

# CROSSING THE AISLE TO CLEANER AIR: How the Bipartisan “Project 88” Transformed Environmental Policy

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UNIVERSITY OF PITTSBURGH  
Institute of Politics  
**case study**

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TO CLEANER AIR:  
How the Bipartisan "Project 88"  
Transformed Environmental Policy**

In partnership with The Heinz  
Endowments' Environment Program  
and the Heinz Family Philanthropies

**PROJECT 88 KEY PLAYERS**



Timothy Wirth



John Heinz



George H. W. Bush



Teresa Heinz Kerry



Robert Stavins



Fred Krupp



Robert Byrd



Andrew McElwaine

“We are in a war for a safer, cleaner environment and the environment is losing. That’s why we need to harness incentives and market forces in the battle. The strategies which Senator Wirth and I have outlined in Project 88 will help our nation to move further, faster, at far less cost. ...

We particularly hope, and that is why we bring them forward for public review and debate at this time, that they will stimulate discussion in the Presidential campaign, in the coming Presidential debate, and in the other campaigns that are taking place this year.”



**H. JOHN HEINZ III**  
SENATE FLOOR STATEMENT,  
OCTOBER 5, 1988

Central Park, New York City

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**Kathy McCauley**  
**Bruce Barron**  
**Morton Coleman**  
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## A NOTE ON INTERVIEWS

This case study benefited immensely from a series of interviews with people who were involved with Project 88 or the development of the 1990 Clean Air Act Amendments. To prevent the endnotes from becoming unwieldy, we have not provided an endnote each time an interview is cited. Rather, readers can assume that, when one of the following interviewees is quoted in the text and no endnote appears, the information came from the interview(s) conducted with that person. The interviewees, with interview dates, were:

**Richard Cohen**, July 14, 2006

**Joe Goffman**, July 21, 2006

**Robert Grady**, September 21, 2007

**Teresa Heinz Kerry**, April 27, 2007

**Fred Krupp**, August 4, 2006

**Andrew McElwaine**, August 30, 2005;  
September 26, 2005; and August 25, 2006

**Brian McLean**, April 13, 2007

**Grant Oliphant**, June 28, 2006

**Roger Porter**, August 16, 2007

**John Schmitz**, August 24, 2007

**Russ Shay**, August 29, 2007

**Robert Stavins**, August 5 and 16, 2007

**Tim Wirth**, March 1, 2007

By agreement with the interviewees, transcripts of the interviews are confidential, but readers wishing to verify a specific point of documentation may contact the Institute of Politics at 412-624-1837.

# Chapter 1

## CREATING A MARKET FOR ENVIRONMENTAL POLICY

In May 1988, a group of friends strolled through Central Park in New York City, talking about the upcoming presidential elections and expressing doubt that the candidates would tackle the nation's serious environmental issues. This small group included Teresa Heinz, a board member of the Environmental Defense Fund (EDF); fellow board member Wren Wirth and her husband, newly elected U.S. Senator Tim Wirth (D-Colorado); and EDF staff member David Roe.

Mrs. Heinz's husband, Senator John Heinz (R-Pennsylvania), joined the group for coffee and they continued their discussion, noting how difficult it was to focus political attention on environmental problems. They decided to launch what became known as "Project 88," intending to clearly frame the most pressing environmental issues and innovative solutions so that the presidential candidates, Michael Dukakis and George H. W. Bush, would feel compelled to discuss these proposals during their debates.

Two years later, President Bush signed the Clean Air Act Amendments into law, ending a long stalemate over air-quality policy and finally addressing the problem of acid rain. As the President signed the bill, he publicly expressed appreciation for the role of Project 88 in shaping this legislation.

Bush's comments recognized that the creative strategy developed in that 1988 meeting in New York City had significantly shaped U.S. environmental policy. In subsequent years, Project 88's impact would spread globally as environmental protection efforts around the world incorporated its core theme, the use of market-based incentives, as a means of achieving environmental policy goals. Among the many achievements in the late Senator Heinz's illustrious career of public service, Project 88 stands as one of those with the furthest reach and the most significant benefits in the United States and abroad.

This University of Pittsburgh Institute of Politics case study goes behind the scenes to look at the development of Project 88 and how Senators Heinz and Wirth helped to bridge not only the gulf between environmentalists and business but also a divide between eastern and western interests. Information not available in published literature, gained through access to the extensive Heinz archives at Carnegie Mellon University and interviews with key players who participated in the policymaking and legislative processes, has made possible an extensive reconstruction of the pathway by which a promising policy innovation found acceptance. The pathway was a tortuous one, leading from academic thinkers to a bipartisan pair of U.S. senators, then through friendly and well-placed aides in the Bush White House, and culminating in the hard-won approval of a Republican president's environmental initiative by leaders of a Democratic Congress.

The success of Project 88's acid rain proposals is a fascinating story of how a good idea can make its way through the political process to long-term

embodiment. The story also contains many other components that should be of interest to students of public policy, such as:

- **The power of effective bipartisan teamwork.** The combination of market mechanisms with ambitious environmental goals was an unlikely marriage vulnerable to criticism from both ends of the political spectrum. But the partnership of a single Republican (from an esteemed corporate family) and a single Democrat (with excellent environmental credentials) immensely enhanced the concept's credibility.
- **How good science and technology can undergird real improvement in environmental policy.** The market-based incentives proposed by Project 88 relied on regulators' ability to measure and monitor emissions of specific compounds at hundreds of facilities across the country.
- **How the political dynamics of interest groups can sustain or hinder successful coalition building.** In this case, one environmental interest group improved U.S. environmental policy by taking a significantly different tack from—and weathering criticism by—fellow advocacy organizations that had not been able to achieve enactment of their goals into law.
- **How personal relationships can shape alliances and policy priorities.** The relationship between two former schoolmates, Senators Heinz and Wirth, reinforced their shared commitment to developing sound environmental policy. In addition, their efforts received significant support from their wives, both of whom had strong environmental policy backgrounds and happened to be EDF board members at the time.

## THE ROAD TO POLICY GOLD

The central theme of Project 88 was that thoughtful use of economic incentives could, in many cases, harness market forces to achieve environmental goals. Prior to Project 88, market-based environmental incentives had appeared in various modest applications, such as the five- or 10-cent surcharges that encouraged consumers to recycle their empty drink cans and bottles for refunds. The U.S. Environmental Protection Agency had piloted several pollution permit trading programs during the 1970s and 1980s. But no one had seriously considered a permanent, national system of emission allowances that could be assigned, auctioned, reserved for future years, or exchanged on the open market.

To understand the context in which Project 88 presented its bold proposals, Chapter 2 of this case study chronicles the major trajectories of U.S. environmental policy in the 1970s and 1980s, the growing problem of acid rain, and the impasse on acid rain and other air-quality issues that prevailed between the Reagan administration and congressional Democrats during most of the 1980s. Chapter 3 turns to Project 88 itself, looking first at the existing bank of innovative (but largely untested) ideas on which it drew and following the project from its conception through the 1988 presidential election.

If graded solely on its original mission of shaping environmental policy discourse in the 1988 campaign, Project 88 would have been a failure. Shortly after Bush's victory, however, the wheels began rolling toward the incorporation of Project 88's acid-rain approach into White House proposals and, eventually, into landmark

environmental legislation. Chapter 4 details that 20-month journey within the broader context of the negotiation of federal clean-air legislation.

Many experts continue to view Project 88 and the Clean Air Act Amendments of 1990 as the strategic moment that opened the door to wide recognition—and worldwide application—of market-based incentives in environmental policy. For this reason, Chapter 5 not only summarizes the immediate impact of Project 88 but also goes on to review subsequent developments in the use of market-based incentives.

At a time when domestic policymaking in America often seems dominated by increasing partisan divisiveness, it may be both heartening and instructive to take a close look at how a long-standing bipartisan friendship helped to produce one of the most widely acknowledged achievements in the history of U.S. environmental policy.

# Chapter 2

## THE IMPERATIVE FOR ACTION: THE CLEAN AIR ACT AT AN IMPASSE

### BACKGROUND ON THE CLEAN AIR ACT

“The great question of the ’70s is, shall we surrender to our surroundings, or shall we make our peace with nature and begin to make reparations for the damage we have done to our air, to our land, and to our water? Restoring nature to its natural state is a cause beyond party and beyond factions. It has become a common cause of all the people of this country. ... Clean air, clean water, open spaces—these should once again be the birthright of every American. If we act now, they can be.”

*President Richard Nixon’s annual message to Congress, January 22, 1970<sup>1</sup>*

In his 1970 State of the Union speech, Richard Nixon signaled his intention to propose a strong pollution control program—one more comprehensive and expensive than most members of Congress had contemplated. For years, Congress had made only incremental changes in U.S. environmental laws because most legislators saw pollution as a state and local matter.<sup>2</sup>

Nixon’s contemporary, Senator Edmund Muskie (D-Maine), had worked since the early 1960s

to pass tougher federal legislation. Muskie knew that research showed a growing pollution problem, that states were ignoring air quality goals, and that the issue had to be addressed on a national level. Still, when it appeared clear that Nixon was ready to act aggressively to control pollution, Muskie was cynical about Nixon’s reasons for adopting the environment as a key domestic issue: “Nixon saw me emerging as a potential presidential candidate and he knew of my interest in environmental issues. He tried to preempt the issue from me.”<sup>3</sup>

In the end, Muskie and Nixon shared credit for the passage of the 1970 Clean Air Act, a law that “resulted in a major shift in the federal government’s role in air pollution control.”<sup>4</sup> The Clean Air Act significantly expanded the federal government’s regulatory and enforcement power over pollution from both auto emissions and industrial smokestacks. Shortly thereafter, Congress created the U.S. Environmental Protection Agency (EPA) and gave it responsibility for implementing the Clean Air Act, including setting limits for six common pollutants that come from driving cars, making steel, and burning coal. Once the EPA had set those limits, each state would be required to develop a plan for reaching prescribed reductions in carbon monoxide, nitrogen oxide, ozone, sulfur dioxide, particulate matter, and lead.

### THE 1977 AMENDMENTS AND THE START OF A STALEMATE

Richard Cohen analyzes the political struggles leading up to the Clean Air Act and its subsequent amendments in his book, *Washington at Work: Back Rooms and Clean Air*. Cohen writes that the original 1970 statute was especially hard

on American automakers, calling the law “far less forceful in cutting pollution generated by other industries such as steel and electric utilities, many of which were nationally based and therefore had more friends in Congress than did the auto industry.”<sup>5</sup>

#### Summary: Clean Air Act

The Clean Air Act is the comprehensive federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes the U.S. Environmental Protection Agency to establish National Ambient Air Quality Standards to protect public health and the environment. The goal of the 1970 Clean Air Act was to set and achieve these standards in every state by 1975 and for states to develop “state implementation plans” for reducing pollution by industrial sources in the state. The act was amended in 1977, primarily to set new dates for achieving attainment of the National Ambient Air Quality Standards, as many areas of the country had failed to meet the deadlines. The 1990 amendments to the Clean Air Act were intended to meet unaddressed or insufficiently addressed problems such as acid rain, ground-level ozone, stratospheric ozone depletion, and air toxics.<sup>6</sup>

The auto industry worked to avoid being caught flat-footed again, actively cultivating friends during the 1970s. By the time amendments to the Clean Air Act came up for review, the auto industry was in a much stronger position to argue its case. Detroit and its representatives in Congress said that the auto industry lacked the technology to reduce the nitrogen oxide emissions coming

from cars and that imposing emission reductions would add so much to the cost of each car that the already-suffering industry would collapse. When the Clean Air Act Amendments were signed into law in 1977, Congress and President Jimmy Carter agreed to weaken the nitrogen oxide emissions requirements for autos from 0.4 grams per mile to 1 gram per mile, with an extension of the compliance deadline to 1980.<sup>7</sup>

The 1977 Clean Air Act Amendments did address a serious problem with pollution coming out of smokestacks. One problem with the original law was that it focused on industrial pollution occurring only within a limited geographical area. “The 1970 law required industry to clean up pollution in the immediate vicinity of its source. Many polluters, particularly big, coal-fired power plants, did so by sending emissions through tall smokestacks, which dispersed the pollutants over a wide area. Sulfur and nitrogen oxides are transformed chemically in the atmosphere and return to earth as acidic rain, snow, and dust. This pollution, much of it emanating from the Midwest, has been found to damage freshwater life and buildings in the Northeast and Canada.”<sup>8</sup>

To address the issue of these sulfur and nitrogen oxide emissions, the 1977 amendments contained provisions that required the installation of pollution-controlling scrubbers at all new power plants, regardless of the amount or concentration of pollution that rose into the air from them. This provision represented a legislative victory for producers of high-sulfur coal, which is mined in the midwestern and Appalachian regions—and which, when burned, spews sulfur dioxide in greater concentrations than does low-sulfur coal from western states. The new requirement

for scrubbers on all stacks removed “much of the incentive to replace high-sulfur coal with low sulfur” and protected the high-sulfur coal industry.<sup>9</sup> It also gave utilities an unintended incentive to keep older, dirtier plants in operation far beyond their anticipated lives, since the scrubber provision applied only to new pollution sources. The scrubber requirement came about through an alliance between environmentalists and legislators from high-sulfur coal states. This unlikely alliance generated significant criticism, and it would eventually fall apart as it became clear that high-sulfur coal was a primary contributor to acid rain that impacted the United States and Canada.<sup>10</sup>

The 1977 amendments also set a deadline of 1982 for metropolitan areas to comply with clean air standards for ozone and carbon monoxide. No extensions would be allowed beyond 1987.<sup>11</sup>

By 1987, however, it was clear that many states had ignored the deadline and were counting on further extensions. Metropolitan areas across the country were out of compliance with the Clean Air Act, and the EPA was preparing to sanction all the “non-attainment” areas. Some members of Congress thought that they should do as they had done previously when metropolitan areas failed to meet environmental goals—extend the deadline. Congressman John Murtha (D-Pennsylvania) tried to do just that in late 1987, introducing legislation to delay sanctions until 1989. But his bill was voted down. As one Capitol Hill aide recalled, “That was a shocker, and everyone realized that the day of reckoning was coming.”<sup>12</sup> In a show of strength by Congressman Henry Waxman (D-California)

and fellow environmentalists, the House of Representatives agreed to an extension only until August 31, 1988.

Congress would need to revisit the Clean Air Act again—not only because some states were still not in compliance with air quality standards, but also to tackle pollution issues that were not known in 1970 or were not fully addressed in either the original law or the 1977 amendments. The most controversial of these new issues was acid rain, which had become the “main stumbling block” in clean-air debates during the 1980s.<sup>13</sup>

Passage of new clean-air legislation by 1988 hardly seemed likely. A standoff over acid rain had prevailed ever since President Ronald Reagan had taken office in 1981. As early as 1983, William Drayton, who had been EPA policy chief during the Carter administration, commented, “We have lost the decade of the 80s. Even assuming a new President is elected in 1984 who is deeply dedicated to the environment and gives it top priority, it will be 1990 before we get it back to where we were.”<sup>14</sup> Philip Shabecoff, who reported on environmental issues for *The New York Times* during this period, wrote in 1984: “The Clean Air Act, meanwhile, remains stalled as it has been for nearly four years, because of differences between the Administration and environmental groups and within Congress over acid rain and other crucial issues.”<sup>15</sup> In 1986 another *Times* reporter wrote, “The dispute over acid rain—and the expenses that would have to be incurred should it be decided that sulfur dioxide emissions are the major sources and have to be substantially cut back—may keep the clean air amendments on hold for this year.”<sup>16</sup> And in 1988, the story had not changed: “For nearly

eight years, acid rain has been the chief obstacle to Congressional efforts to amend the Clean Air Act.”<sup>17</sup>

All told, more than 70 bills on acid rain were introduced before 1989. None passed.

## THE POLITICAL CONTEST OVER ACID RAIN

**“What do you do—declare war or persuade Americans of the value of acting?”**

*Canadian Prime Minister Brian Mulroney, responding to questions after his visit with President Reagan to discuss acid rain*<sup>18</sup>

By 1988, dozens of states and Canada were calling for limits on the sulfur dioxide emissions that came largely from the smokestacks of electric power plants burning high-sulfur coal, which created the acid rain that was drifting into their territories and destroying their lakes and trees. Because most of the high-sulfur coal was mined in the Midwest, the U.S. battle over acid rain would be fought on regional lines. Democrats and Republicans across the Midwest were persuaded by high-sulfur coal producers and the electric utilities that any further pollution controls would torpedo their industries.<sup>19</sup>

To the degree that the debate was partisan, it pitted pro-business Republicans, including President Reagan, against the Democratic-leaning environmental lobby. Reagan’s appointees in the Office of Management and Budget “doubted the seriousness of the air pollution problem in the United States,” according to William K. Reilly,

EPA administrator during the George H.W. Bush administration.<sup>20</sup> Reagan characterized industry as overtaxed and overregulated, while many environmentalists said “the more you hurt industry, the more you help the environment” and framed pollution as “morally wrong.”<sup>21</sup>

The two sides in the acid rain debate only hardened their positions during Reagan’s eight years in office. Shortly after he entered the White House, Reagan issued an executive order establishing new procedures for federal agencies to follow before they issued major regulations, including environmental protection rules, and calling for reexamination of existing regulations that imposed significant costs on industry. (Vice President George H. W. Bush led the Reagan administration’s Task Force on Regulatory Relief, and its review questioned many EPA regulations.) President Reagan’s appointments to the key agencies involved in environmental regulation gave little encouragement to those who hoped for aggressive action on acid rain. At EPA, Reagan appointed Anne Gorsuch. Under Gorsuch, the EPA’s powers were eroded, the agency budget was cut from \$1.25 billion to \$826 million, staff was reduced by 12 percent and was “demoralized and virtually inert,” and several of the EPA’s political appointees “came out of the industries it is supposed to regulate.”<sup>22</sup> At the Department of the Interior, Reagan appointed James Watt, who later resigned under criticism of his policies, which included leasing federal coal to industries (at well below market prices and without environmental safeguards) and allowing drilling on the Outer Continental Shelf.<sup>23</sup> And at the Energy Department, Reagan appointed James B. Edwards as Secretary, with the directive of eliminating the Department.



H. John Heinz III Archives, Cornell University

Senator Heinz in the Oval Office with President Ronald Reagan on October 16, 1984. Heinz and Wirth planned to promote their environmental ideas with the candidates running to succeed President Reagan in the 1988 election.

While the White House resisted new pollution policies, environmental organizations had solidified their case for more regulation and established what some called the “Holy Grail” of acid rain: a reduction of sulfur dioxide emissions by 10 million tons and a cap on total emissions. But environmentalists’ demands for significant reductions in sulfur dioxide and nitrogen oxide pollution levels went nowhere during the 1980s. President Reagan refused to move forward on Clean Air Act amendments if they included provisions to limit acid rain.

The stalemate over the Clean Air Act amendments became an embarrassment for the leadership in Congress and the EPA as new revelations about acid rain, toxic air, and urban air quality caused Americans to demand action. Northeastern states joined environmental groups in filing five lawsuits against the federal government,

saying that it had violated the Clean Air Act by not curbing acid rain. Preliminary findings from the EPA’s first-ever national inventory of toxic substances being released into the air and water by chemical companies indicated that actual toxic release amounts were greater than environmentalists’ estimates. And Canadian Prime Minister Brian Mulroney came to the United States to meet with President Reagan about acid rain, specifically asking the U.S. government to limit nitrogen oxide pollution, which was drifting across the border into Canada and causing its lakes to become acidified. Canada claimed that more than 50 percent of the acid rain poisoning 700,000 of its lakes was coming from the United States.<sup>24</sup> (Mulroney and Bush earlier had come to an agreement to take a first step on acid rain: to appoint a U.S.-Canada team to examine the issue and recommend actions. That team ultimately called for a multibillion-dollar program to demonstrate clean coal technologies, and President Reagan endorsed the recommendation, allocating \$500 million for “innovative emissions control projects.”<sup>25</sup> But the Reagan administration rejected the acid rain protocols suggested by Canada and an international negotiating group.)

While Canada and many Americans were calling for faster action, the Reagan administration preferred to invest in potential technologies and let the stalemate within Congress continue, stoked by conflicts between environmentalists and the coal and utility industries (over acid rain) and with the auto industry (over emissions). It would take a change in leadership in the White House and Congress, with the assistance of a bipartisan initiative called Project 88, to break the logjam.

# Chapter 3

## PROJECT 88: USING MARKET INCENTIVES TO CONTROL POLLUTION

### BREAKING THE LOGJAM

“When negotiations are stuck, you have to have something new to put on the table. That was the magic of Project 88 and the idea of tradable permits. It gave people the chance to break out of the lockstep they were in for a long time.”

*Senator Tim Wirth, interview, March 1, 2007*

The Clean Air Act never was amended during the Reagan administration. The President, along with eastern coal interests, the United Mine Workers, the auto manufacturers, and electric utilities, actively opposed strengthening the law, while environmentalists had coalesced and ratcheted up their demands for regulation and control.

Throughout this period, the Environmental Defense Fund (EDF) was among those studying a fresh approach to controlling pollution. EDF (now known as Environmental Defense) was formed in 1967 by a small group of scientists who successfully sued local, state, and federal government agencies to stop the use of the pesticide DDT. In the years following its success, EDF continued to pair the science-based analysis of environmental issues with tough legal advocacy,

winning efforts to pass the Clean Water Act, remove flammable materials from children's garments, add species to the endangered species list, and remove lead from gasoline.

EDF employed scientists and attorneys, but it also hired economists so that it could assess the costs and benefits of environmental policy options. This approach, said EDF president Fred Krupp, was "positively iconoclastic" at the time, as other environmental organizations contended that decisions about a public good as precious as clean air or water must not be subjected to cost-benefit analysis. Krupp remembers hearing the leader of one environmental organization say, "Economics? That's an advanced form of brain disease."

EDF's economists, particularly Dan Dudek, had studied the work of the economist Thomas Tietenberg and environmental law professors Bruce Ackerman and Richard Stewart,\* who had written about meeting environmental goals not through more regulation, but through market incentives. These theorists felt government could "use a variety of innovative measures to enlist the forces of the marketplace and the ingenuity of entrepreneurs to help deter pollution and reduce degradation of natural resources."<sup>26</sup>

Market incentives to reduce pollution include tradable permits, which set an overall pollution maximum for the nation or a designated geographic area and authorize companies to emit a preset amount of pollution. Firms that do not use all their pollution allowances because they employ less-polluting methods of production or install

technology that reduces emissions can sell the unneeded pollution allowances to other firms. Economists theorized that these instruments could be less expensive and more effective than the 30-year pattern of increasing command-and-control regulation. "What was most needed was the right opportunity and incentives for business and industry to marshal their creativity and technological know-how to meet the needs of a less-polluting and more energy efficient society. This new philosophy would balance environmental goals with private sector costs, be more flexible in application, and be driven by 'incentives' rather than governmental prescription and policing."<sup>27</sup>

But market-based instruments had not been demonstrated on a large scale before. The EPA had given tradable allowances to refineries during the phaseout of lead in gasoline and had also experimented with pollution offsets or "bubbles," under which a power plant could exceed emissions targets at individual smokestacks as long as its total emissions declined.<sup>28</sup> These either were temporary uses or permitted emissions trading only within a single company, not between firms. Brian McLean, who was director of the EPA's Acid Rain Division during the 1980s, wrote that the EPA's emissions trading programs before 1990 "simply added flexibility to the underlying command-and-control infrastructure."<sup>29</sup>

It took two elected officials who saw the potential of market-based incentives, working with EDF and a gifted scholar, to translate the concept into broadly workable policies. In doing so, they helped to break the Clean Air Act logjam.

\*Stewart chaired EDF's board in the early 1980s.

## THE BIRTH OF PROJECT 88

Project 88 was born in the context of a deep friendship between two senators whose relationship dated back to prep school and between two couples with a shared passion for the environment. As Senator Tim Wirth explained, "Jack Heinz and I were very close friends. We had gone to school together [at Phillips Exeter Academy in New Hampshire] and had played high school basketball together, but more importantly, as families after we married, we became very close friends before either of us was in politics.\* Then our wives became friends." Both Teresa Heinz and Wren Wirth were board members of EDF, where David Roe—a close friend of Tim Wirth's for many years—worked. It was not unusual for the Heinzes, Wirths, and Roe to spend time together.

Teresa Heinz recalled the evening when the friends first envisioned Project 88: "I remember walking down Central Park West after a dinner with Wren, Tim, and David Roe. It was a nice evening in May 1988. [Michael] Dukakis was already the [Democratic presidential] nominee. In walking and talking, we shared our frustration with how there was no incentive for dialogue or learning about the possibilities and challenges regarding the environment. It was presumed that Dukakis would have the environmentalists on his side and Bush would not.

"We thought there needed to be more meat to this, more opportunities for discussion [about the environment]. We were going to meet my husband to have a cup of coffee at Palm Court. That's where

\*Both men had entered the U.S. House of Representatives in the 1970s (Heinz in 1971 and Wirth in 1975) before moving on to the U.S. Senate (Heinz in 1977 and Wirth in 1987).

we said we really should do a laying out of the issues and present it to both campaigns after the August conventions. Jack was very excited about this. He said it would be great for the debates.

"That next Saturday, each man [Heinz and Wirth] got \$50,000 from different foundations to pay for the costs of the project. They raised \$100,000 in one day."<sup>30</sup>

### Too Friendly To Campaign Against Each Other

The friendship across party lines between John Heinz and Tim Wirth was so deep that they could not bring themselves to campaign against each other. Here is how Wirth recalled it:

"When Jack first ran for the Senate, he ran against Bill Green from Philadelphia. I remember being interviewed by the *Philadelphia Inquirer* about Jack. They knew we knew each other. I gave a glowing interview about him. I think I got a telephone call from the Speaker's office within 24 hours [scolding Wirth for speaking so favorably of a Republican candidate].

"When I was running for the Senate in 1986, Jack was chairman of the Senate Republican Campaign Committee. He had promised that he would visit the campaigns of all the Republicans running for the Senate that year. So that meant he had to visit Colorado and the guy I was running against. He kept his word—by making one visit to a small town in the far northeast corner of the state. His campaign plane came down in Julesburg, he held a rally for my opponent, and he took off and was not heard from again."

David Roe from EDF and Graham Allison, then the dean of the John F. Kennedy School of Government at Harvard University, suggested that the senators contact Robert Stavins about serving as the project director. Stavins had worked as a staff economist for EDF, studying a tradable approach to water demand in California and conducting a cost-benefit analysis of a hydroelectric project, but had left EDF to earn his doctorate at Harvard. Tim Wirth called Stavins, and by June 17, 1988, Stavins had signed on as Project 88's director and agreed to send, by August 8, 1988, a partial draft of a report on "innovative approaches to solving major environmental and natural resource problems, in consultation with experts from environmental organizations, academia, government, and the private sector."<sup>31</sup>

Stavins worked quickly to recommend a framework for the report and to develop a list of economists and other experts to contribute papers that addressed the key environmental issues. In his first of many updates to Heinz and Wirth, Stavins wrote, just one week after being hired, "I have assembled an excellent staff, each member of which has committed himself ... to supply us within three weeks with a brief draft paper on a specific topic from the list. In each case, we have already discussed the innovative (typically market-based) approaches which will be proposed."<sup>32</sup>

Both senators liked the idea of organizing the project around a new, market-based approach to controlling pollution. Heinz by nature "did not like stalemates and logjams, and he loved coming up with new ideas and new approaches," said Fred Krupp, who became EDF's president in 1984.

"A thrill in life for him was solving problems. From the moment he heard about these market-based approaches, they resonated with the fact that he was a Republican, albeit one whom the majority of Democratic voters in Pennsylvania could support. He liked the idea of harnessing markets to solve problems."

The appeal of the market approach made sense in light of Heinz's contrasting experiences with Social Security and welfare reform. In his view, Social Security worked well because it set a broad goal and put in place a fairly simple administrative structure to meet it. In contrast, Heinz found the welfare system of his time "underwhelming," with its changing goals, large bureaucracy, and dizzying array of programs.<sup>33</sup>

Wirth also was interested in the broader use of economic instruments in environmental policy, in part because of his responsibilities as a member of the Senate's Energy and Natural Resources Committee, which provides oversight and legislation on the nation's energy policy, including utility policy and coal, gas, and oil production and distribution. He had earned a PhD from Stanford University and was known for his tireless intellect. Russ Shay, then a Wirth aide, described him as having an "indefatigable appetite for taking things on. He had an idea for what needed to be done for America, for his campaign, or for Colorado every five minutes." Andrew McElwaine of Heinz's staff called Wirth "insatiably curious about the world" and said that, when they first met upon Wirth's arrival in the Senate, Wirth spoke about how impressed he was with the work of University of Chicago economist (and Nobel Prize winner) Ronald Coase, who had written about social costs and economic incentives.

Like Heinz, Wirth was looking for the "next leap forward, new tools," because it was becoming clear that the returns from more environmental regulation were diminishing.<sup>34</sup> Wirth himself recalled that he "had been trying to formulate a way in which market-based thinking could apply to environmental issues, and had been frustrated that we had been unable to get any positive response from the environmental groups."

Neither man was the obvious senator to lead a project that would shift thinking on how America could achieve air pollution goals, for neither sat on a Senate committee with environmental oversight. According to McElwaine, Heinz had resigned from the Senate Environment and Public Works Committee "because it was pretty clear when the Reagan administration showed up that the Committee would be irrelevant. Heinz did not want to deal in trivialities, he wanted to invest his time where it would bring results." Accordingly, he shifted his efforts to aging, banking, and finance.<sup>35</sup>

But the environment mattered deeply to both Heinz and Wirth. They saw that a bipartisan initiative could attract interest and impart credibility, and they "were coming to a realization that the old approaches weren't working, that there was a real risk of there being a winner and a loser in this debate, and that the country couldn't afford that," according to Grant Oliphant, who served as Heinz's press secretary. The Republican senator from the high-sulfur coal state of Pennsylvania and the Democratic senator from the low-sulfur coal state of Colorado agreed on a strategy to lead a project that would identify market-based approaches to reducing pollution, summarize them in a report, and present these

findings to both presidential candidates during the 1988 campaign. Senators Heinz and Wirth thus became the cochairs of Project 88.

## THE NUTS AND BOLTS OF PROJECT 88

Project 88 aimed to frame the key environmental issues and set an agenda for presidential action. The senators believed that "the sense of urgency needed to meet environmental challenges is not found in our government today" and that they could not "wait until after the election to scurry around to develop a comprehensive program. We should act now, make this part of the election process, commit the Presidential candidates as deeply as possible, and lay the foundation for the new Administration's activities."<sup>36</sup>

Unlike most policy studies, Project 88 would not be the product of a government agency, congressional office, or university group. It would be sponsored by Senators Heinz and Wirth (without the imprimatur of party leaders); staffed by an economist; and funded through grants from the Carnegie Corporation of New York, the Richard King Mellon Foundation, Rockefeller Family and Associates, and Keystone Center/Madison Associates.

The senators wanted the project to have an organizing theme that broke ground, unlike the "Bible-sized" compendium of 700 recommendations that the environmental community had compiled in a recent document called *Blueprint for the Environment*. That theme would be market-based incentives in environmental policy. Heinz and Wirth selected point people on their staffs to work on Project 88. In Senator Heinz's office, the key staff person was Andrew McElwaine;

Senator Wirth assigned Russ Shay and Dave Harwood. The senators worked with EDF and the project director to agree upon an outline for the ideas that would be developed in the report. They decided that the report would describe how market incentives could be applied to reduce each of six major environmental issues, which would form the chapters of Project 88:

1. Global Air Pollution, including greenhouse gases and ozone depletion
2. Air Quality Issues, including acid rain, local air quality, and indoor radon
3. Energy Policy and the Environment, including energy security and alternatives to fossil fuels
4. Federal Water Policy, including water quality, supply, and allocation
5. Public Land Management and Other Land Use Issues, including wetland conservation
6. Solid and Hazardous Waste Management, including reducing toxic substances

Once the outline had been set, Stavins contacted respected economists and environmental experts at institutions across the country to invite them to prepare brief papers on innovative approaches to these environmental problems. Among those invited to submit papers were Tom Tietenberg, professor of economics at Colby College (on acid rain); Jim Hammitt, mathematician for the RAND Corp. (on stratospheric ozone depletion); and Dan Dudek, chief economist at EDF (on the greenhouse effect). Within two weeks, Stavins had received most of the contributors' papers and began the work of editing and writing the report. Stavins had the first draft ready for distribution to reviewers by August 10, 1988—a remarkably brief amount of time given the scope of the project and the coordination required to

obtain and integrate material received from numerous contributors.

McElwaine remembers that the project's sounding board included former Congressman Tom Evans (R-Delaware), "an environmental Republican" whom Heinz liked. Both Heinz and Wirth were concerned that the draft be reviewed by good minds in the public and private sectors. When Heinz scanned an initial list of possible reviewers and saw no one from the private sector on it, he invited leaders from ARCO, USX, 3M, Monsanto, Pennsylvania Electric Co., and DuPont to participate. "That made the whole thing much more defensible," McElwaine observed. "Look at the people listed as reviewers and it's quite a group. It's composed of some who wrote the chapters, some who reviewed them, and some worker bees like me."<sup>37</sup>

Both Senators Heinz and Wirth had made it clear to their staffs that Project 88 would be nonpartisan. But Heinz's and Wirth's staff people took a keen interest in ensuring that Project 88 was consistent with the senators' previously stated policy positions. The first draft of the report included a section that promoted "waste-end taxes" as a way to encourage firms to reduce the amount of garbage and hazardous waste they produced. Senator Heinz had gone on record in opposition to waste-end taxes because he believed they would lead to illegal dumping by some companies that wanted to evade the tax. While Heinz never told McElwaine to "get that out of there," McElwaine knew that Heinz would not reverse himself on a policy he still felt strongly about, so he wrote a letter to Stavins on August 17, 1988. McElwaine described the problem and concluded, "The Draft should delete the waste-end tax." McElwaine's

seven-page letter also enumerated various other problems with the first draft, including "an unsubstantiated attack on the incumbent Administration"; ignoring the Clean Coal Technology Program; ignoring conservation in several sections of the report; recommending a variable oil import fee—which the Senate repeatedly rejected—while ignoring more feasible options; and advocating local cost sharing for Superfund cleanup, which McElwaine called "very poor Federalism."

Similarly, Russ Shay of Senator Wirth's staff spent hours on the telephone with Stavins and meeting with McElwaine. "Andrew and I worked very closely together," Shay recalled. "We liked each other and understood our bosses were committed to each other. Stavins had written a large part of this report; he is an economist and not a politician. Economists are very focused on net gains and losses, while politicians are very focused on who wins and who loses—which are very different things. Our job was to translate the document so that our bosses did not get thrown out on their ears ... to get it to make political sense and prevent it from unnecessarily offending political interests."

After hearing from Wirth's and Heinz's staffs, Stavins made substantial content revisions and submitted a second draft to Heinz and Wirth on August 31, 1988, with a cover letter that highlighted three still-unresolved policy differences between the two senators. These issues were how to address the impact on high-sulfur coal areas, whether to recommend a gasoline tax, and whether to recommend investigation of a variable import levy.

Heinz recognized that the document contained items that ran counter to his legislative positions—most significantly, encouraging a shift from high-

sulfur Appalachian coal to low-sulfur coal from the West—but he felt that it was more important to get the document into circulation. As McElwaine recalled, "This was a brave thing for a senator from a high-sulfur coal state to do, especially when he had just been endorsed for reelection by the United Mine Workers. Heinz did not see a senator as being merely a legislator; he saw himself as someone who could advocate change in policy and new ways of thinking." Shay agreed: "Coal mining is a big industry in Pennsylvania and electric power production from coal is big. That meant acid rain control in particular was a high-stakes political issue for Pennsylvania and for the coal miners, unions, coal companies, and electric industry."

Wirth also showed courage in sponsoring Project 88. He had won his Senate seat by a much slimmer amount than Heinz's election margins and so was more vulnerable to criticism, particularly for backing an environmental approach that was anathema to many liberal Democrats and environmentalists. But Wirth's credibility in environmental circles was strong: "Wirth was looked at as a champion on environmental protection, and to have him embrace [market incentives] was significant for the left."<sup>38</sup>

Although the full and final version of Project 88 was not completed until December 1988, Senators Heinz and Wirth, their spouses, and their staffs began putting Project 88 into the hands of policymakers and promoting the report well before the November election. Teresa Heinz gave the report to James Baker, who was George H. W. Bush's campaign manager, and she recalls that Wren Wirth sent it to the Dukakis campaign.

“Baker—as he’s wont to be disciplined about these things—got the president to meet with environmental leaders. Bush got a lot of support because of that.” It is uncertain if the Dukakis campaign ever responded.

Heinz and Wirth jointly issued a press statement on October 5, 1988, announcing the release of the draft of Project 88, a report to “provoke discussion by the Presidential candidates on environmental solutions.” They also formally entered Project 88’s recommendations into the *Congressional Record* on October 5, 1988, with these statements:

**MR. WIRTH:** My colleague from Pennsylvania, Senator Heinz, and I are releasing the draft of a report on the tough environmental problems this Nation must deal with in the next administration and we outline new approaches to solving those problems. Our recommendations include:

Using “tradable emission permits” to get market forces to work in reducing pollution. Instead of dictating a particular solution, we set out an environmental goal—and let industry compete in an open market to meet it.

Opening up markets to environmentally preferred alternatives. For example, “conservation contractors” who can free up power by saving it should be able to bid to meet a utility’s need for additional electric power, rather than restricting bidding on power supply to new power plants.

Recognizing areas where one action helps to solve more than one problem. For example, a higher gas mileage requirement for automobiles is essential to lowering carbon dioxide emissions, a key to fighting global warming. But it also reduces oil imports, helps

our balance of trade, and reduces pressure to drill for oil in environmentally sensitive areas.

The report recognizes that these economic approaches are not a panacea for environmental problems. ... But we are suggesting there is a mix of the so-called regulatory, or command and control approach to environmental problems—to mix those in with the use of the marketplace and economic incentives.

**MR. HEINZ:** We are in a war for a safer, cleaner environment and the environment is losing. That’s why we need to harness incentives and market forces in the battle. The strategies which Senator Wirth and I have outlined in Project 88 will help our nation to move further, faster, at far less cost. ... We particularly hope, and that is why we bring them forward for public review and debate at this time, that they will stimulate discussion in the Presidential campaign, in the coming Presidential debate, and in the other campaigns that are taking place this year.

It is our belief that Project 88 will not only help head off any kind of unjustifiable policy decision in the future, but will permit all in the political process to set more ambitious goals which in my judgment and the judgment of my colleague, Senator Wirth, we must have if we are to meet our responsibility to leave our children a world that is safer and cleaner than the one we face today.



Senator Heinz discusses environmental policy with reporters during a news conference with Duquesne Light, circa 1984.

The first major media coverage of Project 88 occurred two weeks later, after Tom Graff, a senior attorney in EDF’s California office with good media connections, pitched the story to Peter Passell of *The New York Times*. Passell picked up the story and, in an article that appeared on October 19, suggested that the project should influence the presidential candidates. Both presidential candidates, he wrote, were pledging to be tougher on polluters without spending more money, which was why the “Project 88 report could prove such a political winner. ... What is new is the growing understanding in Washington that market-based incentives could win votes as well as good marks from economics professors. Senators Heinz and Wirth, long identified with opposite poles of the traditional regulatory spectrum, are betting the time is right to fashion a new consensus.”<sup>39</sup>

When Frank Blake, an attorney who was active in George H. W. Bush’s presidential election campaign, read Passell’s column, he contacted Stavins to request a copy of Project 88. Following the election, Blake would become an advocate for Project 88 within the incoming Bush administration, magnifying the impact of Krupp’s relationship with key Bush aides and Senator Heinz’s influence with the White House. Already the momentum was building toward support for the use of market incentives in breaking the deadlock over acid rain.

# Chapter 4

## ACHIEVING POLICY CHANGE: PROJECT 88 AND THE CLEAN AIR ACT AMENDMENTS

“People talk about the power of good ideas, but they don’t become reality on their own. It takes leadership and it takes people. Without Senators Heinz and Wirth giving this constellation of ideas a platform and a huge boost to a whole different level of prominence and consideration, it is unlikely in my view that we would have had emissions trading for sulfur dioxide adopted in the 1990 Clean Air Act amendments.”

*Fred Krupp, interview, August 4, 2006*

### ENVIRONMENTAL STRATEGY IN THE BUSH CAMPAIGN

Candidate George H. W. Bush embraced the environment—including the ideas in the Project 88 report—in part because they made strategic sense. Bush was trailing Governor Michael Dukakis in the polls that summer, so “the campaign decided it needed two or three markers to show they were not just cold-blooded clones of Reagan—which was starting to drive off certain swing voters—to show that they were ‘safe’ Republicans. One of the markers they used was the environment.”<sup>40</sup> Bush also needed a strong response to the questions that organized groups of environmentalists were asking.

According to Fred Krupp, “The entire environmental community made acid rain a key issue in the debates. Wherever the candidates showed up, people and reporters were asking, ‘What are you going to do to keep the lakes from becoming sterile?’”

Vice President Bush responded, “In the past few years we have not done enough to protect the environment. I will do more.”<sup>41</sup> Most significantly, he gave a set of speeches designed to present himself as the stronger candidate on environmental issues. One speech in particular got the attention of the national press and environmentalists. Standing on the shores of Lake Erie on August 31, 1988, Bush said that the “time for study has ended” on acid rain—an oblique reference to President Reagan having pulled back on an agreement with Canada in favor of more research. Bush said, “I am an environmentalist: always have been ... and I always will be.” He pledged to tackle acid rain by cutting “millions of tons” of sulfur dioxide emissions on a clear timetable, which was far more aggressive than environmentalists had expected of a Republican candidate.<sup>42</sup>

Bush’s environmental platform included a list of plans for doing more on acid rain than Reagan had, and more than Dukakis contemplated. “While Dukakis’s platform included the goals for SO<sub>2</sub> [sulfur dioxide] and NO<sub>x</sub> [nitrogen oxide] reduction incorporated within the Clean Air Act Amendments that had just failed, Bush also sought reductions of millions of tons of these acid-rain precursors, but within some kind of market-based context.”<sup>43</sup>

Dukakis’s platform was strong on energy conservation and alternative energy, but his own record cast doubt on his ability to implement a strong environmental policy. “He has pledged a national policy that emphasizes cleaner fuels, such as natural gas, methanol and ethanol. ... But for all his sound plans, Dukakis has a spotty record. The Massachusetts Governor inadequately funded some of his environmental programs, occasionally appointed weak people to key positions and, when conflicts arose, was reluctant to antagonize business. He applied for permits to dump Massachusetts’ garbage off the New Jersey coast, as Bush eagerly reminded that state’s voters in a beachfront appearance early this month.”<sup>44</sup>

Bush’s “eager reminder” took place in Belmar, N.J., after careful planning by his campaign team. Robert Grady, Bush’s chief speech writer during the campaign, had been a top aide to New Jersey Governor Tom Kean, so he knew about Dukakis’s pursuit of a dumping permit. As Grady explained, the campaign team had determined that “the whole election came down to six states [including New Jersey] and these states had become heavily suburbanized in the last 25 years, so we had to get to the suburbanites. We had a conscious strategy of stating our policies and crafting them in a way that would be attractive to the suburban voter.” Grady perceived that one effective way to implement this strategy in New Jersey was “to get to the left on the environment.” The campaign amplified Bush’s message with cable television advertisements tailored to New Jersey’s specific environmental concerns—a fresh media strategy in the relatively young days of cable TV.

Meanwhile, the Republican National Committee also featured Dukakis’s weakness on environmental issues, running a television advertisement in which a camera panned the filth in Boston Harbor and that asked how the Massachusetts governor could be expected to clean up America if he couldn’t clean his own state. Bush toured the harbor on a boat, accompanied by the press, and said that Dukakis had sought a waiver from the federal government to postpone the harbor’s cleanup. To press the point during the first televised debate between the candidates, Bush said in response to one of Dukakis’s remarks, “That answer was about as clear as Boston Harbor.”

Governor Dukakis responded to Bush’s accusations with some of his own: “At the eleventh hour, with just weeks to go before this year’s presidential election, George Bush is running around the country saying he’s an environmentalist. The next thing you know, we’ll be hearing that James Watt and Anne Gorsuch and Rita Lavelle\* are environmentalists, too.” Dukakis added that Bush “stood by and did nothing while they tried to dismantle” toxic waste programs and that twice Bush had “supported the President’s veto” of the Clean Air Act.<sup>45</sup>

To some, there was irony in Bush’s embrace of the environment as one of his core issues. As vice president, Bush had led the Reagan administration’s Task Force on Regulatory Relief, which recommended relaxing many environmental regulations, and “went about it with great zeal,” according to Jim Maddy, executive director of the League of Conservation Voters, which gave

\*Assistant EPA administrator who was jailed on perjury charges related to an investigation of EPA’s toxic waste programs.

Bush a grade of D on environmental issues. During the presidential campaign, Representative James Florio (D-New Jersey) said that Bush’s public stance on the environment “blows my mind: it is almost Orwellian.”<sup>46</sup>

But Bush was more strongly pro-environment than his role in the Reagan administration suggested. Grady noted that Bush’s ideology matched that of much of the country at the time: conservative on the size of government but progressive and in favor of more action on environmental protection. In an interview with *The New York Times*, C. Boyden Gray, counselor to the Vice President, pointed to Bush’s support of research into alternative fuels while he was in the Reagan administration and his opposition to President Reagan over both acid rain and the need to reduce chemicals that were destroying the ozone shield.<sup>47</sup>

Gray himself had evident concern for the environment. He had worked during the Reagan years on the phaseout of lead in gasoline, an early and successful application of market incentives to environmental policy. Gray also was ecumenical in his approach to getting the best thinkers involved in the issue. EDF’s Fred Krupp remembers getting a call from Gray in 1986, after Krupp had written an essay for *The Wall Street Journal* that said the environmental movement needed to be more of a partner with business. “Gray called the day that it was published and said it was refreshing that an environmentalist had written this, and he invited me to come to the White House and have lunch with him. We kept in touch after this.” When Gray was assigned to support negotiations with Canada over acid rain and the development

of the Montreal Protocol on Substances That Deplete the Ozone Layer, he used the discussions as an opportunity to direct the Office of Management and Budget to study emissions trading for sulfur dioxide, according to John P. Schmitz, who reported to Gray and served as deputy counsel to Vice President Bush. During the deliberations over acid rain, Schmitz remembers EDF's Joe Goffman and Dan Dudek meeting frequently with Gray.

With the support of Gray and campaign staff, George Bush skillfully co-opted an issue usually conceded to Democrats. Richard E. Cohen, author of *Washington at Work: Back Rooms and Clean Air*, described Bush's approach as "not something Republican candidates typically do. ... Maybe Dukakis wasn't going to win anyway, but the Bush campaign did a very effective job with various aspects of the environment."<sup>48</sup> After lagging behind Dukakis in the polls all summer, Bush pulled ahead in early September 1988, and his lead widened from that point on. Bush won the election on November 8, 1988, with 53.4 percent of the popular vote and 40 of 50 states' electoral votes.

## PROJECT 88 EXPANDS ITS INFLUENCE

The victorious Bush campaign felt some indebtedness to Senator Heinz, who, on the way to his own landslide reelection, had suspended his campaign to stump for Bush. Heinz "delivered the state of Pennsylvania to Bush by a hair."<sup>49</sup> No Republican presidential candidate has won the Keystone State since. While campaigning for Bush, Senator Heinz also was working to soften the opposition to acid rain legislation by the coal industry. In fall 1988, he spoke to members of the

Pennsylvania Coal Association and urged them to support a compromise on the Clean Air Act—saying that Michael Dukakis might be elected and that they would regret not accepting the proposal before them then. He also reminded them that Senator Robert Byrd would no longer be Majority Leader and that Senator George Mitchell would likely take his place. "Heinz was trying to tell the coal guys that they could really be in trouble by next year and we should try to get a deal done before we get Dukakis and Mitchell and I'm not able to help you," recalled Andrew McElwaine. "I remember the coal lobbyist telling me, 'Heinz should not come up here and support compromise.' But we had some political capital and we were going to spend it."

Over the next two months, James Baker III led Bush's transition team (and later would become his secretary of state) and Gray continued as Bush's counselor (soon becoming White House counsel). As McElwaine recalled, Senator Heinz took some decisive steps to secure support for market-based incentives during this time: "When the transition hit, again we saw John Heinz's ability. Part of what he was very good at was blocking and tackling, the basics of getting stuff done in the policy world. As the Bush transition took effect, Heinz went to work for Project 88. He talked directly with James Baker, he had Reilly and Rosenberg\* over to his office to talk about it, and he made sure the new administration was well aware of the recommendations. And Baker, to his credit, liked it."

\*William Reilly was then the president of the Conservation Foundation and would become EPA administrator in 1989; William Rosenberg was the EPA's assistant administrator for air and radiation.

The other thing we had going for us was that Bob Hahn was appointed as head of the Council of Economic Advisors. He was an important ally. Another one was C. Boyden Gray. Gray was a conservative with an interest in conservation and environmental issues. He and Heinz had a good relationship."

Gray also knew Tim Wirth. They had attended Harvard University together, and Wirth respected Gray's fairness and intellect. "Boyden was a very smart guy, knew a lot about the Clean Air Act, and was troubled by the fact that the negotiations around acid rain were stuck," Wirth explained. "He was eager to figure out what they could do to clean up this impasse and deal with the overly regulatory morass in the Act. There were some very complicated requirements in the Act, the most egregious of which was the requirement that every utility had to eliminate a certain percent of its sulfur emissions, whether it produced a lot or a little. If you were 99 percent clean, you had to reduce emissions by the same percentage as if you were 70 percent clean, regardless of whether you used western coal or other differences. So Boyden had an interest from the perspective of the White House to see if they could clean up the Act and make an environmental contribution."

As early as one week after the election, Gray spoke of Bush's support for the market-based incentives described in Project 88. In a *New York Times* interview, Gray said that Bush had a mandate to protect the environment and that "Bush would seek to use 'market incentives' such as fees and pollution trading rights to achieve a cleaner and healthier environment."<sup>50</sup>



Senator Timothy Wirth giving an interview on the Capitol steps in Washington, D.C., on February 4, 1988.

During the presidential transition period, Heinz and Wirth took the idea of market incentives to a national audience. They met with the editorial boards of *Business Week*, *The Wall Street Journal*, *The New York Times*, *Newsweek*, and *Forbes*; spoke with reporters from dozens of newspapers and magazines; and appeared on network and cable television news programs, often with Fred Krupp or Robert Stavins. Briefings prepared by Heinz's staff for these meetings show that they were

uncertain of the reception he and Wirth would receive. Regarding *The Wall Street Journal's* editorial board, his staff wrote, "We don't have a good handle on them. While certainly market incentives will impress them, as will the enclosed *NY Times* article in which Bush's counsel states the President-elect's commitment to market incentives, they'll probably be suspicious on several grounds: 1) EDF's involvement; 2) TEW's [Tim Wirth's] involvement; 3) the reluctance of many in the business community to embrace the recommendations for federal intervention. If market incentives can't be sold to this group, we're doomed."<sup>51</sup>

As it turned out, Heinz was able to impress many of the editorial boards he visited. Krupp, who participated in the meetings with the editors of *The Wall Street Journal* and *The New York Times*, was "amazed that this guy [Heinz] had quickly become more eloquent than anyone on these issues." Other media coverage of Project 88 during the subsequent months also was positive:

- *Business Week's* editors wrote, "The senators make a strong case that market incentives might succeed where government regulation has failed. The Bush Administration should listen."<sup>52</sup>
- *The Economist's* science and technology editor wrote, "The market approach to cleaning up the world has a simple aim and no hidden big-business agenda. ... After a few half-successful experiments, the idea is reaching maturity. Two American senators, Senator Timothy Wirth (a Democrat from Colorado) and Senator John Heinz (a Republican from Pennsylvania), sponsored a study of some 13 environmental problems. ... Its ideas are creeping into the language of the President-

elect's advisers. And if Margaret Thatcher reads everything her aides press upon her, its ideas may soon be voiced with a British accent."<sup>53</sup>

- The *Los Angeles Times's* editors wrote, "The energy-efficiency program advocated by the Wirth-Heinz study would help fight global warming, acid rain, and local air pollution while also improving U.S. energy security and productivity."<sup>54</sup>
- The *San Francisco Chronicle's* Harold Gilliam wrote, "If President Bush wants to apply market principles to the environment, he will have a ready-made manifesto. The carrot-and-stick method of the marketplace is the environmental approach taken by a seminal new bipartisan report issued by Democratic Senator Timothy E. Wirth of Colorado and Republican Senator John Heinz of Pennsylvania."<sup>55</sup>

As the senators were broadcasting their message, they developed the idea of building a second wave of interest in Project 88 and engaging national leaders in focusing on market incentives in environmental policy. They asked Graham Allison at Harvard's Kennedy School of Government if he would convene a conference on economics and the environment. The resulting Project 88 Conference, held in Washington, D.C., in June 1989, would draw a remarkable list of leaders from the White House, Congress, industry, and the environment at a crucial point in the development of the Clean Air Act Amendments.

## PROJECT 88 AND THE DEVELOPMENT OF PRESIDENT BUSH'S ACID RAIN PROPOSAL: JANUARY–JULY 1989

"When Tim Wirth and I first conceived of Project 88, we knew only that there was gridlock on a series of critical environmental issues, and a need for action. We had no way to know that one year later Project 88's new approaches—emissions trading, marketable permits—would be an integral part of the clean air proposals unveiled yesterday."

*Senator John Heinz, in his speech to the Project 88 Conference, June 13, 1989*

Senator John Heinz met with outgoing EPA Administrator Lee Thomas on January 4, 1989, a few weeks before Thomas would leave office. Heinz wanted to get Thomas's recommendation for how he should "pursue Project 88 within the Executive branch" and move the administration to adopt "a comprehensive program emphasizing market-based solutions over command and control." Heinz also wanted to be certain that Thomas told the new president that he would have to move quickly to "put together a package which the Senate can support before we find ourselves voting on a command and control bill" put forward by the Senate Environment and Public Works Committee. The staffers of one of the committee's members, Senator John Chafee, had told Heinz's staff, "We hope Bush doesn't move quickly—we have our own plans."<sup>56</sup> Thomas recommended that Heinz and Wirth build consensus on Capitol Hill for clean air legislation that the White House would draft.<sup>57</sup>

Even before Bush's inauguration, Senator Heinz was working with Boyden Gray to incorporate market-based incentives into the President's legislative proposal on the environment. Heinz met with Gray on January 5, 1989, to discuss legislative strategy, particularly in developing acid rain legislation. Heinz's staff wrote a briefing memo to prepare Heinz for the meeting with Gray with this advice: "JH [Heinz] should ask Gray for the Administration's cooperation in drafting legislation that Wirth/JH can champion. JH needs to tell Gray that the overall goal is the really hard part. How clean is clean? 4 million tons? 10 million tons? How will Bush go about setting the goals—goals which Project 88 itself did not set?"<sup>58</sup>

Following his inauguration on January 20, 1989, President Bush made a speech to a joint session of Congress on February 9 in which he announced that he would "have a big clean air proposal." Bush named Roger Porter, his assistant for economic and domestic policy, to lead a small team to craft this clean air proposal. The team included Gray; William Reilly, the new EPA administrator; Robert Grady, who had become executive associate director of the Office of Management and Budget; Linda Stuntz, deputy secretary of the Department of Energy; Robert Brenner, EPA deputy assistant administrator for air and radiation; and William Rosenberg, assistant administrator for air and radiation, who managed the EPA's role for Reilly. Porter said it was clear from the start that President Bush wanted this team to incorporate market incentives into the proposal. Bush had pledged to reduce acid rain but knew that if he were to follow the path of the previous 30 years and institute new regulations, the costs of monitoring compliance and requiring

companies to buy new technology to reduce sulfur dioxide could be immense. A March 1, 1989, analysis conducted by ICF Resources International for the EPA's Office of Policy, Planning and Evaluation showed that the cost to utilities of using command-and-control to curb sulfur dioxide emissions by 9 million tons would be \$6–7 billion per year. ICF concluded that introducing even a “very limited trading scenario” would reduce the costs to \$3.3 billion per year—and the savings “would accrue most greatly in the near future, when new plants are scheduled to be built,” according to a summary of the report by Heinz’s staff.<sup>59</sup>

Because Porter’s group was small (usually no larger than 15 people), it could move nimbly and quickly. It began by deciding that it would develop one clean air proposal, rather than separate pieces of legislation for each major pollution problem. The working group also made the key choice to consult extensively with congressional members, staff, and others, rather than developing ideas on their own before presenting them to Congress. “We held a large number of meetings with Democrats and Republicans, House and Senate,” Porter recalled. “And then we held even more meetings with outside interested parties: the environmental groups, the oil and gas industry, auto, chemical, farmers, unions, coal miners. We took a lot of their ideas into consideration because we were trying to figure out how to build a coalition. . . . People want to feel they have been consulted and included.”

Porter knew that the President needed that coalition because, on the one hand, Bush faced an overwhelmingly Democratic Congress that would interpret Bush’s endorsement of market

mechanisms as an extension of his work to eliminate regulations. Many Republicans, on the other hand, would be suspicious of Bush’s aggressive clean-air goals, concerned that it might be a return to the heavy-handed environmental policies of the 1970s. “This is why Project 88 was a useful device for us to rally support for breaking the gridlock,” Porter explained. “One of the virtues of Project 88 was that it was cochaired by Heinz and Wirth. Since one was a Republican and one a Democrat, and both of them were viewed within their caucuses as intelligent and thoughtful rather than wild or crazy, the Administration could highlight Project 88. It had the perpetual benefit of having a bipartisan pair of senators supportive of it. If you were a Democrat and didn’t like it, we could say, ‘This is a Project 88 idea.’ There were a fair number of Democrats I talked to who were quite skeptical about it because it was the Administration’s proposal. But I remember talking to a number of Democrats on the Senate Environment and Public Works Committee, saying that they ought to go look at Project 88—that these were not only Administration claims, there were responsible economists on this. It gave people some cover to say why they were supporting something.”

Porter’s group focused largely on the acid rain issue, which he said was “one of the ripest, most ready to go at the time. Part of it was that the issue had been gridlocked for so long. Part of it was that Senator [George] Mitchell really wanted to get an acid rain bill and, since he had just become Majority Leader, we thought this was a good opportunity.” As Richard Cohen wrote in his book on the Clean Air Act, acid rain “proved to be the most innovative part of the president’s proposal. Not surprisingly, that recommendation

would have the biggest impact on the congressional debate and outcome. Although Bush aides devoted extensive time to other parts of his package, these sections lacked the creative features of the acid rain plan and did not fare as well in Congress.”<sup>60</sup>

William Reilly has said that the White House team on Clean Air Act legislation had a very fast start because some EPA staff had anticipated the fact that clean air finally might be on the White House’s agenda and were ready with the necessary analysis.<sup>61</sup> Not only had the EPA’s National Acid Precipitation Assessment Program spent \$600 million examining the problem during the 1980s, but the agency’s fledgling experiments with emission trading prepared it to address myriad technical issues far more detailed than Project 88’s broad policy scope—issues like how trades would be administered and how emissions would be continuously monitored.<sup>62</sup>

But not everyone within the EPA was enthusiastic about switching to market-based incentives from their accustomed pattern of choosing cleanup technologies. John Schmitz, then deputy counsel to President Bush, recalls that some at the EPA “had already pulled out the map of all the big plants in the Midwest and knew what technology they wanted on each of those power plants. They evaluated emissions trading against the metric of whether it would result in the ‘right technology’ being put on those power plants. We were arguing a totally different concept: let the market decide. There was a lot of discussion and negotiation on whether the EPA was putting the right price tags on these programs. Everyone understood that just putting scrubbers on all these plants was going to be extremely expensive. I think the EPA

dramatically overstated the cost of the trading program, in retrospect.

“We were constantly using Project 88 in these fights with EPA. We would pull out Project 88 and say this is what the best and brightest say they should do. I think I brought a copy with me to each meeting. It was very useful in those staff meetings in Porter’s office.”

As another strategy in persuading the EPA’s top officials that emission trading could work, Boyden Gray invited Greg McRae to make several presentations to the working group. McRae, a California Institute of Technology engineer, had developed the computer modeling of smog for California’s South Coast Air Quality Management District, and Gray knew that his models were far more sophisticated than the ones that the EPA was using, even if the issue at hand was smog, rather than acid rain. As Schmitz explained, “Boyden wanted the EPA to know that they could not bully him on the science, that we had access to California expertise. He could have these fights with the EPA without feeling he was ignorant of the science.”

Fred Krupp has pointed out that the command-and-control regulatory establishment that had built up over 30 years had given government officials a level of power they would lose under a market approach to controlling pollution. “Both appointed officials at the EPA and elected senators and congressmen were empowered by the historical way in which environmental policy had been made, where technologies were picked directly, or picked implicitly by the choice of emission rates that only one technology can meet. They had the power to pick winners and

losers. This gave them power among lobbyists and with industry; it made them important. Giving up power to a market-based system was not something that they were very likely to do.”

The members of Porter’s group completed their deliberations within four months and were able to bring their recommendations to the President in May 1989. On June 5, Senator Heinz met with President Bush and 16 key legislators to discuss the remaining clean air issues on which Bush had not made a decision. Heinz was the only coal-state senator at the meeting; West Virginia Senator Robert Byrd, who had been invited, was managing a debate on the floor of the Senate and was, in McElwaine’s words, “too damn diligent” to miss it. At this point, there were still two acid rain options on the table. One would reduce sulfur dioxide by 8 million tons by the year 1995; the second would reduce sulfur dioxide by 10 million tons by the year 2000. Neither option required a particular technology to control emissions, so plants using high-sulfur coal would likely switch to low-sulfur coal to meet the reduction goals. Heinz’s staff noted the United Mine Workers’ expectation that “coal contracts would be broken as a result of fuel switching” —a dozen contracts in the first scenario and 50 in the second.<sup>63</sup>

The potential for fuel switching was one of the reasons that acid rain legislation had stalled in the 1980s. Elected officials from states producing high-sulfur coal backed legislation that would require all utilities to install scrubbers, so that plants could continue to use high-sulfur coal while meeting environmental standards. They knew that eliminating the scrubber requirement would lead many utilities to increase their use of low-sulfur

coal, since that would be a lower-cost means of reducing sulfur dioxide. In determining a strategy to reduce sulfur emissions, Congress also would be selecting a winning and losing coal region.

By embracing market incentives, President Bush had found a way around the acid rain impasse: He would leave it up to firms to decide how they would use their pollution allowances. In effect, this policy would benefit low-sulfur coal states by granting utilities flexibility as to how they would reduce emissions. Joe Goffman has suggested that the White House may have made a calculation ... “that making the low-sulfur West the winner was probably the way to go, and they used the new idea of marketable permits as the flagship idea for breaking the gridlock. What they were doing was favoring low-sulfur over high-sulfur coal while also, at the same time, introducing a brand-new regulatory tool, breaking out of command-and-control. It was a strategy that reflected basic political savvy about the greater legislative strength of the low-sulfur coalition, and that matched the Administration’s ambition to forge a new policy tool.”<sup>64</sup>

Grady’s recollection from inside the executive branch is consistent with Goffman’s perspective: “The most important intellectual contribution that we in the Administration made was to forge a new coalition on acid rain. The potent new axis included the Western states, which had cleaner coal burning and did not want to pay the cost for Eastern states to meet their standards; Eastern and Western producers of low-sulfur coal who would benefit when coal users were free to choose which fuel they preferred; advocates of less intrusive government interference in the marketplace; and the Northeastern states, the original proponents

and the immediate beneficiaries of controls to reduce acid rain. The big losers were the United Mine Workers, which had its greatest presence in high-sulfur coal mines, and the Midwest states, whose utilities have relied on high-sulfur coal.”<sup>65</sup>

On June 12, 1989, President Bush unveiled the outline of his clean air proposal, including a 10-million-ton reduction in sulfur dioxide. In his Rose Garden speech, he thanked Project 88 for “bringing creative solutions to long-standing problems, for not only breaking the mold, but helping to build a new one.”<sup>66</sup>

*The New York Times’s* coverage of Bush’s announcement read: “Saying ‘we will make the 1990s the era for clean air,’ President Bush today proposed an array of costly measures to strengthen the nation’s law for fighting air pollution. In a speech at the White House, the President asked that the Clean Air Law of 1970 be amended to cut almost in half sulfur dioxide emissions from coal-burning power plants. Mr. Bush also recommended other efforts to combat urban smog and reduce emissions of toxic chemicals. ... For the first time, the arguments of economists have apparently found a receptive audience at the White House. Mr. Bush’s proposals would allow companies to buy and sell the right to pollute and thus let the market decide the cheapest way to contain smokestack emissions. The adoption of such a market-oriented approach would alter the thrust of antipollution efforts for decades to come.”<sup>67</sup>

On July 21, when the President submitted to Congress the legislative language interpreting his proposal, it was essentially as he had outlined

it in June. The centerpiece of the proposal was tradable emissions permits to reduce acid rain.

### **WORKING TO MOVE PRESIDENT BUSH’S CLEAN AIR PROPOSAL FORWARD: AUGUST 1989–NOVEMBER 1990**

Of the three parts of Bush’s clean air proposal, acid rain would advance most quickly in Congress. But it faced formidable opposition, not only from business and labor sectors surprised by its aggressive cleanup goal, but also from environmental organizations. Most environmental groups were deeply suspicious of the market mechanisms and EDF’s involvement with Project 88, and the White House did not allay their concerns. According to Krupp, EDF had broken an unspoken rule of the environmental community: “We had talked to Republicans. It sounds humorous in retrospect, but the idea that we had talked to them meant that a motion to censure EDF was actually debated at the national meeting of the Clean Air Coalition. The other reason is that we were using this downright heretical means of advocating a market-based system, which environmentalists assumed would create loopholes. There was an assumption that the more it pained industry, the better for the environment, because industry was evil and the more you hurt them the more you helped the environment.”

EPA Administrator William Reilly stated, “I particularly was disappointed at the reception to our proposal by the Clean Air Coalition. Most members of that coalition acknowledged that Bush’s was a very progressive bill; they had not expected a bill aimed at eliminating ten million tons of sulfur dioxides in the acid



H. John Heinz III Archives, Carnegie Mellon University

Senators Heinz and Wirth expended substantial personal energy in the promotion of Project 88's environmental proposals. Above, Heinz, on June 27, 1989, conducts a news conference on environmental policy at Carrie Furnace in Rankin.

rain title, for example, even though that's what they had advocated and that's what they got. They, nevertheless, for tactical reasons, chose to characterize the Administration bill as weak. ... That experience showed that environmentalists were out of touch. It showed that they had allowed their ideology to run away with them. Also, the habit of negativism, of reflexive antipathy that had characterized their relationship with the Reagan-Bush administration unfortunately carried over to the Bush administration."<sup>68</sup>

EDF leaders, John Heinz, and Tim Wirth met with environmentalists individually to explain their support of market incentives to reduce acid rain. According to Wirth, most of the environmental groups "viewed this with horror, that we were legally sanctioning pollution. We responded that the political decision is not that we are going to have [no pollution], but how much and where." McElwaine remembers that, at the Environmental Law Institute luncheon, the chair of the Sierra Club spoke up about tradable permits, saying he was offended because it would create a right to pollute, which he termed

"immoral." "Senator Heinz had this delicious way of using humor," said McElwaine. "He said in response, 'They have always had the right to pollute; now we're going to charge them for it.'"

Environmentalists ultimately came to terms with the acid rain provisions of the proposal because the President delivered the "Holy Grail" they had been seeking: a mandated reduction of 10 million tons of sulfur dioxide, with a cap on emissions. Both provisions made Bush's proposal more stringent than previous ones, including those put forth by the most sympathetic House committees.<sup>69</sup>

The Bush proposal also met with opposition from the high-sulfur coal industry and many of its supporters in the Senate Coal Caucus, which was meeting regularly to derail the Clean Air Act. Senator Robert Byrd (D-West Virginia), a member of the caucus, wanted to require companies to put scrubbers on their factories' stacks, knowing that they then would stick with high-sulfur Appalachian coal because it was cheaper. Senator Heinz, who chaired the Senate Coal Caucus from 1983 to 1988, worked to persuade the members of the caucus to vote for the tradable permit program. As McElwaine recalled, "Because of the tradable permit program, there was a split in the Senate Coal Caucus. There were just enough votes, including Heinz's, to win final passage. Senator Byrd would call meetings of coal-state senators in his office on a constant basis to discuss strategies to make it more favorable to coal. In the end, the strategy that worked was that those who [installed] scrubbers got extra allowances for buying the scrubber." Heinz's leadership on Project 88 and his ability to persuade senators in the Coal Caucus

to vote for tradable permits helped to smooth the passage of the President's acid rain proposal. McElwaine summarized the impact: "The tradable permit program split the caucus and weakened the leverage of those who would have liked to kill the whole bill."

While Heinz worked hard to gain support among senators for emissions trading, he knew that coal mining jobs in Pennsylvania and the region would be lost. The analysis conducted by ICF for the EPA showed that a marketable permit system for acid rain reduction would impact thousands: "The change in employment is a drop of between 7,000–20,000 by the year 2010 for Northern Appalachia, depending on whether the trade is between existing sources or between new and existing."<sup>70</sup> Byrd would insist that displaced coal workers receive half of their salary and fringe benefits for three years after they had lost their jobs. The estimated cost of this provision was half a billion dollars, and President Bush let Senator Mitchell and Senator Dole know that he would not sign the Clean Air Act if it contained this provision. Byrd's amendment was defeated, narrowly, after last-minute pressure from the White House.<sup>71</sup>

The other major set of industries opposed to the acid rain provisions of the Clean Air Act was the electric utilities. But they were less organized than the coal industry and were caught off guard by the speed with which the White House submitted its proposal. After Bush was first elected, one of the utilities' trade publications assumed that "Bush would pursue clean-coal technology rather than emissions control."<sup>72</sup> Even after Reilly had spoken at his confirmation hearings about delivering first on acid rain, "a spokesperson for

the industry association, Edison Electric Institute, expressed little concern, citing the difficulty in drafting a bill that would pass Congress.<sup>73</sup> The Clean Air Act also may not have been the electric utilities' number-one issue; McElwaine said that "industry lobbyists would come to us with five or six issues and the Clean Air Act would be one of those things. They were just as concerned about the costs of Three Mile Island cleanup as about the Clean Air Act." The utilities also were divided among themselves along two fault lines: their power plants' differing energy sources and the amount of pollution they emitted.<sup>74</sup>

While Heinz and Wirth were persuading environmental and industry groups to support the acid rain provisions within Bush's proposal, their staffs were working to win over their counterparts on key committees. McElwaine recalled that "The Senate Committee on Environment and Public Works was a hard sell at that time on anything other than regulation. You had a tough staff there who saw no reason to diverge from the 'holy writ' as laid down by Edmund Muskie in 1970." Beginning in 1989, the senior Republican on this committee was John Chafee of Rhode Island, with whom Heinz had worked well on environmental issues. At Chafee's invitation, Heinz and Wirth testified before the Senate Committee on Environment and Public Works. The committee members found it striking to have bipartisan testimony on an issue that had divided the parties in Congress for years. Before them, in McElwaine's words, were "this Rocky Mountain Democrat with a liberal bent and an eastern Republican with a moderately conservative bent, and they were in lockstep on this. That was bizarre."

The bill reported out of the Environment and Public Works Committee remained heavily regulatory and did not include emissions trading. (According to Roger Porter, the White House had estimated that the cost of the committee's bill would be twice that of the Administration's proposal.) Nevertheless, the breakthrough idea of tradable permits continued to make progress. As Wirth recalled: "Jack [Heinz] and I pushed tradable permits as the way to resolve the toughest issue of the Act, which was the polarization between old and new, clean and dirty, east and west, that had persisted. Dole really liked it. Mitchell, despite the protestations of many environmental groups, agreed to it because it provided the Democrats with a way of making progress on clean air, which had been a goal of the D's for 15 years, since the Muskie campaign. I believe that Project 88 and the concept of tradable permits were absolutely the key to that."

With the President and congressional leaders on both sides of the aisle embracing the market-based approach to acid rain, lobbyists began assuming that it would eventually become law and turned their resources to how the emission allowances would be allocated. The assignment of permissible amounts of sulfur dioxide emission to each covered plant would represent the creation and distribution of permits worth about \$2 billion in annual economic value. Congress wrote the allocation formula into the legislation itself, rather than leaving it to the EPA rulemaking process. Plants that had already reduced emissions more than the 1971 New Source Performance Standards would receive allowances based on 120 percent of their actual emission rates. On the other hand, the "dirtiest" states—Pennsylvania, West Virginia, Kentucky, Ohio, Indiana, and

Illinois—benefited from the bonus pool of allowances offered to plants that chose to install scrubbers, and the last three of these states also were granted extra allowances. The negotiations for the allowances took place quietly; there were no votes specifically on allocation provisions in either the House or the Senate.<sup>75</sup>

Key players in the process cite Joe Goffman, who had moved from EDF to Capitol Hill as a staff member for the Senate Environment and Public Works Committee, as the unsung hero who kept the legislative ball rolling in the Senate. As Congress began to become overly generous with special allowances, Goffman helped to insert a provision authorizing the EPA to reduce all allocations on a pro rata basis if they added up to more than the overall cap (which the allocations ultimately did, by about 10 percent).<sup>76</sup>

The early achievement of agreement in principle on the acid rain section did not make negotiations on other titles of the Clean Air Act Amendments any easier. According to McElwaine: "What the archives don't show is the agony of the actual passage of the Clean Air Act. John [Heinz] was struggling to be both a moderately conservative Republican and an environmental senator, and he had to balance this with the many amendments once the bill hit the floor. I remember his frustration with all of the items in the permitting process in the other titles and the difficult tradeoffs he had to make. His votes and Wirth's on the other titles didn't necessarily agree. On one big amendment that would weaken permitting requirements, Heinz wound up voting for it while Wirth was against it. I can remember that Chafee was lobbying me to try to turn Heinz around. ... Heinz still faced a difficult set of choices on

the Clean Air Act and cast a number of votes that the environmental community, including EDF, was not happy about."

The negotiations over the Clean Air Act would take 130 hours, with the discussions coming after adjournment each evening, according to Porter, whom Bush appointed as his primary negotiator. "I got [House Energy and Commerce Chairman John] Dingell to commit that if we could get a bill out of the Senate, he would produce a bill out of the House. So we concentrated on the Senate and got the bill coming out of Environment and Public Works, which was worthless. Senator Mitchell was not going to bring the Administration's bill to the floor, so he proposed negotiation to the President. We started at about 8 p.m. after the Senate adjourned and did that over several weeks." Said Grady, who also represented the President in these closed-door negotiations: "At any given time there were about 10 to 15 senators in the room. We would have pizza and Coke and go until 2 a.m. until we hammered out a bill. We negotiated the whole bill line by line." Senator Mitchell led these negotiations with an "extraordinary commitment to moving the bill. While Dingell and [Henry] Waxman in the House separately were working out their differences, it was Mitchell and his investment of time as a leader and his commitment to the policies that really made this happen."<sup>77</sup>

Following the completion of these intense negotiations, and with key senators sharing a bipartisan commitment to oppose any floor amendments, the Senate approved a Clean Air Act Amendments bill in April 1990. The House of Representatives passed its own bill in May,

and the conferees appointed to resolve the remaining differences between the two versions reached agreement in October. Within a week, both the House and the Senate passed the conference report. On November 13, 1990, the Clean Air Act Amendments of 1990 were submitted to the President.

Two days later, President Bush signed the bill, announcing that “the logjam has now been broken.” He also highlighted a new, distinctive feature of the Clean Air Act, market incentives:

The innovative use of market incentives in the bill represents the turning of a new page in our approach to environmental problems in this country. The acid rain allowance trading program will be the first large-scale regulatory use of market incentives and is already being seen as a model for regulatory reform efforts here and abroad. The acid rain program is based on some simple concepts—that we should set tough standards, allow freedom of choice in how to meet them, and let the power of markets help us allocate the costs most efficiently.

By employing a system that generates the most environmental protection for every dollar spent, the trading system lays the groundwork for a new era of smarter government regulation, one that is more compatible with economic growth than using only the command-and-control approaches of the past. ... The result will be the dawning of a new era in regulatory policy, one that relies on the market to reconcile the environment and the economy.

# Chapter 5

## THE LASTING IMPACT OF PROJECT 88: MARKET-BASED INCENTIVES IN ENVIRONMENTAL POLICY TODAY

The events of 1989 and 1990 showed that Project 88 had come along at a very opportune time. Its ideas were ripe for harvest in the earliest days of a new administration looking for ways to fulfill George H. W. Bush’s promise to be an “environmental president.” On acid rain, Project 88 offered a means to bridge the gap between business and environmentalism, fulfilling green advocates’ emission reduction goals while appealing at the same time to industry’s economic motivations. By more than satisfying the environmentalists’ demands, this component of Bush’s proposal became a winner with Democrats and removed a major obstacle to the negotiation of new federal clean-air legislation.

While Project 88’s emissions allowance trading proposal gained acceptance partly on merit, it also had caught its share of good breaks. As Robert Stavins wrote a decade later, its adoption—“like any major innovation in public policy—can partly be attributed to a healthy dose of chance that placed specific persons in key positions.”<sup>78</sup> Advocates like C. Boyden Gray in the White House, Joe Goffman on Capitol Hill, and Brian McLean at the EPA provided essential support that helped to move

emissions trading through the legislative process with unusual speed and smoothness.

Getting one’s policy proposals enacted into law is a cause for great celebration. But that victory marks the beginning of the more important test: Does the policy work? In this case, the answer has been a resounding yes. The approach to reducing sulfur dioxide emissions embodied in Project 88 has succeeded remarkably, becoming a “living legend of market effectiveness” and a model for the application of market-based incentives not only in U.S. environmental policy but around the world.<sup>79</sup>

### THE EXPERIMENT TAKES OFF

By 1995, 263 units at 110 plants were to be covered by Phase I of the Clean Air Act Amendments. These units would each receive a defined number of sulfur dioxide emission allowances, as defined by the complicated 1990 formula. Doubters wondered, given the untested nature of emissions trading, if a market for exchanging allowances would emerge or if plant owners would largely hoard their allowances to avert the severe noncompliance penalty of \$2,000 per ton.

Indeed, the market got off to a slow start, with only about 350,000 allowances traded by March 1994, at widely varying prices.<sup>80</sup> But as the 1995 implementation date approached, market activity began both to accelerate and to stabilize. Not only did utility companies exchange allowances with each other, but some brokerages purchased them as an investment, and some environmental organizations purchased allowances and retired them to drive the cap of total permissible

emissions down further. More than 18 million allowances changed hands from March 1995 to March 1998. Notably, the price of an allowance, initially predicted to be \$300–400, hung steadily around \$150 during 1994 and then dropped further, reaching a low of \$65 per ton in early 1996.<sup>81</sup>

A major factor in this price drop was over-compliance by the majority of plants. Only Illinois Power had to become a large purchaser of additional allowances in order to meet the law’s requirements. In 1995–97, utilities “banked” a total of 7.4 million allowances—that is, they emitted 7.4 million tons of sulfur dioxide less than they had allowances to permit and reserved the excess allowances for future use or sale.<sup>82</sup>

Compliance got a big assist from one external factor: declining rail rates. Implementation of deregulation under the Staggers Rail Act led to greater railroad competition and lower costs to shippers. Most significantly, per-mile rail shipping costs from Wyoming’s Powder River Basin—the U.S. region with the lowest-sulfur and cheapest-to-mine coal—were cut in half. As a result, coal users in Great Plains states like Minnesota, Iowa, and Missouri found it economical to switch to Powder River coal, thus reducing their sulfur emissions. In the midwestern and Appalachian states, most plants relied primarily on scrubbing technology to meet emissions goals, though the market for production of lower-sulfur coals in these states was enhanced.<sup>83</sup>

The 1990 law also provided for the EPA to hold back and auction off about 2.8 percent of the available allowances in March of each year.

This provision was inserted mainly to give new plants an alternative means of obtaining allowances in case a robust trading market did not develop. As it turned out, the auction was not needed for this purpose, but it became a valuable public indicator of the market value of allowances, since the price of most private trades remained confidential.

The implementation of emissions trading gave industries enhanced incentives to invest in finding ways to reduce pollution. Fred Krupp recalled the feedback he received from one utility executive shortly after the 1990 law's passage. At the next meeting of President Bush's council of environmental advisors, this executive approached Krupp and said, "I thought those [market-based] ideas were a little strange, but now that the law has passed I have two dozen proposals for how we can cut emissions at our smokestacks. It's amazing what telling people we can make money from reducing emissions has done to spur new ideas." Krupp's anecdote was not unique; on the contrary, researchers from the Massachusetts Institute of Technology's Center for Energy and Environmental Policy Research credited the advent of emissions trading with motivating a shift from stagnation to significant progress in affordable scrubber technologies.<sup>84</sup> Some plants were retrofitted to burn low-sulfur Powder River Basin coal, while others experimented until they found how much low-sulfur coal they could blend into their fuel mixture without negatively affecting performance.<sup>85</sup> Anecdotal evidence suggests that the tighter connection between pollution reduction and the bottom line caused environmental management to become a more important factor in many companies' planning and decision making.<sup>86</sup>

Whereas industries frequently cited special circumstances when lobbying for (and often securing) waivers from command-and-control regulations, emissions trading removed their excuses; if their emissions were going to exceed permitted levels, they could buy more allowances. As a result of this flexibility, Phase I of the Acid Rain Program was implemented with 100 percent compliance—and at an abatement cost estimated at half of what command-and-control regulatory mechanisms would have required.<sup>87</sup>

Phase II units entered the Acid Rain Program in 2000. By 2004, with 3,391 operating units covered, total sulfur dioxide emissions were 10.3 million tons—a drop of nearly 7 million tons, or 40 percent, from 1980 levels. Emissions trading continued to play a major role in compliance, as the EPA's allowance tracking system recorded the trading of 15.3 million sulfur dioxide emission allowances in 2004. Just four units received penalties in 2004 and none in 2005 for having an insufficient number of allowances to cover the amount of sulfur dioxide they emitted.

The total number of emission credits available annually is to decline through 2010 until it reaches 8.95 million tons. Meanwhile, the EPA has gone on to implement additional cap-and-trade rules covering emission of fine particles, ozone, and mercury, as well as pollution affecting park and wilderness areas. One of these, the Clean Air Interstate Rule, will entail further emission reductions beginning in 2010; the anticipation of its impact caused the first major spike in sulfur dioxide allowance prices, which jumped from \$215 in early 2004 to more than \$1,500 at the end of 2005 before dropping back to the \$700 range by mid-2006.<sup>88</sup>



Partnership between Congress, including Senators Wirth and Heinz, and President George H.W. Bush was essential to the eventual adoption of market incentives in national environmental policy. Above, Senator Heinz with President Bush at the White House on August 1, 1989.

## THE IDEA REPRODUCES

In their comprehensive 2000 study, the MIT researchers concluded that the Acid Rain Program “has been more successful in reducing emissions than any other regulatory program initiated during the long history of the Clean Air Act.”<sup>89</sup> Not surprisingly, this amazing success encouraged additional applications of market-based environmental incentives, both domestically and globally.

The 1980s had seen growing concern about the impact of ground-level ozone, or “smog,” produced by emission of nitrogen oxides. Seeking to address the suffocating smog for which Los Angeles had become notorious, the four-county South Coast Air Quality Management District (SCAQMD) in 1993 adopted a Regional Clean Air Incentives Market, or RECLAIM. The program set a declining emissions cap for 350 nitrogen oxide emitters and 40 sulfur oxide emitters in the Los Angeles area. The program had little impact at first, as the initial emission caps were set well above actual emissions. By 2000, when permitted total nitrogen oxide emissions were only half of the 1994 level, increased power demand and declining availability of excess credits caused the price of nitrogen oxide credits to soar from \$1,500 to \$45,000 per ton. The nitrogen oxide emission goal was not met in 2000, but the price spike made installing additional pollution controls the cheapest option for more plants, and emissions were in line with the cap again by 2001. An EPA evaluation of RECLAIM pointed out the importance to trading programs of reliable compliance monitoring, the demands of which

SCAQMD may not have fully anticipated when it incorporated this still-pioneering market-based program.<sup>90</sup>

Nitrogen oxides were creating a more complicated, interstate problem at the opposite end of the country, where ozone was traveling downwind in the atmosphere and contributing to unacceptable air quality in northeast states. As a result, the same 1990 Clean Air Act Amendments that created emissions trading also established the Ozone Transport Commission (OTC). Nine of the 12 OTC member states and Washington, D.C., agreed on an emissions trading program—the world’s first multilateral cap-and-trade system—that began in 1999. Participating states each adopted their own rules, but all were based (with approved modifications in some instances) on a “model rule” negotiated between the states and the EPA. The states also agreed to use the EPA—by then experienced with accounting for emission trades in the Acid Rain Program—as its accountant. The total ozone emissions cap for the summer smog season was set at 25 percent below actual mid-1990s emission levels. By 2002, emissions were down by 34 percent relative to 1995.<sup>91</sup>

The system’s biggest limitation was that it did not regulate southern and midwestern states that did not have a smog problem within their own borders but were contributing to downwind ozone concentrations. As these states did not want to join voluntarily, the EPA expanded on its success by incorporating the OTC trading system into a larger 22-state program as of 2003.<sup>92</sup>

## GLOBAL SPREAD

The philosophy of emissions trading spread globally as well. In 1992, Chile instituted a trading program in an attempt to deal with severe air quality problems in its capital city, Santiago. Due to weak regulatory enforcement and high transaction costs, a robust trading market did not emerge as quickly as it would in the United States. However, the policy of awarding pollution allowances only to emission sources that existed at the program’s outset achieved one important goal for a developing country: it caused previously unknown sources to come forward and identify themselves to regulators in order to receive their allowances.<sup>93</sup>

More broadly, emissions trading became a player in international discussions of global warming—with a significant push from one of the same players who had made Project 88 possible.

International concern regarding the threat of climate change was heightened by the United Nations Conference on Environment and Development (the “Earth Summit”) in Rio de Janeiro, Brazil, in June 1992. This conference formulated a convention on climate change, and subsequent discussions led to the 1995 adoption of the Berlin Mandate, which called on the world’s countries to reach an agreement that would reduce the emission of “greenhouse gases” believed to be contributing to global climate change.

An international team known as the Ad Hoc Group on the Berlin Mandate met from August 1995 to December 1997, seeking to work out such an agreement on a global approach to reducing greenhouse gas emissions. The U.S. emissary to

international climate change negotiations was none other than Tim Wirth, by then retired from the Senate. As negotiators began attempting to construct terms by which to implement the Rio treaty’s broad goals, Wirth proposed the inclusion of tradable permits for carbon dioxide emissions, citing the U.S. Acid Rain Program’s success as a precedent. Wirth recalled the response: “The Europeans were aghast at the idea. They thought it was a cop-out and an absolute travesty.”

But the United States insisted strongly on this point, and the European skeptics agreed to accept its inclusion in the Kyoto Protocol, negotiated in 1997. Since then, in an ironic turnabout, the Europeans, as Wirth put it, “have embraced tradable permits with an enthusiasm matched only by their previous resistance,” while the United States has declined to become a signatory to the Kyoto Protocol. The European Union initiated the first major international trading program in 2005, when its Emission Trading Scheme took effect on a trial basis; each country receives a defined national emission cap and then assigns emissions within that cap, first to industry sectors and then to individual units within each sector. The European Union intends to reduce greenhouse gas emissions by 8 percent during 2008–2012, the Kyoto Protocol’s first binding commitment period.<sup>94</sup>

The United States’ reluctance to agree to Kyoto highlights a key difference between domestic and international environmental agreements. In the EPA Acid Rain Program, the U.S. government is the arbiter of fairness, working out and implementing a domestic allocation of sulfur dioxide emissions. On the international stage of the Kyoto Protocol, however, the United States

is a wealthy nation facing claims by developing countries that the U.S., having been a leading producer of carbon dioxide, should make the steepest reductions. Moreover, an international agreement on market-based reductions will pose far greater implementation and enforcement challenges than the U.S. Acid Rain Program. As of this writing, the United States and six other major industrialized nations (Australia, Canada, China, India, Japan, and South Korea) are jointly pursuing voluntary emission reduction steps as an alternative to the Kyoto Protocol's binding limits.<sup>95</sup>

The worldwide spread of market-based incentives in environmental policy has spawned a considerable analytical literature examining where they do and do not work effectively. For example, analysts have observed that market instruments function best when (as in the case of sulfur dioxide or greenhouse gas emissions) reducing total pollution amounts is a sufficient goal regardless of where the reductions occur. For this reason, they have been applied much more successfully to air pollution than to water pollution. Incentives are less useful when the cost of reducing pollution is roughly the same for each polluter, because no market for permit trading will emerge in such cases. Cap-and-trade systems' dependence on continual monitoring of pollution levels at major emission sources leaves uncertainty as to how well such systems can function in developing nations or internationally. And, just as in the U.S. Congress in 1989–1990, the initial allocation of emission allowances often becomes the most contentious issue. In the Kyoto Protocol, for example, the use of 1990 emission rates as baselines awarded a great advantage to Russia and Ukraine—

two countries whose pollution levels declined during the 1990s due to lack of economic growth—in the form of surplus emission allowances.

Given these limitations, market-based incentives cannot universally displace the traditional command-and-control approaches to environmental regulation. In those settings where they function well, however, they have represented a major advance in public policy.

The two editions of Project 88 contributing author Tom Tietenberg's book on emissions trading illustrate the evolution of this policy tool. The 1985 version theorized about the viability of emissions trading but had virtually no real-life examples. The second edition, published in 2006, traced the trajectory of this concept from skepticism to enthusiasm and finally to realistic application. "While emissions trading is no panacea," Tietenberg concluded, "well-designed programs that are targeted at pollution problems appropriate for this form of control are beginning to occupy an important and durable niche."<sup>96</sup>

Emissions trading has become part of environmental policy in dozens of nations around the world, including some that were under Communist domination when Project 88 began. Brian McLean recalled that, while he was working with Poland and the Czech Republic on the development of emission trading systems in the 1990s, a man from Slovakia—Ivan Mojik, director of the Air Protection Department within Slovakia's environmental ministry—also participated in some of the meetings. Mojik apparently listened well, because in 1999 Slovakia became the first Eastern European country to adopt a sulfur dioxide emission trading program. With support

from the EPA and other American experts, China has been piloting cap-and-trade programs since 1998.<sup>97</sup>

As in many other policy areas of modern Western capitalism, experience with market-based incentives in environmental policy has shown that, while the market alone cannot achieve desired public goals, it can be harnessed to make these goals more achievable with greater economic efficiency. The degree to which nations around the world have taken this step since 1990 is a lasting testimony to the vision of people, led by Senators John Heinz and Tim Wirth, who asserted both the crucial importance of increased environmental protection and the potential for making industry a contributor toward this goal.

# Endnotes

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Krupp: T. Charles Erickson/Environmental Defense Fund

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# CD Index

## CROSSING THE AISLE TO CLEANER AIR: APPENDICES

This CD contains important documents from Project 88 and from the development of the Clean Air Act Amendments of 1990. Most of these documents have been obtained from the Heinz Archives at Carnegie Mellon University or the personal files of Robert Stavins and, as such, have not previously been available to the public.

- 1.) Mason Walsh Jr. (trustee, Richard King Mellon Foundation), letter to Senator Heinz, June 13, 1988, expressing the foundation's interest in funding what would become Project 88 and suggesting other contacts
- 2.) William Reilly (president, The Conservation Foundation), letter to Senator Heinz, June 14, 1988, indicating that Project 88 would nicely complement Reilly's own plans for influencing policy in the new presidential administration
- 3.) Robert Stavins, letter to Senators Heinz and Wirth, June 17, 1988, in which Stavins agreed to direct Project 88
- 4.) Thomas B. Evans Jr. (of the Washington law firm Manatt, Phelps, Rothenberg and Evans), letter to Andrew McElwaine (Senate committee staff member serving Senator Heinz), June 23, 1988, recommending contact people who may be helpful with Project 88
- 5.) Media release, June 30, 1988, announcing Project 88
- 6.) Senator Heinz, letter to Mason Walsh Jr. (trustee, Richard King Mellon Foundation), July 7, 1988, seeking financial support for Project 88
- 7.) David Anderson (general manager, environmental affairs, Bethlehem Steel Corporation), letter to Robert Stavins, August 12, 1988, responding to the first draft of Project 88
- 8.) Mason Walsh Jr., letter to Robert Stavins, August 15, 1988, responding to the first draft of Project 88
- 9.) Patrick Noonan (president, The Conservation Fund), letter to Robert Stavins, August 17, 1988, responding to the first draft of Project 88
- 10.) George Muhlebach (director, environmental protection, CIBA-GEIGY), letter to Robert Stavins, August 17, 1988, responding to the first draft of Project 88
- 11.) Andrew McElwaine (aide to Senator Heinz), letter to Robert Stavins, August 17, 1988, responding to the first draft of Project 88. This document illustrates the painstaking efforts by staff of Senators Heinz and Wirth to review the draft and ensure that it was not politically damaging to or contradictory to the established policy views of the senators. Eventually, rather than trying to resolve every policy difference prior to publication, the senators decided to include, in the Project 88 foreword, a statement that "we do not necessarily endorse each and every idea presented, and might take exception to some."
- 12.) Robert Stavins, letter to Senator Heinz, August 31, 1988, accompanying the second draft of Project 88. Stavins reported that he had received 46 reviews of the first draft and had made substantial revisions. He also identified remaining "potential differences" between Senators Heinz and Wirth.
- 13.) Excerpt from presidential candidate George H. W. Bush's campaign speech, August 31, 1988, in which he emphasized his commitment to clean air legislation
- 14.) Media statement by Senators Heinz and Wirth, October 5, 1988, upon the announcement of Project 88
- 15.) Congressional floor statements by Senators Heinz and Wirth, October 5, 1988, on Project 88, as they appeared in the *Congressional Record*
- 16.) Andrew McElwaine ("Amc"), memo to Senator Heinz, October 5, 1988, regarding plans for distribution of Project 88 report
- 17.) Project 88: list of contributors and reviewers
- 18.) Project 88: foreword
- 19.) Project 88: introduction
- 20.) Project 88: sections discussing acid rain
- 21.) Vice President George Bush, letter to Senator Heinz, November 4, 1988, expressing appreciation for Project 88
- 22.) Andrew McElwaine ("Amc"), memo to Senator Heinz, November 21, 1988, preparing him for meetings with editorial and reporting staff at *Business Week*, *The New York Times*, *Newsweek*, and *The Wall Street Journal*. The memo includes predictions as to how each news outlet's staff will respond to Project 88.
- 23.) *Business Week* editorial, December 19, 1988, recommending Project 88's "promising initiatives." Reprinted from December 19 issue of *Business Week* by special permission, ©1988 by the McGraw-Hill Companies, Inc.
- 24.) Andrew McElwaine, memo to Senator Heinz, January 2, 1989. The memo prepares Senator Heinz for his meeting with outgoing EPA administrator Lee Thomas on January 4, but also reviews in detail staff members' perspectives on the weakest points of the Project 88 report.
- 25.) Andrew McElwaine, memo to Senator Heinz, January 4, 1989, preparing him for his meeting with White House transition counsel Boyden Gray on January 5. The memo incorporates feedback received from Lee Thomas in his meeting with Senator Heinz earlier that day.
- 26.) Andrew McElwaine, memo to Senator Heinz, January 18, 1989 (misdated 1/18/88), providing background and seeking direction regarding the possibility of a spring conference on Project 88. The document also contains handwritten responses by Senator Heinz and senior aide Cliff Shannon ("CS").

- 27.) William Ruckelshaus (chairman and CEO, Browning-Ferris Industries), letter to Senator Heinz, January 27, 1989, offering support for efforts to enact legislation containing market-based environmental incentives
- 28.) Andrew McElwaine and Keith Mason (“KM”), memo to Senator Heinz, February 23, 1989, preparing him for a meeting with EPA Administrator William Reilly. The memo describes early indications from the White House that its clean air proposals will draw from Project 88.
- 29.) Senators Wirth and Heinz, letter to William Reilly, March 13, 1989, following up on their February meeting and referencing a memo (not included here) that recommended particular items from Project 88 for initial consideration by the EPA
- 30.) Senators Wirth and Heinz, letter to President Bush, March 16, 1989, seeking his participation in the Project 88 conference, then planned for May 1989
- 31.) Keith Mason, memo to Senator Heinz, April 3, 1989, summarizing a report by the ICF consulting firm on the fiscal impact of emissions trading proposals. The memo goes on to discuss various political aspects of the outlook for possible legislation, including staff’s contact with Senator Robert Byrd’s office and opposition from environmental organizations.
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- Michael Deland. According to the memo, Deland had expressed interest in the possibility of implementing emissions trading on a regional pilot basis.
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- 34.) Keith Mason (“KM”), memo to Senator Heinz, April 13, 1989, describing a report he had received from a meeting among White House staff, EPA leadership, and several senators from Western states the previous day. A handwritten addition from Andrew McElwaine reads, “KM tried to get in. They kicked him out.”
- 35.) Senator Heinz, letter to Roger Porter, April 14, 1989, seeking his participation in the Project 88 conference
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- 37.) Senator Heinz, letter to President Bush, May 12, 1989. After commending the President’s decision to sponsor an international workshop on global warming, Senator Heinz expressed his pleasure that the ideas in Project 88 “have proven useful” and offered some suggestions on legislative development.

- 38.) Andrew McElwaine, memo to Senator Heinz, June 5, 1989, preparing him for a meeting with President Bush that afternoon. The memo describes the status of negotiations on acid rain permit trading and other topics related to clean air.
- 39.) Text of Senator Heinz’s welcoming speech at the Project 88 Conference, June 13, 1989, including Heinz’s handwritten notes
- 40.) Joseph Goffman (senior attorney, Environmental Defense Fund), letter to *Pittsburgh Post-Gazette*, June 13, 1989, in support of Project 88 and Senator Heinz’s environmental leadership
- 41.) William Reilly, letter to Senator Heinz, June 15, 1989. Writing the day after the Project 88 symposium, EPA Administrator Reilly expressed support for efforts to apply market incentives and described prior EPA activities of this nature.
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- 44.) Draft letter prepared for Senator Heinz to send to President Bush, October 18, 1989, calling on the President to provide strong leadership at an international conference on climate change scheduled for November 6–7. The draft has handwritten revisions by Senator Heinz.
- 45.) Senator Heinz, letter to Robert Redford, October 31, 1989, expressing appreciation for Redford’s leadership in the August 1989 “Sundance Symposium” and describing follow-up actions to address climate change
- 46.) Daniel Dudek (senior economist, Environmental Defense Fund), letter to Senator Heinz, May 1, 1990, indicating receptiveness to Project 88’s themes in Poland
- 47.) President Bush’s message at the bill signing ceremony for the Clean Air Act Amendments, November 15, 1990
- 48.) Chronology of the Clean Air Act Amendments of 1990, taken from a summary on the U.S. Environmental Protection Agency’s Web site

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