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Murray L. Weidenbaum

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**CENTER FOR THE STUDY
OF AMERICAN BUSINESS**

AN ECONOMIC APPROACH TO HAZARDOUS WASTES

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An Address to the Annual Chemical Progress Week Luncheon,
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AN ECONOMIC APPROACH TO HAZARDOUS WASTES

Murray L. Weidenbaum

Every poll of citizen sentiment in the United States shows overwhelming support for doing more to clean up the environment. One public opinion survey by *The New York Times* and CBS News reported that 58 percent agreed with the following 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.

With such an overwhelming public mandate and a plethora of new laws and directives by the Environmental Protection Agency plus tens of billions of dollars of compliance costs by private industry, why then are ecology groups and so many citizens so unhappy with the results?

Unfortunately, environmental action is an important example of the failure of the American society to follow through on good intentions. Those same citizens who want environmental improvements "regardless of cost" are vociferously adamant in opposing the location of a hazardous waste facility in their own neighborhood. Nor are they too keen on paying for the cleanup. Sure, they are all for cleaning up the environment, but why don't you put the dump site in someone else's back yard? And why don't you get "them" (meaning the other fellow) to pay for it?

Note: This material is drawn from the author's forthcoming book, *The Post Reagan Economy* (New York, Basic Books, 1988).

A sad example is what happened when the enlightened citizens of Minnesota received a \$3.7 million grant from EPA to build and operate a state-of-the-art chemical landfill which could handle hazardous wastes with high assurance of safety. In each of the 16 locations that the state checked out, the local residents raised such a fuss and howl, that the state government backed off. Ultimately, the unspent grant was returned to EPA.

Unfortunately, the Minnesota experience is not an exceptional case. Since 1980, not a single major new disposal facility has been sited anywhere in the United States.

This ambivalent attitude toward the environment is nothing new. In the early 1970s, 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% to 28% (with 10% "not sure"). That survey, we should recall, was taken before the big runup in utility bills. Perhaps not too surprisingly, the survey showed strong support for taxing business to finance environmental cleanup.

In other words, most Americans very much want a cleaner environment, but they are neither willing to pay for it nor even seriously inconvenience themselves. They try to take the easy way out -- by imposing the burden on "someone else," preferably large impersonal institutions. Meanwhile most of us remain totally oblivious to the key role that we as consumers play in this process by continuing to demand rising amounts of goods and services whose production and distribution generate the great bulk of pollution. Let us try to see how the nation got into this policy box and then examine some opportunities for solution.

The Environment Policy Problem

The sad truth is that EPA frequently falls short in meeting congressionally-mandated goals for pollution cleanup and the number of dangerous dump sites filled with overflowing hazardous wastes continues to mount. A cynic might react to the mountain of environmental impact statements and regulatory issuances that are prepared each year with the plea, "Let us mourn for all the trees that are needlessly cut down to meet the paperwork requirements of environmental statutes."

It is too easy for environmental groups to respond to these serious ecological problems by blaming them all on neanderthals in the business community who do not care about the air we breathe, the water we drink, or the land we live on -- and the EPA for knuckling under to their pressures. Nor is public policy helped by the mirror image of that activity -- business executives accusing both EPA and environmental groups of not caring a whit about such practical matters as jobs or the economy.

The fact is that the status quo in hazardous waste policy is not working. Congress continues to pass high-sounding legislation with unrealistic timetables and inflexible deadlines, while EPA gets ever more responsibilities and private industry spends billions more on environmental compliance. Meanwhile, serious ecological problems worsen. In the words of former administrator Bill 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." Let us see if there are sensible ways out of this policy quandary.

From my own experience, I am mindful of the fact that virtually any change in an environmental statute proposed by an economist is viewed as the response of a green-eyeshade type devoid of all ecological concerns. Perhaps some

modern-day Shakespeare can write the script whereby a reform-minded economist convincingly declares, "If I am polluted, do I not cough?"

Let us turn to the current controversy over the disposal of hazardous wastes. Instances of toxic-waste contamination at Love Canal in New York State and at Times Beach here in Missouri have brought a great 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 responses. The same holds true, to a large extent, for the attitude of Congress.

Turning to dioxin, I feel obliged to note that the most severe reaction reported so far by humans is a bad case of chloracne -- which is a severe, acne-like skin reaction. The scare stories were typically based on extrapolating from data on animal experiments, which is very tricky. 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. Nevertheless, I readily confess my unwillingness to move to or even visit Times Beach and our hearts must go out to those people who have suffered such severe psychological and financial damage.

In trying to avoid the repetition of such situations, EPA has promulgated detailed regulations on how polluters must keep track of hazardous wastes and how they should dispose of them. Late last year Congress extended and expanded Superfund, the program designed to clean up hazardous waste sites. The law will require companies and ultimately consumers to pay in \$9 billion to the fund over the next five years. Despite all this effort and attention, the hazardous waste dump problem is little improved over the situation that prevailed before Congress passed the Comprehensive Environmental Response and Liability Act in 1980. Let us see what can be done to deal with this serious situation.

Incentives for Locating Toxic Dumps

Let us face the main reason for the scarcity of hazardous-waste sites -- the "Not in My Backyard" syndrome. Sites for toxic substance disposal have joined prisons and mental hospitals as items that the public in general wants, but not too close by.

The fact remains that continued public opposition to virtually every means of disposing of toxic substances will inevitably lead to disrupting the manufacture of needed products. Unfortunately, this could also lead to more illegal and dangerous "midnight dumping" of chemicals wastes and other hazardous materials.

But 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 important features of the problems arising from the production and use of hazardous substances. We need to look upon environmental pollution not as a sinful act, but as an activity costly to society and susceptible to economic incentives.

Dealing with important and continuing national problems inevitably involves making hard choices. Of course, it will cost large amounts of money (likely in the tens of billions of private and public expenditures in the next decade) to meet the 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 not an appeal merely to good citizenship, but 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. In a free society with a market economy, in striking contrast, we offer to pay people to get them to do something they otherwise would not want to 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.

We must recognize that citizens as individuals have much to gain by opposing hazardous waste facilities that would be located near them. When we stop to think about it, it is not fair for society as a whole to benefit from a new safe disposal site, but to impose most of the costs (such as depressed property value) on the people in the locality. But we also should realize that local resistance to dealing with hazardous wastes imposes large costs on society as a whole. After all, blocking new waste facilities does not make the problem disappear. To the contrary, holding vast quantities of toxic substances in temporary and deteriorating storage conditions is no solution.

But there is a way of reconciling individual interests and community concerns. It is economic incentives. Just think about it. The prospect of jobs and income for the community encourages many communities to offer tax holidays and other enticements to companies considering the location of a new factory -- which often does not exactly improve the physical environment of the region. Under present arrangements, however, there is little incentive for the citizens of an area to agree to locating a site for hazardous wastes in their vicinity, no matter how safe the facility really is. But perhaps some areas would accept such a facility if the state government (financed by all of the citizens who will benefit from the disposal facility) would pay for a new school building or firehouse or library or some other important civic investment desired by the residents of the area adjacent to the dump site. After all, unlike an industrial factory, a hazardous waste facility provides few offsetting benefits to the local residents in the form of jobs or tax revenues.

This idea is not as far fetched as it may seem. An episode in 1985 shows the promise of the incentive approach. In the rural 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 in additional taxes, he promised to pay the property taxes of every landowner in the town for the next 25 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 citizen support for making difficult tradeoffs when provided with some reasonable -- and in this case imaginative -- alternatives.

But there is no need to place the entire burden for improving the status quo of environmental policy on private citizens. There is much that government can do to improve the situation. For example, EPA could reduce the entire hazardous waste problem process 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 some undesirable materials. To the extent that changes in legislation would be required, the agency should urge Congress to make them.

Public policy needs to take account of the fact that levels of some substances can now be measured by the EPA in terms of parts per quadrillion. That means that many of the scare headlines about chemical health hazards are

akin to searching for the proverbial needle in the haystack. Actually, the needle-haystack comparison is much too modest. One part per billion is just one inch in 16,000 miles, a second in 32 years, a penny in \$10 million, or four drops of water in an Olympic-sized pool.

A recent EPA report concludes that the agency's current 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 several areas of high risk but little regulatory effort. A key example is the runoff of polluted water from farms and city streets.

Conversely, 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. The reason for this mismatch between needs and resources is obvious. EPA's priorities are set by Congress and reflect public concerns more than scientific knowledge.

The results of this mismatch are substantial. After all, not all hazards are created equal. At present, it is likely that some disposal sites are being filled with innocuous material while truly dangerous substances are, or will be -- for lack of space -- dumped illegally or stored "temporarily." What is needed is more widespread application of the legal concept known as de minimis non curant lex -- the law does not concern itself with trifles.

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. That doctrine was cited in turning down the claim that some "migration" of substances occurred from food-packaging films and food-contact articles. More recently, 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.

Just this past December, Professor Bruce Ames of the University of California at Berkeley spoke out on this subject -- he is the inventor of the Ames test, widely used to identify chemicals that might be carcinogens (i.e., cancer causing). Here is a direct quote:

We do want rules about pollution, but I'm not sure we should be spending enormous amounts of money getting that last part per billion out of the water supply when there's really no evidence that it is doing any harm . . .

A Birth Control Approach to Pollution

Over 99 percent of federal and state environmental spending is devoted to controlling pollution after waste is generated. Less than 1 percent is spent to reduce the generation of waste. Moreover, many current pollution control methods often do little more than move waste around. For example, air and water pollution control devices typically generate solid, hazardous waste that goes to landfills and often leach from there into groundwater.

Clearly, the most desirable approach is to reduce the generation of hazardous wastes in the first place. Again, economists have developed some concepts that are useful. The way to do that is to provide adequate 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. Further, to the extent that hazardous wastes must be generated, government should make their proper treatment or disposal a relatively easy matter rather than an extraordinarily difficult one. Measured against these two objectives, the current legal framework is not as good as it could be.

Under recent amendments to the federal "Superfund" law, clean ups are financed with a combination of taxes levied on producers of chemical "feedstocks" and petroleum, a surtax on the earnings of large manufacturing companies, and contributions from the Treasury. Thousands of serious disposers who do not

happen to be in the chemical or oil business wind up paying much less than comparable disposers in those two targeted industries. Similarly, large manufacturers may pay disproportionately more if they have high revenues and low waste generation. The problem is that we now tax producers rather than polluters. By doing that, we are missing a real opportunity to curb the actual dumping of dangerous waste.

A basic correction is needed in that major piece of environmental legislation called the Comprehensive Environmental Response, Compensation, and Liability Act (or "Superfund"). Conceptually, 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 taxing the amount of production.

(1) It would provide an incentive to reduce the actual output of waste. Some companies would find it cheaper to change their production process than to pay the tax. (2) It would promote development of recycling and reuse systems. (3) It would cover the products produced overseas which are now disposed of in our country tax free. In short, rewriting the Superfund law so that it is more fair would also help protect the environment -- and would probably save money.

More companies are recycling as they become increasingly aware of the business possibilities and the economic benefits. Let me give you a few examples. One chemical firm burns 165,000 tons of coal a year at one of its textile fiber factories. That generates 35,000 tons of waste in the form of flyash. The company recently found a local cement-block company that was testing flyash as a replacement for limestone in making lightweight cement blocks. The chemical company now sells the flyash to the cement block manufacturer. What has been an undesirable waste by-product has been turned into a commercially useful material. Simultaneously, the companies are conserving the supply of limestone.

In another industry, a timber company through its research developed a new use for tree bark. That is 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. Yet another case of constructive recycling is furnished by the manufacturing practices of a chemical plant in Illinois. It 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 different ways. The least desirable is to subsidize the producers 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.

A more promising alternative is to put a stiff tax on the generation and disposal of hazardous 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 (specifically, hazardous wastes) would become more expensive. Every sensible firm would then try to reduce the amount of pollution tax it pays by curbing its hazardous wastes. Care needs to be taken to make such a tax workable and to guard against more "illegal dumping" by generators in an effort to avoid the tax.

Adjusting to new taxes on pollution would not be a matter of patriotism but of cost minimization and hence profit maximization. The pollution tax approach appeals to self-interest in order to achieve the public interest. Many economists

have long advocated "taxing" pollution through effluent fees as a more efficient alternative to the current regulatory system. They argue that charging polluters for the pollution they cause increases incentives for companies to find innovative ways to decrease their discharges.

These fees would have the effect of raising costs and hence prices for products whose production generates a lot of pollution. Consumer demand would tend to shift to products which pollute less. In order to stay competitive, high-polluting producers would have to economize on pollution, just as they would on any other costly factor 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.

The Public Sector Drags Its Heels

A word of caution: we should avoid falling into a common trap -- that of associating polluters exclusively with business. To be sure, many companies do generate lots of toxic waste and not all of them handle it properly. But the same can be said about government agencies, hospitals, schools and universities. Moreover, EPA lacks the enforcement power over the public sector that it possesses over the private sector. Reports of plant closings due to the high cost of meeting environmental standards are common. The "lost opportunity" cost for the plant not built, or the expansion not made, is probably higher still. In contrast, there is no record of a government agency or even of a single government facility closing down for the same reason.

It therefore is not surprising that the General Accounting Office says that federal agency performance in carrying out the requirements of hazardous waste disposal "has not been exemplary." In fact, a GAO report issued late last year 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 not been in compliance for more than three years.

A major offender is the Department of Defense which now generates more than 500,000 tons of hazardous waste a year. That is more than the five largest chemical companies combined.

The federal government does not set a good example in terms of its compliance with its own environmental directives. It expects the private sector to take environmental concerns far more seriously than it does itself. The point is not to let anyone off the hook. The preferred solution is quite obvious: what is sauce for the goose should also be sauce for the gander.

Regulation Is a Consumer Issue

Let me return to my main theme. Environmental economics makes for strange alliances. So far, business interests have opposed the suggestions of economists for sweeping changes in the basic structure of government regulation such as using taxes on pollution. After all, despite the shortcomings of the present system of government regulation, many firms have paid the price of complying with existing rules. Firms have learned to adjust to regulatory requirements and to integrate existing regulatory procedures into their long-term planning.

In developing public support for regulatory reform, it is vital to distinguish between the self-serving objective of merely reducing the burdens on business and the enlightened attitude of adopting more efficient and more effective modes of regulation. As long as regulatory changes are seen as primarily a problem for business, there will be limited public support for the kinds of reform that I have been advocating. I must admit that I share the public attitude that business executives are paid to deal with difficult problems, including the ones that arise in complying with regulation.

But reforming regulation is truly a consumer issue. It is the consumer who receives the benefits from regulation and who ultimately bears the burden of the costs of compliance in the form of higher prices and less product variety. Thus it is the consumer who has the key stake in improving the current environmental regulatory morass.

At first blush, economics and ecology may seem to be poles apart. But when we consider economic analysis to be a way of dealing with difficult problems of choice -- rather than a mere green eyeshade approach -- we can see how using some basic economic concepts can help to achieve our important environmental objectives.