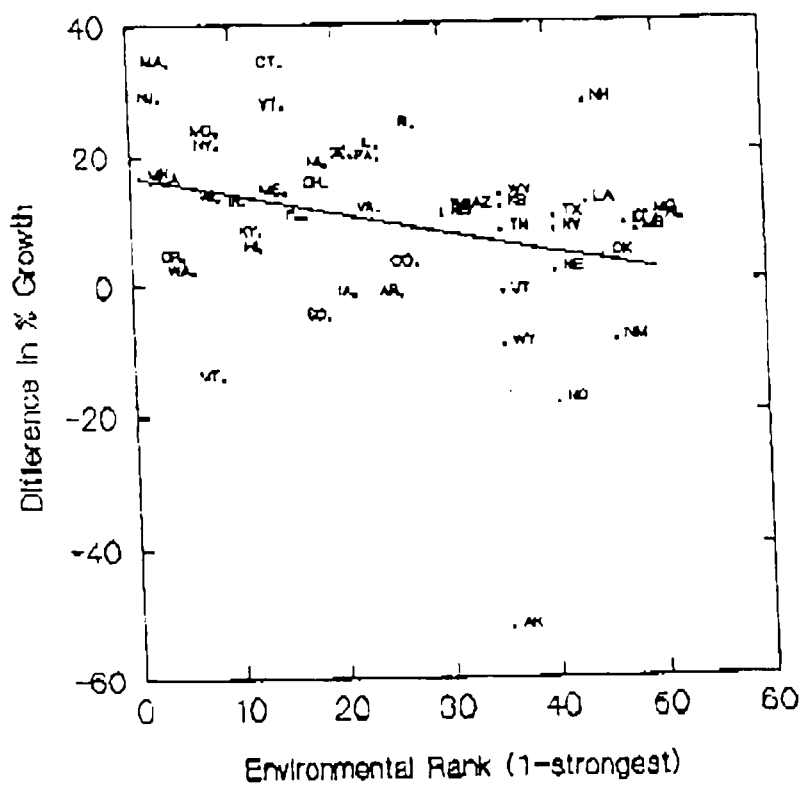
AK = Alaska!
AR = Arkansas

Δ Growth Total Employment

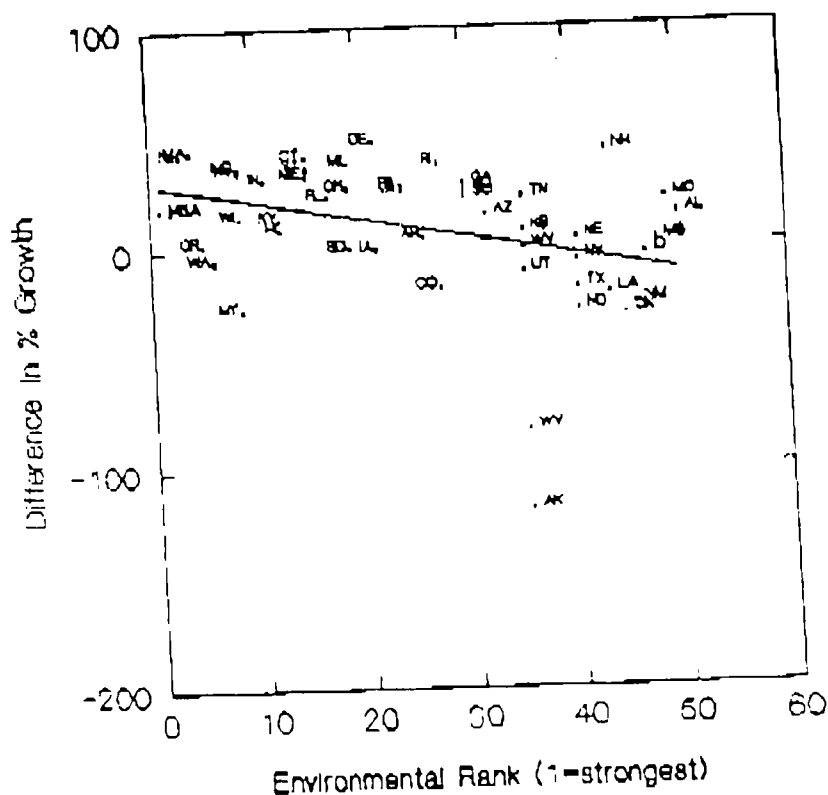




→ Growth Labor Productivity
1970s - 1980s

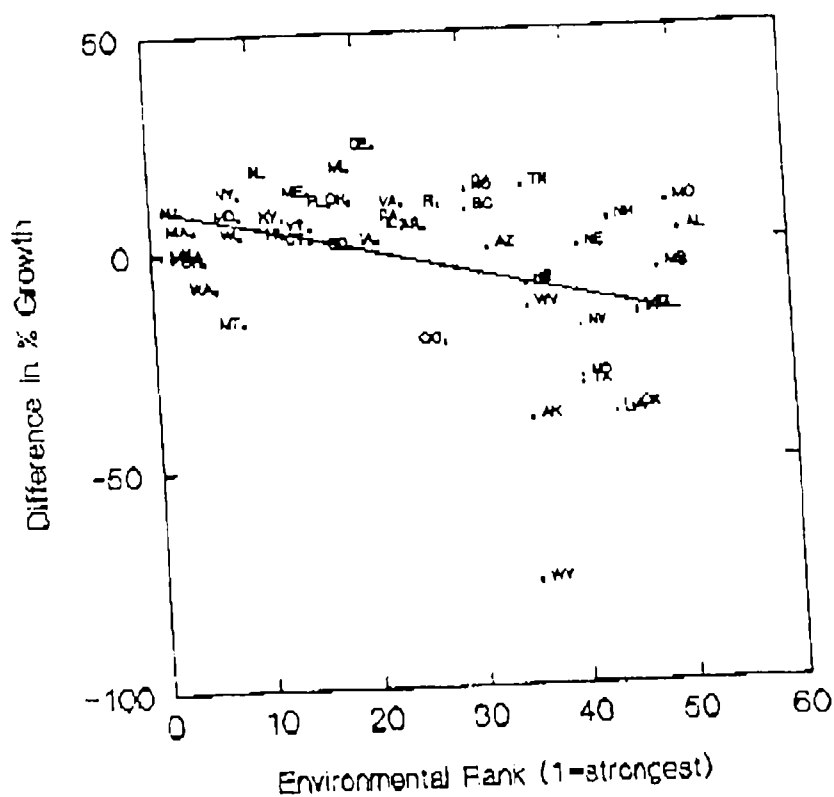


Δ Growth Gross - State
between 1970s + 1980s



AK = Alaska!
AR = Arkansas

Δ Growth Total Employment





WORLD RESOURCES
INSTITUTE

Donna W. Wise
Director, Policy Affairs

1709 New York Avenue, N.W., Washington, D.C. 20006, 202-662-3487

ENVIRONMENT

Japan Times Saturday, July 18, 92

Dw

Japan studying new environment laws

An outline of future legislation on environmental protection was submitted to two advisory bodies Friday by the Environment Agency.

The outline provides for a system of environmental impact assessment in Japan and for environmental protection measures to be taken by Japanese enterprises operating overseas.

After receiving the preliminary draft from the agency, committees of the Central Council for Pollution Control and the Natural Environment Conservation Council held a

joint meeting to begin discussing a legal framework for preserving the global environment.

On the basis of the discussions, to be concluded by early September, the agency will work out bills to be submitted to the Diet.

Urban population, nuclear energy and economic policies will be included in discussions of the proposed legislation, according to members of the advisory councils.

Participants in Friday's talks said the word "environ-

ment" should be redefined. Koki Iwata, chief of the planning division of the Central Council for Pollution Control, told a news conference after the meeting.

Taking the view that increasing urban population and nuclear energy may cause environmental problems, members said these subjects should be included in the discussion, said Iwata, who is also chairman of the Economic Research Association.

Underwriting conservation

projects will also be discussed, he said.

At present, laws under the jurisdiction of the Environment Agency do not deal with these issues.

According to the outline, the Environment Agency believes that people must recognize that air and water are limited resources and should pay something for them.

It also says that emitters of materials that contaminate the air or water should shoulder some of the costs of environmental preservation.

cc David Greenwood
Kathy McKinstry
Rick Atwood

4

Asahi Evening News

Aug. 19, 92

Global Environment Fund Sought to Provide Aid To Private Eco Groups

The Environment Agency has formulated plans for the creation of a fund to help conserve the global environment.

The fund, tentatively called the Global Environment Fund, will be set up in the Environmental Service Corp., an extradepartmental organization of the agency, according to the plans. It will provide financial support to environmental conservation activities carried out by private groups.

The plans call for an appropriation from the proposed supplementary budget for fiscal 1992 to launch the fund, which is also to be capitalized by the private sector.

An environmental panel of the ruling Liberal Democratic Party proposes to press for a ¥200 billion appropriation as a state contribution. This presupposes that a sum of

about ¥10 billion a year will be supplied to the fund to keep it running.

But it is not clear how much the Finance Ministry will agree to provide at a time of tight state finances or even whether the ministry will endorse the very idea of setting up the fund.

The Environmental Service Corp. is to make a fresh start as the Pollution Control Service Corp. on Oct. 1. A bill to make the change may be submitted to an extraordinary Diet session to be convened this fall.

Apart from the state contribution to the fund, the Environment Agency's plans call for the creation of a system for soliciting donations nationwide under the sponsorship of private organizations carrying out environmental conservation activities and an active campaign to get donations from compa-

nies. Tax breaks are also proposed to encourage donations.

According to the plans, the fund will supply financial assistance to: (1) activities carried out by private Japanese groups in the Third World, such as restoring forests and afforestation in deserts; (2) environmental conservation activities carried out by foreign private groups in developing countries, including contributions to international environmental funds; (3) the recycling of goods and environmental activities carried out in Japan; (4) mechanisms to train international environmental volunteers and provide environmental information.

A fund management committee, including foreign professionals, will be set up to verify if the money provided by the fund has been properly spent.

Japan Times Aug. 20, '92
MITI outlines antipollution plan

Jiji Press

The Ministry of International Trade and Industry plans to spend ¥1.55 trillion on a 28-year project aimed mostly at developing technology to combat environmental pollution and to boost energy efficiency.

The New Sunshine Project, which will begin in fiscal 1993, aims to develop technology for environment conservation, such as technology to curb carbon dioxide exhaust, as well as study creation of energy-efficient and environment-friendly cities.

MITI and the Industrial Science and Technology Agency will seek ¥55.7 billion in the fiscal 1993 budget as initial-year costs.

The new project will absorb three existing energy programs, including the Sunshine Project to develop alternative energy sources, the

Moonlight Project on energy-saving technology and a program to develop technology to curb industrial carbon-dioxide emissions.

In addition, three new research categories have been established under the New Sunshine Project.

MITI will seek ¥500 billion to develop new technology related to energy recycling, ¥900 billion for long-term, joint international research on energy-related problems and ¥150 billion to provide technological support for developing nations fighting energy and environmental problems.

A project to combat global warming is one of the central programs falling under the new technology category. Another is a three-year, ¥50 billion study to begin next year on recycling industrial waste heat in model cities.

One thrust of the proposed joint international research is a plan to produce hydrogen using electric power resources abundant in developing countries and transporting it to industrialized nations. Another project falling under this category is development of technology related to low-pollution automobile engines.

The plan to help developing countries fight energy-linked pollution will revolve around research into industrial-use solar energy systems. That project will start in the next fiscal year.

MITI hopes that by 2030, 10 years after the conclusion of the New Sunshine Project, at least one-third of Japan's energy needs can be supplied by technology developed under the project and that carbon-dioxide emissions will be halved.

Japan Times Aug. 20, '92
Environment Agency status becomes focus of tug of war

A tug of war is going on within the Liberal-Democratic Party and government circles over a proposal to upgrade the Environment Agency to ministerial status.

Proponents of the move argue the agency should be reorganized and given greater power to make international contributions in environmental projects.

But other government agencies, which will be cut back if the Environment Agency's authority is expanded, are steadfastly resisting.

The government announced at the Earth Summit in Rio de Janeiro in June that it would earmark nearly ¥1 trillion in official development assistance for environmental projects over the next five years.

Left out of ODA planning

The Foreign, Finance and International Trade and Industry ministries and the Economic Planning Agency have begun the process of selecting projects for ODA funding.

They are doing so without the participation of the Environment Agency, which some people have sarcastically called little more than a "colony."

The agency's chief, who has the title of deputy director general, has traditionally been an ex-official of the Finance or Health and Welfare

ministries.

Twenty-four of the agency's supervisory posts are held by former officials of the Health and Welfare Ministry, while seven of the posts are held by career agency officials.

The proposal to make the agency a ministry was first aired late last September.

An executive meeting of the LDP's Environment Division urged the move and Kazuo Aichi, then head of the agency, promised to study the proposal.

The call was echoed in a report by the LDP's Research Commission on Foreign Affairs and Comprehensive Security in the Upper House in May. Commission Chairman Ichiro Nakanishi said upgrading should be done at an early date to cope with global environment problems.

During an international environment conference in April, Prime Minister Kiikichi Miyazawa proposed a basic environment law, which would require constant environmental monitoring by responsible administrative organizations.

Aichi said such a law would inevitably lead to elevation of the agency's status.

Shozaburo Nakamura, current head of the agency, has set up a special office to prepare a draft of the law by the

end of the year.

The LDP has set up a review body on environmental problems with former Finance Minister Ryutaro Hashimoto as head.

MITI Minister Kozo Watanabe is opposed to raising the agency's status and chided advocates as opportunistic.

Sadanori Yamanaka, the first director general of the agency, has flatly rejected the idea, too. What is wrong with it remaining an agency? he asked.

Takeshita awaits timing

Former Prime Minister Noboru Takeshita felt it best to wait for the right time, when raising the status would be more natural and spontaneous.

If the agency is elevated, 15 government agencies would be affected, one observer noted.

He worried the agency, which has a staff of about 1,000, might evolve into a mammoth organization with a workforce of 30,000.

Hashimoto, who shows strong interest in environmental problems but describes himself as a staunch advocate of administrative reforms, does not hesitate to voice his opposition.

Raising the agency's status makes no sense from the standpoint of administrative reforms, he said.

Government gears up to meet green promises

By ELAINE KURTENBACH
The Associated Press

Nearly two months after Japan was applauded at the Earth Summit for promises to provide billions of dollars in environmental aid, no new projects have been announced.

Japanese environmentalists charge that the government's ambitious summit promises, which include a pledge to cut back on ozone-eating pollutants, will not do enough to turn back environmental destruction.

But bureaucrats in charge of the nation's aid program said they are quickly moving ahead with plans to expand their environmental assistance to developing countries.

The government clearly realizes that helping salvage the global environment gives Tokyo a chance to assert some long overdue diplomatic leadership without provoking

international controversy.

Kazuhiro Nakai, of the Foreign Ministry's aid policy division, said as much as \$7.9 billion in aid to developing countries will go to reforestation, sanitation and control of water and air pollution.

Government officials usually propose projects to recipient countries, which then make formal requests for the aid. Unlike U.S. foreign aid programs, Japanese economic assistance does not require legislative approval and thus bypasses the glacial parliamentary process.

Officials of the Ministry of International Trade and Industry, jockeying for a larger role in aid policy, have leaked to the media a \$2.41 billion "Eco-Phoenix" plan that would use environmental technology to revive five to 10 heavily polluted cities in the developing world. The proposal is named after the leg-

endary bird said to rise from the ashes of destruction.

But the Foreign Ministry said Japan is unlikely to tackle such an ambitious plan now because it doesn't have the wherewithal.

"I don't think we've acquired the expertise," Nakai said.

Japan's foreign aid traditionally focused on building economic infrastructure, such as harbors, dams, roads and railways in Asia — large-scale projects often criticized for their heavy environmental impact.

But as pollution worsens in increasingly affluent Asia, Tokyo is concentrating more on environmental aid and on smaller projects in other parts of the developing world.

Conservationists, however, charge that even environmentally friendly aid programs focus too much on urban problems and fail to address the

globe's most serious problems of desertification and erosion.

"The very biggest problem is how to enable people living in rural areas, who account for almost 70 percent of the world's population, to stay on the land. There isn't a single Japanese specializing in that," says Shunsuke Iwasaki, director of the Japan Volunteer Center.

"Just spending a lot of money won't solve problems if the main aim isn't sustainable, human-centered development," says Tadaaki Yasuoka, a foreign aid specialist at Tokyo's Sophia University.

Researchers also say that while industry is successfully developing substitutes for chemical substances that destroy the Earth's ozone layer, Japan cannot meet its summit goal of freezing carbon dioxide emissions at 1990 levels by 2000.

Japan Times Aug. 28, '92

9.4% increase in aid sought

The Foreign Ministry plans to seek a 9.4 percent increase in official development assistance in its request for the fiscal 1993 national budget, ministry officials said Thursday.

The ministry's total budget request for fiscal 1993 is ¥678.1 billion, up 9.1 percent from the initial budget for the current fiscal year, the officials said.

Of the total, ¥525.9 billion

will be allocated for ODA programs designed to assist Third World countries in their efforts to promote market economies and preserve the environment, they said.

The officials said that among major ODA outlays are ¥28.5 billion in aid for economic restructuring of African nations and ¥1.6 billion in technical assistance to East European countries.

Foreign Ministry Proposes Major Internal Changes

Kyodo

The Foreign Ministry proposed Thursday a structural overhaul to improve its information gathering and policy making capabilities by forming two new bureaus and establishing a consulate in Dubai.

The proposals, included in the ministry's budgetary request for fiscal 1993, are a response to criticism that it was unprepared for the 1991 Persian Gulf war.

The ministry is seeking to form a Comprehensive Policy Bureau and an International Information Bureau.

The Comprehensive Policy Bureau would absorb the United Nations Bureau and be responsible for overall diplomatic strategy, scrapping an approach under which each bureau is separately responsible for its own policy area, the ministry said.

The Comprehensive Policy Bureau would serve as the core policy formulating body for the ministry.

Aug. 28, '92

MITI to seek 55% budget increase for funding environmental efforts

The Ministry of International Trade and Industry will request ¥282.7 billion in its fiscal 1993 budget to fund efforts to save energy to protect the environment, ministry officials said Thursday.

The figure marks a 55 percent increase from the ministry's current budget for similar efforts, they said.

The energy conservation package is one of the four main pillars of MITI's policies for the next fiscal year.

The others are revamping Japan's industrial and economic structure, contributing to international society and improving citizens' lifestyles.

The total budget request of ¥900 billion for the next fiscal year is 5.9 percent higher than MITI's appropriation for the current fiscal year, according to the ministry.

MITI has earmarked ¥1.2 billion to encourage corporations to change attitudes and behavior toward environmental protection, and ¥55.7 billion to fund its "New Sunshine Project," a comprehensive plan to encourage research and development in energy-saving technology.

The ministry also intends to diffuse Japan's technological knowhow in these areas to developing countries, and has allocated ¥23.3 billion for its Green Aid Plan that will be spent on feasibility studies, training programs and dispatching engineers, officials said.

Another ¥1.8 billion will go to promoting automobiles that run on electricity, methanol and natural gas to cut down on pollution, they said.

About ¥2.7 billion has been

requested to aid smaller businesses in slashing working hours, securing workers and finding substitutes for ozone-depleting chlorofluorocarbons, which will be banned starting in 1996.

MITI will increase its budget for developing medical equipment for an aging society from the present ¥700 million to ¥1.2 billion.

A total of ¥2.6 billion will go to establishing a training center in the former Soviet Union for the safe operation of its nuclear power plants and inviting over 1,000 plant engineers from the former Soviet Union and the Eastern bloc for training in Japan.

Over ¥3.7 billion, the equivalent of the current budget, has been allotted for further promoting import efforts, the officials said.

Conservation budget requests rise

Government agencies will request a total ¥584 billion for expenses related to global environmental conservation for the next fiscal year, Environment Agency officials said Friday.

The Liberal-Democratic Party's ad hoc committee on the global environment approved the requested amount Friday.

The amount is up 17.2 percent from the fiscal 1992 appropriation for similar measures, according to the agency.

The increase is the highest since the agency started keeping tabs on the requests in 1988.

Of the total, 55 percent was requested by the Ministry of International Trade and Industry and the Science and Technology Agency for nuclear-energy-related appropriations.

The government is promoting nuclear power generation as a means to reduce carbon dioxide emissions, which are thought to cause global warming.

The nuclear-energy-related request from the two government sections is up ¥12.7 billion from the current budget.

But their share of the total request for environmental spending is 17 percent lower than in the current year.

MITI will request ¥64 billion to promote other kinds of energy development to reduce fossil fuel consumption.

Requests for measures to halt acid rain total ¥21 billion, twice the amount for the current year.

The Japan Times Aug. 30, '92

Budget requests to rise over 7% in fiscal 1993

Budget requests of government ministries and agencies for fiscal 1993 total about ¥77.44 trillion, up 7.2 percent from the original budget for the current fiscal year, a Finance Ministry source said Saturday.

The ministries and agencies are to submit the budget requests for fiscal 1993, beginning next April, by Monday.

The growth rate in the budget requests is smaller than last year's 8.3 percent but remains at a high level, the source said.

General expenditures for implementing policies — the general account minus debt servicing costs and tax allocations to local governments — are likely to top ¥40 trillion for the first time, reaching ¥40.55 trillion and growing 4.8 percent over the preceding year.

Government debt servicing costs are expected to grow 11.4 percent from the previous year to ¥18.33 trillion, accounting for about 25 percent of the general account budget.

The rise in debt servicing costs stems from massive redemption of government

bonds, the balance of which is estimated to reach ¥174 trillion at the end of next March, the source said.

Tax grants to local governments will increase 9.4 percent to ¥17.26 trillion.

General expenditures for next fiscal year include ¥250 billion for improving living conditions and ¥200 billion for public works.

They also include ¥110 billion for a new program to study how Japan can become a "lifestyle superpower," with a quality of life matching its national wealth.

The ministry is planning to trim the general account budget requests to the level of ¥74 trillion, according to the source.

The ministry will announce a draft budget for fiscal 1993 in late December.

On the revenue side, the government may have to issue debt-financing bonds for the first time in four years because tax revenues are likely to drop considerably next fiscal year due to the slowdown of the economy, some economists say.

On the spending side, the

ministry will earmark ¥1.3 trillion for improving the nation's infrastructure, utilizing proceeds from sales of government-held shares of Nippon Telegraph and Telephone Corp.

The government, however, has decided to forgo sales of NTT shares in both fiscal 1992 and 1993 in view of the prolonged stock market slump, and therefore projects for infrastructure improvement may have to be financed by flotation of construction bonds, the source said.

Meanwhile, budget requests by government ministries and agencies in the fiscal investment and loan program — often referred to as the "second budget" — for fiscal 1993 are expected to total some ¥36.22 trillion, the source said.

The amount represents an increase of about 12 percent from the sum for the current fiscal year.

The program is mainly financed by postal savings funds and pension funds. The sum excludes the amount used by the Ministry of Posts and Telecommunication at its own discretion.

Japan Times Sept. 2, '92

Environment center to aid farmers

Jiji Press

The Ministry of Agriculture, Forestry and Fisheries plans to establish an environmental center in the first half of fiscal 1993 to help combat the devastation of farmland in developing nations.

The center will be set up with the cooperation of industry, government and academic sectors, with the ministry subsidizing a portion of the operations, ministry officials said Tuesday.

The center will gather and disseminate data on the state of farmland and water resources throughout the world, train specialists on ways of protecting farmland and dispatch them to developing nations.

It will also cooperate with the U.N. Environment Program and other international organizations, foster exchanges of information among private corporations and host international conferences on the protection of farmland.

The center is one of a number of projects that reflect Tokyo's determination to tackle environmental problems more aggressively.

Protection of farmland was cited as a high priority at the U.N.-sponsored Earth Summit in Rio de Janeiro in June.

Arable land accounts for about 35 percent of the Earth's total land mass, and farming operations use about 70 percent of the world's freshwater resources.

Consequently, the conservation of farmland and water resources is directly tied into the protection of the global environment, the ministry officials said.

Forum to help U.S. win more ODA jobs

By JOY M. TADAKI
Staff writer

American companies will get help in cashing in on lucrative Japanese official development assistance projects in developing countries at a planned conference in Tokyo, a U.S. official said Monday.

The conference, slated for Nov. 10 to 12, was specified in last January's Action Plan endorsed by U.S. President George Bush and Prime Minister Kiichi Miyazawa.

It will aim to educate more than 100 U.S. executives on Japan's ODA procurement policies and procedures, according to the official, who spoke on condition of anonymity.

Organizers are ultimately hoping to "match-make" the two countries' private sectors — pairing Japanese firms with similar U.S. companies interested in doing ODA business, he said.

He said Japan's ODA has become increasingly "untied," meaning the contracts do not have to be awarded to Japanese firms.

With U.S. firms losing a percentage share of ODA contracts, the official said he hopes the dissemination of information at the conference

will help U.S. firms compete for ODA contracts.

U.S. participants will pay their own way, so neither government will be left footing the bill, according to the official.

Sponsored by the U.S. departments of state and commerce, the U.S. Agency for International Development, the U.S. Export-Import Bank as well as other U.S. governmental agencies, the conference will hear the views of speakers from Japanese government bodies.

This will involve the Overseas Economic Cooperation Fund, the Japan International Cooperation Agency, the Japan Export-Import Bank, the Foreign Ministry and the Ministry of International Trade and Industry, according to the official.

Participating U.S. firms will be chosen through statements of interest and specific bids as well as through prior attendance in ODA forums held in the U.S., the official said.

The Agency for International Development held two U.S. forums in May 1989, which attracted some 120 U.S. firms interested in export opportunities available through Japan's ODA program.

Once the selection process on the U.S. side is completed in mid-September, associations of Japanese trading companies and consulting firms will choose Japanese firms working in similar sectors.

These will most likely include engineering, construction, energy, environment, education, agriculture, health and telecommunications, the official said.

He stressed, however, that this conference is "not a special deal just for the U.S.," adding that the British and Swedish embassies here have held similar ODA forums.

Emiko Fujisawa, head of ODA activity for the Swedish Embassy, said the embassy hosted a commercial ODA seminar in February, bringing 16 Swedish firms to Tokyo to visit trading houses and listen to speakers from the Foreign Ministry, the OECF and the JICA.

Fujisawa added that a larger followup ODA conference will take place in Stockholm at the end of this month.

Japan's ODA of \$10.95 billion in 1991 makes it the second largest international donor, according to the Organization for Economic Cooperation and Development.

EPA Plans Environmental Economics

Kyodo

The Economic Planning Agency has launched a study on how to combine the evaluation of economic activities and environmental situations, agency officials said Friday.

The agency released a preliminary report the same day on the method of integrating environmental and economic accounts, which will be applied to 1993's revision of the calculation standard of the System of National Account (SNA) of the United Nations.

The 120-page report shows the preparatory framework

of economic and environmental relations in Japan based on the world's latest research by the United Nations, the World Bank, the United States and Canada.

Unlike conventional economic indicators such as gross domestic product, SNA mirrors both economic and environmental factors, including negative economic aspects such as deduction of natural resources and aggravation of the environment, an official of the agency said.

Based on the report, the agency will launch a three-year plan, in which it will

study sample environmental and economic indicators from vast data for fiscal 1993 and compile a measuring method for the balance of corporate payments on environmental protection in 1994.

In the final year, the agency will release a calculation method on integrated environment and economic accounts with the value of the flow of funds.

The research will be carried out in cooperation with the Ministry of Agriculture, Forestry and Fisheries and the Environment Agency, EPA officials said.

NEWS-C
-C
ALSN C

THE PLAIN DEALER
STATE
& REGION

FAX TO:
TONY SOCCI
FROM
TERRI JEWELINGEN

WEDNESDAY, SEPTEMBER 2, 1992

SEP 2 1992

Whom do you blame for economy?

Voinovich faults Bush's advisers

By **BETH LAKE**
LEADER BUREAU
COLUMBUS
Republican Gov. George V. Voinovich reluctantly acknowledged yesterday that the economy had been poor under George Bush's presidency but he blamed the problems on Bush's economic advisers.
But so, Voinovich warned that the economic Midwest would be worse if Southerners Bill Clinton and Al Gore were elected and pursued an economic strategy that catered to the South. Voinovich said the Arkansas governor and the Tennessee senator would reverse the years of Jimmy Carter's administration, when business and industry headed to the South at the expense of the North and Mid-

"You've got to have people in the White House who understand the industrial Midwest," Voinovich said. "From a regional perspective, we're better off with what we've got in the White House."
Voinovich pointed to Vice President Dan Quayle, the Hoosier who leads the President's Council on Competitiveness, as one who understands the industrial Midwest and the need to break the stranglehold that government regulations have on industry.
Voinovich discussed the presidential campaign at a news conference he called to preview his trade

mission to Southeast Asia from Friday through Sept. 24.
While lavishly praising Bush for helping end the Cold War and encouraging the emergence of fledgling democracies in Eastern Europe, Voinovich had to grope for words when asked to assess Bush's economic record at home.
"I think he has handled the economy, uh, as well as anyone could handle the economy with the responsibilities he has as president of the United States and leader of the world," he said. "He could have given more attention to the domestic scene, but there's only 24 hours in a day."

Voinovich blamed a stagnant Democratic Congress and Bush's own economic advisers for the administration's economic failures.
"He got some bad advice from his economic advisers (who told him) 'Things are going to get better, things are going to get better. Don't panic,'" Voinovich said.
Voinovich said his advice to Bush would be "jobs, jobs, jobs, jobs."
He admitted he was worried that, as the polls stand now, Bush could well lose Ohio in November. "Yeah, I'm concerned," he said. "We'll have to work very hard to make sure we carry Ohio for the president."

In assessing the Bush administration, Voinovich took a rare public swipe at a Bush Cabinet member, U.S. Environmental Protection Agency Director William K. Reilly, calling him "a wild-eyed reactionary" who has gone overboard on the environment at the expense of industrial growth.
Voinovich cited Ohio's battle with the EPA over constructing a blast furnace at the USS/Kobe steel plant in Lorain as an instance where Reilly's pro-environment policies threatened the state's economy.
As wild on the environment as Reilly is, the environmental regulations that would be promoted under Clinton and Gore could only be more burdensome to states, Voinovich warned.

er ship. But aides insist he would break with the traditional Democratic approach of promulgating detailed rules that dictate how businesses must comply. "There's going to be an attempt to innovate," says

Cost of Regulation Isn't Easy to Figure But Estimates Exist

By BOB DAVIS

Staff Reporter of THE WALL STREET JOURNAL
How much do regulations cost the U.S. economy?

There's no foolproof way to measure, economists concede. But Thomas Hopkins of the Rochester Institute of Technology, a senior regulatory official in both the Reagan and Carter administrations, puts this year's bill at \$564 billion, when one includes the impact of economic regulation such as sugar quotas, textile protection and other trade barriers, and the vast paperwork requirements.

Narrowing the topic to compliance with environmental, worker-safety and health regulations, Mr. Hopkins estimates the cost this year at about \$164 billion. That includes such costs to business as buying pollution-control equipment, preparing environmental-impact statements and organizing studies to prove a new drug or medical device is safe. It doesn't include the cost of running agencies like the Food and Drug Administration.

Mr. Hopkins is quick to acknowledge that these regulations have benefits, too—cleaner air and water, safer pharmaceuticals. But he doesn't work those benefits into his calculations. Neither does he factor in the jobs that are created, such as to produce pollution-control equipment. "Just as eliminating all defense spending would have adverse consequences for the public welfare," he says, "eliminating all environmental regulations would cause very damaging effects on society." The best idea, he says, is simply to try to calculate the costs of regulation, so that they can be weighed against its benefits.

Mr. Hopkins's calculations, all in 1991 dollars, show a steady rise in the cost of environmental, safety and health regulation from \$71 billion in 1977 to a projected \$178 billion in 1993. His figure for all regulation, including trade rules and other economic regulation, shows the cost declining from 1977 to a 1986 low of \$469 billion, and then rising to a projected 1993 cost of \$581 billion. Much of the rise, he says, is due to increasing paperwork burdens on companies dealing with new tax forms and health-care cost-containment forms. Again, he doesn't calculate any benefit to society of the jobs created to carry out those tasks.

Mr. Hopkins's estimates are "in the ballpark," says Robert Litan, an economist at the Brookings Institution and former Carter administration official. By better understanding regulatory costs, he says, "we could do more intelligent social planning."

Conferees Approve Funds

network and br

Tradition C With Inn

Emphasis on reliability and service

Dai-Ichi Kangyo Bank (DKB) is a name to remember, not just because it is the largest bank in the world in terms of assets, but also because of its emphasis on reliability and service.

A recent survey revealed that more than 30,000 Japanese companies have chosen DKB as their main bank. Those customers, and the ones that DKB serves at its 69 offices around the world, know that there is much more to DKB than just numbers.

Tadashi Okuda, president of DKB, believes that for all its financial strength, his bank's most valuable assets are its reliability and service.

In a new global era in which financial market liberalization world-wide means greater competition than ever before, Mr. Okuda says that "without a strong reputation for reliability and service, no ranking means anything."

Mr. Okuda has lived that banking philosophy for 37 years. He vividly remembers his days as a junior manager, "making the rounds of our customers, with sweat on my brow and often blisters

The suc

Soor
Okuda
with the
believes
eminent
branch
our emp
employee
I want to
their ser

In its
satisfact
Mr. Oku
"Custom
be achie
ployee s
knowing
well."

DKB's
to custom
has beco
compreh
bank offe
from priv

financing
In a p
nomic gro
in the mos
Asia. "W

fit - economics

ENVIRONMENTALISM
and ECONOMIC PROSPERITY:
Testing the Environmental Impact Hypothesis

Stephen M. Meyer
Professor in Political Science

October 5, 1992

Massachusetts Institute of Technology
Project on Environmental Politics and Policy
Bldg/Room E38-628
Cambridge, Massachusetts 02139
(617) 253-8078

The *MIT Project on Environmental Politics and Policy* focuses on the politics of natural resource and environmental policy-making at federal, state and local levels. Its basic research program explores the behavior of, and interaction among, government authorities, interest groups, academia, the media and the public in the process of formulating, implementing and evaluating natural resource and environmental policies. The Project's studies and analyses are especially concerned with the interplay of politics, science, economics and social values in environmental policy making.

TABLE OF CONTENTS

Abstract:	iv
1. INTRODUCTION	1
2. THE ENVIRONMENTAL IMPACT HYPOTHESIS IN THEORY	4
3. TESTING THE ENVIRONMENTAL IMPACT HYPOTHESIS - I	8
3.1 Data and Methods	9
3.1.1 Economic Indicators	9
3.1.2 Environmental Indicators	10
3.2 Results	11
3.2.1 Gross State Product and Economic Growth	11
3.2.3 Construction Employment Growth	16
3.2.4 Manufacturing Labor Productivity	19
3.2.5 Overall Labor Productivity	21
3.3 Summary	21
4. TESTING THE ENVIRONMENTAL IMPACT HYPOTHESIS - II	23
4.1 Data and Methods	23
4.2 Results	24
4.2.1 Shifts in Gross State Product Growth	24
4.2.2 Shifts in Total Employment Growth	27
4.2.3 Construction Employment Growth	29
4.2.4 Manufacturing Labor Productivity Growth	29
4.2.5 Overall Productivity Growth	32
4.3 Summary	32
5. DISCUSSION	35
5.1 Alternative Explanations for the Positive Correlation Between Environmentalism and Economic Growth	35
5.1.1 Big State Economies	35
5.1.2 Changing Economic Context	38
5.1.3 Group Characteristics Among the States	39
5.2 Consistency With Other Studies	40
5.3 Transient and Local Effects	40
6. SUMMARY	42
ENDNOTES	44

APPENDIX I: Environmental Rankings of States -- 1982	46
--	----

BIBLIOGRAPHY	47
--------------------	----

FIGURES

Figure 2-1: Federal Environmental Legislation 1960-1990	5
Figure 3-1: Growth in Gross State Product 1982-1989	13
Figure 3-2: Growth in Total (Non-Farm) Employment 1982-1989	15
Figure 3-2: Growth in Construction Employment 1982-1989	17
Figure 3-4: Growth in Manufacturing Labor Productivity 1982-1989	18
Figure 3-5: Growth in Overall Labor Productivity 1982-1989	22
Figure 4-1: Differences in Growth Rates, Gross State Product: 1970s and 1980s	26
Figure 4-2: Differences in Growth Rates, Total (Non-Farm) Employment: 1970s and 1980s	28
Figure 4-3: Differences in Growth Rates, Construction Employment: 1970s and 1980s	30
Figure 4-4: Differences in Growth Rates, Manufacturing Labor Productivity: 1970s and 1980s	31
Figure 4-5: Differences in Growth Rates, Overall Labor Productivity: 1970s and 1980s	33
Figure 5-1: The Distribution of State Economies (1982)	36

TABLES

Table I: During the 1980s Did States with Stronger Environmental Policies Experience Poorer Economic Growth than States with Weaker Environmental Policies?	12
Table II: During the 1980s Did States With Stronger Environmental Policies Out-Perform States With Weaker Environmental Policies?	12
Table III: Did States with Stronger Environmental Policies Show Poorer Inter-Decade Economic Gains than States with Weaker Environmental Policies?	25
Table IV: Did States with Stronger Environmental Policies Show Better Inter-Decade Economic Gains than States with Weaker Environmental Policies?	25
Table V: Among the 25 States with Gross State Products Under \$40 billion (1982), Did Those with Stronger Environmental Policies Show Poorer Inter-Decade Economic Gains than Those with Weaker Environmental Policies?	37
Table VI: Among the 25 States with Gross State Produces Under \$40 billion (1982), Did Those with Stronger Environmental Policies Show Better Inter-Decade Economic Gains than Those with Weaker Environmental Policies?	37

ENVIRONMENTALISM AND ECONOMIC PROSPERITY: Testing the Environmental Impact Hypothesis

by

Stephen M. Meyer
Department of Political Science
Massachusetts Institute of Technology

Abstract: Does the pursuit of environmental quality hinder economic growth and development? This study tests the environmental impact hypothesis -- the assertion that rigorous environmental management hurts economic growth and development. The fifty U.S. states were ranked and categorized in terms of the breadth and depth of their environmental programs. Their economic performance was measured in terms of growth rates in gross state product, total (non-farm) employment, construction employment, manufacturing labor and overall labor productivity.

Two variants of the environmental impact hypothesis were analyzed. A test of a forceful version examined the relationship between environmental rank and economic growth during the height of the Reagan New Federalism era: 1982-1989. A test of a second more subtle version compares and contrasts gains and losses in economic growth between the periods 1973-1980 and 1982-1989 as a function of state environmental rank.

This study finds that the U.S. record of the past two decades clearly and unambiguously refutes both variants of the environmental impact hypothesis at the state level. In contrast to the expectations of the first variant of the environmental impact hypothesis, states with stronger environmental policies did not experience inferior rates of economic growth and development compared to states with weaker environmental regulations. In fact the converse was true: states with stronger environmental policies consistently out-performed the weaker environmental states on all the economic measures.

In contradiction to the second variant of the environmental impact hypothesis states with stronger environmental policies did not experience weaker gains in economic growth between the 1970s and 1980s. Here again, it was the states with strong environmental policies that showed the greatest inter-decade improvement in economic performance.

Sensitivity and validity testing of these findings showed that the results held even when time ranges of the periods were varied and when data analysis was restricted to the twenty five states with the smallest economies.

The data show that *at a minimum* the pursuit of environmental quality does not hinder economic growth and development. Furthermore, there appears to be a moderate yet consistent positive association between environmentalism and economic growth. The environmental impact hypothesis, while theoretically plausible, has no empirical foundation and focuses attention on what is probably one of the least influential factors affecting the pace of economic growth and development among the states.

ENVIRONMENTALISM AND ECONOMIC PROSPERITY: Testing the Environmental Impact Hypothesis

by

Stephen M. Meyer*
Department of Political Science
Massachusetts Institute of Technology

1. INTRODUCTION

As the 1988 presidential election drew near candidate George Bush declared his intent to be "the environmental president." With Boston Harbor as his backdrop he assailed his democratic opponent, Michael Dukakis, for dragging his feet on cleaning up water pollution. "No net loss of wetlands" was to be a hallmark Bush administration policy. Clean air and pure drinking water would be a right of all Americans. Indeed after eight years of the Reagan administration's New Federalism, in which federal leadership in managing environmental quality was all but abandoned to the states, many observers were cautiously optimistic that the new Bush administration would reassert federal executive leadership in environmental policy.¹

The budding environmental president, however, failed to bloom. As the American economy began its slide into a long and deep recession the Bush administration set its sights on what it saw as a major roadblock to America's economic recovery: environmentalism. The complex web of environmental regulations and controls on industry and public resources, it asserted, was strangling business, throwing people out of

work, stifling innovation, and reducing American industrial competitiveness. Where tradeoffs were perceived between fostering environmental quality on the one hand, and rekindling economic growth and development on the other, the administration would tilt in favor of the latter. The White House Council on Competitiveness became the administration's anti-environmental watchdog.

The notion that there is a fundamental conflict between the simultaneous pursuit of environmental quality and economic growth and development is not a recent invention of the Bush administration. From the beginning of the first environmental era -- the 1960s and 1970s -- industry has been quick to forecast the potential negative effects of environmental controls and standards.² Congressional hearings have been the fora for heated debates over each new piece of legislation and the regulations that followed.

The often bombastic nature of the "environment versus economy" rhetoric is well illustrated by the U.S. auto industry's assessment of the implications of the 1970 Clean Air Act. Lee Iococca, then vice president of the Ford Motor Company,

*The author is Professor in Political Science at the Massachusetts Institute of Technology and Director of the MIT Project on Environmental Politics and Policy. Funding for this study was provided by the MIT Provost's Humanities and Social Science Fund.

predicted the complete collapse of the U.S. auto industry within five years. At minimum, he argued, the air quality regulations would drive automobile prices through the roof and permanently cripple the U.S. economy.³

Nevertheless the first environmental era was a period of widespread good feelings about environmental policy. Environmentalism had strong bipartisan support. The presumed negative economic effects of environmental programs were discussed and acknowledged. Legislation frequently was modified and regulations postponed to accommodate industry concerns. But the basic idea that environmentalism was incompatible with a vibrant economy was not a powerful or persuasive icon in the policy-making process.

The 1980s marked the beginning of the second environmental era and entrance of the "environmentalism hurts economic prosperity" thesis into federal policy-making. Most significantly, it became a centerpiece of Reagan administration domestic policy, tightly incorporated into that administration's "New Federalism". Administrative actions were used to take the bite out of environmental legislation.⁴ Regulations and standards considered burdensome on industry were watered down or suspended completely. Enforcement was intentionally neglected so that industry could get on with its business of doing business.

The Office of Management and Budget (OMB) was particularly effective in ensuring that economic and business concerns took precedence over what were portrayed as conflicting environmental measures. For example, OMB redrafted the congressional testimony of a top NASA scientist who was

prepared to declare that global warming was a proven phenomenon. OMB, in an effort to block any movement towards regulating the emission of so-called greenhouse gases from U.S. industries and products, rewrote the testimony so that global warming would be portrayed as a highly speculative hypothesis.

The Bush administration, through its Council on Competitiveness, merely centralized and refined the process of administrative regulatory relief begun by its predecessor, with a special focus on environmental regulations. In 1991 the Council attempted to redefine wetlands so that some 50% of what experts inside and outside the government considered wetlands would be opened for development. After signing the 1990 Clean Air Act and touting its environmental significance, President Bush issued an executive order suspending its key provisions. The Clean Air Act of 1990 may now be law, but for all intents and purposes it is not in force.

It is clear that over the past twelve years *the environmental impact hypothesis* — the general proposition that strong environmental policies, rigorously enforced, inhibit economic growth and development, stifle employment, and reduce competitiveness -- has substantially and pervasively influenced federal policy-making. Yet there has been surprisingly little rigorous research to substantiate it. A slew of anecdotes is usually tossed out by proponents of the thesis to support their case. Other anecdotes are hurled back by environmentalists to "prove" the opposite point. But such a fundamental policy issue should not be left to impressions and speculation. The question remains: Can the environmental impact hypothesis stand up to rigorous examination? Does the pursuit of environmental quality through government

regulation systematically and extensively
harm economic performance and prosperity
to a measurable degree? This paper offers an
analysis with which to address that question.

2. THE ENVIRONMENTAL IMPACT HYPOTHESIS IN THEORY

The environmental impact hypothesis is almost intuitive in its simplicity, and perhaps that is why it is so appealing -- especially during periods of economic downturn. Sifting through the literature and the popular press one finds four interlocking assertions (or expectations) that form the core of the hypothesis:

- Environmentalism directly inhibits overall economic performance;
- Environmentalism stifles employment growth;
- Environmentalism depresses labor productivity and undermines industrial competitiveness.
- Environmentalism forces industry to flee to regions where environmental policies are less restrictive and burdensome.

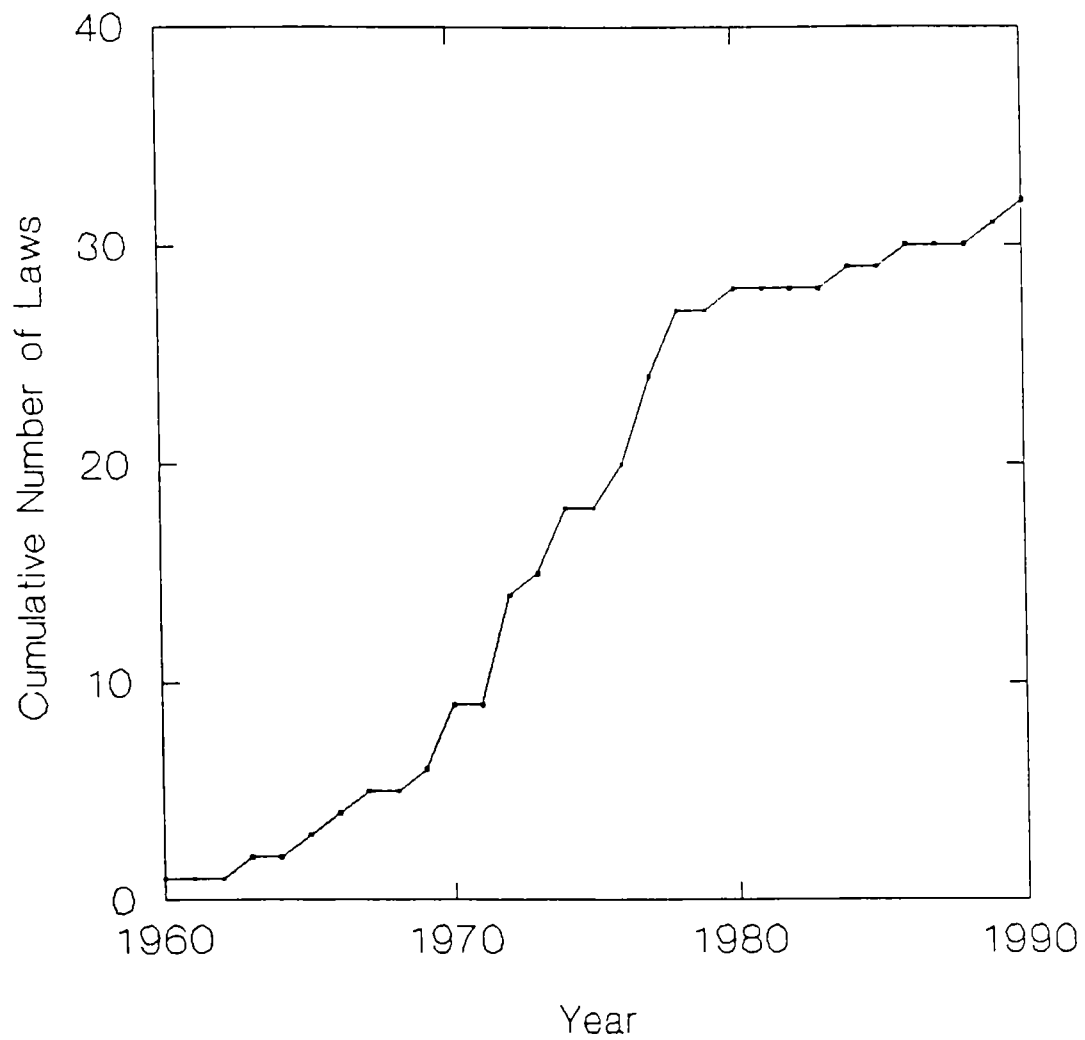
The first point sums up the presumed impact of layers of environmental regulations, mandated pollution control activities, environmental impact requirements, land-use and siting restrictions, and tax-supported programs and projects that have mounted up since the beginning of the environmental era. **Figure 2-1** depicts the accumulation of major federal environmental legislation from 1960 through 1990. The virtual explosion of environmental legislation in the 1970s, which in turn spawned tens of thousands of administrative regulations, is readily apparent. The basic argument, then, is that the heavy burden of environmentalism -- the added costs of doing business, restrictive regulation, and increased taxes -- must weigh down economic performance.

This argument leads directly to the empirical proposition: *as environmental regulations and controls increase, overall economic performance should decrease -- all else being equal*. Conversely, as environmental regulations are removed economic performance should improve. This is the core proposition underpinning the anti-regulatory activities of the Council on Competitiveness

The second argument is equally straightforward. Environmentalism reduces employment because it directly constrains the conduct of business while simultaneously increasing the costs of doing business. In extractive industries such as logging, oil and gas production, and mining environmentalism may prohibit access to resource rich areas. Environmental controls may also limit the extent of extractive activities while simultaneously burdening industry with clean up and restoration costs. If extractive industries cannot expand their domain and if they must contend with the imposed costs of environmental protection and restoration, then less capital will be available for wages. Over time jobs may actually be lost as entire regions are either closed to extractive activities or the costs of doing business become prohibitive. This argument was at the center of the recent federal decision to deny endangered species protection for the Northern Spotted Owl in old growth forests of the Pacific Northwest.

Similarly, as environmental regulations impose ever higher costs on the manufacturing sector there is less capital available for plant expansion. Funds that pay for extensive pollution control systems and waste management are not available for plant

FIGURE 2-1: FEDERAL ENVIRONMENTAL LEGISLATION
1960-1990



modernization and expansion, or wage increases.⁵ Product prices jump to cover increased costs, and sales decline as a result. Should profits drop significantly industry layoffs inevitably follow. Certainly there is no new hiring. Indeed when politicians assert that jobs will be lost if more restrictive emissions standards are imposed on American manufactured automobiles, this is the underlying logic of their position.

Meanwhile, workers grow nervous about their job security and wages and put off major purchases -- and especially house purchases. Construction employment may be an early casualty of environmental controls as firms postpone or cancel plans for facilities expansion and employees withdraw from the real estate market. Of course construction employment may also suffer as a direct result of land-use restrictions, such as wetlands laws and habitat protection regulations for endangered species.

Thus as environmental regulations and controls increase overall employment growth should slow, if not actually decline. Correspondingly, construction employment should fall, reflecting the inability of industry to expand and fears about job security among the labor force. In the latter sense, the changing pace of growth in construction employment may be a leading indicator of negative environmental impact on the economy.

The third argument holds that environmentalism hurts labor productivity and industrial competitiveness by inhibiting plant modernization, stifling R&D and innovation, and replacing high skills jobs with low skills jobs. The contention that the costs of environmental compliance force businesses to divert scarce capital away from

investment has already been noted. The retention of outmoded production facilities means that the productivity-enhancing benefits of new technology are lost.

In theory environmental measures can also inhibit R&D and product innovation by adversely affecting the psychology of industry decision making.⁶ Complex environmental regulations and the specter of future regulations create a general aversion to risks associated with the unpredictable environmental effects of new products and processes. In response to increased costs of doing business and fear of additional environmental regulations, industry gravitates to safe products that represent minor risks and incremental improvements over existing products. Ultimately, this behavior impairs both competitiveness and productivity.

Proponents of the environmental impact hypothesis acknowledge that environmentalism may create some new jobs. Increased activities in recycling, toxic waste cleanup, forest restoration, and treatment plant management may add jobs. However, they argue that to a great extent these will be low skills jobs. So while unemployed machinists, loggers, and construction crews may find new work, the economic value of that new work will be minimal. Thus, in terms of observable effects: *as environmental regulations and controls increase overall labor productivity and manufacturing productivity should decline.*

The fourth assertion, that industries will flee to regions with less restrictive environmental regulation in order to avoid the burdens of environmentalism, is a fear shared by both environmentalists and supporters of the environmental impact hypothesis. The former use this point to

bolster their call for strong national environmental regulations. If environmental controls are geographically uniform, they argue, then industries will not have an incentive to flee. Supporters of the environmental impact hypothesis also predict the migration of environmentally burdened industries to regions with fewer environmental restrictions. But they point out that a uniformly strict national environmental policy will merely replace domestic industrial migration with international industrial migration. U.S. national economic prosperity, employment, and competitiveness will suffer as industries choose to move overseas rather than invest at home.

In this context a leading indicator of environmentally induced industrial migration is construction employment growth. While industries might wish to leave states with heavy environmental burdens, it is impossible to pick up and leave instantaneously. Similarly, labor -- while quite mobile in the United States -- requires time to move. Thus, it is conceivable that measures of economic production (such as gross state product) and employment growth might not be strong indicators of environmental impact on the economy because of the long lead times involved. However, construction employment growth should be a good leading indicator because it reflects future business plans. Industries planning to migrate three or five years in the future need facilities to move to. These are contracted for ahead of time. Therefore, *as environmental regulations and controls increase one should see a slowdown in construction employment growth. Correspondingly, there should be an increase in construction employment growth where environmental regulations are minimal or are in the process of being relaxed.*

The environmental impact hypothesis both substantively and from a policy perspective is concerned with the consequential effects of environmental policies on medium and long-term economic growth, employment, and competitiveness. It is not concerned with transient economic dislocations. Indeed every prospective government action -- e.g., changing interest rates, cancelling a weapons program, shifting the NASA budget -- results in some short-term loss of jobs and some loss of business to one or more industries. The scaling back of U.S. weapons purchases, for example, is expected to force the loss of hundreds of thousands of defense industry jobs, in the decade ahead. Thus, the analyses below focus on the enduring economic impacts of environmental policy.

3. TESTING THE ENVIRONMENTAL IMPACT HYPOTHESIS - I

Despite a multitude of national environmental laws, the U.S. federal system of power sharing ensures that there will be some degree of diversity among the environmental policies and programs of the states. How the states choose to implement and enforce federal laws, whether they augment federal laws with their own environmental legislation and regulations, and the amount of state taxpayer dollars available for pursuing environmental quality are just some of the variables that produce variation in environmental management among the states.

The scope and degree of this variation in environmental policies among the states depends to a great extent upon the tone and tenor of federal leadership. When federal leadership is strongly asserted and substantial federal funding is available the divergences among the states tend to lessen. But when federal leadership is weak and federal funding is not forthcoming states have both the opportunity and incentive to assert their individual preferences. Divergences in environmental policies widen.

The research design of this study explicitly takes advantage of the dynamics of this diversity among the states in examining the extent to which differences in their environmental records are reflected in their relative economic performance over the past two decades.

In its most forceful form the environmental impact hypothesis asserts that *states with weak environmental policies should exhibit more economic vitality than those with stronger environmental policies, all else being equal.* Of course, all else is

rarely equal and we shall examine a more measured interpretation of the environmental impact hypothesis later in the paper. Nevertheless this forceful version of the environmental impact hypothesis serves as a good starting point from which to examine the data. Based on the previous discussion five empirical predictions follow:

(1) States with stronger environmental records should experience poorer overall economic growth compared to those with weaker environmental records.

(2) States with stronger environmental records should experience slower employment growth compared to those with weaker environmental records.

(3) States with stronger environmental records should experience slower construction employment growth compared to those with weaker environmental records.

(4) States with stronger environmental records should experience slower manufacturing labor productivity growth compared to those with weaker environmental records.

(5) States with stronger environmental records should experience slower overall labor productivity growth compared to those with weaker environmental records.

In order to test these propositions data on gross state product, total (non-farm) employment, construction employment, and labor productivity (overall and manufacturing) were collected for each of the fifty states for the period 1982-1989. Intra-period growth rates were then calculated and

compared.

The period 1982-1989 is an especially good choice for analysis because the largest divergences in environmental policies among the fifty states occur at this time. Most notably this period represents the height of the New Federalism policies of the Reagan administration.⁷ Federal funding to the states was cut significantly; enforcement of federal regulations was scaled back; and the states were given broad new discretionary powers for implementing and enforcing policy.⁸

Environmental policy was one of the main "targets" of the New Federalism. Some states continued to pursue environmental control with purpose and vigor. Other states responded to the shift in federal policy by scaling back their own efforts. To the extent that environmental policies have always varied among the states those differences were certainly magnified during the Reagan era. Thus, if environmentalism does hurt economic growth and development its differential effects should be particularly pronounced among the states during this time.

Second, 1982-1989 was a period of substantial national economic growth -- at least from a statistical standpoint. If environmentalism hindered employment and development in states with strong environmental policies and programs, then the effects will not be masked by the macroeconomic effects of the recessions of the early 1980s and early 1990s.

Third, the period was spanned by a single presidential administration with a well defined political-economic ideology that was basically anti-regulatory, anti-environment,

and pro-states rights. This constancy in executive branch philosophy and policy helps to minimize confounding influences on the economy while magnifying environmental policy differences among the states.

Thus, if the forceful version of the environmental impact hypothesis is correct, this period offers the best opportunity to observe the superior economic performance of the environmentally weak states relative to the environmentally strong states.

3.1 Data and Methods

3.1.1 Economic Indicators: As mentioned above, five economic indicators were chosen for analysis: gross state product growth, non-farm employment growth, construction employment growth, manufacturing labor productivity, and overall labor productivity.

Gross state product data, deflated for the base year 1982, were provided by the U.S. Commerce Department. These data (in current dollars) are published regularly in the Commerce Department's Survey of Current Business.

Employment data were obtained from the U.S. Labor Department's Employment and Earnings publication.

The manufacturing labor productivity indicator is the dollar value of output per worker per year in the manufacturing sector. The overall labor productivity indicator is the dollar value of non-farm output per non-farm worker per year. All dollar values are constant 1982 dollars.

The growth index used for each indicator

follows the general form:

$$\%GROWTH = \left[\frac{VALUE_{1989}}{VALUE_{1982}} - 1 \right] \times 100$$

3.1.2 Environmental Indicators: The environmental impact hypothesis links environmental efforts -- policies, programs, and regulations -- with economic burdens. It is not concerned with the impact of environmental quality on the economy. Thus, the indicator(s) of a given state's environmental record should be related to the breadth, scope, and rigor of its environmental policies and programs and not its level of success. Of interest are states where public expenditures on environmental programs are high, where industry expenditures for environmental compliance are substantial, and where there are tight controls on plant siting, waste disposal, emissions, and land use.

New Jersey, for instance, ranks very high on environmental effort but fairly low on environmental quality. It is the former characteristic that is of interest to us here. Thus, references in this paper to "strong" or "weak" environmental states pertain only to their levels of effort, not their relative environmental cleanliness.

The indicator for the relative environmental record used in this study was taken from the work of Duerksen (1983). Based on data from the late 1970s and early 1980s he evaluated each state across a roster of 23 environmental indicators. For example, he looked at the comprehensiveness of state environmental impact statement regulations, the extent of state regulations protecting critical habitats and wildlife, state

per capita expenditures for environmental quality, and the scope of state power plant siting regulations and associated environmental impact assessments.

Each indicator was built on an ordinal scale and a final score for each state was computed by summing the ranks across all indicators. This study has adopted Duerksen's summary scores and simply re-ranked them so that the values would run from 1 to 50. A rank of 1 indicates the strongest environmental record and 50 reflects the weakest environmental record. **Appendix 1** lists each state and its corresponding environmental rank..

Based on natural break points in this ranking the states were also grouped into three mutually exclusive categories: environmentally strong, environmentally moderate, and environmentally weak. This grouping by relative environmental commitment assumes that there are greater similarities in environmental regulation and management within the categories than between them. As shown in **Appendix 1** the first seventeen states make up the strong category, the next fifteen are classified moderate, and the last eighteen fall into the weak category.

Since the environmental indicators are based on pre-1982 data and the economic measures are based on data from the period 1982-1989, the analyses in this section of the paper are looking for enduring medium term effects of environmental policies. In other words, state environmental policies set in motion in the late 1970s and early 1980s and enforced differentially throughout the 1980s should have exhibited persistent -- not one-shot -- effects on economic growth and development within the states.

3.2 Results

3.2.1 Gross State Product and Economic Growth

Do states with stronger environmental policies experience slower economic growth compared to states with weaker environmental policies? If so, then we would expect that, on average, states in the strong environmental category should have lower gross state product growth rates than states in the moderate category, and even lower growth rates than states in the weak environmental category. Correspondingly, states in the moderate environmental category should have lower gross state product growth rates than those of environmentally weak states.

In order to test the statistical likelihood of this relationship one actually sets up the converse relationship (a null hypothesis) and asks the question: Given these gross state product (GSP) data, what is the probability that the growth rates among the strong environmental states equal or exceed those of the moderate environmental states, which in turn equal or exceed the growth rates of the weak environmental states? The alternative to this null hypothesis is the environmental impact hypothesis. Symbolically, these two mutually exclusive hypotheses can be presented as:

$$H_{null}: GSP_{strong} \geq GSP_{moderate} \geq GSP_{weak}$$

$$H_{EI}: GSP_{strong} < GSP_{moderate} < GSP_{weak}$$

If the statistical test finds that the probability of the relationships specified by the null hypothesis, H_{null} , is small, then we can accept the alternative as being true -- that is, we can assume that the environmental impact hypothesis, H_{EI} , is true.⁹ For the

purposes of this study we will give the environmental impact hypothesis the benefit of the doubt and will reject the null hypothesis if the probability of it being true turns out to be 10% or less ($p \leq .10$).¹⁰

The results for the statistical tests on all five indicator are summarized in Table I. As can be seen, the likelihood that the growth in gross state product of the strong environmental states equals or exceeds those of the moderate environmental states, which in turn equal or exceed those of the weak states is greater than 99.9%. The data categorically refute the environmental impact hypothesis. There is either no difference in economic performance among the various environmental categories of states, or perhaps the relationship is the converse: economic performance actually improves with environmental effort.

We can explore this relationship further with the box plot shown in Figure 3-1a. For each environmental category the basic box represents the distribution of the core 50% of the cases scattered about that category's median (average) gross state product growth rate. The central line inside each box is the median value for the category. The line bisecting the entire graph reflects the pooled median of all the states -- that is, the national average.¹¹

As can be seen, the strong environmental states sit above the national average and slightly above the moderate environmental states. Both of these groups sit substantially above the weak environmental states, which show growth rates below the national average. Growth in gross state product among the strong environmental states was more than twice that of environmentally

Table I During the 1980s Did States with Stronger Environmental Policies Experience Poorer Economic Growth than States with Weaker Environmental Policies?

ECONOMIC GROWTH INDICATOR	SIGNIFICANCE TEST		ACCEPT ENVIRONMENTAL IMPACT HYPOTHESIS?
	Z-Score*	Prob.	
Gross State Product	-3.30	>0.999	no
Total (Non-Farm) Employment	-2.20	>0.987	no
Construction Employment	-4.36	>0.999	no
Manuf. Labor Product Productivity	-0.24	>0.594	no
Overall Labor Productivity	-2.81	>0.997	no

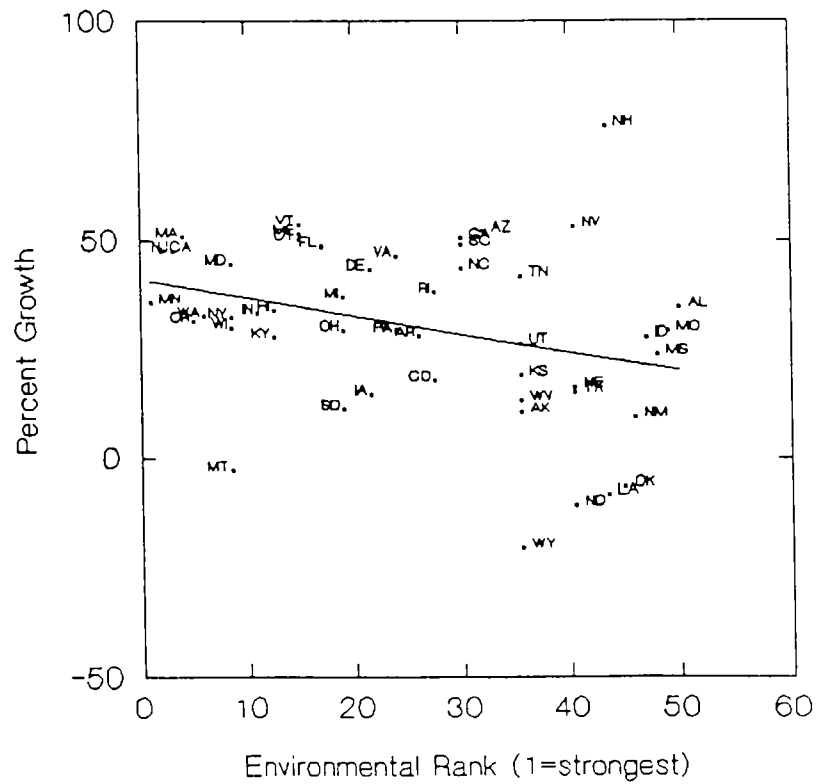
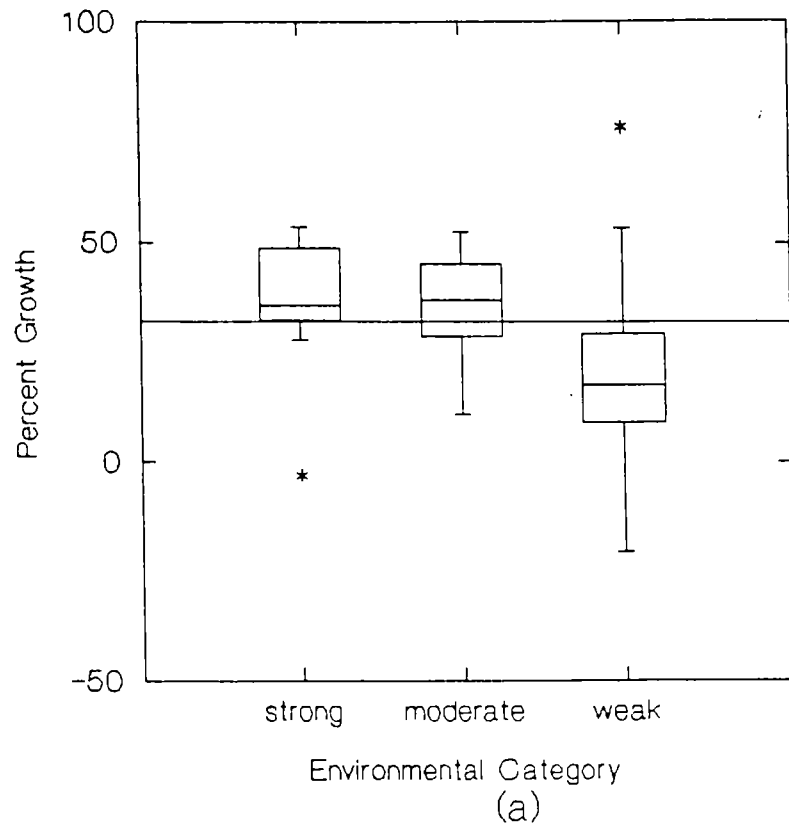
* Jonckheere's test of ordered alternatives is used to test for ordered differences among the three environmental categories in accordance with H_{mij} . A Z-score of +1.28 or greater, corresponding to a significance level of 0.10 or less, is required to accept the environmental impact hypothesis as true. See: Hollander and Wolfe (1973) and Lehmann (1975) for a description of Jonckheere's test.

Table II During the 1980s Did States With Stronger Environmental Policies Out-Perform States With Weaker Environmental Policies?

ECONOMIC GROWTH INDICATOR	CORRELATION		IS THERE A POSITIVE CORRELATION?
	r-value*	Prob. $r = 0$	
Gross State Product	+0.35*	< 0.007	yes
Total (Non-Farm) Employment	+0.23*	< 0.05	yes
Construction Employment	+0.54*	< 0.0001	yes
Manuf. Labor Product Productivity	+0.007	< 0.49	no
Overall Labor Productivity	+0.33*	< 0.011	yes

*An r-value of +0.23 or greater, corresponding to a significance level at or below 0.05, is required to accept the hypothesis that environmentalism is positively associated with a particular indicator of economic growth. This the converse of the environmental impact hypothesis.

Figure 3-1: GROWTH in GROSS STATE PRODUCT
1982-1989



weak states. It *appears*, therefore, that there is a moderate positive correlation between gross state product growth and environmentalism -- just the opposite of what the environmental impact hypothesis asserts.

But graphical appearances can deceive. To test this possibility that a true positive correlation actually exists we turn to the individual environmental rank of each state and compare it to the state's rank in gross state product growth. If a positive correlation exists then a higher environmental rank should correspond to a higher rank on gross state product growth. A moderate positive correlation, above +0.23, is sufficient for us to accept the hypothesis that environmentalism is positively associated with economic growth.¹² (Again, the environmental impact hypothesis asserts that they should be negatively associated.)

Table II summarizes the correlation results for the data. The correlation between environmental rank and rank in growth in gross state product is +0.35, well above the acceptance threshold. The data clearly and strongly support the argument that stronger economic growth is associated with stronger environmental policies.

This positive relationship is obvious in **Figure 3-1b**, which is a scatterplot of the data: gross state product growth versus environmental rank. The plot depicts the growth in each state's gross state product for the period 1982-1989 along the vertical axis against its corresponding environmental rank along the horizontal axis. "1" represents the strongest environmental rank; "50" reflects the weakest. The line running through the cloud of points is the best linear (regression) fit to the data. This regression line is provided for descriptive purposes only. The

analysis does not posit a linear fit among the data.

If the environmental impact hypothesis were correct then the plot should spread from the lower left towards the upper right. It is readily apparent from **Figure 3-1** that this is not the case.

Two states with low environmental rankings showed some of the highest gross state product growth rates (e.g., Nevada and New Hampshire). But it is also true that the poorest gross state product growth rates -- indeed, negative growth rates -- were held almost exclusively by states with low environmental rankings. Thus, in terms of the states at the lower end of the environmental scale Nevada and New Hampshire are the exceptions, not the rule, on this measure of economic performance.

3.2.2 Total (non-farm) Employment Growth:

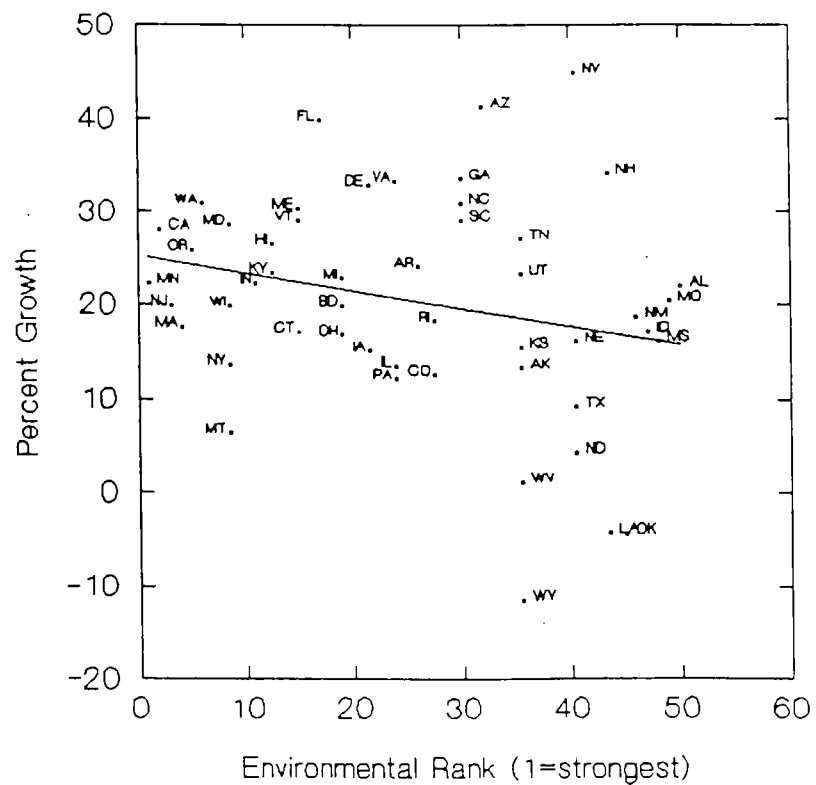
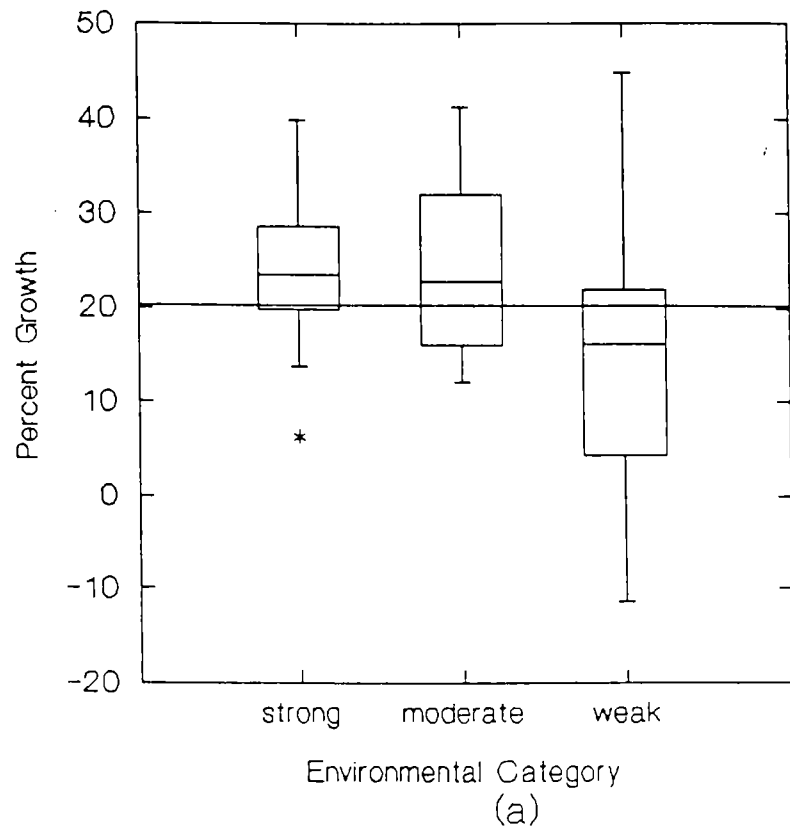
In the political arena the environmental impact hypothesis focuses on jobs as an indicator of effect. Does environmentalism hinder employment growth? Is the effect strong enough to be observable at the state level? Here we run the same statistical tests on the total employment (EMPT) data:

$$H_{null}: EMPT_{strong} \geq EMPT_{moderate} \geq EMPT_{weak}$$

$$H_{R}: EMPT_{strong} < EMPT_{moderate} < EMPT_{weak}$$

From **Table I** we see that the probability that the null hypothesis is true -- that there is either no difference or a real difference that is opposite that predicted by the environmental impact hypothesis -- is over 98.7%. Again we find the data unambiguously contradict the environmental impact hypothesis.

Figure 3-2: GROWTH in TOTAL (NON-FARM) EMPLOYMENT
1982-1989



The box plot in **Figure 3-2a** tells us a little bit more. Here we see that the difference between the environmentally strong and moderate states seems insignificant; their median and the box placements are roughly equivalent. However, where the majority of the environmentally strong states sit above the national average in employment growth, the greatest portion of the environmentally weak states sits below the national median. In fact average employment growth among the environmentally strong states was about 45% better than that of the environmentally weak states.

Does this apparent positive correlation stand up to statistical testing? The rank correlation between employment growth and environmental rank shown in **Table II** is +0.23. This modest positive correlation, while weaker than that for gross state product growth, is still sufficiently strong for us to accept the likelihood that a true positive correlation exists: states with higher environmental ranks also tend to have higher employment growth.

Figure 3-2b is the corresponding scatterplot. New Hampshire and Nevada repeat their performance as anomalies among the environmentally weaker states.

3.2.3 Construction Employment Growth:

As noted earlier examining construction employment growth tells us something about the longer-term effects of environmental policy on economic performance. If businesses flee environmentally strong states, as the environmental impact hypothesis posits, then employment growth in the construction trades in environmentally strong states should shrink. Meanwhile construction employment growth should pick up in the

environmentally weak states as disaffected industries and workers make plans to relocate.

To test whether construction employment growth (EMPC) declines in environmentally strong states and increases in environmentally weak states, we examine the pair of hypotheses:

$$H_{\text{null}}: EMPC_{\text{strong}} \geq EMPC_{\text{moderate}} \geq EMPC_{\text{weak}}$$

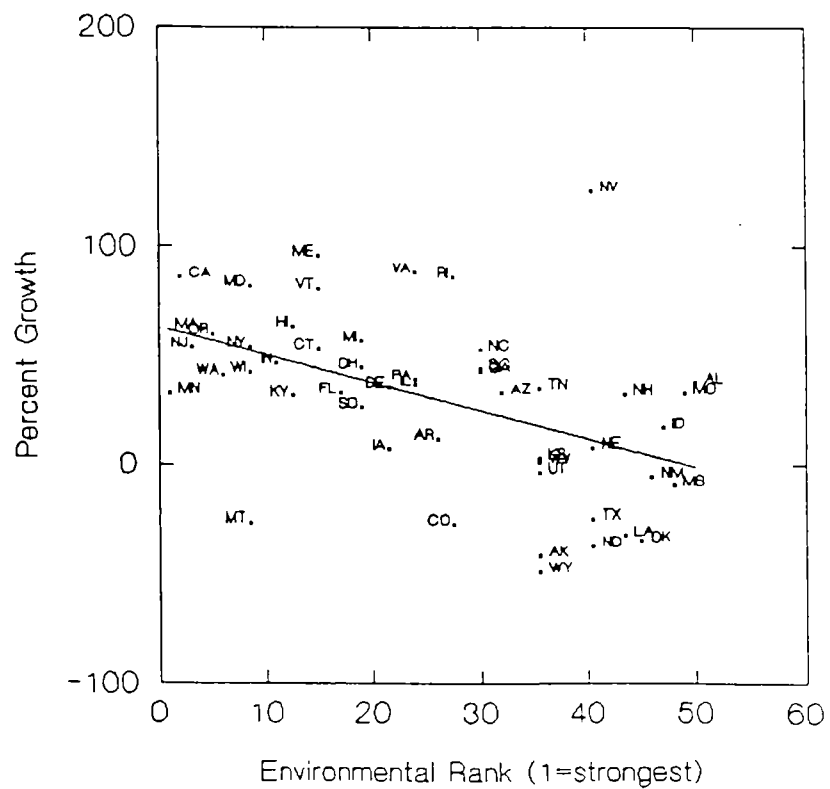
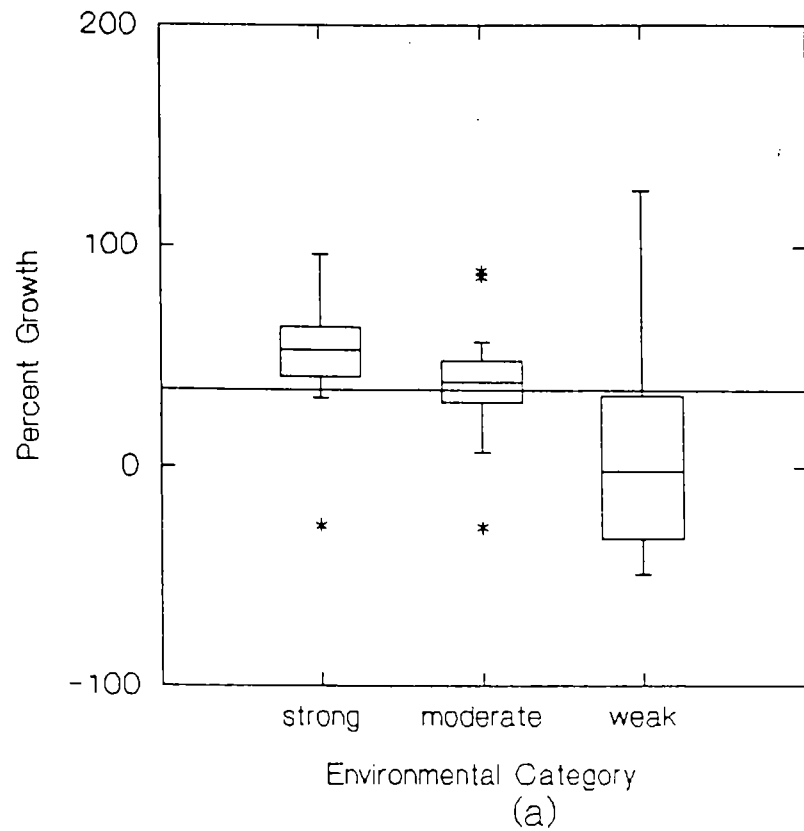
$$H_{\text{alt}}: EMPC_{\text{strong}} < EMPC_{\text{moderate}} < EMPC_{\text{weak}}$$

As shown in **Table I** the data suggest that the probability that either environmentalism is unrelated to construction employment growth, or that environmentalism is associated with higher construction employment growth is over 99.9%. We can say with considerable certainty that the environmental impact hypothesis is wrong.

As the box plot in **Figure 3-3a** shows the relationship between environmentalism and construction employment growth is the strongest we have seen yet. Where the strong environmental states float high above the national average the practically the entire box representing the weak environmental states lies below. Environmentally moderate states sit somewhere in between. Average construction employment growth among the environmentally strong states was about 53% for the period, while the environmentally weak states showed an average decline of approximately -1.4%.

It is also interesting to contrast the fairly low variance in construction employment growth among the strong and moderate environmental states (characterized by their short boxes) with the large variance of the environmentally weak states. This suggests

Figure 3-3: GROWTH in CONSTRUCTION EMPLOYMENT
1982-1989



This page left blank

that there may be some systematic differences among the states in this latter category that affect how environmental policies and programs are associated with construction employment.

The rank correlation (Table II) between construction employment growth and environmental rank is a hefty +0.54, the strongest correlation among the economic growth indicators. This says that the most intense construction employment growth took place in those states that had the stronger environmental policies and programs. Industry and labor did not flee in the face of environmental regulation.

The plot in Figure 3-3b offers visual confirmation. Notice the very tight scatter of the states about the estimated regression line. Nevada stands out as an outlier among the environmentally weak states, while Montana represents an anomaly among the environmentally strong states.

However onerous compliance with environmental measures in states with strong environmental records may have been, the growth in construction employment suggests that industry was investing for the future. There is no indication of business flight to states with lax environmental regulation as predicted by the environmental impact hypothesis.

3.2.4 Manufacturing Labor Productivity: Has environmental regulation in environmentally strong states sufficiently burdened industry to the point that it is reflected in weakened growth in manufacturing labor productivity (MPROD)? Failure to invest in plant modernization (due to capital diversion for pollution abatement) combined with the flight of industries to

environmentally weak states should be evident here. The pair of relevant hypotheses to test is:

$$H_{null} : MPROD_{strong} \geq MPROD_{moderate} \geq MPROD_{weak}$$

$$H_A : MPROD_{strong} < MPROD_{moderate} < MPROD_{weak}$$

From Table I we can see that the likelihood that there is no difference among the three environmental categories in terms of manufacturing labor productivity, or that the relationship runs opposite to that postulated by the environmental impact hypothesis, is over 59%. Though it is the lowest probability value in the table, it is still very much greater than would be needed to reject the H_{null} . The environmental impact hypothesis is supported by the data.

Examining Figure 3-4a one sees virtually no difference in either the box placements or the medians of the three environmental categories.

Testing the proposition that there is no true correlation between environmentalism and manufacturing labor productivity Table II shows the rank correlation coefficient shown for manufacturing labor productivity is effectively zero.

The scatterplot in Figure 3-4b shows just a cloud of points scattered randomly around a horizontal (null fit) regression line. New Hampshire's high growth in manufacturing labor productivity stands out as a curiosity among the lower ranking states on the environmental scale. The fact that Massachusetts also sits high above the other environmentally higher ranked states suggests the possibility of a link. A considerable amount of high-technology industry was spawned in lower New Hampshire during the

1982-1989



era of the "Massachusetts miracle." This bears further looking into.

3.2.5 Overall Labor Productivity: Overall labor productivity should reflect the effects posited above plus the "dumbing down" of job skills as predicted by adherents to the environmental impact hypothesis. That is, as more manufacturing jobs are replaced by labor intensive environmental jobs -- such as recycling, trash sorting, insulating, and even tourism -- overall labor productivity in strong environmental states should decrease.

We examine the pair of hypotheses for overall labor productivity (PROD):

$$H_{III} : PROD_{strong} \geq PROD_{moderate} \geq PROD_{weak}$$

$$H_{IV} : PROD_{strong} < PROD_{moderate} < PROD_{weak}$$

And from **Table I** it is readily apparent that the data refute the environmental impact hypothesis. There is a 99.7% likelihood that either no difference in overall labor productivity among the three environmental categories exists, or that overall labor productivity in environmentally stronger states grew faster than in environmentally weaker states.

Figure 3-5a clarifies the situation. There does not seem to be a significant difference between the environmentally strong and moderate states, though the latter appear to have a median just slightly below the former. The environmentally weak states, however, clearly sit below the other two and the national average. In fact overall labor productivity growth among the strong and moderate environmental states was roughly double that of the weak environmental states.

From **Table II** the correlation of 0.33

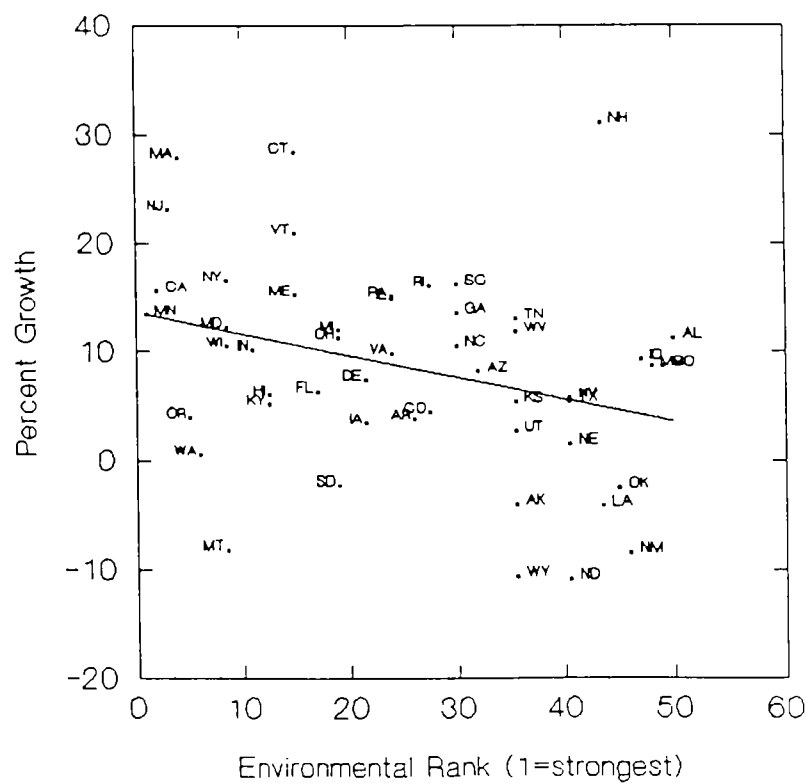
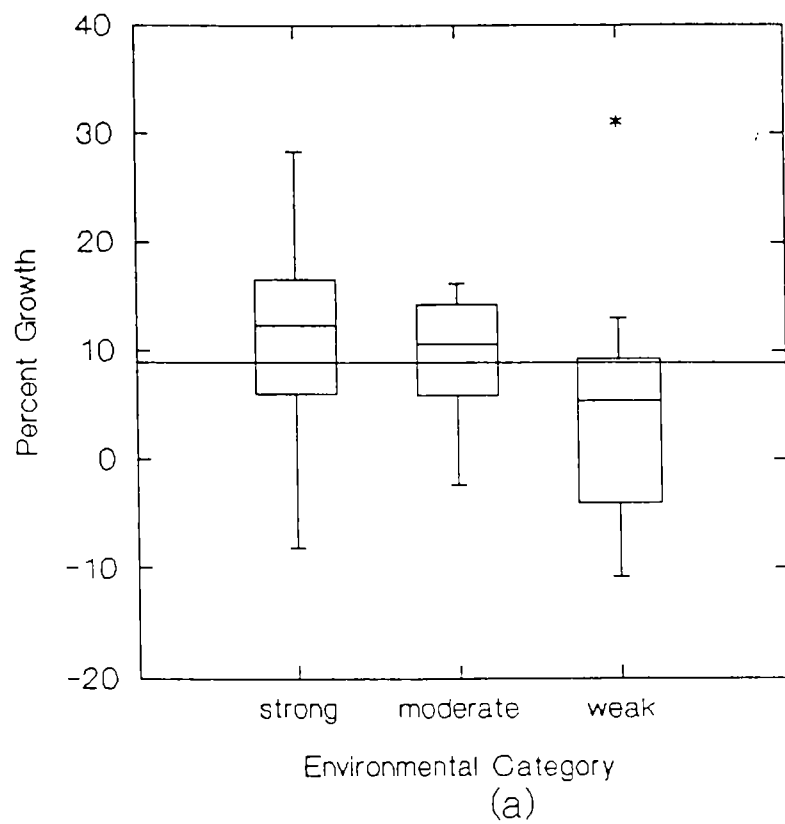
supports the impression that there is indeed a positive correlation here that flies in the face of the environmental impact hypothesis. Overall labor productivity grew faster in states with higher environmental ranks. **Figure 3-5b** shows that once again New Hampshire is an oddity among the lower ranking environmental states.

3.3 Summary

The data failed by a wide margin to support the environmental impact hypothesis across all five indicators. In fact environmentalism was found to be positively associated with four of the five economic growth variables (manufacturing labor productivity being the exception).

The environmentally strong states outperformed the environmentally weak states by substantial amounts. The most dramatic difference was in construction employment growth. The moderate environmental states fell somewhere in between the other two categories in terms of economic performance.

Figure 3-5: GROWTH in OVERALL LABOR PRODUCTIVITY
1982-1989



4. TESTING THE ENVIRONMENTAL IMPACT HYPOTHESIS - II

The notion that robust economic growth and development are more likely to be found among states with relatively lax environmental policies can be dismissed. This forceful interpretation of the environmental impact hypothesis, while theoretically interesting, is simply not true. Indeed, while a "null finding" -- the lack of any relationship between environmentalism and economic performance -- would have been sufficient to undermine the validity of the environmental impact hypothesis, the preceding analyses points to a consistent and systematic positive relationship between environmentalism and economic growth.

But it would be premature to dismiss the environmental impact hypothesis in its entirety. Consider the following argument. Environmentalism hinders economic growth and development; it stifles employment. As environmental regulations and controls are lifted economic performance should improve and employment should increase *relative to times when environmental regulations were in place*. Thus, states that throw off the yoke of environmentalism should show improved economic performance, while those that retain or enhance environmental controls will not experience accelerated growth.

The subtlety of this argument is in its focus on relative changes in economic growth, rather than the absolute level of economic growth itself.¹³ The boost to economic performance from lax environmental regulation may not be enough to change the relative economic ranking based on growth, but it would still represent an improvement in economic performance due to the relaxing of environmental controls.

Consider four states: A, B, C, and D. In the 1970s their hypothetical gross state products grew by 60%, 50%, 20%, and 10% respectively. Now imagine that in the 1980s C and D were able to relax significantly their environmental policies, while A and B maintained strong environmental efforts. Suppose that their respective gross state product growth rates in the 1980s turned out to be 40%, 35%, 25%, and 10%. While their relative ranking in the 1980s remains unchanged from the 1970s, it is clear that A and B's performance relative to the prior period slipped. Conversely the performance of C improved while D remained unchanged.

Even though both C and D still rank behind A and B in gross state product growth in the 1980s there relative improvement in economic performance would be consistent with the environmental impact hypothesis. The analysis in the preceding section of the forceful version of the environmental impact hypothesis would not detect this particular effect.

4.1 Data and Methods

In order to test this more subtle version of the environmental impact hypothesis data for the period 1973-1980 were compared with the data from 1982-1989. The data sources and indicator construction procedures for the 1973-1980 data set were identical to those used for the 1982-1989 data set.

As noted earlier the 1970s saw tremendous growth in federal environmental legislation and regulations. The nascent state of environmental policy, the availability of federal funds, and the assertive leadership the

federal government fostered a modicum of similarity if no homogeneity among the state environmental policies. The period certainly stands in contrast to the 1982-1989.

If the environmental impact hypothesis is correct then we should see a systematic difference in the changing economic performance among environmentally strong, moderate, and weak states when they are compared across the two periods.

Specifically, states that took advantage of Reagan administration policies to relax their environmental controls in the 1980s, or were forced to so because of federal budget cuts, (i.e., environmentally weak states) should exhibit improved economic performance. Conversely, states that chose to maintain and augment their environmental policies (environmentally strong states) should show either lesser improvement, no change, or a decline in performance.

To test this argument a growth difference index was constructed for each economic indicator. For each state the growth in a given economic indicator for the period 1973-1980 was subtracted from the growth in the period 1982-1989:

$$dGROWTH = GROWTH_{1982-1989} - GROWTH_{1973-1980}$$

Returning to the illustration used above the corresponding indices for A,B,C, and D would be -20, -15, +5, and 0 respectively. The difference ranking would be C,D,B, and then A, consistent with the expectations of the environmental impact hypothesis.

4.2 Results

4.2.1 Shifts in Gross State Product Growth:

Do environmentally stronger states experience poorer improvement in gross state product growth between the two periods than environmentally weak states? Here we examine the pair of hypotheses relating inter-decade differences in gross state product growth (dGSP):

$$H_{null}: dGSP_{strong} \geq dGSP_{moderate} \geq dGSP_{weak}$$

$$H_{II}: dGSP_{strong} < dGSP_{moderate} < dGSP_{weak}$$

Table III presents the statistical tests of the subtle variant of the environmental impact hypothesis for all five indicators. Once again the results strongly and unambiguously contradict the environmental impact hypothesis. In terms of inter-decade shifts in the growth in gross state products the probability that there is either no difference among the states in the three environmental categories or that there is a difference favoring environmentally strong states is over 99.9%.

The box plot in Figure 4-1a reveals that while environmentally strong and moderate states demonstrate fairly similar performance improvements, the environmentally weak states do substantially worse. They hover for the most part below that national average. Where the average (median) improvement in gross state product growth among the environmentally strong states was about 23%, the environmentally weak states actually declined about -5%.

In Table IV the rank information is used to test the possibility of a positive

Table III Did States with Stronger Environmental Policies Show Poorer Inter-Decade Economic Gains than States with Weaker Environmental Policies?

ECONOMIC GROWTH INDICATOR	SIGNIFICANCE TEST		ACCEPT ENVIRONMENTAL IMPACT HYPOTHESIS?
	Z-Score*	Prob.	
Gross State Product	-3.48	> 0.999	no
Total (Non-Farm) Employment	-2.86	> 0.998	no
Construction Employment	-4.12	> 0.999	no
Manuf. Labor Product Productivity	-0.29	> 0.614	no
Overall Labor Productivity	-2.81	> 0.997	no

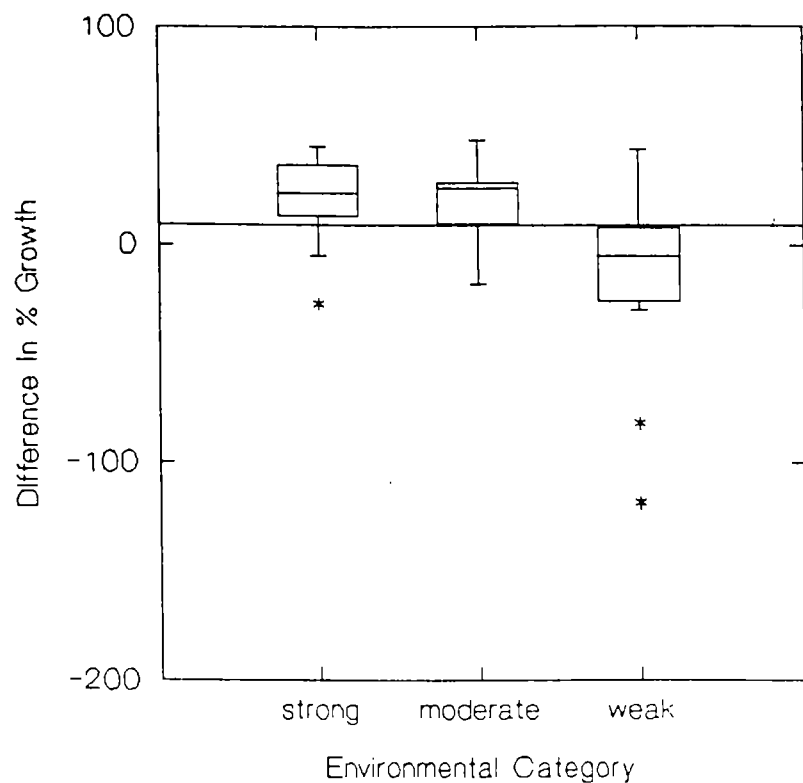
* Jonckheere's test of ordered alternatives is used to test for ordered differences among the three environmental categories in accordance with H_{mn} . A Z-score of +1.28 or greater, corresponding to a significance level of 0.10 or less, is required to accept the environmental impact hypothesis as true. See: Hollander and Wolfe (1973) and Lehmann (1975) for a description of Jonckheere's test..

Table IV Did States with Stronger Environmental Policies Show Better Inter-Decade Economic Gains than States with Weaker Environmental Policies?

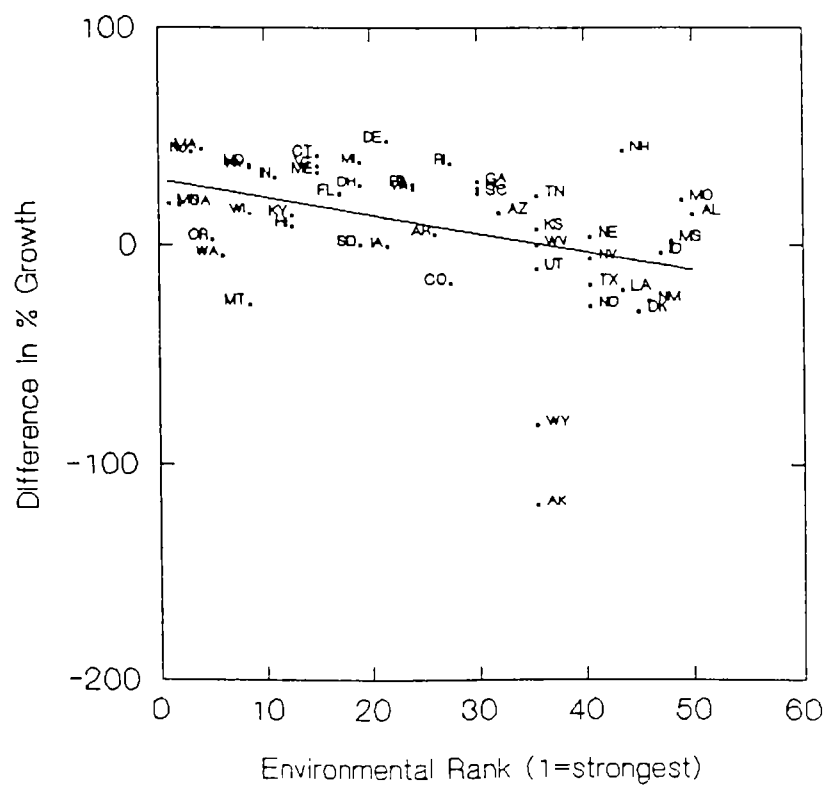
ECONOMIC GROWTH INDICATOR	CORRELATION		IS THERE A TRUE POSITIVE CORRLATION?*
	r-value	Prob. $r = 0$	
Gross State Product	+0.43*	< 0.002	yes
Total (Non-Farm) Employment	+0.35*	< 0.007	yes
Construction Employment	+0.51*	< 0.0002	yes
Manuf. Labor Product Productivity	+0.009	< 0.48	no
Overall Labor Productivity	+0.36*	< 0.006	yes

*An r-value of +0.23 or greater, corresponding to a significance level at or below 0.05, is required to accept the hypothesis that environmentalism is positively associated with a particular indicator of economic growth . This is the converse of the environmental impact hypothesis.

Figure 4-1: DIFFERENCES in GROWTH RATES
GROSS STATE PRODUCT: 1970s and 1980s



(a)



(b)

relationship between environmentalism and improvement in gross state product growth. The solid positive correlation coefficient of +0.43 confirms that the higher the environmental rank of a state the greater the inter-decade improvement in gross state product growth.

In **FIGURE 4-1b** we can see what this looks like visually. Clearly the data contradict the expectations of the environmental impact hypothesis. Compared to the 1970s environmentally strong states actually improved their economic performance in the 1980s. Environmentally weak states lost ground.

Alaska and Wyoming fair especially poorly in this comparison and stand as outliers among the environmentally weak states. When they are excluded from the analysis the correlation drops from +.43 to +.40. They do not affect the overall pattern in the data.

4.2.2 Shifts in Total Employment Growth: Even if weak environmental states fail to keep pace with strong environmental states in dollars generated, perhaps they nonetheless are better at retaining and adding jobs. To test the environment versus jobs argument we examine the pair of hypotheses that relate inter-decade differences in total employment growth (dEMPT):

$$H_{III} : dEMPT_{strong} > dEMPT_{moderate} > dEMPT_{weak}$$

$$H_{IV} : dEMPT_{strong} < dEMPT_{moderate} < dEMPT_{weak}$$

As given in **Table III** the probability that there are either no differences in inter-decade gains in employment growth among the

environmental categories, or that the gain favors environmentally stronger states is over 99.8%. There is no "environmental versus jobs" tradeoff at the state level.

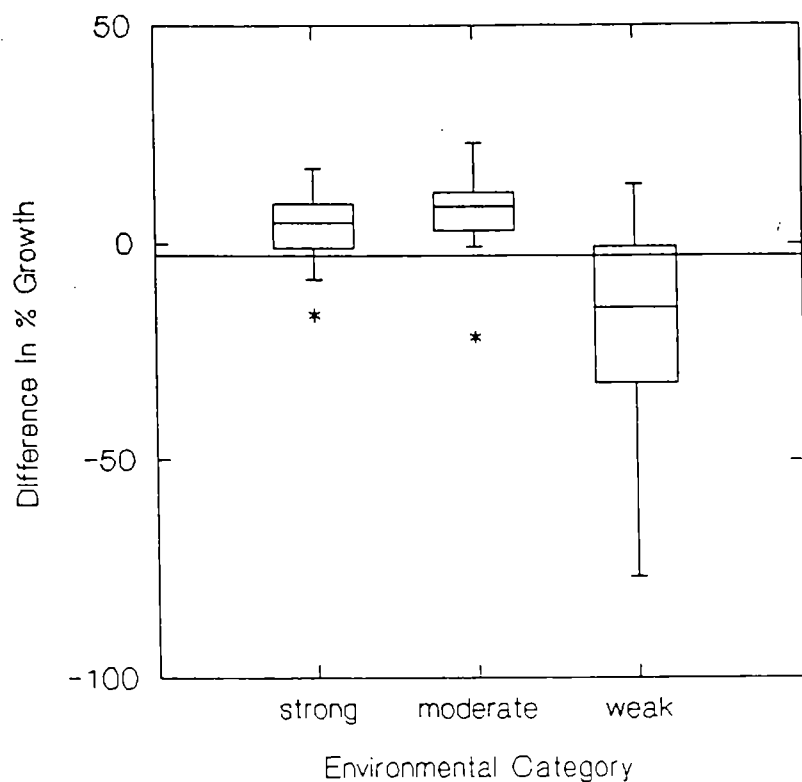
The box plot in **Figure 4-2a** shows that while there is little systematic difference between environmentally strong and moderate states, environmentally weak states fall significantly below them, and the national average (median). While the rate of total employment growth among environmentally strong states increased by about 5% over the earlier period, the environmentally weak states saw a decline of almost -15%.

The box plot also shows that the variance among the weak states (indicated by the boxes size) insignificantly greater than the variance of either of the other two categories. This may provide some important clues for further study into the nature of the relationship between environmental policies and economic performance.

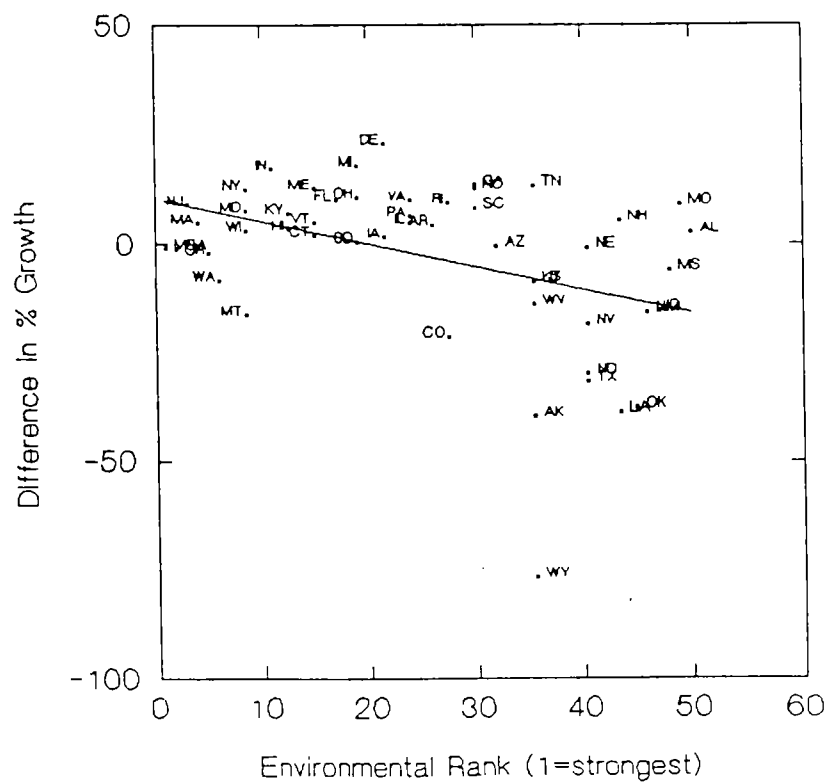
Is there a true positive association between environmentalism and inter-decade improvement employment growth? From **Table IV** it seems clear that there is. The correlation of +0.35 highlights the fact that as a state's environmental rank increases so does the degree to which its employment growth increased between the 1970s and 1980s.

Figure 4-2b is the associated scatterplot. Notice the tighter pattern of the scatter among the states with higher environmental ranks compared to the lower ranking states. The energy states, Texas, Alaska, Oklahoma, and Louisiana, cluster at the bottom. Wyoming is a significant outlier among the weak environmental states. But when that case is excluded and the data are reanalyzed the correlation barely changes. It drops from

Figure 4-2: DIFFERENCES in GROWTH RATES
TOTAL (NON-FARM) EMPLOYMENT: 1970s and 1980s



(a)



(b)

+0.35 to +0.33.

4.2.3 Construction Employment Growth:

Here again we look at the leading indicator for the environmental impact hypothesis. Is there some indication that industry and labor are migrating to environmentally weaker states? Does construction employment growth decrease systematically as one moved from environmentally strong to environmentally weak states? We test the contending hypotheses for differences in construction employment growth (dEMPC):

$$H_{mult}: dEMPC_{strong} \geq dEMPC_{moderate} \geq dEMPC_{weak}$$

$$H_{alt}: dEMPC_{strong} < dEMPC_{moderate} < dEMPC_{weak}$$

The answer from Table III is a resounding: no. The data clearly show that either there is no systematic difference among the environmental categories, or there is a positive relationship between environmentalism and economic growth.

Figure 4-3a depicts very starkly what seems to be a strong positive relationship between state environmentalism and inter-decade increases in construction employment growth. Median construction employment growth in environmentally strong states during the 1980s jumped 50% over the earlier period. In contrast it declined by more than -19% among the environmentally weak states.

The strong correlation of +0.51 in Table IV statistically confirms the visual impression of the box plot. It seems safe to conclude that there is a true positive association between environmental rank and improvement in construction employment growth.

The scatterplot in Figure 4-3b helps to clarify how individual states contribute to the overall pattern. The greater variance among the weak environmental states (seen in the box plot) seems to be the consequence of the very poor showing of the energy and sage brush states. Nevada stands out among the environmentally weak states for its peculiarly good showing

These data most strongly refute the argument that businesses will migrate to states with more relaxed environmental policies.

4.2.4 Manufacturing Labor Productivity

Growth: Did environmentally strong states experience less substantial inter-decade improvements in their manufacturing labor productivity? We test the pair of mutually exclusive hypotheses for differences in the growth of manufacturing labor productivity (dMPROD):

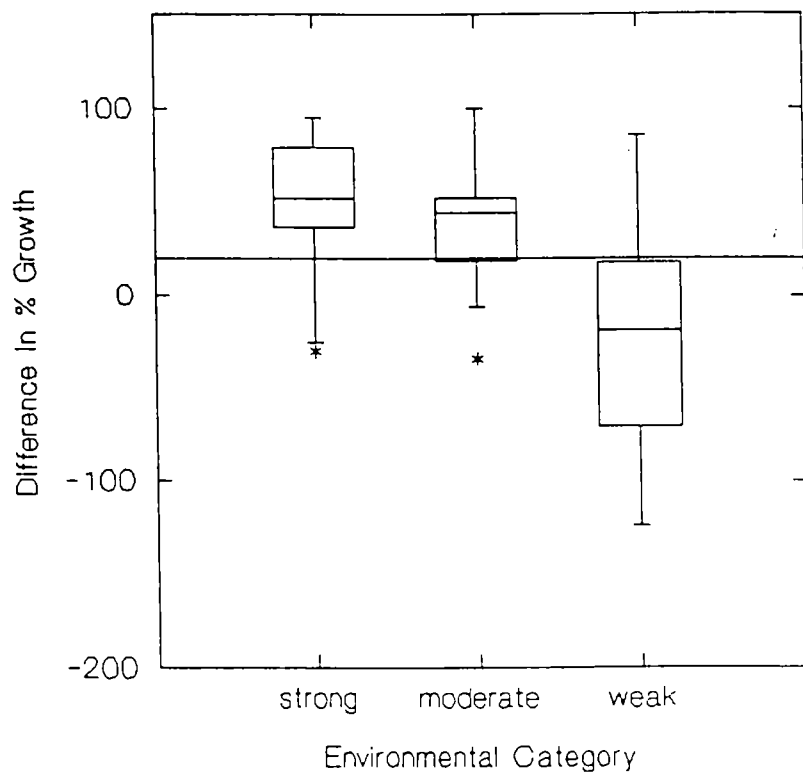
$$H_{mult}: dMPROD_{strong} \geq dMPROD_{moderate} \geq dMPROD_{weak}$$

$$H_{alt}: dMPROD_{strong} < dMPROD_{moderate} < dMPROD_{weak}$$

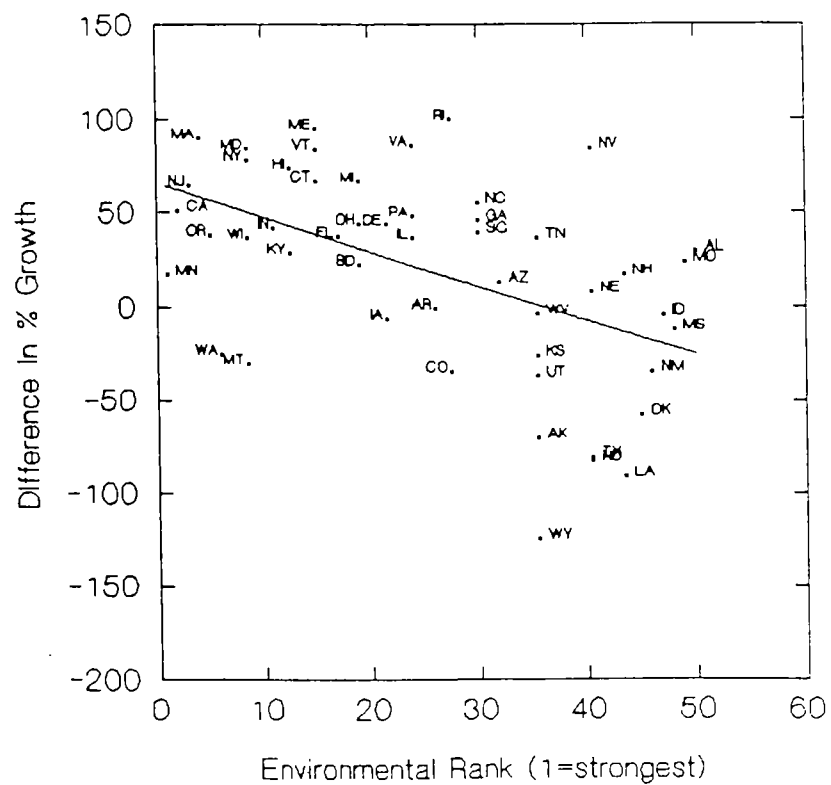
The statistical test of the manufacturing labor productivity data shown in Table III, while not as overwhelming as those for the other indicators, nonetheless strongly refutes the environmental impact hypothesis. It suggests that no systematic differences exist among the environmental categories when they are compared in terms of self-improvement on this indicator.

The box plot in Figure 4-4a reveals basically no difference in box placements or medians among the three groups of states. Inter-decade median increases in manufacturing labor productivity were 31%,

Figure 4-3: DIFFERENCES in GROWTH RATES
CONSTRUCTION EMPLOYMENT: 1970s and 1980s

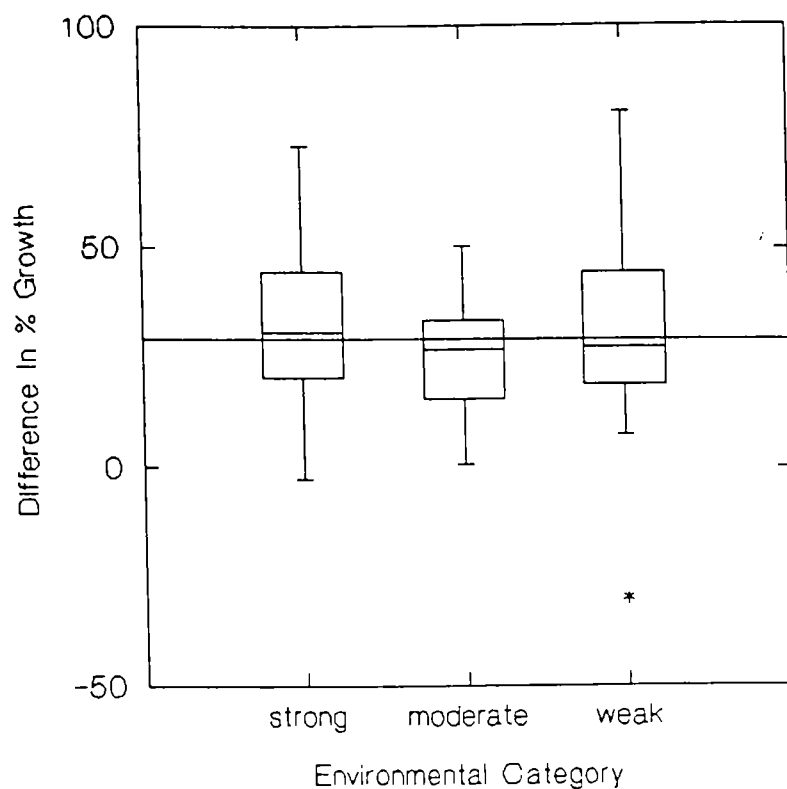


(a)

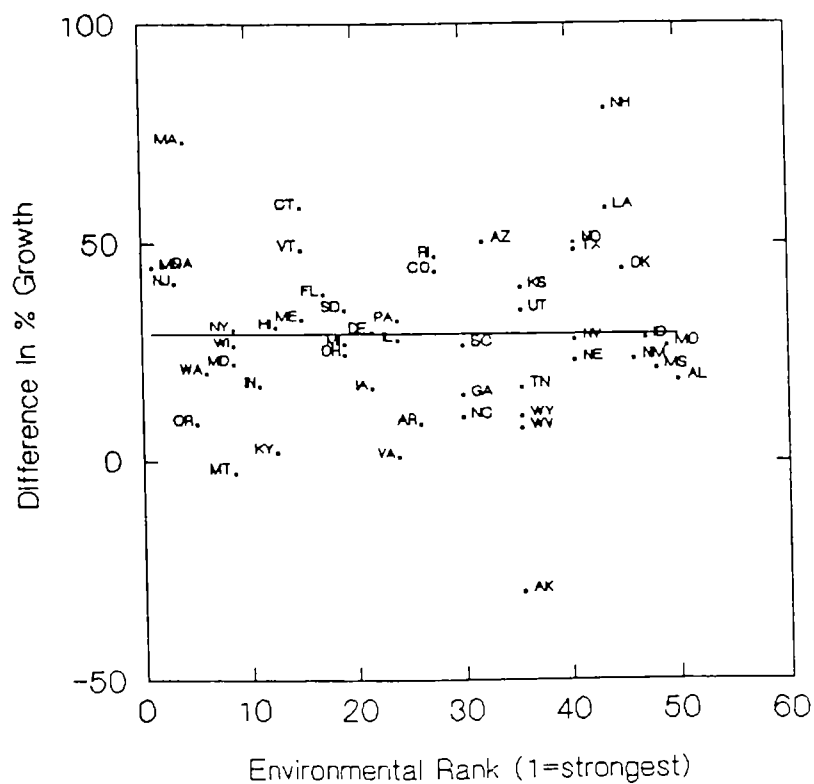


(b)

Figure 4-4: DIFFERENCES in GROWTH RATES
MANUFACTURING LABOR PRODUCTIVITY: 1970s and 1980s



(a)



(b)

28%, and 27% for environmentally strong, moderate, and weak states, respectively.

It is not surprising therefore that the correlation shown in **Table IV** is, for all intents and purposes, zero. Correspondingly, the scatterplot in **Figure 4-4b** shows a random cloud distributed about a horizontal (zero-fit) regression line. Once again New Hampshire stands out as an anomaly among the environmentally weak states. Its atypically high increase in manufacturing labor productivity is paralleled by the performance of its neighbor Massachusetts. But New Hampshire's effect in the analysis is cancelled out by the other extreme case among the environmentally weak states, Alaska.

This null result forces us to reject the environmental impact hypothesis, which expects that weak environmental states should show improving manufacturing labor productivity as industry migrates. Environmentalism appears to have no observable systematic effect on manufacturing productivity growth among the states.

4.2.5 Overall Productivity Growth: Does environmentalism produce a general dumbing-down of the work force to the point that its effect can be observed in declining overall labor productivity growth among the environmentally strong states? The pair of hypotheses examined for differences in overall labor productivity (dPROD) is:

$$H_{\text{null}} : dPROD_{\text{strong}} \geq dPROD_{\text{moderate}} \geq dPROD_{\text{weak}}$$

$$H_{\text{II}} : dPROD_{\text{strong}} < dPROD_{\text{moderate}} < dPROD_{\text{weak}}$$

Based on the statistical test reported in **Table III** the answer is no. This assertion of

the environmental impact hypothesis is not supported by the data. The likelihood that there is either no systematic difference among the environmental categories, or that the difference runs contrary to the environmental impact hypothesis is over 99.7%.

Figure 4-5a suggests that environmentally strong states did experience higher increases in overall labor productivity growth compared to environmentally weak states. The difference between the environmentally strong and moderate states seems to be insignificant. Environmentally strong states showed inter-decade improvements averaging 14%. Environmentally moderate states showed inter-decade increases in overall labor productivity of around 12%. The environmentally weak states averaged an 8% increase, a little more than half that of the environmentally strong states.

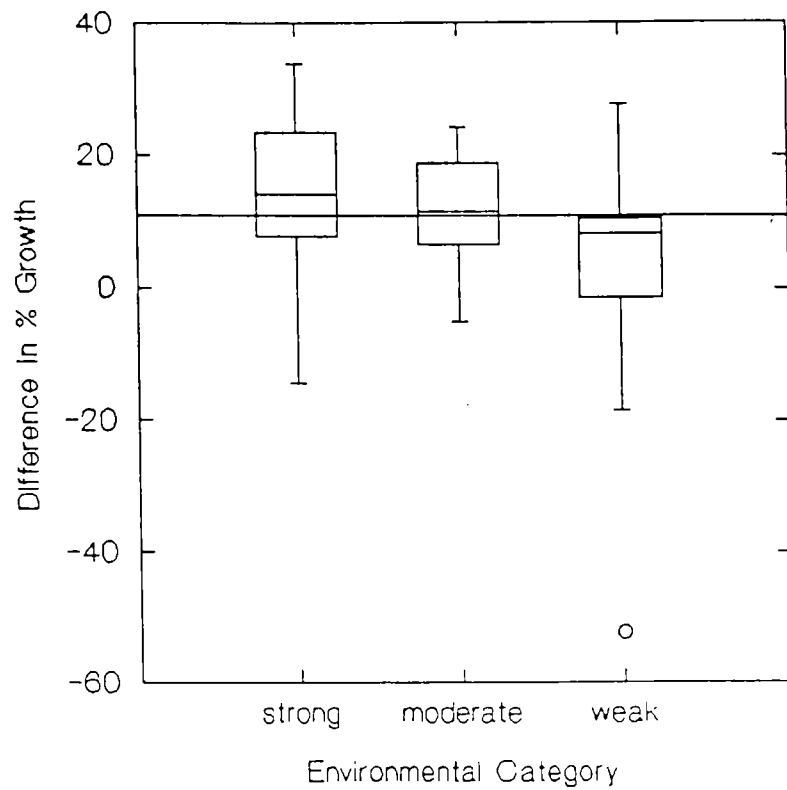
Is the apparent positive relationship between environmentalism and this indicator real? The correlation of +0.36 in **Table IV** implies that the relationship is indeed real.

Examining **Figure 4-5b** the energy and sagebrush states do not cluster in a poor showing among the environmentally weak states, as they did for the other indicators. Alaska is an outlier, which when excluded from the analysis barely affects the correlation (it drops for +.36 to +.35)

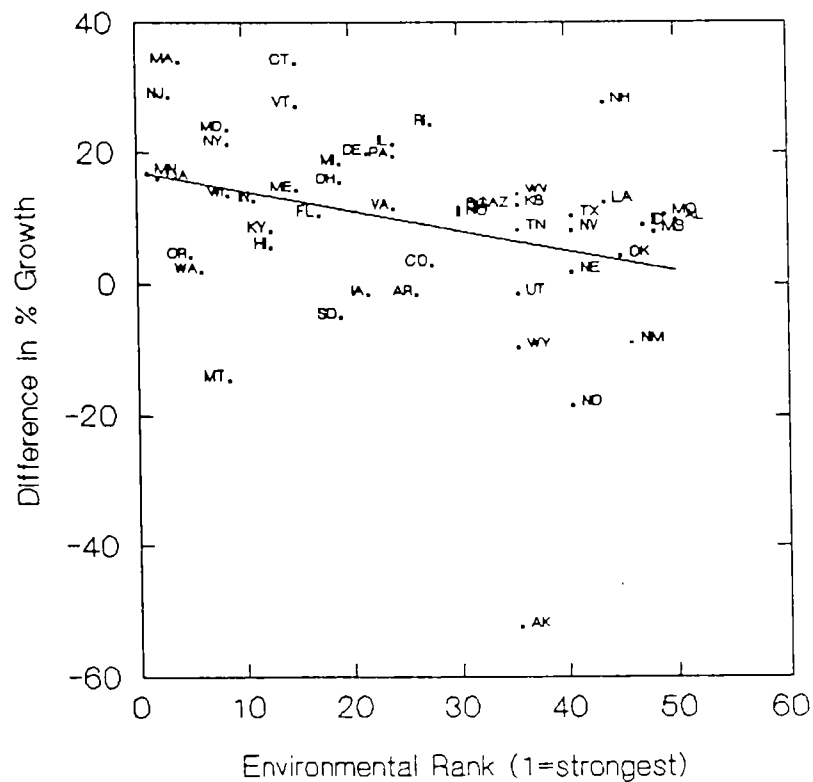
4.3 Summary

This subtle version of the environmental impact hypothesis is not supported by the data. When economic performance was measured in terms of inter-decade gains in growth in gross state product, total

Figure 4-5: DIFFERENCES in GROWTH RATES
OVERALL LABOR PRODUCTIVITY: 1970s and 1980s



(a)



(b)

employment, construction employment, and overall labor productivity the states with higher environmental ranks systematically outperformed those with lower environmental ranks. No systematic differences were found when the states were compared in growth in manufacturing labor productivity. This null result likewise forces rejection of the environmental impact hypothesis.

Among all the economic indicators construction employment growth exhibited the strongest positive association with environmental rank. What should have been a powerful leading indicator that confirmed the environmental impact hypothesis ended up as offering the strongest contrary evidence.

5. DISCUSSION

When this study was first conceived it seemed reasonable to assume that it would either confirm a modest negative relationship consistent with the environmental impact hypothesis, or it would find a null relationship. After all the environmental impact hypothesis is at first glance quite plausible. Finding a positive correlation between environmentalism and economic growth was, therefore, a surprise.

There is always the danger in any analysis that extraneous factors will either create or mask patterns in the data that can be attributed mistakenly to the variables being examined. Such threats to the validity of the analysis are often ignored when the findings seem unambiguous, as they appear here. But irrespective of whether the results confirm one's suspicions or run contrary to what one expects it is necessary to ask: What other factors outside those posited in this study may account for the results?

5.1 Alternative Explanations for the Positive Correlation Between Environmentalism and Economic Growth

Three possibilities come immediately to mind. First is the possible overshadowing effects of the big state economies, such as California, New York, and Texas. Second is the changing economic context of the 1970s and 1980s. Third is the possibility that there are group characteristics among the states that skew the results.

5.1.1 Big State Economies: One obvious alternative explanation is that the results are driven by "big state" economies. On the one hand, the large industrial states tend to have the most severe environmental problems they

and so they should also tend to have the most burdensome environmental policies and programs. At the same time, by virtue of the sheer size and diversity of their economies they may also tend to show the strongest economic growth.

On the other hand, the small economy states are likely to have fewer environmental problems and thus less burdensome environmental controls. At the same time their relatively small size also provides less of a foundation for vigorous and robust economies.

The variation in state economics, measured in terms of 1982 gross state product, is shown **Figure 5-1**. The largest economy (California) is some 64 times that of the smallest (Vermont). There is a natural break in the distribution at around \$80 billion below which there are forty-one states. This is followed by a cluster of six states between \$100 billion and \$160 billion, and then New York and California. What happens to the analysis when big state economies are excluded from the data set?

In a most extreme test **Table V** reproduces the analysis for the comparison of the 1970s and 1980s limiting the data set to the twenty-five states with gross state products under \$40 billion. The hypothesis tested corresponds to the subtle version of the environmental impact hypothesis: Do states with stronger environmental records suffer poorer gains in economic growth compared to weaker environmental states?

The results in **Table V** are entirely consistent with those presented in **Table III**. Tests on every indicator suggest that either

FIGURE 5-1: THE DISTRIBUTION OF
STATE ECONOMIES (1982)

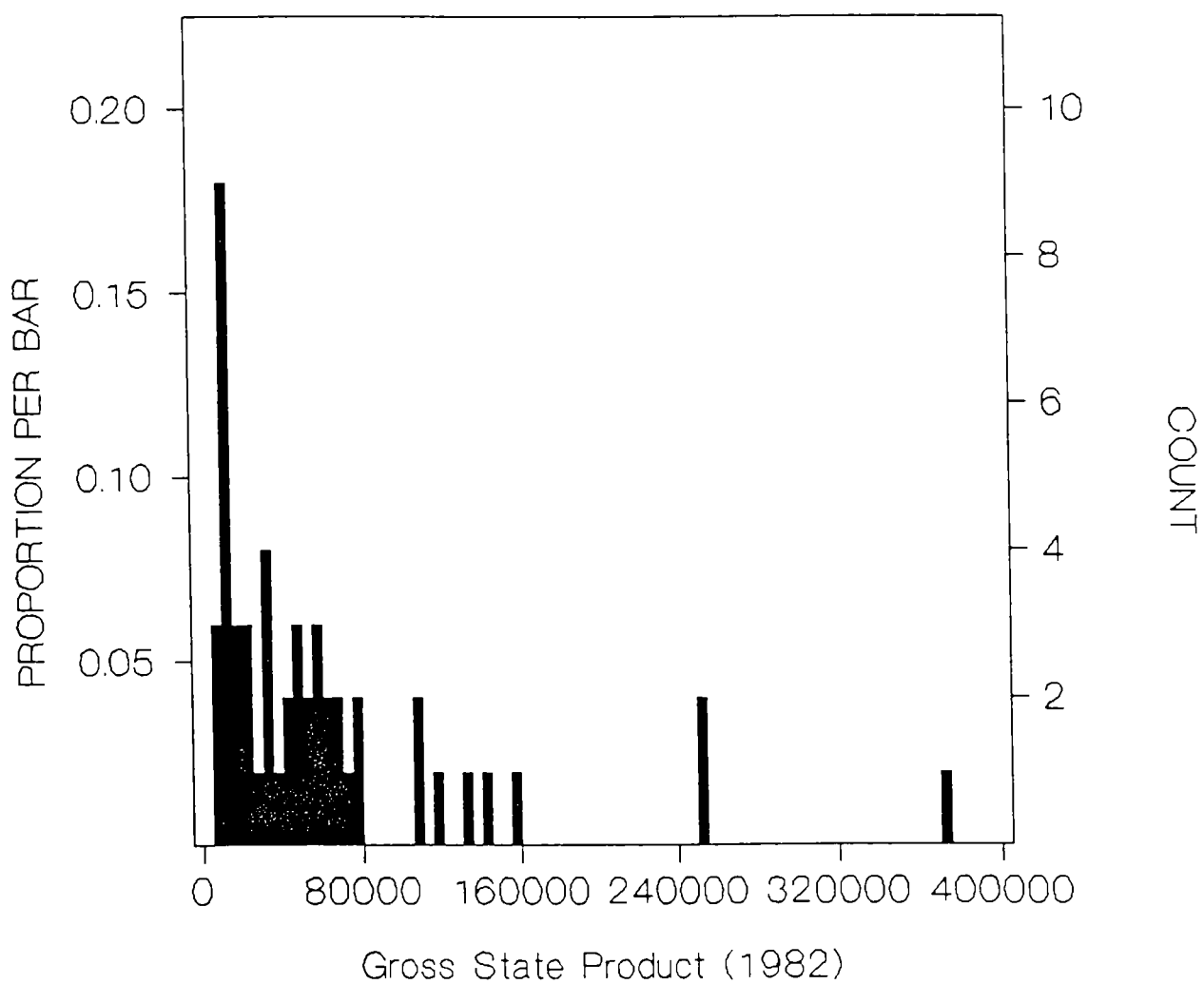


Table V Among the 25 States with Gross State Products Under \$40 billion (1982), Did Those with Stronger Environmental Policies Show Poorer Inter-Decade Economic Gains than Those with Weaker Environmental Policies?

25 States With Gross State Products Under \$40 billion (1982)

ECONOMIC GROWTH INDICATOR	SIGNIFICANCE TEST		ACCEPT ENVIRONMENTAL IMPACT HYPOTHESIS?
	Z-Score*	Prob.	
Gross State Product	-2.15	>0.984	no
Total (Non-Farm) Employment	-2.80	>0.997	no
Construction Employment	-2.91	>0.998	no
Manuf. Labor Product Productivity	-0.14	>0.556	no
Overall Labor Productivity	-0.90	>0.816	no

* Jonckheere's test of ordered alternatives is used to test for ordered differences among the three environmental categories in accordance with H_{0a} . A Z-score of +1.28 or greater, corresponding to a significance level of 0.10 or less, is required to accept the environmental impact hypothesis as true. See: Hollander and Wolfe (1973) and Lehmann (1975) for a description of Jonckheere's test..

Table VI Among the 25 States with Gross State Products Under \$40 billion (1982), Did Those with Stronger Environmental Policies Show Better Inter-Decade Economic Gains than Those with Weaker Environmental Policies?

ECONOMIC GROWTH INDICATOR	CORRELATION		IS THERE A TRUE POSITIVE CORRELATION?*
	r-value	Prob. $r = 0$	
Gross State Product	+0.23	< 0.13	no
Total (Non-Farm) Employment	+0.38*	< 0.03	yes
Construction Employment	+0.38*	< 0.03	yes
Manuf. Labor Product Productivity	-0.05	< 0.60	no
Overall Labor Productivity	+0.02	< 0.46	no

*An r-value of +0.33 or greater, corresponding to a significance level at or below 0.05, is required to accept the hypothesis that environmentalism is positively associated with a particular indicator of economic growth. This is the converse of the environmental impact hypothesis.

there is no systematic relationship between environmentalism and economic growth, or there is a positive relationship. **Table VI** provides the associated correlation analysis, testing for the significance of a positive relationship. Here environmentalism is still positively associated in a statistically significant way with total employment and construction employment. With this restricted dataset the other indicators fail to support the existence of a positive association between environmentalism and economic growth. Nonetheless they do allow us to reject the environmental impact hypothesis' prediction of true underlying negative correlations.

Perhaps more reasonably, when the data set is restricted to the 41 states with gross state products under \$80 billion (1982), thus excluding only the really uncharacteristic economies, all the positive correlations between environmental rank and the economic growth indicators are statistically significant.

The stability of the results despite this radical pruning of the data set means that we can dismiss the alternative explanation that "big economies" are masking the true negative effects of environmental policy on economic prosperity. The environmental impact hypothesis is firmly repudiated. The existence of a positive relationship between environmentalism and economic growth is consistently supported.

5.1.2 Changing Economic Context:

Another possible explanation for the results reported might be the changing economic context. That is, changing fiscal, energy, regulatory, and tax policy may simply swamp the negative effects of environmentalism on the economy. And if these shifts were correlated in time, they might account for the

positive association found in the analyses. The election of Ronald Reagan in 1980 was certainly this type of economic watershed..

The irony in this alternative explanation is, of course, the big shift in economic and regulatory policies that took place as part of the Reagan revolution was specifically targeted to help these states that ultimately turn out to be the poorest performers in this study. Energy deregulation and the relaxing of restrictions governing natural resource exploration and extraction from public lands were hallmarks of the Reagan revolution policies.

In fact this study's research design, through its choice of time frame and significance levels, was "biased" in favor of those states that should have benefited disproportionately from Reagan administration policies. Therefore, if the changing economic context has affect the results of this study it is most likely masking an even stronger true positive association between environmentalism and economic growth.

More to the point, if practically every other conceivable economic factor such as the dynamics of the international currency market, the size of federal deficit, Japanese investment policy, the price of oil, or changing technology so readily overwhelms, masks, or inverts the putative negative effects of environmentalism then we should really turn our attention elsewhere. The argument that one cannot observe the harmful economic effects of environmentalism because they are lost in the noise of contemporary economic trends and events is an argument that concedes the triviality of the environmental impact hypothesis from both a substantive and a policy perspective.

5.1.3 Group Characteristics Among the States: A third possible alternative explanation for the results argues that peculiarities inherent in the characteristics among one or more groups of the states may account for the findings. We have already considered one such group: the big economy states.

Reexamining the box plots and scatter plots in **Figure 4-1** through **Figure 4-5** it would appear that from the perspective of relative economic performance the differences between strong and moderate environmental states are slight. The useful analytic distinction, therefore, is between the weak environmental states and all the rest. This is an important conclusion because the states that make up the moderate environmental category are similar to the weak environmental states in terms of their general socioeconomic-economic profiles.

Why then do the weak environmental states do so poorly? As we look over the states that comprise the weak category we find that a number are energy producing states such as Texas, Louisiana, Oklahoma, and Alaska. It is possible that the boom/bust cycle that rolled through the energy sector in the 1970s and 1980s may account for their poor showing -- regardless of their relative environmental status.

Yet even when these cases are removed the basic results stand. The more restricted data set still shows that the economic performance among the weak environmental states is neither better than, nor worse than that of strong and moderate environmental states.¹⁴

Another threat to the validity of the analysis that is linked to group characteristics

is a statistical phenomenon known as *regression to the mean*. Basically, it raises the possibility that the states that comprise the environmentally strong category may have experienced unusually weak economic growth in the 1970s while those in the environmentally weak category experienced unusually strong growth. In the 1980s as economic patterns returned to more normal forms both groups would regress towards more average performance. In this statistical adjustment strong environmental states would show improved growth while the weak environmental states would show decline. In this way an inflated, if not false, positive correlation might be obtained.

Theoretically this hypothetical effect might call into question the strength of positive correlation between environmentalism and economic growth. It cannot, however, affect the bottom line conclusion that the negative relationship predicted by the environmental impact hypothesis fails to materialize. Given the findings for the test of the forceful version of the environmental impact hypothesis presented in Section 3 at most regression effects would imply that the correlation uncovered in Section 4 should be zero, rather than positive.

When the time range for the two periods examined are varied by several years, the results in Sections 3 and 4 change marginally, but the positive correlations remain. This suggests that if a regression effect is present in the data it only reduces slightly the magnitude of the positive correlations. The positive association between environmental record and economic performance remains intact.

5.2 Consistency With Other Studies

As noted at the beginning of this study, there have not been many systematic efforts to examine the relationship between environmental policy and economic performance. Those few studies that do exist support the basic finding of this paper.

Several macroeconomic and microeconomic studies published in the late 1970s tried to simulate the effects of increasing environmental regulations on economic performance. These modelling exercises report marginally conflicting results. Some suggested that environmentalism may produce small positive economic effects in GNP and employment. Others report potentially small negative effects.¹⁵ The differing assumptions and mathematical relationships used to structure these models are the most likely the causes of the variation in outcomes.

What is interesting, however, is that the estimated magnitude of the impact of environmental regulation on economic performance found in all of these macroeconomic simulations was marginal -- regardless of whether the direction of the effect was positive or negative. Environmental policy was not a major influence on economic performance, development, and growth when placed in the context of larger forces such as fiscal, monetary, and tax policy.

A recent survey of U.S. firms by the Bureau of Labor Statistics found that only one-tenth of one percent of layoffs in 1988 were attributed to "environmentally related" causes.¹⁶ This is an ambiguous category and since this was based on company responses, one might expect that even this number is

inflated. Nevertheless, if 99.9% of the jobs lost in the U.S. are attributable to something other than environmentalism, then the environmental impact hypothesis is not only fundamentally wrong it is irrelevant.

5.3 Transient and Local Effects

Does this mean that strict environmental policies and regulations have absolutely no negative economic impacts? The answer is clearly no. Specific environmental regulations can and do have transient affects on specific industries, local communities, and certain occupations. The case study literature, while of mixed quality, documents this well.

But these effects are limited in scope and duration, and few in number.¹⁷ While they are certainly important to those affected, and they can be unsettling at the community level, they are often barely noticeable at the state level. They are entirely undetectable at the national level.

Moreover, when such cases are examined closely environmental policies and controls do not turn out to be the root cause of the economic dislocations. Rather environmental intervention merely spotlights the underlying problems, and may accelerate their effects.¹⁸ The Spotted Owl/Old Growth Forest controversy is a good example where a regional industry experiencing serious decline for more than a decade is suddenly placed in the national limelight.¹⁹

There are also transient and local economic effects from environmental policies and programs that have positive impacts. Countervailing forces are often set in motion by environmental efforts that result in job creation, technological innovation, and the

rise of new industries.²⁰ Over time these act to offset transient and local negative effects, though there are almost certainly delays that are felt at the local level.

6. SUMMARY

The analyses presented in this study clearly refute the environmental impact hypothesis in either its forceful or subtle variant. States with stronger environmental policies and programs did not exhibit hobbled economic growth or development compared to those with weaker environmental records. Moreover, rather than detect the absence of a systematic relationship between pursuit of environmental quality and economic growth and development -- which would have been sufficient to dismiss the environmental impact hypothesis -- the data revealed a clear and consistent *positive* relationship between the states' environmental effort and their economic performance. States with higher environmental rankings outperformed states with lower environmental rankings on four of the five economic growth indicators. This surprising yet solid finding allows us to dismiss the environmental impact hypothesis with even greater confidence.

While these results may tempt the reader to infer that environmentalism stimulates economic prosperity, any such conclusion at this point would be speculation. It is absolutely clear that the environmental impact hypothesis is repudiated by the data. However, the positive association between state-level environmentalism and economic prosperity may be the consequence of some third factor that is positively correlated with both environmentalism and economic growth. For example, states that tend to favor strong environmental policies may also be more likely to invest in education, health, transportation and communications infrastructure, and other elements that stimulate and support economic growth. In this case, the positive correlation between environmentalism and economic growth

would be spurious.

There are, of course, some plausible arguments for accepting the positive association between environmentalism and economic growth as an indicator of a partial cause and effect relationship. Highly skilled and well educated workers tend to be attracted to regions that offer a better quality of life. Thus, new industries, high-technology firms, and R&D laboratories may well migrate to environmentally strong states.

Strict environmental controls may also have a "Darwinian" effect on industry. The desire to avoid the expected high costs of waste disposal and pollution abatement can fuel process and product innovation that result in improved productivity, higher input-output efficiencies, and substantial cost savings. This has been the experience of such prominent firms as the 3M Corporation, Dupont, and Raytheon.

While the results presented in this study are certainly consistent with such speculation, they are not proof of cause and effect.

At minimum we can conclude that shifts in environmental policy, whether intended to extend environmental control or reduce it, have no discernable effect on state economic performance. If environmentalism does have negative economic effects they are so marginal and transient that they are completely lost in the noise of much more powerful domestic and international economic influences. The environmental impact hypothesis, while theoretically intriguing, has no empirical foundation and focuses attention on what is certainly one of the least influential factors affecting the pace

of economic growth and development.

The benefits of environmental protection are obvious and demonstrable. It is clear from the data and analyses presented in this report that the states can pursue environmental quality without fear of impeding economic prosperity. For those who continue to argue that environmentalism hurts economic growth and prosperity the burden of proof now clearly falls on their shoulders.

ENDNOTES

1. See, for example, the excellent collection of essays in Vig and Kraft (1990).
2. See Rosenbaum (1991).
3. Mr. Iococca is quoted in Smith (1992;74-75).
4. Rosenbaum (1991), Vig and Kraft (1990), Vig and Kraft (1984).
5. Ling (1985).
6. Ling (1985).
7. See: Davis and Lester (1989), Vig and Kraft (1984), Rosenbaum (1991;124-127).
8. Between 1973 and 1980 federal expenditures for regulation and monitoring for pollution abatement and control grew by 77% in constant dollars, while state and local expenditures grew by roughly 36%. But this pattern was reversed between 1982 to 1989. Federal expenditures actually shrunk by about 20% over the period while state spending rose 21%. See: U.S. Department of Commerce (1992; Table 9).
9. This may seem like a bizarre way to go about testing a hypothesis, but it is standard statistical procedure. One does not test the actual hypothesis one is interested in, but rather its converse. If the converse hypothesis -- called the "null" hypothesis in statistical jargon -- proves unlikely, then one accepts the alternative as true. The methodological and analytical underpinnings of this approach of falsifying the converse hypothesis are discussed in any standard text on research methods.
10. It is convention that this probability is set to 5% (.05) or 1% (.01), which are much more stringent criteria than the 10% (.10) used here.
11. For the remainder of this report the **median** is used to represent the average value, rather than the mean. This lessens the impact of extreme outlying cases on the analysis. Since the most prominent outliers work against the environmental impact hypothesis, this tends to bias the analysis in its favor.

12. What we are actually doing here, once again, is testing the converse (null) hypothesis: that in reality there is either no correlation or there is a negative correlation between environmentalism and economic growth. For this data set consisting of 50 cases, a correlation greater than +0.23 would cause us to reject this null hypothesis that the true correlation is zero with a probability of 5% ($p \leq .05$) level. The .05 significance level is more stringent than that used to test the environmental impact hypothesis against the data.
13. In modelling terms, the forceful version focuses on the impact of environmentalism on the first derivative of economic performance with respect to time (i.e., growth) while the subtle version focuses on the second derivative of economic performance with respect to time (change in growth).
14. Once again, a null finding -- that is, a finding that suggests *no* systematic relationship between environmentalism and economic prosperity -- is sufficient to refute the environmental impact hypothesis.
15. OECD (1984), Data Resources, Inc. (1979), Muller (1980), Hollenbeck (1979), Haveman and Christianson (1977).
16. Cited in Lee (1990).
17. From the spotty data that are available, the number of jobs lost, plants closed, and local economies devastated due to the leveraged buy-out craze of the 1980s and the savings and loan failures -- which were both a direct result of government policies -- is probably more than one hundred times that due to "environment related" causes.
18. This issue is beyond the scope of this study, but will be addressed in a follow-on report.
19. See Anderson and Olson (1991).
20. See, for example Fischetti (1992), Cooper (1992).

APPENDIX I: Environmental Rankings of States -- 1982*

State	Environmental Rank	Category	State	Environmental Rank	Category
MN	1	strong	AR	26	moderate
CA	2	strong	RI	27.5	moderate
NJ	3	strong	CO	27.5	moderate
MA	4	strong	SC	30	moderate
OR	5	strong	GA	30	moderate
WA	6	strong	NC	30	moderate
MT	8.5	strong	AZ	32	moderate
WI	8.5	strong	AK	35.5	weak
MD	8.5	strong	KS	35.5	weak
NY	8.5	strong	WV	35.5	weak
IN	11	strong	WY	35.5	weak
KY	12.5	strong	UT	35.5	weak
HI	12.5	strong	TN	35.5	weak
ME	15	strong	ND	40.5	weak
VT	15	strong	NE	40.5	weak
CT	15	strong	NV	40.5	weak
FL	17	strong	TX	40.5	weak
SD	19	moderate	NH	43.5	weak
MI	19	moderate	LA	43.5	weak
OH	19	moderate	OK	45	weak
DE	21.5	moderate	NM	46	weak
IA	21.5	moderate	ID	47	weak
PA	24	moderate	MS	48	weak
IL	24	moderate	MO	49	weak
VA	24	moderate	AL	50	weak

* Based on Duerken (1983).

BIBLIOGRAPHY

- Anderson, H. Michael and Jeffrey T. Olson (1991) Federal Forests and the Economic Base of the Pacific Northwest (Washington D.C.: The Wilderness Society).
- Copper, Mary (1992) "Jobs vs. Environment," CQ Researcher, Vol. 2, No. 18 (May 15).
- Data Resources, Inc. (1979) The Macroeconomic Impact of Federal Pollution Control Programs: 1978 Assessment (NTIS PB-296 960/8SL)
- Davis, Charles E. and James P. Lester (1989), "Federalism and Environmental Policy," in Lester (1989), chapter 3.
- Fischetti, Mark. (1992) "Green Entrepreneurs," Technology Review (April), pp. 39-45.
- Haveman, Robert and Greg Christianson (1977) Jobs and the Environment (Scarsdale, N.Y.: Work in America Institute).
- Hollander, Myles, and Douglas A. Wolfe (1973) Nonparametric Statistical Methods (New York: John Wiley and Sons, Inc.)
- Hollenbeck, Kevin (1979) "The Employment and Earnings of Stationary Source Air Pollution," Journal of Environmental Economics and Management, No. 6, 208-231.
- Lee, Tony (1990) "Here Comes the Pink Slip," American Demographics, Vol. 12, No. 3, pp.46-49.
- Lehmann, E.I. (1975) Nonparametrics (San Francisco: Holden-Day, Inc.)
- Lester, James P., ed. (1989) Environmental Politics and Policy (Durham, N.C.: Duke University Press).
- Ling, Joe T. (1985) "Introductory Comments," in OECD (1985), pp. 104-108.
- Muller, Frank G. (1980) "The Employment Effects of Environmental Policy, An International Comparison: Germany and the USA," Journal of Environment Systems, No. 10, pp. 119-137.
- OECD (1985) Environment and Economics (Results of the International Conference on Environment and Economics, 18-21 June 1984).
- Rosenbaum, Walter A. (1989), "The Bureaucracy and Environmental Policy," in Lester, ed. (1989), chapter 8.

- Rosenbaum, Walter A. (1991) Environmental Politics and Policy (Washington D.C.: Congressional Quarterly, Inc.)
- Smith, Zachary A. (1992) The Environmental Policy Paradox (Englewood Cliffs, N.J.: Prentice Hall, Inc.)
- U.S. Department of Commerce (1992) Survey of Current Business , Volume 72, No. 6 (June).
- Vig, Norman J. and Michael E. Kraft, eds. (1984) Environmental Policy in the 1980s: Reagan's New Agenda (Washington D.C.: Congressional Quarterly, Inc.)
- Vig, Norman J. and Michael E. Kraft, eds. (1990) Environmental Policy in the 1990s (Washington D.C.: Congressional Quarterly, Inc.)

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
003. memo	Kenneth Berlin to Jeremy Rosner and Katie McGinty re list [pre-presidential, political] (4 pages)	08/13/1992	Personal Misfile

COLLECTION:

Clinton Presidential Records
Council on Environmental Quality
Kathleen "Katie" McGinty
OA/Box Number: 2619

FOLDER TITLE:

Economics/Jobs [2]

2012-0769-F
kc1983

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]



American Institute for Pollution Prevention



Members

<u>Organization Represented</u>	<u>Name</u>	<u>Affiliation</u>
Aerospace Ind. Asso. of America	Elliott Berkibiser	The Boeing Co.
Air & Waste Management Association	✓ David M. Benforado	3M Company
	Paula C. McLemore	Ethyl Corporation
Aluminum Association	Dr. R. Lee Byers	Aluminum Company of America
American Academy of Environmental Engineers	Dr. Frederick G. Pohland	Univ. of Pittsburgh
American Chemical Society	Dr. Robert B. Pojasek	GEI Consultants, Inc.
	Dr. William G. Mikell	(Ret) E.I. duPont de Nemours & Co., Inc.
American Institute of Chemical Engineers	Dr. Charles A. Wents	International Scientific Management, Inc.
American Iron & Steel Institute	Anthony A. Spinola	U.S. Steel
American Paper Institute	Karl Ayers	Mead Corporation
American Petroleum Institute	Dr. Howard Klee, Jr.	Amoco Oil Co.
American Society of Civil Engineers	Terrence J. McManus	Intel Corporation
Chemical Manufacturers Association	Joseph L. Lindsly	Dow Chemical Co.
Department of Defense	CEO Edmund Miller	Office of the Assistant Secretary of Defense
Electric Power Research Institute	Dr. George M. Hidy	Electric Power Research Institute

AIPP

University of Cincinnati
Department of Civil and Environmental Engineering
741 Rhodes Hall (Mail Location 71)
Cincinnati, OH 45221
(513) 556-3693 (513) 556-3648

MEMBERS

-2-

Organization Represented	Name	Affiliation
EPA Science Advisory Bd.	Richard A. Conway	Union Carbide Corp.
Health Industries Manufacturers Assoc.	Pat Bartholomew	Baxter Healthcare Corp.
National Agricultural Chemicals Association	Dr. Ralph F. May <i>CEO: Eber Woolard see WST article</i>	E.I. duPont de Nemours & Co., Inc.
National Research Council	Dr. David T. Allen	University of California at Los Angeles
National Roundtable of State Waste Reduction Programs	Terry Foecke	Waste Reduction Inst. for Training & Applications Inc.
Society of Women Engineers	Diana J. Evans	Woodward-Clyde Consultants
Solid Waste Association of North America	Robert A. Peters	Solid Waste Association of North America
Water Environmental Federation	Alan E. Rimer	Blasland, Bouck & Lee
EMERITUS MEMBER	Dr. Joseph T. Ling	3M (Ret.)

Chairman - Dr. Robert B. Pojasek
GEI Consultants, Inc.

Vice Chairman - Dr. R. Lee Byers
Mgr. Environ. Programs
Aluminum Co. of America

Council Chairpersons:

7 Economics - Mr. Elliott Berkhisser Implementation - Ms. Paula McLemore
Education - Mr. Alan E. Rimer Technology - Dr. Ralph F. May

Executive Director -

Dr. Thomas R. Hauser, Research Professor
University of Cincinnati

EPA Liaison (ORD) -

Dr. David G. Stephan, Sr. Engineering Advisor
EPA Risk Reduction Engineering Laboratory

EPA Liaison (PPO) -

Mr. Gerald F. Kotas, Director
Pollution Prevention Division
U. S. EPA

Reprinted From Journal of the Air & Waste Management Association, Vol. 41, No. 4, April 1991

Regulatory Barriers to Pollution Prevention:

A Position Paper of the Implementation Council of the American Institute for Pollution Prevention

R. Lee Byers

Aluminum Company of America
Pittsburgh, Pennsylvania

Pollution prevention/waste minimization is a win-win-win situation for government, industry, and the public, which offers more than just protection of the environment for all. Industry gains from reduced capital and operating costs, reduced liabilities, cleaner and safer working conditions, conservation of energy and material resources, and the opportunity for government and industry to work together in a cooperative manner. However, a number of regulatory barriers exist which discourage pollution prevention/waste minimization. This paper provides examples from the aluminum, chemical, petroleum, and wood treating industries of how these regulatory barriers become disincentives. To promote pollution prevention/waste minimization, Congress and the U.S. EPA need to reexamine those RCRA provisions which support a command and control strategy that creates the barriers. The barriers include the distinction between value and valueless materials, offsite storage requirements prior to reuse/recycle, the "Derived from Rule", the "Burning for Fuel Rule", land ban technology standards, and RD&D restrictions. A new RCRA Pollution Prevention/Waste Minimization subtitle is proposed to eliminate or minimize these barriers.

At a conference in 1982 in Winston-Salem, North Carolina, Dr. Paul Palmer, a California chemist active in the field of waste reduction and cleaner technologies for many years, identified a series of barriers to maximum waste reduction¹. He indicated that about 40 percent of the barriers were political, including piecemeal legislation, bureaucratic resistance, and human conservatism. According to Palmer, financial restrictions cause about 30 percent of the barriers including disposal "subsidies", scarce money, and an entrenched disposal industry. Another 20 percent of the barriers to waste reduction were attributed to media and public ignorance and misinformation. Only about 10 percent of the barriers were attributed to technology.

Much has changed since 1982 pertaining to pollution prevention. The Hazardous and Solid Waste Act set the direction for moving toward waste reduction. State environmental agencies have established information clearinghouses, waste exchanges, and technical assistance programs. The Office of Technology Assessment and subsequently the U.S. EPA became active, with EPA establishing an Office of Pollution Prevention in June 1988. Congress has been active in proposing legislation. Disposal subsidies have been reduced, and the public's awareness and knowledge have increased considerably. Despite these positive developments, most, if not all, of the categorical barriers to waste reduction identified by Palmer still exist. While the percentage each category may contribute is probably different today, legislative and regulatory barriers are still viewed by many as the major obstacles to pollution prevention, waste reduction, and waste minimization.

A Proposal for a New RCRA Subtitle on Pollution Prevention/Waste Minimization

The purpose of this paper is to address what is perceived by much of industry today as the primary barriers to pollution prevention and waste minimization—the regulatory barriers. The Resource Conservation and Recovery Act (RCRA) regulations are based on a command and control strategy—probably the only strategy which could have changed the country's waste management practices. But this strategy is restrictive, punitive, and in the case of pollution prevention/waste minimization, counterproductive.

Pollution prevention, waste reduction, and waste minimization represents a win-win-win situation for government, industry and the public. Pollution prevention and waste minimization offer more than just protection to the environment—they offer operating cost savings, reduced liabilities, cleaner and safer working conditions, and preservation of energy and material resources. A few major companies have been quick to realize these advantages and, voluntarily, have been leading industry in setting the trend towards waste minimization and reduction. However, many industry efforts have been thwarted by restrictive regulations, stringent definitions, and inflexible rules.

A new RCRA Pollution Prevention/Waste Minimization subtitle is proposed to eliminate or minimize these barriers. By providing a new set of regulations which encourage pollution prevention/waste minimization while retaining the restrictive and burdensome regulations pertaining to treatment, control, and disposal of wastes, a major new driving force for waste reduction will result. This paper identifies barriers and issues, summarized in Table 1, which should be addressed in preparing a Pollution Prevention/Waste Minimization subtitle.

EPA's Pollution Prevention Policy Statement as published in the Federal Register² was a major step toward eliminating some of the confusion surrounding the terms pollution prevention, waste reduction, waste minimization, and recycling. The policy statement replaces the RCRA term "waste minimization" with the term "pollution prevention" to bring about a multimedia focus as opposed to a more restrictive focus created by a term associated with RCRA. Further, the policy establishes a hierarchy of waste management by placing pollution prevention (source reduction and environmentally sound recycling) above waste treatment, control and disposal.

The policy statement leaves unaddressed, however, where waste minimization resulting from reuse, recycle and reclamation fits into pollution prevention. Wastes once generated and removed from the process seem to fall outside the umbrella of pollution prevention. Yet such wastes, properly managed on-site through segregation, improved work procedures, and good housekeeping can be reduced in amount, reducing on-site or off-site treatment requirements. Surely such management meets the intent of Congress when it declared that "generation of hazardous waste is to be reduced or eliminated as expeditiously as possible" concluding the statement with "waste nevertheless generated should be managed so as to minimize the present and future threat to human health and the environment."³

Similarly, out-of-loop and off-site recycling, although acknowledged that when properly conducted offers the potential for significant economic benefits and reduced risk, is not recognized in the policy statement as fitting into the scope of pollution prevention. The Federal Register notice did request public comment on this issue. Perhaps belatedly, the belief is expressed here that out-of-loop and off-site recycling which results in "minimizing the present and future threat to human health and the environment" and which is conducted in an environmentally sound, and assured manner, falls fully in the realm of pollution prevention.

Finally, EPA's pollution prevention policy is silent concerning reuse and reclamation of secondary materials. If beneficial reuse and reclamation activities can be undertaken in an environmentally sound manner and result in "minimizing the present and future threat to human health and the environment," why do these activities not meet the intent of Congress? We believe they do and propose that they be included in the realm of pollution prevention.

Thus, to encourage the full range of activities which fall within the realm of pollution prevention and to further reduce the confusion which surrounds present day terminology, it is proposed that EPA adopt the following hierarchy for pollution prevention:

POLLUTION PREVENTION

WASTE REDUCTION

Elimination at the Source

Reduction at the Source

On-site Closed-Loop Recycling, Reuse, and Reclamation

WASTE RECYCLING, REUSE AND RECLAMATION

On-site Out-of-Loop Recycling, Reuse and Reclamation

Off-site Recycling, Reuse and Reclamation

The pollution prevention hierarchy should be kept separate from the waste management hierarchy defined as:

WASTE CONTROL/CONTAINMENT

On-site and Off-site Waste Treatment

On-site and Off-site Waste Disposal

Distinction Between Secondary Material and Hazardous Waste

The definition of hazardous waste as originally contained in RCRA is multifaceted and includes the broad categories

of hazardous characteristics, nonspecific source listed wastes, specific source listed wastes, and discarded and off-spec commercial chemical products. RCRA focuses on waste management and as such needed to define waste by equating discarded materials with materials having no value. Over the years the complexity of defining when material is a hazardous waste has increased with the evolution of RCRA, leading to explicit exemptions, management based standards (burning as a fuel, recycling) and land banned wastes. Added to these categories of wastes are numerous classifications which associate a waste with a set of regulations in addition to, or in lieu of, those standards which apply to all "RCRA hazardous wastes". These classifications, listed below, compound the complexity of determining when a material is a hazardous waste:

By-product

Corrosive waste treated by elementary neutralization

Dioxin waste

Hazardous waste fuel

Inherently waste-like

Reactive/ignitable

Restricted waste (meets treatment standard)

Restricted waste (does not meet treatment standard)

Spent material

Used oil fuel

It is not the purpose of this paper to suggest changing the definition of hazardous wastes which brings a material under the regulation of Subtitle C when it is "managed", that is, treated or disposed of. The purpose is to propose a new definition which would allow a material having value (a secondary material), which is not being treated or disposed of, to be processed to recover or make use of a chemical constituent or property. This definition should result in the material coming under a new RCRA pollution prevention/waste minimization subtitle written to deal with secondary materials.

Obviously, anything done at the source to eliminate or reduce the amount of hazardous waste is outside the scope of RCRA. Once a hazardous waste (as presently defined) is generated and the generator chooses to reuse, recycle or reclaim the waste to recover any beneficial constituent or utilize any property of the waste, the generated waste should not be considered a waste but a secondary material which can be used as a raw material for a reuse, recycle or reclamation process. For example, there are intermediate products possessing hazardous properties which serve as raw materials and subsequently as feedstocks to manufacturing and production processes. There are no regulations on moving intermediate products from one processing unit to another, for transporting, storing, and additional processing. Industry has demonstrated that it is capable of safely handling (avoiding spills, proper storage, proper recordkeeping, etc.) valuable intermediate product.

Why should secondary materials serving as a substitute for a raw material or as an intermediate product be regulated by RCRA any more than "hazardous" process streams or materials which industry presently is safely handling?

The answer may be that a naturally occurring raw material or process stream has historically been given a much greater commercial value than a material which has been considered a "secondary material". But it is the escalating costs of otherwise treating and disposing of the "waste" and subsequent long-term liability which today gives added "value" to proper handling of waste. Economics are driving generators toward environmentally sound raw material substitution or reuse, recycle, and reclamation by converting a "waste" into a process intermediate. To ensure that the economics tip strongly in favor of reuse, recycle and reclamation, hazardous waste regulations for these activities should be less onerous, complex, and costly than those for treatment and disposal.

Table 1. Examples of how regulatory barriers have eliminated pollution prevention and waste minimization opportunities for some major industrial wastes

Industry	Waste	Barriers	Comments
Aluminum	Spent Potlining-K088	Distinction between Raw Material and Solid Waste Derived From Rule Burning Rule Permitting (for storage)	Santee Cement Co. terminated receipt of potlining to avoid permitting. Fluoride was beneficially being used in cement while cyanide was being destroyed. Tests had demonstrated no adverse environmental impacts from potlining addition to cement kilns. Potential reuse of 50,000 tons/yr eliminated because of regulatory barriers. Use of potlining as a fluoride mineralizer by American Rockwool, who was paying comparable raw material prices for potlining, terminated because of permitting requirements, derived from rule and burning rule. Extensive tests had demonstrated environmental impact or mineral wool plant improved with use of potlining. Reuse of 7,000 tons/yr of potlining prevented by regulatory barriers.
Woodtreating	Wastewater treatment sludge from cresote and/or pentachlorophenol-K001	Derived From Rule Delisting	Ash from the incineration of K001 waste is completely inert. Yet due to the derived from rule it is classified as a RCRA hazardous waste. Delisting is a long, drawn-out process, resulting in a completely inert material being landfilled and consuming valuable space in a hazardous waste landfill.
Chemical	Various organic chemicals	Rules pertaining to amount of waste which a research and development laboratory or pilot plant can process.	Research is underway concerning the biodegradation of organic hazardous wastes which requires receipt, storage, and treatment of the wastes. Current rules discourage such work due to the time and quantity restraints imposed by RCRA.
	Still bottoms-K018	Distinction between Raw Material and Solid Waste Permitting (construction)	A process to thermally oxidize K018 wastes, recovering both energy and chlorine in the form of hydrochloric acid has been developed. The 2-8 years time and the cost to obtain a RCRA permit plus the corrective action investigation imposed on an entire chemical plant have resulted in abandonment of the technology.
	Offspec Dowtherm	Permitting (one time treatment requirement) Offsite storage prior to reuse or recycle	Dowtherm became contaminated at customer's plant. It could have been filtered and reintroduced into customer's process. But it could not be stored for treatment at the customer's site and the original manufacturer could not receive it back since he did not have a permit to treat offspec hazardous "waste". The offspec Dowtherm was sent to an incinerator for disposal, a less than desirable or optimum environmental solution.
	Wastewater Recycling	Derived From Rule	Treated wastewater from a RCRA permitted wastewater treatment facility cannot be considered for reuse/recycle in non-critical process applications because of previous association with a listed waste. Resources that might otherwise have been conserved are disposed of, consuming other valuable resources—fresh water makeup and landfill space.
	Various Secondary Materials	Distinction between Secondary Material and Solid Waste Permitting (for storage)	Many secondary materials (coproducts) as well as unused reagents and diluted materials have intrinsic value if they could be recycled. However, for this to be done, some recovery (purification, concentrating, or other cleanup is necessary). Current RCRA waste definitions preclude this from being done except under the harsh RCRA regulations. Many times storage awaiting equipment availability as well as storage for quantity accumulation is necessary. Presently such storage requires a RCRA permit. A storage exemption for reusers/recyclers similar to the 90 day storage provision for generators is needed.
Petroleum	API Separator Sludge K051	Distinction between Raw Material and Solid Waste Permitting (for storage)	Coke produced from petroleum hazardous waste containing oil at the same refinery which generated the waste is exempt from RCRA. For a refinery which does not produce coke, the oil would have to be shipped offsite to a refinery having a coker. The offsite refinery would be regulated by RCRA, which effectively eliminates this reuse alternative.
	Various RCRA Characteristic Wastes	Burning Rule Derived From Rule	Characteristic wastes generated in a petroleum refinery could be burned for energy in a FCC unit. The burning rule would require the entire FCC unit to be permitted as a RCRA treatment facility. The owner, in order to avoid having to permit the FCC, chooses not to burn the characteristic waste, thereby losing the capacity of the facility for environmentally sound reuse of these characteristic wastes.
	Dissolved Air Flotation K048 API Separator Sludge K051	Delisting	Under current regulations, once a waste is listed as hazardous it must be handled and disposed of as such even though it may no longer be hazardous. The cost of disposal remains the same for listed wastes that have been reused/recycled and for wastes which have not. Delisting is theoretically an option but in reality a virtual impossibility. There is simply no incentive to pursue reuse/recycle.

To achieve this, it is proposed that a new RCRA subtitle be written to cover pollution prevention/waste minimization activities in such a way that generators would naturally choose to be regulated by that subtitle rather than Subtitle C (the new subtitle would obviate the need for the existing provisions in Subtitle C pertaining to recycling). To determine when a material is regulated under the existing Subtitle C or would come under a Pollution Prevention/Waste Minimization Subtitle a distinction between what is a secondary material and what is a hazardous waste must be made.

Other Major Barriers

Off-site Storage Prior to Reuse/Recycle

Provision needs to be made for storing "secondary material" being recycled off-site prior to its being processed. It is not practical to have to instantly process a material as soon as it reaches a recycle facility. RCRA allows a ninety day storage period for generators without imposing a permitting requirement on them—a similar (180 days is suggested) provision is needed for off-site storage prior to recycling. Some storage requirements are imposed on a generator and similar requirements would be reasonable for a recycler. However, having to get a permit and come under the full burden of RCRA simply discourages many if not most firms from "resource recovery and reclamation" of a secondary material even though such recovery and reclamation would result in reducing the risk to human health and the environment.

"Derived From" and Delisting Rules

The "derived from" rule states that any material derived from a listed hazardous waste is itself a hazardous waste. The primary objective of reuse, recycle and reclamation is to produce a material that is no longer hazardous, while beneficially recovering a chemical or fuel value. Many reuse, recycle and reclamation processes do just that. But the obstacles for delisting the derived material are so great that generators and recyclers simply will not spend the time, effort and resources required. A mechanism is needed, perhaps a de minimis delisting rule, by which a product from a reuse, recycle, or reclamation operation that is no longer hazardous can be readily removed from the hazardous classification. A new pollution prevention/waste minimization subtitle should provide for such a mechanism.

"Burning for Fuel"

A secondary material which contains a fuel component and that is combusted in the process is considered by RCRA to be a waste being "burned for fuel" and is subject to regulation as a hazardous waste. This rule over-rides other considerations such as the presence of valuable chemical constituents (not necessarily the toxic constituent) which it may be more desirable to recover in a high temperature process than the fuel content of the material. The fact that a calorie-bearing constituent is burned in the process or that a toxic constituent is destroyed in the process should not prevent the recovery of the valuable constituent if it can be shown that environmental risks are reduced. The processing of "spent potlining" (an aluminum industry secondary material) in a mineral wool cupola is an example of such a situation. This situation truly represents resource recovery yet is prevented today by RCRA's "burning for fuel" rule.

This barrier could be addressed simply by addressing the barrier related to the distinction between a secondary material and a hazardous waste. If the question of when a material ceases to be a waste and can be considered a secondary material is resolved then the burning rule would not be an

issue. By whatever mechanism, the burning for fuel issues need to be addressed to fully realize opportunities for pollution prevention/waste minimization.

Permitting

The difficulties of permitting hazardous waste treatment, storage, and disposal facilities are well known. It is not the intent here to address the problems of pre-construction limitations, timing, costs, etc., of permitting Subtitle C facilities. Perhaps these barriers to permitting should be retained as a disincentive for pursuing treatment and disposal facilities. However, to encourage pollution prevention/waste minimization facilities, in fact, to provide incentives, there should be a streamlined process for permitting reuse, recycle and reclamation facilities.

A new subtitle should allow reuse, recycle or reclamation facilities to proceed with permitting and construction with no more permitting restrictions than a new plant designed to process "raw material" into a finished product would face. Storage requirements may need to be placed on the facility but these should be no more stringent than RCRA's 90 day storage requirements for generators, with 180 days storage suggested to allow for accumulation of inventory needed for batch operations.

To be fully in concert with EPA's Pollution Prevention Policy statement the permitting requirement of the proposed subtitle should be multimedia, with one permit covering air, water, and solid waste (generator) issues. A new subtitle must ensure that the barriers of the existing RCRA permitting process are eliminated.

EPA's program of corrective action is a major disincentive for permitting any type of RCRA facility for any reason. If EPA is to encourage the building of pollution prevention/waste minimization facilities it must restrict the domain of its permits to the facility engaged in a RCRA activity. Extending RCRA's domain to an entire production plant when only a single operation or facility is involved in a RCRA activity is a major disincentive to industry.

Land Ban Technology Standards

Theoretically at least, technology standards imposed by a land ban can eliminate the possibility of using a reuse, recycle, or reclamation process even if that process produces a residue having a lower risk than the technology standard. It is proposed that only performance standards be set by land bans and that industry be allowed to determine what technology it wishes to use to meet those standards.

Research, Development and Demonstration

EPA has published an intent to propose rulemaking which would give permitting flexibility to hazardous waste research and development facilities. These proposed rules believed to be under consideration by EPA, as the present day rules, do not provide for flexibility in conducting pilot plant testing and full scale, commercial demonstration of promising reuse, recycle or reclamation technology.

Such testing and demonstration often requires large quantities of secondary materials be processed in order to provide for a representative range of waste composition, to achieve desired waste to feed ratios, and to establish steady state process conditions. In many cases, five hundred pounds of waste per hour for periods of up to five days are required to obtain the desired test results. In addition, the testing and demonstration often can be done only on certain equipment or one-of-a-kind test facilities. For these situations it is necessary to obtain an RD&D permit.

These RD&D permits are known to take up to two years to obtain at a cost of hundreds of thousands of dollars. Since the risk that the technology may not work is compounded by

regulatory demands comparable to what is required to permit a full-scale commercial facility, generators have little incentive, and in the case of small companies, may not even be able to afford to pursue new reuse, recycle or reclamation technologies. It is essential that innovative technology development for reuse, recycle and reclamation be encouraged if pollution prevention/waste minimization advances are to be expected. The proposed pollution prevention/waste minimization RCRA subtitle needs to streamline and simplify the requirements for permitting research, development and demonstration facilities.

Summary

Pollution prevention/waste minimization represents the mature phase of the environmental protection movement which has been evolving since the early 1960s. Industry is beginning to recognize that pollution prevention/waste minimization reduces operating costs, minimizes long-term liabilities, provides cleaner and safer working conditions, and preserves energy and material resources. Environmentalists see pollution prevention/waste minimization as a means of reducing, if not reversing, adverse environmental impacts. Government is acting as a catalyst to bring about a new ethic with respect to environmental protection. Pollution prevention thus represents an opportunity for all segments of society to win, working together in a cooperative spirit.

Certain legislation and regulations which have created forced incentives for control and containment of wastes once they are generated have unfortunately also created barriers to the pursuit of pollution prevention and waste minimization. By recognizing these barriers and taking steps to replace them with new or modified legislation and regulations designed to encourage pollution prevention/waste minimization, the specific but also mutually desirable objectives of government, industry, and concerned citizens can be more quickly realized. A new RCRA Pollution Prevention subtitle is proposed for achieving this end.

Views contained in this document do not necessarily reflect the views of every member of the American Institute for Pollution Prevention nor every organization represented in the Institute. The author wishes to acknowledge W. B. Beck, E. I. Du Pont De Nemours and Company; G. H. Collingwood, Allied Signal, Inc.; R. Marton, Conoco, Inc.; R. Olson, Dow Chemical U.S.A.; and G. J. Crouth, Aluminum Company of America, for their contributions in helping to define the regulatory barriers to pollution prevention/waste minimization discussed in this paper and for providing examples (Table I) of how these barriers impacted the management of wastes generated by their companies. The author is also indebted to members of the Implementation Council of the American Institute for Pollution Prevention (AIPP) and AIPP members at large for their review and helpful comments.

References

1. L. Gardner, D. Huislingh, "Waste Reduction through Material and Process Substitutions: Progress and Problems Encountered in Industry," *Hazard. Waste Hazard. Mater.* 4:177 (1987). Cited in UNEP Industry and Environment, Jan/Feb/Mar. 1989.
2. Fed. Reg., 54: 3845, 1989.
3. U.S. Congress, Office of Technology Assessment, "Serious Reduction of Hazardous Waste: For Pollution Prevention and Industrial Efficiency," OTA-ITE-317 (Washington, DC: U.S. GPO, September 1986).

R. L. Byers is Manager, Environmental Programs-Solid and Hazardous Waste, Aluminum Company of America (ALCOA), Pittsburgh, PA 15219.

etter

port on people
in Offices,
actories

NER for govern-
th efforts.

cal alliance found
ar, down from 700
is calling "about
ing belts, an offi-
cline 40% to 50%
id, Ind., and Bos-
sees placements
12% more youths

canceled a jobs
signed up, down
also halted job
Indiana group
ts. But the New
M'extenc firing
its plich to em-
000 jobs. Boston
ms' bolster job-

trying to sell
instead of just
firms.

autiously praise

iced by Demo-
ould make em-
age for workers
the uninsured.
roup on Health,
oyers, says the
open "produc-
issues of costs
medical care.
is "controvers-

congressional
responding to
ivate coverage
controls don't
on s would
ares, says the
a ther large-
usiness United
ard, but with
nents.

muddle lobby-
al.

ite Demo-
solid; unions
e at the AFL-
e Employees
ons favor the
l it's politi-
ilding-trades,

tion of State.
and the
anadian-style
e only way to
aid McEntee
S cutting few
employers' ex-
kers' wages.
that cannot
ddle class?"

Cleaning Up

Chemical Firms Find
That It Pays to Reduce
Pollution at Source

By Altering Processes to Yield
Less Waste. They Make
Production More Efficient

Dow Reuses a Toxic Solvent

By SCOTT McMURRAY

STAFF REPORTER OF THE WALL STREET JOURNAL

The chemical industry's record on the environment has been a sorry one. Despite tougher regulation and pressure from public interest groups, it still accounts for nearly half of all the toxic pollution produced in the U.S.

Yet lately, a new force has been driving the industry to clean up its act: economics.

In a major shift, chemical companies are viewing waste not as an unavoidable result of the manufacturing process, but as a measure of its efficiency. The more unusable byproducts a process creates, the less efficient it is—and the more economic incentive there is for making it better.

That's what Du Pont Co. discovered at its Beaumont, Texas, plant, which makes products for plastics and paint. For years, the facility had been spewing out a staggering 110 million pounds of waste annually. Du Pont engineers argued that reducing the pollution would be too expensive.

Not Waste After All

But when they took a second look last year, they found just the opposite was true. By adjusting the production process to use less of one raw material, they were able to slash the plant's waste by two-thirds. Yields went up and costs went down. The savings: \$1 million a year.

"When I heard about it, I just said: 'That's amazing,'" says Edgar Woolard, Du Pont's chairman and chief executive officer. He says the company now even sees waste reduction as a way to achieve a competitive advantage.

Environmentalists heartily support this view. Slashing toxic waste production "is very similar to energy conservation in the 1970s. There is a potential for massive savings," says David Roe, a lawyer with the Environmental Defense Fund.

The entire chemical industry, says Environmental Protection Agency administrator William Reilly, is "getting religion" about the benefits of cutting wastes.

Other industries, from semiconductor makers in Silicon Valley to metal processing companies across the Rust Belt, are also beginning to focus on toxic waste reduction as a way to cut costs, curb pollution and make operations more efficient. But it's the chemical industry that has the most to gain from waste reduction savings

According to the EPA, in 1989, the last year for which figures are available, the industry produced nearly half of the 5.7 billion pounds of toxins generated nationwide and tracked by the EPA. Chemical company officials say that, since then, the proportion has stayed roughly the same, though the total amount of toxins released in the country is believed to have declined. Some environmentalists have argued, however, that the EPA significantly understates the total amount of toxins discharged into the environment.

A Bigger Picture

Richard Mahoney, Monsanto Co.'s chairman and chief executive officer, estimates that there is \$125 million worth of material that currently isn't recovered from the waste that leaves the company's plants. What's more, other costs associated with waste are rising. They include processing, disposal and cleanup, not to mention lawsuits and government fines when those jobs don't get done right.

Dow Chemical Co., for instance, recently spent \$30 million building a waste incinerator and dump to handle toxic materials at its plant site in Midland, Mich. And, earlier this year, Monsanto paid the state of Massachusetts \$1 million to settle claims that its Everett, Mass., plant didn't report certain waste-water discharges. It paid another \$192,000 to a trust fund that supports the cleanup of Boston harbor. Last year, it forked over \$27 million to clean other sites. At year end, it had an accrued liability of \$120 million on its balance sheet to cover certain future cleanup costs.

Chemical companies, however, might have made substantial cuts in toxic emissions sooner had they recognized some of the potential economic advantages, such as lower materials costs. "One of the differences is that we're now putting some of our best people into this area," says Robert Luft, Du Pont's senior vice president, chemicals. "When you do that, you can start making some fast progress."

The Legacy of Bhopal

In the past, chemical companies used to focus merely on complying with federal and state pollution laws for specific chemicals or plants. They didn't pay much attention to the aggregate amount of waste they produced each year, or the future liability it represented. Waste disposal costs were low, and the typical approach to pollution often was the dilution solution: Dilute wastes in massive amounts of air up a smokestack or water out the end of a sewer pipe. More-permanent solutions were unattractive. They almost always involved adding equipment, which meant higher costs. And, thus, intense corporate resistance.

That began to change after the deaths of more than 3,000 people in Bhopal, India, following the release of a cloud of toxic gas

Please Turn to Page A6, Column 1

Cleaning Up: Chemical Firms Find That It Pays To Alter Processes So They Produce Less Waste

Continued From First Page

at a Union Carbide Corp. subsidiary in 1984. The disaster led to U.S. legislation in 1986 directing the EPA to compile and publicize a survey of toxic emissions, which put pressure on big polluters to do more than just meet minimum government standards.

In the process, companies began to discover economic advantages, as well. Some came from increasing production efficiency, while others came from finding other uses for some of the byproducts. Along the way, companies began to conclude that pollution was a sign of a bad manufacturing system. "When you make a lot of waste you know you don't have control of your operation," says Mr. Woolard, Du Pont's chairman.

Dow Chemical has been applying the same philosophy to its operations. For example, it estimates that, by recycling a toxic solvent used to make its Verdict herbicide, it is now saving about \$1 million a year, and halving the amount of solvent going out the door as waste.

At its Plaquemine facility near Baton Rouge, La., Dow spent \$15 million on waste reduction projects last year that it says have already saved \$18 million in toxic waste disposal and raw material costs. The company promotes these projects internally with the acronym WRAP: Waste Reduction Always Pays.

Monsanto says that its rayon fibers plant in Pensacola, Fla., has cut its toxic air emissions by about 90% since 1987, and saved a few million dollars a year in raw materials expense. The plant is capturing a toxic solvent in a mineral-oil bath before it escapes up a smokestack. It then recycles the solvent back into the production process. The mineral oil isn't wasted either: It is returned to the plant, where it captures more solvent.

Capturing a Carcinogen

Monsanto says its Saugat, Ill., plant, across the Mississippi River from company headquarters outside St. Louis, cut its air and water emissions of PDCB, a carcinogenic chemical used in making mothballs, by 90%, or one million pounds. The company cooled the plant's waste vapor and captured the crystallized chemical for reuse before it was emitted. Loading the product directly into tank cars under sealed conditions cut vapor emissions even further.

In some cases, the industry is constructing new plants that incorporate the latest waste reduction technology. A new Du Pont herbicide plant, near Dunkirk, France, is expected to produce 90% less pollution than an existing facility. Among other things, it will distill and recycle solvents.

In other cases, chemical companies are tying together production processes at different plant sites to cut waste and save on raw material costs. Last fall, a Du Pont

The Toxic Top Ten

U.S. companies ranked by the amount of toxic waste produced by their various facilities

COMPANY	FACILITIES	TOXIC WASTE (in millions of pounds)
Du Pont	85	348.40
Monsanto	33	293.83
American Cyanamid	29	202.09
BP America	18	123.66
Rohm and Haas	2	119.08
ICI	51	106.04
Valcan Materials	2	93.15
General Motors	133	87.87
Eastman Kodak	23	79.48
Phelps Dodge	19	77.42

*1988 figures (lowest available).

Source: Environmental Protection Agency

plant in Mobile, Ala., that makes herbicides and insecticides began tapping into the waste stream leaving the plant, pulling out solvents and titanium byproduct that it used to incinerate. The solvents get recycled into the plant's own operations, while the titanium is treated and shipped to a Du Pont plant in DeLisle, Miss., where it is used to make paint pigments. By integrating production this way, the Mobile plant cut its annual toxic emissions by about 25 million pounds, nearly 20%.

Getting Along

Besides cutting costs, these waste reduction programs help companies earn public good will, as well as meet demands from regulators and environmentalists. Arco Chemical Co. is using several waste reduction processes to meet the stiff environmental standards that apply to the expansion of its Channelview, Texas, propylene oxide plant just east of Houston. The Arco Chemical plant, where 17 workers died in an explosion last July, is in an area of back-to-back oil and chemical plants that parallels the ship channel leading to the Gulf of Mexico.

"Roll down your car window and the aroma will knock you over," is how George Smith, of the Sierra Club's Houston chapter, describes the area.

The environmental group feared Arco Chemical's plant expansion would fill the air with an excessive amount of benzene, so it threatened to put the plan through a lengthy public hearing process. In response, Arco Chemical agreed to install a distillation process to recover benzene from liquid waste at the plant. The process keeps much of the benzene from reaching the plant's water treatment unit, where it could partially evaporate into the air before decomposing.

As it turns out, the added cost of the distillation process is largely offset by savings from the benzene that's recycled, says John Evans, environmental superintendent for the plant. And when all waste processors are in place, including catalytic converters that break down hydrocarbons before they go up the smokestack, the expanded facility will emit substantially fewer toxic chemicals than the original plant, even though production will have increased 200%, Mr. Evans says.

Environmentalists say the chemical industry still has a long way to go before it gets unqualified praise. But chemical companies contend that both regulators and the public will continue to see a substantial reduction in their output of toxic wastes. Monsanto, Dow and Du Pont all say their emissions have declined by between 30% and 50% in the past four years. They add that the numbers will continue to drop in the years ahead. The EPA is providing additional incentive: Last month, the agency proposed extending the deadline for required pollution controls at plant sites if companies speed up voluntarily cuts in their emissions.

Even though some of the short-term costs for the new waste reduction programs have been high—more than \$200 million a year at the largest chemical companies—Monsanto's Mr. Mahoney says it is money well spent. "Our initiative and commitments to environmental protection will, over the long term, make us more efficient, more cost effective and more competitive," he predicts.

EnClean Agrees to Buy Sizemore

HOUSTON—EnClean Inc. said it agreed to acquire Sizemore Environmental Group Inc., a Corpus Christi, Texas, waste management services concern. Terms weren't disclosed.

In the year ended March 31, Sizemore had revenue of \$17.5 million.

St an