

The Polluter Pays Principle:

A Proper Guide for Environmental Policy

by Roy E. Cordato, Ph.D.

Institute for Research on the Economics of Taxation
Studies in Social Cost, Regulation, and the Environment: No. 6

Roy E. Cordato, Ph.D., Project Director

Copyright © April 2001 by
The Institute for Research on the Economics of Taxation (IRET)

EXECUTIVE SUMMARY

"The 'polluter pays principle' states that whoever is responsible for damage to the environment should bear the costs associated with it." (Taking Action, The United Nations Environmental Programme.)

Few people could disagree with the proposition that those who cause damage or harm to others should "pay" for those damages. It appeals directly to our sense of justice.

Forcing polluters to bear the costs of their activities is also said to enhance economic efficiency. Appropriately applied, policies based on a polluter pays principle (PPP) should enable us to protect the environment without sacrificing the efficiency of a free market economic system.

But the devil is in the details. The polluter pays principle needs to answer four questions: What constitutes pollution? Who are the polluters? How much must the polluters pay? To whom they must make the payment?

A correct interpretation of the polluter pays principle would define pollution as any by-product of a production or consumption process that harms or otherwise violates the property rights of others. The polluter would be the person, company, or other organization whose activities are generating that by-product. And finally, payment should equal the damage and be made to the person or persons being harmed.

Inanimate objects and the environment do not incur costs, people do. It is not merely the physical property that is being damaged, but the interests of the owner. However, most advocates of PPP rarely talk about harm to people. Instead, they misappropriate the economic theory by redefining the concepts of cost and damage to apply to things rather than to people. The statement above is typical. Polluters are said to be those who "damage" or impose "costs" on the *environment*.

Thus, environmentalists define a "polluter" far more broadly, not as someone who is harming others, but often as someone who is simply using his own property and resources in a way that offends the environmentalists. Because, in such cases, there are no victims to compensate, the amount to be paid is determined by the extent to which it will deter the politically disfavored activity. The payment (whether there are real victims or not) typically goes to the government in the form of a tax. In such cases, the PPP is used to promote an environmental agenda rather than to insure that real polluters pay compensation to real victims of their activities.

"Damage to the environment" and "costs to the environment" are nebulous and subjective concepts where the use of any resource, including the air, water and one's own property, can be defined as harming or 'potentially harming' that resource and therefore the environment.

Ultimately since all human activity involves altering (damaging?) the natural environment, the PPP as defined by its most vocal advocates can be invoked as a justification for taxing all consumption and production activities.

The use of "market-based instruments" to enforce these arbitrary curtailments of the use of property are often justified on the grounds of "economic efficiency." Instruments such as tradable emissions permits are said to result in less misdirection of resources than command and control solutions to pollution problems. However, when the fundamental concept of pollution is misguided, and the target reductions are made arbitrarily without the benefit of market signals as to the costs of production or the wishes of the consumers, no instrument is efficient.

Environmental problems occur because there is a conflict over the use of a resource. When we think of damage to property we are not simply speaking about the alteration of one or another of its physical aspects, we are in fact tying that property to an owner and the uses that he or she may have planned for it.

In order to decide who is the polluter and who should be paid one must first know who has rights to the resource whose use is in dispute. There are situations where ownership is in dispute or property rights are undefined. These problems need to be clarified, either in the courts, as is typically the case when there are disputes over property rights, or legislatively, as may be necessary when rights are completely undefined, as might be the case with rivers, the ocean, etc.

Unfortunately, the polluter pays principle that is currently guiding public policy has lost the concept that environmental problems are essentially about interpersonal conflicts over the use of property. The notion of property rights as *the rights that human beings have to property* has been replaced with the idea that somehow *the property itself has rights* that are being violated by productive human activity. The misapplied principle is muddying the waters, so to speak, in many environmental discussions, including those surrounding greenhouse gas emissions and global warming, solid waste disposal and the use of virgin materials, and clean water and air.

These errors lead to the illogical definition of a polluter as someone who causes damage to, or imposes costs, not on others, but on the environment. Since the environment cannot be compensated directly, this makes for an excuse to impose taxes on the offending parties, which, of course are to be used to "undo the damage." Ultimately though, these "payments" enhance the incomes of a host of government bureaucrats, consultants, and lawyers, all of whom benefit from the process. The polluter pays principle as it is currently being advocated ends up being a wealth transfer from non-polluters to politically well connected non-victims.

A property rights based polluter pays principle, if implemented, would solve many of these problems by enforcing existing property rights and providing principled guidance for the privatization of currently unowned resources by courts and legislatures. It will be much easier for law makers and adjudicators of disputes to move in the right direction once the problem is clearly identified.

The Polluter Pays Principle: A Proper Guide for Environmental Policy

*By Roy E. Cordato, Ph.D.**

"The 'polluter pays principle' states that whoever is responsible for damage to the environment should bear the costs associated with it."¹

Few people could disagree with what seems at first glance to be such a straightforward proposition. Indeed, properly construed, this is not only a sound principle for dealing with those who pollute but is an extension of one of the most basic principles of fairness and justice: people should be held responsible for their actions. Those who cause damage or harm to other people should "pay" for that damage. This appeal to our sense of justice is why the "polluter pays principle" (PPP) has come to resonate so strongly with both policy makers and the public.

As a general rule, sound economic analysis of pollution and environmental problems must also be based on the principle of responsibility. Forcing polluters to bear the costs of their activities is good economics too; it not only advances fairness and justice, but also enhances economic efficiency. In other words, with appropriate policies based on a PPP, we should not have to give up the economic efficiency of a free market system based on private property in order to obtain environmental protection, nor vice versa.

But as with most such general principles, the devil is in the details. In this case, the details relate to three basic questions that any application of the PPP must answer. First, how do we define pollution and therefore a polluter? Second, how much should the polluter pay, once he is identified? Third, to whom should the payment be made? The answers to these questions are at the heart of whether any application of the PPP will be either just or economically efficient.

A correctly construed polluter pays principle would penalize those who injure **other people** by harming their persons, or by degrading their property.

Too often, however, the PPP is misdefined and misused to suppress private economic activity that benefits the parties directly involved and does no specific damage to other people,

**The author is Vice President for Research and Resident Scholar, John Locke Foundation.*

¹Taking Action, Chapter 2, p. 3. Published by the United Nations Environmental Programme [sic], found at www.rona.unep.org.action.02.htm.

but which offends those who oppose human impact on the environment and prefer to leave resources undeveloped. The objective is to restrain the resource use at the expense of the property owners and consumers without cost to those who wish to see the resources remain idle.

Under such a misapplication of the PPP, very often "a polluter" is not someone who is harming others, but is someone who is simply using his own property and resources in a way that is not approved of by government officials or environmentalists. In such cases there is no harm to be measured and no real victims to compensate. Consequently, the amount to be paid is not determined by the extent of any actual damage done. Rather, it is set at a level that curbs the politically disfavored activity to the degree desired by its opponents. And finally, the payment (whether there are real victims or not) typically goes to the government in the form of a tax. In other words, in most cases, the PPP is used as cover to promote a political or ideological agenda rather than to ensure that real polluters pay compensation to real victims of their activities.

I. Damage to People vs. Damage to the Environment

Most advocates of PPP rarely, if ever, talk about harm to people or individuals. To many, polluters are not necessarily those who, through their production or consumption activities, do damage to the *persons or property of others*. Polluters are those who "damage" or impose "costs" on the *environment*. The quotation at the start of this paper expresses that concept.

This language in describing the PPP is seen repeatedly. The *Rio Declaration on Environment and Development* states that "National authorities should endeavor to promote the internalization of environmental costs [via] the use of economic instruments..." (more on this below). The "Draft International Covenant of Environment and Development, IUNC, 1995" states, "Parties shall apply the principle that the costs of preventing, controlling, and reducing potential or actual harm to the environment are to be borne by the originator."²

These are nebulous and subjective terms under which the use of any resource, including the air, water and one's own property, can be defined as harming or "potentially harming" that resource and therefore the environment. Does strip mining or establishing a landfill damage the environment or simply make use of it? Ultimately, all human activity involves altering (damaging?) the natural environment. Therefore, the PPP as defined by its most vocal advocates can be invoked as a justification for taxing all consumption and production activities.

The PPP can be carried to extremes by advocates of population control. Just by existing, we all "harm," i.e., change, the natural environment. Does that make each of us a polluter who must be made to "pay?" Does putting carbon dioxide (essential for all life on earth) into the atmosphere constitute "polluting" the air? Are humans polluting the air when we exhale? Should

²These quotes are from The Earth Charter Initiative: Resource Materials, at www.earthcharter.org/report-survey/survey20.htm, under the heading "The Polluter Pays."

we limit population growth through restrictions on procreation (as with the Chinese government's one child policy)?

II. Polluter Pays, "Market Based" Instruments, and Damage to the Environment

Closely tied to the PPP are policies typically grouped under the heading of "market based" or "economic" instruments,³ which are broken down into two categories, taxes and tradable permits. Both are seen as attempts to "make the polluter pay" by attaching a fee to the polluting activities.

The taxation approach is most direct. The tax would be paid either in the form of an emissions fee or an excise tax on the sales of products that are associated with pollution. The tradable permits approach would first have the government establish an overall acceptable level of emissions for an industry and would then distribute permits for that level of emissions to companies within the industry. The companies could then buy and sell these emissions permits based on their needs to emit the pollutant and their abilities to find pollution abatement techniques.

By these means, the polluters (or their customers) are made to "pay" for their polluting activities either through a tax, through the purchase of permits from others in the industry, or through the use of their own assigned permits (foregoing the cash that could be earned by selling them). In the first instance the "payment" is established by and made to the government. In the latter cases it is established by the supply and demand conditions in the market for permits.

A. "Harnessing Market Forces" for the Environment

While the presumed moral case for market based instruments is generally centered on the concept of making the polluter pay, the economic justification for these instruments is that of efficiency. That is, using market based incentives to accomplish environmental goals is assumed to be more efficient than traditional command and control policies.

As argued by the World Resource Institute's Duncan Austin, "'economic instruments', which aim to control pollution by harnessing the power of market incentives, offer a more cost-effective, flexible, and dynamic form of regulation than conventional measures."⁴ This notion is tied directly to the PPP. Theoretically, by making polluters pay, you are also making them

³For example, when searching the World Resource Institute web site, www.wri.org, for material on the "polluter pays principle," one of the first articles to appear is Duncan Austin, "Economic Instruments for Pollution Control and Prevention — A Brief Overview," World Resources Institute, September 1999. This connection is also made in the academic literature. See David Pearce & R. Kerry Turner, "Packaging Waste and the Polluter Pays Principle: A Taxation Solution," *Journal of Environmental Management and Planning*, Vol. 35, No. 1, 1992.

⁴*Ibid.*, p. 1.

take into consideration the pollution costs associated with their production activities. This encourages the more efficient use of resources overall, while providing an incentive for polluters to find the lowest cost methods for reducing emissions.

The problem with this theoretical approach is that, in advocacy and practice, the concept of cost is twisted to mean more than actual damage inflicted on third parties. Too frequently, the payment that PPP advocates would impose or the degree of cutback that is mandated is calculated to reduce the activity in question to the degree desired by the opponents of the activity rather than to the extent warranted by the actual level of "external costs" associated with the activity.

Economics, being a behavioral and social science, attaches the concept of costs to human beings and individual decision making. "Cost" refers to what must be given up when a person chooses one course of action as opposed to another, or when someone else's activities prevent a person from choosing one course of action rather than another. Economic theory argues that efficiency, i.e., social welfare, will be maximized when producers take into account *all* of the costs involved in making the product (including the costs they incur themselves and those they impose on other people) as they decide how much to produce and how much to charge.

For example, in the case of a company that is polluting a river, the cost might be to downstream recreational users who have to give up or cut back on certain activities: swimming, fishing, etc. Their cost would be the value that they place on the activities that the pollution is preventing them from pursuing. From this perspective, then, pollution "problems" arise because the polluter is imposing costs on other human beings. It is the human users of the river who bear the costs, not the river itself.

The application of a polluter pays principle *that accurately reflects the economic theory of costs* would have to include the identification of a victim and compensation to that victim by the offending party. An economic notion of "damage" would be directly linked to this view of costs. All pollution damages would relate to costs that are imposed on others, either by directly causing them physical harm or by somehow depriving them the use of their property.

Many advocates of market based instruments and PPP misappropriate the economic theory by redefining the concepts of cost and damage to apply to things rather than to people. Inanimate objects and the environment do not incur costs, people do.⁵

⁵For an interesting discussion of this notion, see Aaron Wildovski, "Accounting for the Environment," *Accounting, Organization, and Society*, Vol. 19, No. 415, 1994, pp. 461-481.

B. Polluter Pays in Practice: A Ship With No Rudder

As one would expect, the nebulous concepts of damage and costs to the environment have allowed policy makers and advocacy groups to identify pollution, and therefore polluters, in completely arbitrary ways. Because of this, the PPP has been invoked as a justification for policies that advance neither economic efficiency nor justice and that often subvert sound science. Rather, the PPP as it is commonly invoked, becomes a tool for those who seek to expand public sector control over the use of natural resources, or who want a rationale for taxing activities that they don't like and encouraging those that they do.

1. Non-Recyclers: Polluters Who Must Pay?

Around the world, the PPP is being invoked as a justification to encourage recycling in solid waste disposal and discourage the use of virgin materials — trees for paper, petroleum for plastics, iron for steel, etc. — in manufacturing. Proposals range from taxing the use of packaging materials, such as glass and paper products, to establishing tradable permit programs based on an overall recycled-content standard for certain kinds of manufacturing.

In advocating such proposals, it is simply asserted that not recycling, i.e., using landfills or incinerating waste, is by definition "damaging to the environment." Therefore, those who choose non-recycling methods of waste disposal or use non-recycled materials in production are said to be contributing to pollution problems and must be forced to pay. But saying that the use of virgin materials alters nature and therefore "imposes costs on the environment" fails to establish that anyone is hurt, or, if they are hurt, the amount of injury they suffer. Therefore, the goal of these proposals seems to have nothing to do with identifying polluters and their victims and arranging compensation. Instead, it is simply to reduce the use of virgin materials, landfills and incineration for its own sake.

For example, in "Packaging Waste and the Polluter Pays Principle: A Taxation Solution,"⁶ authors David Pearce & R. Kerry Turner call for excise taxes on the use of beverage containers. The tax would be levied either on the virgin materials that go into the packaging or as a tax on the sale of the beverage packaged in the container. Their claim is that "**environmental damage** from packaging waste is not reflected in the prices of packaged products" and that "the size of the levy needs to be related directly to the **environmental damage done by the production and consumption** of the packaging, or to the costs of restoration to the environment"⁷ (emphasis added). Yet one can search the entire article, which appeared in a prestigious academic journal, and find no proof or even a mention of actual costs or damage **to people** from the use or disposal of the beverage containers being taxed. Consequently, under this

⁶*Op. cit.* at note 3.

⁷*Ibid.*, p. 6.

scheme, the "polluters" pay no compensation to anyone for damages. Indeed, the author argues that programs such as this need to raise revenue for the government because a good deal of recycling tends not to be profitable. That is, recyclers are actually charging local governments for reprocessing the waste rather than paying them for access to it, because they cannot recover their full costs by selling the recycled output.⁸ Presumably the revenues would be used to subsidize recycling and the use of recycled materials.

Stavins and Grumbly in their article, "The Greening of the Market: Making the Polluter Pay," in *Mandate for Change* from the Progressive Policy Institute,⁹ argue for a tradable permits scheme to promote recycling. Under their plan to make the "polluter pay," "the government would set an industry-wide ... recycled content standard which individual firms could meet in one of two ways: They could use the required percentage of secondary materials, or they can use fewer secondary materials and buy permits from other firms that exceeded their recycling requirements."¹⁰ The underlying assumption is that to produce certain products with virgin rather than recycled materials is automatically to be a polluter. Again, no victims of this pollution are identified, and if there is no victim, there is no justification for "compensation."

2. Global Warming and PPP

As noted, the concept of cost in economics imposes a real constraint on who may be called a polluter and whether and how much such a polluter should pay. Because only people can bear costs, the expressions "costs to the environment" and "damage to the environment" have no valid meaning unless they are simply euphemisms for costs or damage to people, i.e., their person or property. Under the PPP, as typically invoked, this constraint is completely ignored. Consequently, environmental advocates in and out of government feel free to define as pollution the emissions of almost any substance into the air or water, even ones that, according to scientific evidence, are not harming anyone. In reality, not all by-products of the production process are pollutants and not all uses of the natural environment harm people.

The most current example of this careless concept of cost is heard in debates about the alleged problem of global warming and what, if anything, should be done to reduce emissions of carbon dioxide. From the early discussions of this issue in the late 1980s and early 1990s, the polluter pays principle has been invoked as the guiding force behind the most often discussed public policy remedies to the problem. For example, tradable permits to curb greenhouse gases

⁸*Ibid.*, p. 7. This implies that recycling is more costly than other methods of waste disposal. Since production costs are a measure of the value of resources that goes into a process, the implication is that recycling uses up resources that are more valuable than those that would be used in other methods of trash disposal.

⁹Robert Stavins and Thomas Grumbly, "The Greening of the Market: Making the Polluter Pay," in *Mandate for Change* (Washington, D.C.: The Progressive Policy Institute), 1993, pp. 203-206.

¹⁰*Ibid.*, p. 211.

were advocated as a practical application of the PPP by *Mandate for Change* (which was widely seen as the policy guide for Mr. Clinton during his 1992 campaign).¹¹ And indeed, in signing the Kyoto Protocol, the Clinton Administration endorsed the use of a tradable permits program. (The United Nation's agreement known as the Kyoto Protocol, if ratified by the Senate, would commit the United States to drastic reductions in CO₂ emissions.)

Typical of most PPP advocates, supporters of the Kyoto agreement and tradable permits have shunned any attempt to come to grips with the actual science that needs to be invoked when determining whether or not CO₂ emissions in general are likely to cause real damage to persons or property. Furthermore, there is no evidence that the levels of CO₂ emissions that the policy is supposed to bring about would have any discernable effect on the climate or would prevent harm to anyone. Indeed, the best estimates of the effect of the Kyoto Protocol are that it might lower temperatures by less than one half of one degree Fahrenheit when fully implemented.¹²

While this is not the forum for a complete discussion of the scientific issues surrounding global warming, there are several points relating to the PPP that need to be highlighted. First, the scientific evidence relating to whether global warming is or will be occurring is controversial and far from settled.¹³ Second, even if warming does occur, scientists disagree as to whether it will cause harm; many scientists claim that both increased atmospheric CO₂ and warming may generate net benefits to society.¹⁴

Therefore, it is scientifically reckless to refer to CO₂ as a pollutant or to those whose activities emit CO₂ — electric utilities, automobile drivers, etc. — as polluters. Furthermore, if it cannot be demonstrated that increased levels of CO₂ will cause anyone harm, then what would the industries that emit CO₂ be paying for? If it cannot be demonstrated that there is a polluter, then the entire principle of "making the polluter pay" is void of meaning.

In the case of CO₂, the definition of pollution and who is therefore a polluter has been the result of a political process that has taken place at the United Nations. It is not the result of either rigorous science or meaningful principles of economics or justice. If people better

¹¹*Ibid.*, p. 206.

¹²Thomas Wigley, "The Kyoto Protocol: CO₂, CH₄, and Climate Implications," *Geographical Research Letter*, Vol. 25, 1998, as cited in Patrick J. Michaels, "Long Hot Year: Latest Science Debunks Global Warming Hysteria," *Policy Analysts* No. 329 (Washington, D.C.: CATO Institute, December 31, 1998).

¹³For evidence suggesting that there has been no global warming for at least the last two decades, see John R. Christy and Roy Spence, "Global Warming: Evidence From the Satellite Record," Environmental Studies Program, Competitive Enterprise Institute, Washington, D.C., from www.cei.org.

¹⁴For a discussion of the former, see Elizabeth Cullota, "Will Plants Profit From CO₂?" *Science*, Vol. 268, May, 1995 and for a discussion of the latter, see Thomas Gale Moore, *Climate of Fear: Why We Shouldn't Worry About Global Warming* (Washington, D.C.: The Cato Institute), 1998.

understood the real meaning of the PPP, if actual victims had to be identified before invoking the PPP and implementing a program based on it, if the amounts to be paid had to be based on the notion of compensation for harm done or even risk posed, then the politicization of the process would be much more difficult. Sound science and economics would have to be a touchstone for the entire process.

3. Superfund: The Granddaddy of PPP Policies

In 1980 Congress passed *The Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) and from this Act established the Hazardous Substance Trust Fund, now known as Superfund. These programs are meant to clean up EPA-designated hazardous waste sites. The principle of making the polluter pay is explicitly incorporated in the title of the Act.

As has been discussed, the PPP should be about determining "liability" for harm and making those responsible compensate those who have suffered. However, just like the other policy initiatives discussed above, Superfund has little to do with these basic principles despite the title of the Act that created it. Superfund forces those who have been determined by the EPA to be "polluters" to pay to clean up sites that may or may not be causing anyone harm. Many victims of these Superfund rulings have had only a tangential relationship to the waste site. The program makes no effort to identify or indemnify harmed individuals.

Many sites that pose little or no actual risk to the surrounding communities are designated as hazardous under the program. Sites are evaluated by the EPA according to a formula that was originally set up to guarantee that at least 400 sites would be identified for clean-up. (CERCLA's original purpose was to identify 400 sites nationwide with a minimum number in each state to muster the political support to ensure passage.) The selection cut-off point (as generated by the formula) has nothing to do with identifying actual harm to individuals. According to one expert, "there is no correlation between a site being on Superfund's National Priority List and the risk it poses to human health."¹⁵

Through the legal procedure known as "joint and several liability," companies and parties that have had only a tangential relationship to the site and no meaningfully causal relationship to any health hazards being generated by the waste can be held responsible for the full cost of clean-up. Furthermore, completely unconnected parties have been forced, at various times, to pay for federal clean-up costs through taxes on specific industries and a corporate minimum tax.

The primary focus of Superfund is on forcing companies to bear the costs of "cleaning-up" designated hazardous waste disposal sites, not on compensating any victims that may have suffered from irresponsible waste disposal activities. Amounts that the "polluters" pay go to

¹⁵As quoted in Jerry Taylor, "Salting the Earth: The Case for Repealing Superfund," *Regulation: The Cato Review of Business and Government*, November 15, 1996, found at www.cato.org/pubs/regulation/reg18n2d.html.

lawyers, bureaucratic administration, private investigators, and clean-up, while actual victims, if any, usually go uncompensated.

A company or individual can be identified as a polluter even though there are no spillover effects from the activity; even though, in the jargon of economics, all costs are being internalized. This allows the government to label as "polluters," for legal purposes, companies and individuals whose waste disposal activities have been confined to their own property and have not harmed others. This highlights the crucial problems with the polluter pays principle as it has been invoked over the past several decades. Severing the link between the polluter and actual harmed victims makes the standard completely arbitrary, and the principle can become a powerful weapon for any crusading interests who can gain control of the regulatory apparatus. Furthermore, it debases the concept of pollution. Pollution simply becomes a matter of personal aesthetics. Pollution may be defined as any use of a resource that is found to be distasteful to a particular bureaucracy or environmental group, which then can be used as an excuse for some form of government control over how the resource is used.

III. Property Rights and Making the Polluter Pay

As noted at the outset, the idea that polluters should be made to pay for the damage that they cause has a basic appeal to our sense of justice and fair play. It is a simple extension of the idea that people should be held accountable for their actions, and if one person does harm to another, then compensation is in order. What makes these fundamental principles of justice coherent are property rights. When it is said that person A does harm to person B, it is understood that A has done damage to B's person or property, and the amount that A pays in compensation to B is related to the monetary value of this damage. The ultimate point is for A to make B whole again; that is, to the extent possible, A should provide full restitution for B's suffering.

It is right that environmental policy should make the polluter pay so long as it is grounded in these basic principles. No one has the right to harm the person or property of others or even to make use of other people's property without their permission. In that context, ambiguities about what kinds of emissions or by-products of production processes should be characterized as pollution, who should be identified as a polluter, and what the polluter should pay and to whom are greatly reduced. If a producer emits a substance into the air, a body of water, or into the ground, and the emissions cause health problems to people in the community or damage to their property, then those emissions would be correctly characterized as pollution and the company as a polluter. The payments that the company would be forced to make would go, not

to the government in the form of a tax or to other companies to somehow buy permission to pollute, but to those in the community who have suffered from the polluting activities.¹⁶

This straightforward "polluter pays principle," which is based on the common sense notion that we should all respect other people's persons and property, gives rise to a unique way of viewing environmental problems and how they arise. From this perspective, such problems are the result of conflicts over the use of property or some resource. Persons A and B would both like to use the same resource or other property for conflicting purposes. Usually the presence of private property allows for such conflicts to be resolved both peacefully and in a mutually beneficial way, even when the issue involves the environment.

For example, on wildlife preserves owned by the Audubon Society, it is not uncommon to see energy companies drilling for oil and natural gas. While the Audubon Society and oil companies may want to use this land for what might at first appear to be conflicting purposes, when private ownership of the property is in place, there is a strong incentive for the owners and other parties to reach an accommodation. By leasing part of its land for oil exploration, the Audubon Society can gain revenues for purchasing other land while insuring that the drilling takes place in an environmentally friendly way. This is not the case on publicly owned land, such as The Alaskan National Wildlife Reserve (ANWR), where any drilling is viewed as being at the expense of environmental concerns.

When such conflicts are not resolved through mutually advantageous exchange, that is, in cases in which someone tries to make use of another's property without their permission, the problem is resolved by applying the simple rule that the person who owns (has title to) the property is the one whose purposes prevail. If a company emits dust or soot into the air and these emissions soil people's homes or automobiles, there is a conflict over the use of property. The company is using the property of others in the community as a disposal site for its waste. The homeowners and the company want to use these houses for conflicting purposes. The company's emissions represent pollution, not simply because they are a by-product of a

¹⁶Some economists argue that it is not necessary actually to pay the victims in order to achieve "the efficient level" of pollution. It is beyond the scope of this paper fully to assess this approach. However, it is offensive to any sense of justice based on individual liberty and personal responsibility. Also, it has serious theoretical problems that make it practically and conceptually impossible to apply in the real world. Economists would have to be able to determine people's preferences in the absence of any actions being taken, exchanges being made, or the existence of actual market prices to indicate an "efficient level" of pollution. Policymakers would require the same sort of information needed to centrally plan the economy. It would require the analyst to assume what F.A. Hayek called a "pretence of knowledge" (see Hayek's Nobel Prize address "The Pretence of Knowledge," in *New Studies in Philosophy, Politics, Economics and the History of Ideas*, (Chicago: University of Chicago Press) 1985.) The purpose of the approach in this paper is not to calculate and impose some efficient outcome on markets. Rather, the purpose of the PPP is to secure property rights, which are necessary for efficient operation of a market exchange process. For a discussions of related issues see James Buchanan, *Cost and Choice*, (Chicago: Markham Press) 1989; Roy E. Cordato, *Welfare Economics and Externalities in an Open Ended Universe*, (Boston: Kluwer Academic Publishers) 1992; and Mario Rizzo, "The Mirage of Efficiency," *The Hofstra Law Review*, Vol 8, No.3, 1980.

production process that is emitted into the air, but because the emissions violate the property rights of others.

This property rights approach takes the focus off the physical environment per se and places it on human beings and their right to live their lives unmolested. An activity can only be characterized as polluting if it harms others. In this context, the notions of costs to the environment or damage to the environment per se have no meaning. Also from this perspective, the three questions mentioned at the outset of this paper are readily and coherently answered. Pollution would be defined as any by-product of a production or consumption process that harms or otherwise violates the property rights of others. The polluter would be the person, company, or other organization whose activities are generating that by-product. And finally, payment should be made to the person or persons being harmed.

A. Justice and Economic Efficiency

The property rights approach to the polluter pays principle has two distinct and mutually reinforcing advantages. First, it is consistent with the principles of liberty and justice that the United States was founded upon and second, if generally invoked as a guiding principle of environmental policy, it will enhance economic efficiency and social welfare.

On the first issue, the argument is straightforward. A property rights grounded PPP is based on the fundamental idea that people are free to pursue whatever production or consumption goals they desire so long as there is personal accountability for any and all damage to others or their property. Individual liberty and personal accountability have always been the foundation of our civil and criminal justice systems and form the ethical foundation of our social order.

Just as importantly, the efficiency of an economic system depends on the extent to which private property rights are clearly defined and enforced. In the economics literature it has become standard to view environmental problems, or what economists call negative externality problems, as resulting from poorly defined or enforced property rights.¹⁷ When property rights are not protected, producers or consumers are free to impose costs on others, resulting in an economically inefficient outcome. In an economically efficient world, people involved in economic activity, from generating electricity to disposing of waste materials, would bear all of the costs of their production activities. This insures that the relevant information concerning resource scarcity and consumer demand is being captured in the price of products being sold on the market. Resources will be allocated most efficiently, i.e., in a way that is consistent with the desires of consumers and the relative availability of productive inputs, when the decisions of entrepreneurs and consumers are based on these more fully informed prices.

¹⁷See Ronald Coase, "The Problem of Social Cost," *The Journal of Law and Economics*, Vol. 3 (October 1960), pp. 1-44.

A public policy stance that is guided by a property rights based PPP would hold that businesses can pursue production activities they desire using any techniques or inputs that they deem most economical so long as the costs of their activities are not being thrust upon others through invasions of other people's private property. If third parties are being harmed by these activities, then the offending parties are forced to make reparations. The most likely forum for resolving related disputes is the civil court system, where such problems are treated as nuisances or torts.

From an economic standpoint, such an approach would have two important advantages. First and most obviously, it would hold polluters to account for any actions they have taken and, ultimately, internalize the costs of their production activities, with positive effects on the price system and the efficient allocation of resources. Second, such a system would provide strong incentives for prevention of pollution. If those involved in production activities come to realize that they will be held strictly accountable for any harm that comes to others as a result of polluting activities, attempts will be made to ameliorate the problems before they occur. There would be a strong incentive to develop new technologies that are meant to eliminate or minimize pollution from the outset, leading to overall reductions in pollution generally.

This approach would also shift the focus of policy makers and legislators from the ineffable task of minimizing "costs to the environment" toward the more concrete goal of minimizing conflicts over the use of resources and harm to individuals. Property rights enforcement would primarily be handled by the courts. Environmental policy would be devoted to more clearly defining property rights where they are currently poorly defined (e.g, in the use of rivers, streams, the oceans, etc.), because in order to implement a PPP one must be able to determine who has the rights to use the resource in question. For example, problems of water pollution generally arise where the questions of who has rights to use the waterway and for what purposes have not been adequately addressed.¹⁸

In addition to fostering conflicts over the use of resources, the lack of property rights also encourages poor stewardship of resources, giving rise to the mismanagement known as the "tragedy of the commons."¹⁹ When a resource is not owned or is "owned in common," users of the resource have no incentive to husband it judiciously or to conserve or replenish the resource for future use. This is because the benefits associated with such conservation methods will not be reaped by those who bear the costs.

¹⁸For an excellent discussion of how, in many instances, property rights to such resources have been established and how they could be practically established in other instances, see Terry Anderson and Donald Leal, *Free Market Environmentalism*, (San Francisco: Pacific Research Institute) 1991.

¹⁹Garrett Hardin, "The Tragedy of the Commons," *Science*, Vol. 162, pp. 1243-48.

If a fisherman comes across a large school of fish in the ocean, his incentive is to catch as many of them as quickly as possible. Any attempt to conserve or replenish the supply would be futile because others could come along and extract as many fish as they want, thwarting the fisherman's conservation efforts.

The incentives are exactly the opposite for the owner of a private commercial catfish pond. Every fish extracted and sold today is one that cannot be sold tomorrow, and the owner feels the effect. He will extract the catfish judiciously and replenish the stock as it is depleted. He also has a strong incentive to keep the water clean and to make the pond a conducive habitat for the catfish.

The lesson is clear. A polluter pays principle that is based on private ownership of resources will not only minimize polluting activities, it will instill the strongest possible conservation ethic consistent with providing the goods and services that society desires.

B. Revisiting Some Examples

Pollution problems are best defined in terms of interpersonal conflicts over the use of property. If property owners are using only their own resources without harming others, there is no cause for government action. For example, in the area of solid waste disposal and recycling, if the flow of waste from the user of the product to disposal and storage of any waste — packaging, empty bottles, cans, etc. — is properly managed and kept from spilling over onto the property of others, there should be no concern to public policy makers.

The use of landfills or incineration as methods for disposal would only be polluting if the by-products of these methods were not contained and caused damage to others. If there were leakages from landfills into ground water supplies of a neighboring community or if the incineration process caused emissions into the air that caused health problems for others, then the PPP would dictate that the owners of the landfills, including any government owners such as municipalities, should be held liable for the damages.

It should also be noted that the same would be true for any of the waste that was ultimately recycled. If the recycling process generates by-products that harm others, then those that are involved in the harmful process should be held accountable to those who are damaged. These by-products might include chemical waste as a result of stripping the ink from newsprint or air pollution from trucks used in curb-side pick-up operations.

An interesting case in which these principles were not followed is that of the infamous Love Canal disposal site. Problems at Love Canal led to the passage of the Superfund legislation in the 1970s. The site was originally owned by Hooker Chemical Company in the 1940s and 1950s. While Hooker owned the site, the company was very aware of its responsibility to

contain the chemicals deposited there, and took extensive measures to prevent any seepage onto neighboring properties.

When the local school board wanted to buy the site, Hooker refused to sell on the grounds that there was toxic waste stored at the site, and that to build a school there would be inappropriate. The local school board would not take no for an answer and forced Hooker to sell, threatening to take the property under eminent domain. Hooker ultimately sold the property to the school board for \$1.00 making sure to state up-front in the contract that the site contained toxic chemicals and to disclaim any responsibility for damages caused by future irresponsible use of the property. Hooker warned the school board not to disturb the walls and cap of the containment field.²⁰

Unfortunately, during the construction of the school, the protective clay walls and cap that encased the site were regraded and weakened. Then, over the protests of Hooker, the school board sold some of the land for a housing development. In the process of laying the sewer lines and building the homes, the stored chemicals leaked. Instead of holding responsible the school board and the city of Niagara Falls, N.Y. (which was laying the sewer lines), the government, the press and the public blamed Hooker Chemical for the problems. Under a property-rights-based PPP, the polluter would not have been Hooker Chemical. The mere storage of the waste at the site did not constitute pollution. The polluters were those who allowed the waste to seep onto the property of others, in this case the local school board and the city. To the extent that there was damage to the health and property of others, it was these institutions that should have been forced to make compensation and restore damaged property.

Finally, it needs to be reiterated that where there is no damage to the person or property of others and no conflict over resource usage, there is no pollution. This is the essential point missed by those who argue that a polluter pays principle should dictate using taxes and other penalties to reduce CO₂ emissions. Indeed, there are three good reasons for not branding CO₂ as a pollutant.

First, the global warming hypothesis that the increased levels of CO₂ due to human activity will cause significant increases in global temperatures has not been proven. Second, even if it were proven that human-generated CO₂ will cause higher global temperatures, it has not been proven the results would be harmful. Some scientists have argued that warmer temperatures might have positive social benefits, including those that might result from longer growing seasons and reduced health problems related to harsh winters. Third, CO₂ is essential for all life on earth. Temperature issues aside, an increase in CO₂ may boost plant growth and

²⁰Taylor, *op. cit.*

crop yields by acting as an "aerial fertilizer," as it has been referred to by the journal *Science*²¹. Consequently, it makes no sense to identify those industries and consumers whose activities generate CO₂ as polluters whose activities must be stopped or who must be made to pay for damages, because it has not been established that their activities have caused harm.

Conclusion

The idea that polluters should be made to pay for damages that they cause to the health and property of others is sound and, in a free society based on personal responsibility, should be the guiding principle for all environmental policy. A straightforward interpretation of the polluter pays principle would suggest that if the consumption or production activities of one group of consumers or producers have harmful effects on others then the perpetrators of the harms should be held liable for the damages.

This interpretation leads directly to a defense of private property. As noted, environmental problems occur because there is a conflict over the use of a resource. In order to decide who is the polluter and who should be paid, one must first know who has rights to the resource whose use is in dispute. The entire concept of damage or harm is tied into this principle. When we think of damage to property we are not simply speaking about the alteration of one or another of its physical aspects, we are in fact tying that property to an owner and the uses that he or she may have planned for it. The damage in question is not the "harm" to the physical property but rather the harm to the owner.

Certainly, there are situations where ownership is in dispute or property rights are undefined. These problems need to be clarified, either in the courts, as is typically the case when there are interpersonal disputes over property rights, or legislatively, as may be necessary when rights are completely undefined, as might be the case with rivers, the ocean, etc.²²

Unfortunately, the polluter pays principle that is currently guiding public policy seems to have been defined purely by the whims of policy makers and advocacy groups. The idea that environmental problems are essentially about interpersonal conflicts over the use of property has been taken completely out of the equation. The notion of property rights, where what is being

²¹See Cullota, *op. cit.* at note 14. Also see Graham D. Farquhar, "Carbon Dioxide and Vegetation," *Science*, Vol. 278, November 21, 1997.

²²It should be noted that, historically, private property rights arrangements have developed with regards to portions of both rivers and the ocean, which have typically worked very well to stem the problems associated with the "tragedy of the commons" discussed above. These arrangements have arisen, very often, through private agreements among users of the resource. Unfortunately, in many cases local and federal governments have refused to uphold these agreements. For an excellent discussion, see Anderson and Leal, *op. cit.* at note 18.

referred to are the rights that human beings have to property, has been replaced with the idea that somehow the property itself has rights that are being violated by productive human activity.

From this distortion of the notion of property rights we end up with the illogical definition of a polluter as someone who causes damage to, or imposes costs on, not others, but the environment. Since the environment cannot be compensated directly, this makes for an excuse to impose taxes on the offending parties with the promise, of course, that they will be used to "undo the damage."

In reality, such "polluter payments" serve primarily to enhance the incomes of a host of government bureaucrats, consultants, and lawyers, all of whom benefit from the process. The polluter pays principle as currently construed ends up as a device to transfer wealth from non-polluters to politically well-connected non-victims.

A correctly construed polluter pays principle would highlight the fact that there is no tension between liberty, economic efficiency, and private property on the one hand and sound environmental stewardship on the other. Environmental problems tend to arise when people are allowed to impose costs on others by degrading other people's property or by using property that is unowned. A property-rights-based polluter pays principle, if implemented, would solve many of these problems. It would ensure that existing property rights are enforced. It would provide principled guidance for the privatization of currently unowned resources by courts and legislatures. Finally, by clearly identifying the objective, it would make it much easier for law makers and adjudicators of disputes to move in the right direction.

ABOUT IRET

IRET was founded in 1977 as a 501(c)(3) public policy research organization dedicated to the belief that constructive, free-market economic policies are essential for the nation's economic progress. To this end, IRET conducts research and analysis of the economic effects of tax, budget, and regulatory public policy initiatives. IRET is a leader in offering guidance to policy makers regarding fundamental tax reform that would eliminate the bias against saving and investment in the current tax system, including elimination of the estate tax, taxation of capital gains, and the double taxation of corporate income. IRET is also researching ways to replace Social Security with personal saving for retirement.

IRET has a reputation as a no nonsense resource for policy makers and opinion leaders. IRET relies on contributions from individuals, foundations, and corporations to perform its work. It accepts no government funding. IRET is the leading public policy institute in Washington focusing realistically on the growth aspects and economic consequences of federal policy changes.

IRET's resident and contributing economists prepare books, studies, bulletins, and Congressional advisories for publication and distribution to the Congress, the media, and the public. IRET scholars testify at Congressional hearings and consult with Members of Congress on legislation and economic issues, write opinion pieces for journals and newspapers, make radio and television appearances, and speak at conferences on economics and public policy.

IRET's late founder, Norman B. Ture, was a distinguished tax advisor to Congress and served as Under Secretary of the Treasury for Economic Affairs in the Reagan Administration. Dr. Ture played a central role in the development of the Economic Recovery Tax Act of 1981. IRET's current President and Executive Director is Stephen J. Entin. Mr. Entin is a recognized expert on taxation and Social Security. He was Deputy Assistant Secretary for Economic Policy at the Treasury Department in the Reagan Administration, and was instrumental in the development of the 1981 tax cuts, in particular, the "tax indexing" provision that keeps tax rates from rising due to inflation. Mr. Entin represented the Treasury Department in the preparation of the Annual Reports of the Board of Trustees of the Social Security System, and conducted research into the long run outlook for the system. He advised the National Commission on Economic Growth and Tax Reform (the Kemp Commission), assisted in the drafting of the Commission's report, and was the author of several of its support documents. Prior to joining Treasury, Mr. Entin was a staff economist with the Joint Economic Committee of the Congress, where he developed legislation for tax rate reduction (the Kemp-Roth bill) and incentives to encourage saving. Mr. Entin is a graduate of Dartmouth College and received his graduate training in economics at the University of Chicago.