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### Protecting the Environment: Harnessing the Power of the Marketplace

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*Washington University in St Louis*

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## **Protecting the Environment: Harnessing the Power of the Marketplace**

by Murray Weidenbaum

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Center for the  
Study of  
American Business  
Washington University - St. Louis

# Protecting the Environment: Harnessing the Power of the Marketplace

by Murray Weidenbaum

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This booklet is one in a series designed to enhance the understanding of the private enterprise system and the key forces affecting it. The series provides a forum for considering vital current issues in public policy and for communicating these views to a wide audience in the business, government, and academic communities. Publications include papers and speeches, conference proceedings, and other research results of the Center for the Study of American Business.

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## Introduction

Although economists and environmentalists often find themselves on opposite sides of specific issues, they occupy some common ground. A healthful environment is essential for the effective conduct of economic and other human activities. Even the most theoretical economist breathes the same air and drinks the same water as members of the Sierra Club; in fact, he or she may be a dues-paying member.

Likewise, a strong economy provides the resources for human activity, including dealing with ecological problems. It also generates the rising living standard that enables citizens to focus on serious concerns beyond the immediate one of paying for everyday necessities. Balancing economic and ecological concerns is hardly an either/or matter.

Any doubt on that score can be resolved by examining the plight of many East European nations. Their weak economies have been unable to support the environmental cleanup taking place in Western societies. The result has been "an ecological disaster zone," where even the snow is black. Fines levied on polluters are ineffective in their socialized economies because the government, as owner of all property, ends up paying the penalties.<sup>1</sup>

The situation is very different in the United States. Rather than subordinating environmental concerns to economic goals, we tend to ignore economic considerations in fashioning public policy on ecological issues.

## Public Support and Individual Reluctance

Every poll of citizen sentiment shows overwhelming support for doing more to clean up the environment. A public opinion survey by *The New York Times* and CBS News reported in 1983 that 58 percent of the sample agreed with the following strong statement: "Protecting the environment is so important that requirements and standards cannot be too high and continuing environmental improvements must be made regardless of cost."<sup>2</sup>

Nevertheless, despite the continuation of such an overwhelming public mandate and a plethora of new laws and directives by the

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Environmental Protection Agency (EPA) plus hundreds of billions of dollars of compliance costs expended by private industry, the public remains unhappy with the results.

Unfortunately, environmental action is an extremely important example of not wishing to pay the piper. Those same citizens who want environmental improvements "regardless of cost" vociferously and adamantly oppose the location of any hazardous waste facility in their own neighborhood. Nor are they keen on paying for the cleanup. Of course, they strongly favor cleaning up the environment, but each prefers to have the dump site located in someone else's backyard and to have the other fellow pay for it.

An example of this situation is the reaction of the enlightened citizens of Minnesota to a \$3.7 million grant from the EPA to build and operate a state-of-the-art chemical landfill that could handle hazardous wastes with a high assurance of safety. In each of the sixteen locations that the state proposed, the local residents raised such a fuss and howl that the state government backed off. Ultimately, the unspent grant was returned to EPA.

The Minnesota experience is not exceptional. The EPA was also forced to stop a project to test whether the sludge from a municipal waste treatment plant could be used as a low-cost fertilizer. The public opposition was fierce, even though the EPA was going to use federally owned land and the sludge was expected to increase crop yields by 30 percent.<sup>3</sup>

Since 1980, not a single major new disposal facility has been sited anywhere in the United States. According to a state-by-state review, the outlook for the future is "even more bleak," in large part because of a worsening of the emotional atmosphere surrounding any effort to locate a new dump site.<sup>4</sup> As Professor Peter Sandman of Rutgers University has pointed out, the public perceives environmental matters not only emotionally, but also morally. "Our society," he has written, "has reached near-consensus that pollution is morally wrong -- not just harmful or dangerous . . . but wrong."<sup>5</sup> Yet, the individuals that make up that same public are reluctant personally to assume the burdens associated with that strongly held view.

This ambivalent attitude toward the environment is not new. In 1969, the National Wildlife Federation commissioned a national survey to ascertain how much people were willing to pay for a cleaner environment. At a time of peak enthusiasm for environmental regulation, the public was asked, "To stop the pollution destroying our plant life and wildlife, would you be willing to pay an increase in your monthly electric bill of \$1?" The "no" vote won hands down, 62 percent to 28 percent (with 10 percent "not sure").<sup>6</sup> That study, we should recall, was taken before the big runup in util-

ity bills. Perhaps not too surprisingly, the survey showed strong support for taxing business to finance environmental cleanup.

In other words, most of us Americans very much want a cleaner environment, but are neither willing to pay for it nor seriously to inconvenience ourselves. We try to take the easy way out -- by imposing the burden on "someone else," preferably a large impersonal institution.

## Trying to Do Everything at Once

It is much easier for Congress to express a desire for cleaner air or purer water than for an agency like the EPA to fulfill that desire. To be sure, vast sums of money have been spent for these purposes in recent years. From 1970 to 1986, Congress appropriated over \$55 billion for the operation of the EPA. The headcount of EPA employment rose from a few hundred in 1970 to over nine thousand in 1988. These numbers are dwarfed by the costs incurred in the private sector to comply with the government's rules on environmental cleanup. The U.S. Council on Environmental Quality estimated the total at over \$100 billion for 1988 and over \$750 billion for the preceding decade (in dollars of 1986 purchasing power).<sup>7</sup>

These staggering outlays have not prevented the critics from instituting an almost endless array of lawsuits whose main purpose is to get the EPA to act faster and to do more. Typical of the assaults on the EPA is this statement by Congressman James J. Florio of New Jersey: "They are not in charge. They do not have the resources by their own actions to get the work done, and they are more interested in cosmetics than anything."<sup>8</sup>

The plaintive response of the EPA administrator at the time was that "EPA's plate is very full right now."<sup>9</sup> That plate is being heaped higher on an almost daily basis. One of EPA's newest responsibilities, for instance, is regulation of genetically engineered pesticides. Moreover, rapid scientific improvements permit the detection and, perhaps, regulation of ever more minute quantities of pollutants.

Meanwhile, John Q. Public (and Jane Q. Public) are making the problem worse. In 1965, the average American disposed of three pounds of garbage a day. By 1985, that figure was up to four pounds each day and rising -- in addition to wastes from agriculture, mining, industry, construction and demolition, sewage, and junked autos.<sup>10</sup>

To be sure, the EPA can claim important accomplishments. Between 1970 and 1985, air pollution from vehicles was reduced by 46 percent for hydrocarbons, 34 percent for carbon monoxide, and 75 percent for lead. Rivers from coast to coast that were nearly

devoid of life teem with fish once again. Lake Erie, so laden with pollutants in 1969 that a river feeding into it caught fire, has been revived.<sup>11</sup>

Despite these successes, the EPA frequently falls short in meeting congressionally mandated goals for pollution cleanup. The hard fact is that the status quo in environmental policy is not sufficient. Congress continues to pass high-sounding legislation with unrealistic timetables and inflexible deadlines, while the EPA gets ever greater responsibility and private industry spends billions more on environmental compliance. In the words of the EPA's former administrator William Ruckelshaus, "EPA's statutory framework is less a coherent attack on a complex and integrated societal problem than it is a series of petrified postures."<sup>12</sup>

## Exceptions to the Rules

### The Public Sector Drags Its Feet

In addition, misperceptions of the villains in the pollution story abound. Many people fall into a common trap -- that of associating polluters exclusively with business. Many companies do generate lots of pollution. But the same can be said about government agencies, hospitals, schools, and colleges.

Moreover, the EPA lacks the enforcement power over the public sector that it possesses over the private sector. Reports of plant closings because of the high cost of meeting environmental standards are common. In contrast, there is no record of a single government facility closing down because it was not meeting ecological requirements.

It is not surprising, for instance, that the General Accounting Office (GAO) says that the performance of federal agencies in carrying out the requirements of hazardous-waste disposal "has not been exemplary." A GAO report issued in 1986 says that, of 72 federal facilities inspected, 33 were in violation of EPA requirements and 22 had been cited for Class 1 (serious) violations. Sixteen of the 33 facilities remained out of compliance for six months or more. Three had been out of compliance for more than three years.<sup>13</sup> A follow-up report by the GAO in 1987 showed little further progress. Only four of eleven federal agencies had completed the identification of hazardous-waste sites and none had finished assessing the environmental problems they had uncovered. Of 511 federal sites failing to meet EPA standards, only 78 had been cleaned up.<sup>14</sup>

A major offender is the Department of Defense, which now generates over 500,000 tons of hazardous waste a year. That is more

than is produced by the five largest chemical companies combined.<sup>15</sup> The lax situation uncovered by the GAO at Tinker Air Force Base, in Oklahoma, is typical of the way in which many federal agencies respond to the EPA's directives: "Although DOD [Department of Defense] policy calls for the military services to . . . implement EPA's hazardous waste management regulations, we found that Tinker has been selling . . . waste oil, fuels, and solvents rather than . . . recycling. . . ."<sup>16</sup>

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*Congress wants a cleaner environment but so far has not mustered the will to impose even modest pollution controls on a politically powerful group of constituents -- farmers.*

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The GAO reported that two of the five commercial waste sites receiving the base's wastes had major compliance problems. Also, personnel at Tinker Air Force Base were dumping hazardous wastes in landfills that themselves were in violation of EPA requirements. In one case, the EPA had been urging the Oklahoma Department of Health for several years not to renew a landfill's permit. In another instance, the State Water Resources Board was seeking a court order to close the site. Civilian agencies, including those in state and local governments, continue to be reluctant to follow the same environmental standards that they impose on the private sector.<sup>17</sup>

### Agricultural Interests Favored

Also, federal policy arbitrarily excludes one of the largest single sources of pollution from the EPA's effective jurisdiction: the runoff of pesticides and fertilizers from farms.<sup>18</sup> The EPA reports that, in six of the agency's ten regions, pollution from farms and urban streets is the principal cause of water quality problems. But pollution from these sources remains virtually unregulated.

Large quantities of agricultural pollution can be controlled fairly easily at low cost by using limited-till plowing techniques. In striking contrast, industrial pollution control has often been pushed to the limits of economic feasibility. Nevertheless, Congress follows a double standard: for urban and industrial pollution it requires the imposition of tough and detailed standards to qualify for permits to discharge wastes. For rural and farm pollution, the EPA is merely given money to study the problem.

Like the rest of us, Congress wants a cleaner environment. But so far it has not mustered the will required to impose the most modest pollution controls on a politically powerful group of con-



stituents. To be sure, farm families also want a cleaner environment -- but it is always nice to get someone else to pay for your desires.

## **Economic Solutions to Hazardous Waste Problems**

Turning to specific environmental problems, we can start with the controversy over the disposal of hazardous wastes. Instances of toxic-waste contamination at Love Canal, in New York State, and at Times Beach, Missouri, have brought a sense of urgency to the problem. The public mood on the subject of hazardous waste leaves little room for patience -- but much opportunity for emotional response.

Emotionally charged responses are encouraged by the fact that even scientists know little about the effects on human health of many toxic substances, such as the various forms of dioxin. Levels of some substances can now be measured by the EPA in terms of parts per billion and occasionally per quadrillion, but even the experts still debate the significance of exposure at those rates. In effect, the scare headlines about chemical health hazards deal with exposures that are akin to the proverbial needle in the haystack. Actually, the needle-haystack comparison is much too modest. One part per billion is the equivalent of one inch in 16,000 miles, a penny in \$10 million, four drops of water in an Olympic-size pool, or a second in thirty-two years.

The most severe reaction to dioxin reported so far by humans is a bad case of chloracne, a severe acne-like rash. The bulk of the available information on dioxin and other hazards is based on extrapolating from data on animal experiments, which is very tricky. Most tests on animals are conducted at extremely high concentrations of the suspected element, which do not reflect real-world conditions in which the animals (or humans) live. Scientists note that the massive doses that are fed the animals overwhelm their entire bodies. Moreover, a level of exposure that is harmful to one type of animal may not be injurious to another. For example, the lethal dose of the most toxic dioxin (2, 3, 7, 8 TCDD) for hamsters is 5,000 times higher than that for guinea pigs.<sup>19</sup> Extrapolating the results to humans is even more conjectural.

However, our hearts must go out to the people in Times Beach, Missouri, and in Love Canal, New York, who have suffered severe financial and psychological damage from the emotional responses to the scare stories they have seen and heard so frequently.

In trying to avoid a repetition of these situations, the EPA has promulgated detailed regulations on how polluters must keep track

of hazardous wastes and how they should dispose of them. Because of growing public concern over leaky and dangerous dump sites, Congress in late 1986 extended and expanded Superfund, the program designed to clean up hazardous waste sites. The law requires companies and, ultimately, consumers to pay \$9 billion into Superfund by 1991.<sup>20</sup> Yet, despite all this effort and attention, the problem of how to dump hazardous wastes is scarcely less serious than it was in 1980, before Congress passed the original Superfund law.

As it stands, the law provides for a large fund raised primarily through taxes on producers of chemical and petroleum products. The EPA uses this money to identify and clean up hazardous waste sites. But little progress is made because, as we noted earlier, there is a severe shortage of dump sites.

A more clearheaded view of waste disposal problems is needed in the United States. Because definitions vary among levels of government, estimates of the amount of hazardous waste disposed of each year in the United States range from 30 million to 264 million metric tons. Most of this waste is buried in landfills because incineration, the safest and most effective means of disposal, is nearly ten times as costly. Even so, government and industry spend over \$5 billion each year to manage toxic wastes. The annual cost by 1990 is projected to reach \$12 billion.<sup>21</sup>

Many experts believe that using landfills is inherently unsafe, if for no other reason than that they are only storage sites. Moreover, there are not enough of them. The EPA estimates that 22,000 waste sites now exist in the United States, and fully 10 percent of them are believed to be dangerous and leaking.

The result: not enough reliable, environmentally safe places to dump toxic substances. Although EPA wants to clean up as many landfills as possible, it has very little choice as to where to put the material it removes under the Superfund mandate. Taxpayers may wind up paying for the costly removal of waste from one site, only to find later on that they have to pay again for removing it from yet another dangerous site.

Meanwhile, legal fees mushroom. The litigation costs involving cleanup at the various Superfund sites are estimated to run somewhere between \$3.5 billion and \$6.4 billion.<sup>22</sup>

## **Economic Incentives Are Needed**

Eventually, society will have to face the main reason for the scarcity of hazardous-waste sites -- the "not in my backyard" syndrome. Sites for the disposal of toxic substances have joined prisons and mental hospitals as things the public wants, but not too close by.

The hazardous-waste-disposal problem is not going to disappear



unless Americans change to less polluting methods of production and consumption. Until then, greater understanding is needed on the part of the public and a willingness to come to grips with the difficult problems arising from the production and use of hazardous substances. Of course, it will cost large amounts of money (probably in the hundreds of billions of private and public expenditures in the next decade) to meet society's environmental expectations. But spending money may be the easiest part of the problem. Getting people to accept dump sites in their neighborhoods is much more difficult.

The answer surely is an appeal not merely to good citizenship but also to common sense and self-interest. In a totalitarian society, people who do not want to do something the government desires are simply forced to do so, with the threat of physical violence ever present. In a free society with a market economy, we offer to pay people to do something they otherwise would not do. The clearest example in modern times is the successful elimination of the military draft coupled with very substantial increases in pay and fringe benefits for voluntarily serving in the armed forces.

Individual citizens have much to gain by opposing hazardous waste facilities to be located near them -- and there is a basic logic to their position. It is not fair for society as a whole to benefit from a new disposal site, while imposing most of the costs (ranging from danger of leakage to depressed property values) on the people in the locality. But local resistance to dealing with hazardous wastes does impose large costs on society as a whole. Those costs are in the form both of inhibiting economic progress and having to ship waste from one temporary site to another.

There is a way of reconciling individual interests and community concerns. It is by the use of economic incentives. The idea is to look upon environmental pollution not as a sinful act but as an activity costly to society and susceptible to reduction by means of proper incentives. After all, the prospect of jobs and income encourages many communities to offer tax holidays and other enticements to companies considering the location of a new factory -- even though it may not exactly improve the physical environment of the region. Under present arrangements, however, there is no incentive for the citizens of an area to accept a site for hazardous wastes in their vicinity, no matter how safe it is.

But perhaps some areas would accept such a facility if the state government (financed by all the citizens benefiting from the disposal facility) would pay for something the people in that locality want but cannot afford -- such as a new school building, firehouse, or library or simply lower property taxes.<sup>23</sup> Unlike an industrial factory, a

hazardous-waste facility provides few offsetting benefits to the local residents in the form of jobs or tax revenues.<sup>24</sup> (See box on page 10 for examples of the use of incentives.)

There is much that government can do to improve environmental policy in other ways. The EPA could reduce the entire hazardous-waste problem by distinguishing between truly lethal wastes -- which clearly should be disposed of with great care -- and wastes that contain only trace or minute amounts of undesirable materials. To the extent that changes in legislation would be required, the agency should urge Congress to make them.

The experience of a company in Oregon provides insights into why Congress needs to legislate common sense into the antipollution laws. The firm has been dumping heavy-metal sludges on its property for over twenty years. Company officials told the General Accounting Office that they automatically classify the material as hazardous. Why? Because it would be too costly and time-consuming to try to prove that it was not. The GAO learned from several industry associations that other companies, similarly uncertain and wanting to avoid expensive testing costs, simply declare their wastes to be hazardous, whether they really are dangerous or not.<sup>25</sup> That is not the only example in which those complying with environmental regulations lose sight of the fundamental objectives to be met.

### Tackling First Things First

A 1987 EPA report concluded that the agency's priorities "do not correspond well" with its rankings by risk of the various ecological problems that it is dealing with. Thus, the agency's own study found areas of high risk but little regulatory effort. A key example is runoff of polluted water from farms and city streets.

Conversely, the study showed that areas of "high EPA effort but relatively low risks" included management of hazardous wastes, cleanup of chemical waste dumps, regulation of underground storage tanks containing petroleum or other hazardous substances, and municipal solid waste.<sup>26</sup> The reason for this mismatch between needs and resources is obvious. The EPA's priorities are set by Congress and reflect public pressure more than scientific knowledge. Driven by the forces of environmental politics, the nation has repeatedly committed itself to goals and programs that are unrealistic. This has meant deploying regulatory manpower unwisely and diverting limited resources to concerns of marginal importance.

The results of this mismatch are substantial. Not all hazards are created equal. Some disposal sites are being filled with innocuous

## Citizens Understand Incentives Even If Politicians Do Not

An episode in 1985 shows the promise of the incentive approach. In the town of Lisbon, Connecticut, an entrepreneur proposed to locate a modern incinerator that would generate both energy from waste and \$1 million in tax revenues. Despite the financial incentive and assurance that the incinerator would be equipped with the latest antipollution devices, he was rebuffed. Then the businessman tried another tactic. Instead of saying that the new facility would bring the town \$1 million a year income in additional taxes, he promised to pay the property taxes of every landowner in the town for the next twenty-five years. Actually, the total cost would be about the same. But individual citizens could appreciate the direct benefits of the second approach.

Local opposition to the undertaking quickly diminished. A town referendum on the incinerator yielded a vote of 680 in favor and 540 opposed. But that vote was only advisory. Later on, the town planning and zoning commission voted 5 to 4 against the project. The incentive approach, in the case of Lisbon, can be described as producing a near miss. Yet the incident does show the latent support for making difficult trade-offs when citizens are provided with some reasonable -- and, in this case, imaginative -- alternatives.

A more direct example of using economic incentives to locate inherently undesirable storage facilities occurred in 1987. A proposed dump site for medical supplies contaminated by low-level radiation was estimated to provide about forty new jobs. Three poor communities in the Mojave Desert region in southern California vied spiritedly for the project, overcoming their concerns over possible environmental impact.<sup>1</sup>

Also in 1987, Senators J. Bennett Johnston, Jr. (Democrat of Louisiana), and James McClure (Republican of Idaho) proposed that a state agreeing to the location of a nuclear disposal site within its borders would receive large incentive payments from the Department of Energy. Over the thirty- to forty-year life of the repository project, these payments would run to several billion dollars. The governor of Nevada, a likely location, denounced the notion as "bribery" and "nuclear blackmail." Yet, in 1978, a state blue ribbon panel had recommended radioactive-waste disposal as a prime alternative use of the Nevada Test Site in the event of a ban on nuclear testing. It does seem that economic incentives can play a role in hazardous-waste disposal, but a good deal of time, patience, and effort may be required.<sup>2</sup>

<sup>1</sup>"Desert Fight for Nuclear Dump," *San Francisco Chronicle*, March 14, 1987, p. 5. See also Philip J. Bourque and R. Haney Scott, "Let States Bid for Nuclear Waste Repository," *Pacific Northwest Executive*, October 1986, p. 1.

<sup>2</sup>Luther J. Carter, "U.S. Nuclear Waste Program At An Impasse," *Resources*, Summer 1987, pp. 2-4.

material while truly dangerous substances are or will be, for lack of space, dumped illegally or stored "temporarily." What would help is more widespread application of the legal concept known as *de minimis non curant lex* -- the law does not concern itself with trifles.

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*Driven by the forces of environmental politics, the nation has repeatedly committed itself to goals and programs that are unrealistic.*

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Back in 1979, a federal circuit court supported the view that there is a *de minimis* level of risk too small to affect human health adversely. It cited that doctrine in turning down the claim that some "migration" of substances occurred from the packaging into the food product. In 1985, the FDA concluded that using methylene chloride to extract caffeine from coffee presented a *de minimis* risk. Hence, the substance is safe for its intended use. In 1987, the National Research Council recommended that the EPA apply a "negligible risk" standard across the board in determining how much of which pesticides can be permitted to show up in food.<sup>27</sup>

## Cancerphobia Misallocates Resources

One approach to eliminating the gridlock in regulatory policy is to focus on the underlying public concern that is driving the pressures for more sweeping environmental and other social regulation. That concern is the worry about cancer. The regulatory waters have become badly muddied by the public's misconception of the causes of cancer. A widely held notion is that the environment is primarily responsible. There is, of course, a germ of truth to that belief.

It turns out that several years ago a distinguished scientist -- John Higginson, director of the World Health Organization's International Agency for Research on Cancer -- assigned the primary blame for cancer to what he labeled "environmental" causes. His highly-publicized finding that two-thirds of all cancer was caused by environmental factors provided ammunition for every ecological group to push for tougher restrictions on all sorts of environmental pollution.

However, upon a more careful reading, it is clear that the eminent scientist was referring not to the physical environment but to the age-old debate of "environment" versus "heredity" as the main influence on human beings. In the case of cancer, he was identifying voluntary behavior -- such as personal life-styles and the kinds of food people eat -- as the main culprit responsible for cancer. Dr. Higginson specifically pointed out, "But when I used the term envi-



ronment in those days, I was considering the total environment, cultural as well as chemical . . . air you breath, the culture you live in, the agricultural habits of your community, the social cultural habits, the social pressures, the physical chemicals with which you come in contact, the diet, and so on."<sup>28</sup> But that explanation has not slowed down the highly vocal ecology groups who latched on to a "catchy" albeit confused theme -- the extremely carcinogenic environment in which Americans supposedly live.

More recently, one university scientist tried to add some objectivity to the cancer debate by quantifying the issue. Professor Harry Demopoulos of the New York Medical Center examined why approximately 1,000 people die of cancer each day in the United States. About 450 of the deaths, or 45 percent, are attributable to diet. Citing the work of Dr. Arthur Upton of the National Cancer Institute, Demopoulos noted that eating more fresh fruits and vegetables and curtailing fat consumption would be most helpful.<sup>29</sup> Clearly, obesity is not the type of environmental pollution that justifies the EPA's increasingly onerous standards.

The second major cause of cancer deaths, according to Demopoulos, is the consumption of excessive quantities of distilled liquor and the smoking of high-tar cigarettes. These voluntary actions resulted in 350, or 35 percent, of the cancer deaths. Again, this is not the environmental pollution that motivates most ecology activists.

A distant third in the tabulation of leading causes of cancer is occupational hazards, accounting for 5 percent of the total. Demopoulos believes that this category may have leveled off and be on the way down. He reasons that many of the occupationally induced cancers are due to exposures two or more decades ago, when scientists did not know that many chemicals were capable of causing cancer.

A fourth category, accounting for 3 percent, is caused by exposure to normal background radiation. The fifth and last category of causes of cancer (accounting for 2 percent) is preexisting medical disorders. These include chronic ulcerative colitis, chronic gastritis, and the like. The remaining 10 percent of the cancer deaths in the United States are due to all other causes; it is noteworthy that air and water pollution and all the other toxic hazards that are the primary cause of public worry are in this miscellaneous 10 percent, not in the 90 percent. Government policy is unbalanced when the great bulk of the effort deals with a category of risk that is only some fraction of one-tenth of the problem.

Hard data can dissipate much of the fear and fog generated by the many cancer-scare stories that the public has been subjected to

in recent years. Overall, cancer death rates are staying steady or coming down. The major exception is smoking-related cancer. For the decade 1974-83, stomach cancer was down 20 percent, cancer of the cervix-uterus was down 30 percent, and cancer of the ovary was down 8 percent.

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*"We are the healthiest we have been in human history."*

Dr. Bruce Ames  
University of California cancer expert

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Life expectancy is steadily increasing in the United States (to an all-time high of seventy-five, for those born in 1985)<sup>30</sup> and in most other industrialized nations, except the Soviet Union. This has led the cancer expert Professor Bruce Ames of the University of California to conclude, "We are the healthiest we have been in human history."<sup>31</sup> That is no justification for resting on laurels. Rather, Ames's point should merely help lower the decibel level of debates on environmental issues and enable analysis to dominate emotion in setting public policy in this vital area.

### **A Birth Control Approach to Pollution**

Over 99 percent of environmental spending by government is devoted to controlling pollution after it is generated. Less than 1 percent is spent to reduce the generation of pollutants.<sup>32</sup> For fiscal 1988, the EPA budgeted only \$398,000 -- or .03 percent of its funds -- for "waste minimization." That is an umbrella term that includes recycling and waste reduction.<sup>33</sup>

The most desirable approach is to reduce the generation of pollutants in the first place. Economists have an approach that is useful -- providing incentives to manufacturers to change their production processes to reduce the amount of wastes created or to recycle them in a safe and productive manner.

### **The Hazardous Waste Example Revisited**

As we noted earlier, the government taxes producers rather than polluters. By doing that, the country misses a real opportunity to curb actual dumping of dangerous waste. The federal Superfund law is financed with taxes levied on producers of chemical "feedstocks" and petroleum plus a surtax on the profits of large manufacturing companies and contributions from the federal Treasury. Thousands of companies outside of the oil and chemical



industries wind up paying very little, whether they are large polluters or not. Contrary to widely held views, a great deal of pollution occurs in sectors of the economy other than oil and chemicals. The manufacture of a single TV set generates about one hundred pounds of toxic wastes.<sup>54</sup>

Switching to a waste-end fee levied on the amount of hazardous wastes that a company actually generates and disposes of would be far more economically sound than the status quo. This more enlightened approach would require a basic correction in the Comprehensive Environmental Response, Compensation, and Liability Act (or "Superfund"), but it would be a very beneficial form of hazardous waste "birth control."

### A General Application of Market Incentives

More generally, if the government were to levy a fee on the amount of pollutants discharged, that would provide an incentive to reduce the actual generation of wastes. Some companies would find it cheaper to change their production processes than to pay the tax. Recycling and reuse systems would be encouraged. Moreover, such a tax or fee would cover imports which are now disposed of in our country tax free. In short, rewriting statutes, such as the Superfund law, so that they are more fair would also help protect the environment -- and would probably save money at the same time.

Already, some companies are recycling as they become aware of the economic benefits.<sup>56</sup> For example, one chemical firm burns 165,000 tons of coal a year at one of its textile fibers factories, generating 35,000 tons of waste in the form of fly ash. The company recently found a local cement block company that was testing fly ash as a replacement for limestone in making lightweight cement blocks. The chemical company now sells the fly ash to the cement block manufacturer. What used to be an undesirable waste by-product has been turned into a commercially useful material. Simultaneously, the companies are conserving the supply of limestone.

A timber company, through its research, developed a new use for tree bark, the last massive waste product of the wood products industry. The firm designed a bark processor that made it the first domestic producer of vegetable wax, an important ingredient in cosmetics and polishes. A factory in Illinois had been creating a veritable sea of calcium fluoride sludge (at the rate of 1,000 cubic yards a month) as a by-product of its manufacture of fluorine-based chemicals. The company found that the sludge could be mixed with another waste product to produce synthetic fluorspar, which it had been buying from other sources. Recycling the two waste products now saves the firm about \$1 million a year.

Incentives to do more along these lines could be provided in several ways. The producers could be subsidized to follow the desired approach. In this period of large budget deficits, that would, of course, increase the amount of money that the Treasury must borrow.

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*The pollution tax approach appeals to self-interest in order to achieve the public interest.*

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A different alternative is to tax the generation and disposal of wastes. The object would not be to punish the polluters but to get them to change their ways. If something becomes more expensive, business firms have a natural desire to use less of the item. In this case, the production of pollution would become more expensive. Every sensible firm would try to reduce the amount of pollution tax it pays by curbing its wastes. Adjusting to new taxes on pollution would be a matter not of patriotism but of minimizing cost and maximizing profit. The pollution tax approach appeals to self-interest in order to achieve the public interest.

Charging polluters for the pollution they cause gives companies an incentive to find innovative ways to cut down on their discharges.<sup>56</sup> These fees would raise costs and hence prices for products whose production generates a lot of pollution. It is wrong to view this as a way of shifting the burden to the public. The relevant factor is that consumer purchasing is not static. Consumer demand would shift to products which pollute less -- because they would cost less. To stay competitive, high-polluting producers would have to economize on pollution, just as they do in the case of other costs of production. Since pollution imposes burdens on the environment, it is only fair that the costs of cleaning up that pollution should be reflected in the price of a product whose production generates this burden.

Nine countries in Western Europe have adopted the "polluter pays" principle. In these nations, pollution control is paid for directly by the polluting firm or from the money collected from effluent taxes. The West German effluent-fee system, the oldest in operation, began before World War I. It has succeeded in halting the decline in water quality throughout the Ruhr Valley, the center of West Germany's iron and steel production. It is also serving as a model for a more recent French effort.<sup>57</sup>

Practical problems make changes in pollution policy difficult in the United States. Both the regulators and the regulated have an interest in maintaining the current approach. Pollution taxes have

little appeal in the political system, particularly in the Congress. Many reject a pollution tax on philosophical grounds, considering pollution charges a "license to pollute." They believe that putting a price on the act of polluting amounts to an attitude of moral indifference towards polluters. That gets us back to the point made earlier, that many people look at ecological matters as moral issues -- which makes it especially difficult to adopt a more rational and workable approach.

### Conclusion

Although economists are often accused of being patsies for the business community, environmental economics makes for strange alliances. So far, business interests have opposed the suggestions of economists for such sweeping changes in the basic structure of government regulation as using taxes on pollution. Despite the shortcomings of the present system of government regulation, many firms have paid the price of complying with existing rules. They have learned to adjust to regulatory requirements and to integrate existing regulatory procedures into their long-term planning.

As any serious student of business-government relations will quickly report, the debate over regulation is miscast when it is described as black-hatted business versus white-hatted public interest groups. Almost every regulatory action creates winners and losers in the business system and often among other interest groups. Clean air legislation, focusing on ensuring that new facilities fully meet standards, is invariably supported by existing firms that are "grandfathered" approval without having to conform to the same high standards as new firms. Regulation thus protects the "ins" from the "outs."

There are many other examples of regulatory bias against change and especially against new products, new processes, and new facilities. Tough emissions standards are set for new automobiles, but not for older ones. Testing and licensing procedures for new chemicals are more rigorous and thoroughly enforced than for existing substances. This ability to profit from the differential impacts of regulation helps to explain why business shows little enthusiasm for the use of economic incentives and prefers current regulatory techniques.

But the reform of regulation is truly a consumer issue. The consumer receives the benefits from regulation and bears the burden of the costs of compliance in the form of higher prices and less product variety. Thus, the consumer has the key stake in improving the current regulatory morass.

### Notes

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