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**IMPLEMENTATION OPPORTUNITIES FOR ECONOMIC
INCENTIVES FOR ENVIRONMENTAL POLLUTION
CONTROL**



**ENVIRONMENTAL
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**IMPLEMENTATION OPPORTUNITIES FOR USING
ECONOMIC INCENTIVES FOR ENVIRONMENTAL
POLLUTION CONTROL**

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EXECUTIVE SUMMARY

The use of economic incentives for pollution control appears to be gaining increasing acceptance. A recent Environmental Protection Agency (EPA) report details numerous uses to which they have been put in the United States at all levels of government. Numerous bills have been introduced in recent sessions of Congress to establish even more. One of the reasons for this interest is the economic savings that economic incentives can provide in achieving any given level of environmental protection. Such savings are widely believed to be of importance at a time of heightened concern with the international economic competitiveness of the United States.

If the time has indeed come for economic incentives, it is important to develop a comprehensive overview of the implementation opportunities available for introducing additional incentives. This report is intended to provide that overview. The conclusion is that there are opportunities for using a wide variety of approaches for implementing them at the Federal level. The Report examines three basic approaches that could be used to implement additional economic incentives, and concludes that where incentive programs take into account their connection with underlying social norms, they are more likely to achieve acceptance and to produce success.

Economic incentive systems that ignore their connection with deeply rooted norms (societal norms expressed in longstanding legal principles) risk rejection by policy makers, enforcers, administrators, and the public alike. Such norms provide a basis for pollution discharge fees (and product fees) on the theory of "compensation," which requires that the fees bear some rational relationship to harm. They also provide a basis for tradeable allocations, provided that the allocations do not create a harm which could otherwise be reduced (viz. the results of trades must not produce violations of ambient standards or increase relevant risk levels). They provide a basis for collection and dissemination of truthful information, inducing modifications of behavior in the marketplace. And they provide a basis for private and public enforcement. Thus, economic incentive programs that build upon underlying social norms may enjoy greater public acceptance than those that do not. Nevertheless, these norms do not set the outer bounds for economic incentive systems.

The three basic approaches examined are the following:

- (1) Use the authority that already exists in environmental laws to introduce economic incentives where feasible
- (2) Make changes in individual environmental statutes as they come up for reauthorization to allow increased use of incentives

Implementation Opportunities for Economic Incentives for Environmental Pollution Control

- (3) Enact new legislation allowing the use of economic incentives on a multi-media basis.

In discussing (1), the report concludes that of the six laws surveyed, the Clean Air and the Toxic Substances Control Acts offer the broadest authority. The Clean Water Act offers potentially broad authority but there are important open legal issues in its use. The Emergency Planning and Community Right to Know, Pollution Prevention, and Safe Drinking Water Acts provide only narrow authority.

Although some of the existing Federal statutes offer broad opportunities for greater use of economic incentives, they do so primarily at the state and local level. Since most pollution concerns are heavily location dependent, it may be most efficient to implement incentives at the state and local level. However, the absence of Federal laws to encourage greater use of incentives may retard their adoption at those levels.

Under the Clean Air Act Amendments of 1990, states are authorized to implement a wide array of incentives as part of their SIPs, including marketable permits, emission fees, and deposit systems. Because many of the remaining air emission problems are highly localized in nature (carbon dioxide emissions are perhaps the most significant exception), the greatest opportunity for use of incentives is at the state and local level. Thus, if state and local pollution control authorities made fullest use of their ability to use incentives, the aggregate savings could well approximate the totals projected above.

The Clean Water Act authorizes some use of incentives, notably trading systems for water bodies that fail to meet water quality standards, and in this case the authority is not explicit. National discharge fees are not clearly authorized. However, at the state level, some states set National Pollution Discharge Elimination System (NPDES) fees based in part on the volume and toxicity of the discharges. Since water quality problems are local or regional in nature, greater authorities for incentives in the Clean Water Act could encourage states to adopt incentives to meet their individual needs. With greater use of discharge fees by states under the NPDES system, water pollution control cost savings could approximate the savings projected above.

In the area of solid waste, a national system of incentives would be needed to achieve the projected savings from improved package design, reduced use of virgin materials and increased use of recycled materials.

With regard to the two legislative options (2) and (3), Congress has wide latitude to legislate economic incentives. The EPA also has substantial latitude within its specific statutory mandates to construct such systems. A comprehensive statute (3) offers advantages over a statute-by-statute approach (2). Statute-by-statute media boundaries can be artificial. As the United States discovered in the 1970s when strengthened Clean

Air and Clean Water acts led to creation of more solid wastes, strong regulation in one medium can drive waste products into another, less regulated area. Incentives can have the same effect. Creating incentive packages that cover all media or that can be tailored to particular cross-media problems can help avoid this problem.

In fact, policy makers need to pay close attention to existing law in order to avoid or resolve potential conflicts. Incentives would need to be designed with a full understanding of how they will interact with command and control schemes already in place. This is important because in most cases, even when incentives serve as a central part of a regulatory program, command-and-control and enforcement structures play important roles. For example, under a tradeable permit system, regulators will still have to set limits on emissions. Traditional enforcement mechanisms will also be essential to discourage polluters from exceeding their permits.

Because a comprehensive statute would break some new ground, EPA could benefit from authority to try some of the more innovative approaches on a local or pilot project level. However, rather than specifying the project and the area, the law could probably give EPA some flexibility in choosing both. Considering the variety of tools that a comprehensive incentives statute would offer and the variety of problems to which the tools could be applied, such flexibility seems in order.

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FOREWORD

The Environmental Law Institute (ELI) contributors included Jay Austin, Diane Cannon, Suellen Keiner, James McElfish, John Pendergrass, Tony Picadio, and Ken Rosenbaum. From EPA, Barry Korb and Dan Mussatti made a number of useful comments on earlier drafts of this report. Alan Carlin wrote Section 1 and worked closely with the ELI authors in the preparation of the report.

1. INTRODUCTION

The use of economic incentives for pollution control appears to be gaining increasing acceptance. A recent EPA report¹ details numerous uses to which they have been put in the United States at all levels of government. Numerous bills have been introduced in recent sessions of Congress to establish even more. One of the reasons for this interest is the economic savings that economic incentives can provide in achieving any given level of environmental protection. These savings are widely believed to be of importance at a time of heightened concern with the international economic competitiveness of the United States.

1.1. SCOPE AND RELATION TO EARLIER EPA REPORTS

If the time has indeed come for economic incentives, it is important that EPA develop a comprehensive overview of the potential economic savings from and implementation options available for introducing additional economic incentives for pollution control at the Federal level. This report is intended to provide that overview. Although the emphasis is not on the implementation options for additional incentives at the state and local level, this will be discussed where necessary to clarify the options at the Federal level. Since many incentives can really only be instituted at the state and local level, it is important that this possibility be recognized and discussed in the report.

This report is intended as a supplement to two earlier EPA reports on related topics. The first, *Economic Incentives: Options for Environmental Protection*,² presents a number of detailed options for using a wide variety of economic incentives to solve specific environmental pollution control problems. The second, *The United States Experience with Economic Incentives to Control Environmental Pollution*,³ details not what specific incentives could be chosen but what have been and what the U.S. experience has been with them. This report is similar to the first of these reports in that it deals with incentive options, but differs in that it explores the more general implementation options and possible economic savings from introducing additional economic incentives rather than looking at the details of specific incentives to solve particular pollution problems.

1.2. DEFINITIONS

In order to bound the subject, economic incentives in this report will be defined broadly as instruments that provide continuous inducements, financial or otherwise, for sources to make reductions in the environmental pollution they release. That is, sources view each unit of pollution as having a cost. For maximum efficiency, the cost per unit of pollution faced by different sources should be comparable, except as adjusted to reflect differences in harm caused at different geographical locations or at different times.

Table 1-1: INCENTIVES FACED BY SOURCES UNDER THE COMMAND-AND-CONTROL APPROACH

		Quantity of Pollution Released→	
		Within Regulatory Limits	Excess above Those Allowed by Regulations
↑ Tox- icity of Pollu- tion Re- leased	Excess above Those Allowed by Regulations	Fines and Penalties for Exceeding Regulations	
	Within Regulatory Limits	No Incentives for Reducing Pollution	if Caught and Successfully Prosecuted

This definition excludes certain mechanisms that sometimes are referred to as incentives. Although such mechanisms may have many admirable characteristics and some of the attributes of economic incentives as the term is often used, they will not be

discussed in this report. This class of mechanisms prices (explicitly or implicitly) activities that have pollution as a byproduct. Ride sharing, bike paths, high occupancy vehicle lanes, and parking surcharges provide examples of this type of mechanism. While these mechanisms may lead to a reduction in pollution, the mechanisms place neither an explicit nor an implicit price on incremental units of pollution. Exclusion of these mechanisms carries no implications for whether future EPA actions will or will not consider them to be economic incentives. Rather, their exclusion is primarily for the purpose of limiting the subject of this report to something manageable.

Payments per unit of pollution are the clearest example of an incentive, as the term is used in this report. Because each unit of pollution is costly, sources are penalized financially for increases and rewarded financially for any decreases in their pollution. Some variants on the approach are observed; for example, the payments may apply only on units of pollution above some threshold (80 percent of “baseline” levels is the threshold in one instance).

Market-based systems in pollution reduction credits also operate as incentives, albeit less perfectly than pollution fees. Reductions in pollution below permitted or allowed limits earn sources credits that may be sold to firms that are operating above allowed limits (or retained by the source for future use in some cases). While existing markets in

pollution reduction credits are often limited in terms of the number of potential buyers and sellers, as well as the number of actual trades, they nonetheless offer direct financial rewards for sources to reduce pollution. Sources with high incremental control costs tend to be buyers of the credits, leading to improved cost-effectiveness in pollution control.

Finally, indirect financial incentives for continuous effort at pollution abatement are created when sources must report publicly the quantities of specified substances they release and thus risk the loss of market share or a lower demand for their products. All of these incentive mechanisms operate through the ingenuity and actions of individual sources, who have an incentive to be on the alert for opportunities to make reductions in their pollution.

The contrast between incentive mechanisms as defined here and traditional “command-and-control” approaches is that the latter do not provide incentives to reduce the quantity of releases below permitted levels or to improve the quality of the releases of pollutants beyond permitted levels, as illustrated in Table 1-1. Under pure command-and-control approaches, sources view all releases below permitted quantities or above permitted quality as costless. To have gains in environmental quality, the burden is solely on regulators to tighten requirements imposed on individual sources. Sources operating within the limits of existing regulations (the shaded area in Table 1-1) have no economic reason to act until new regulations are issued.

Unfortunately, there are a wide variety of definitions of economic incentives in common use, as well as a variety of related concepts. One of these related concepts is “market mechanisms.” Generally, this term is used for a somewhat narrower concept involving only those economic incentives which are implemented through mechanisms having direct effects on economic markets. Thus, providing risk information could be an economic incentive but not a market mechanism while pollution fees would be both. Risk information can have an indirect effect on economic markets by shifting either the demand function or the supply function (either through appealing to profit-motivated market share considerations or liability-aversion), but does not directly change prices.

It must be emphasized that although this report makes a careful distinction between command-and-control and economic incentive approaches, these distinctions are often difficult to apply in practice.⁴ In other words, there is a continuous distribution of pollution control measures ranging from the “pure” command-and-control to the “pure” market mechanism. Expressed still another way, the dividing line between command-and-control and economic incentives can be drawn at any number of places; although the definition used above is based on what is probably the most important economic distinction between the two approaches, a case can be made for a number of other definitions.

Another important definition is what is meant by the economic efficiency of economic

incentives. Theoretically, the most economically efficient incentive is one which requires the polluter to pay exactly the price for pollution that he imposes in terms of damages on others. The polluter will then in theory reduce his pollution to the point that the cost of further reductions exactly equals the damages caused to others by the pollution. An economically efficient incentive will therefore be defined as one that either imposes an incentive that meets this criterion or that encourages polluters to act as if it had been imposed.

1.3. TYPES OF ECONOMIC INCENTIVES DISCUSSED IN THE REPORT

The nation's environmental laws control pollution through a mix of strategies, most of which involve direct regulation of the quantity of pollution allowed by individual sources or the control technology sources must use. This direct regulatory approach to pollution control often is termed "command-and-control."

Incentive systems create rewards for preventing or controlling and penalties for increasing one's emissions, effluents, or wastes. Incentive mechanisms can establish a system of rewards and penalties through a variety of specific mechanisms. Table 1-2 shows the mechanisms discussed in this report classified according to the time the incentive becomes effective in relation to the time the pollution occurs. Specifically, the Table lists the following mechanisms:

- (1) Payments based on pollution discharges—Pollution fees, charges, and taxes are payments by polluters based on the quantity of pollutants emitted. They are usually made to government agencies but are sometimes made to private waste disposal companies.
- (2) Deposit-refund systems involve payments by potential polluters at the time a potentially polluting product is purchased, which are refunded if the product is disposed of or recycled in specified ways.
- (3) Tradeable permit rights is the transfer of pollution credits and allowances for in-kind or financial compensation.
- (4) Information disclosure approaches provide for the release of information related to companies' products or activities, such as data on their emissions or compliance status.
- (5) Liability for environmental damage approaches provide for future payment by polluters based on the damages caused by their emissions.⁵
- (6) Payments from government for pollution control—Subsidies and tax concessions provide financial payments to polluters and tax advantages based on changes in pollution or in return for future pollution control actions.
- (7) Extension of private property rights to environmental resources provides incentives for the owners of such rights to prevent pollution of their resource in order to maintain the value of their property.

Table 1-2: TYPES OF ECONOMIC INCENTIVES

Incentive Type	Time Incentive Becomes Effective			Appendix Section Discussion
	Prior to Time of Pollution	At Time of or as Direct Result of Pollution	Long after Pollution Occurred or Might Have Occurred	
(1) Payments Based on Pollution Discharges	Fees or Taxes on Inputs to Pollution Producing Processes	Fees or Taxes on Discharges	Fees or Taxes on Outputs from Pollution Producing Processes	A.2, B.2, thru F.2
(2) Deposit-refund Systems	Deposits		Refunds	A.3 thru F.3
(3) Tradeable Permit Rights	Allowance Trading Systems		Credit Trading Systems	A.4-F.4
(4) Information Disclosure	Manufacturer-Provided Warnings	Reports on Incidents	Disclosure of Past Emissions	A.5 thru F.5
(5) Liability for Environmental Damage	Environmental Assurance Bonds		Superfund Liability for Cleanup; Tort Law for Private Damages; Natural Resource Damages for Public Resources	A.6, B.6, C.6, D.6, E.6, F.6
(6) Payments from Government for Pollution Control	Subsidies for Installing Pollution Control Equipment; Conservation Reserve Payments		Tax Advantages in Return for Reduced Pollution	Not Discussed
(7) Extension of Private Property Rights to Environmental Resources	Owner Prevents Future Pollution to Avoid Loss	Owner Charges Polluters for Pollution	Owner Sues Polluters for Damages to His Property	Not Discussed

Categories (1) through (6) are those identified and used in Carlin (1992). Category (7) was not included in Carlin (1992) because of the lack of examples in the United States but is added here for completeness. The last column of the Table shows the subsection in which each of the new categories is discussed in Appendices A-F. Thus, (1) payments to government for pollution discharges are found in Sections A.2, B.2, C.2, etc., of Appendices A, B, C, etc. It should be noted that within category (1), this report distinguishes between discharge fees (which are always discussed in Section X.2.1 of the appendices where X is the appendix letter), and fees on inputs and products (which are always discussed in Section X.2.2), because of their differing impacts and the differing bases for imposing them.

The Table notes two possible approaches, (6) and (7), that are not discussed in the remainder of this report in the interest of simplifying the analysis. With regard to (7), it can be said that property rights in the United States are primarily creatures of state law, and a variety of legal doctrines affect the ability of states to adjust these boundaries or to alienate public property interests, particularly where these are held in public trust. However, the discussion of pollution fees could apply to privately assessed fees for “use” of privately held environmental resources. In addition, the report's discussion of liability incentives contemplates the existence of a privately held right or set of rights (either in traditional forms of property, personal liberty, or some new form of property).

Some incentive mechanisms, generally shown in line (4) of Table 1-2, establish prices indirectly through market transactions. Within this group are information reporting requirements such as Title III of the Superfund Amendments and Reauthorization Act and California's Proposition 65. Others, such as pollution fees and various trading systems, including EPA's air emission trading program, transferable development rights, and marketable effluent discharge credits, work by directly affecting market prices.

1.4. ORGANIZATION OF REPORT

The report is organized into four sections and eight appendices following this introduction. After a discussion in Section 2 of the underlying social norms that affect the societal acceptability of using economic incentives, Sections 3 and 4 concern the two principal options—the administrative and legislative approaches. Specifically, Section 3, supplemented by Appendices A through F, discusses the administrative options—that is, what can be done by EPA without new legislation. Section 4, which covers the legislative options, presents two possibilities: Changes in each environmental law as it comes up for reauthorization, and a comprehensive economic incentive statute covering all media. An illustrative comprehensive statute is provided in Appendix G. Section 5 summarizes the findings of the report. Finally, Appendix H provides a bibliography and a list of references by Section.

Endnotes for Section 1

1. Carlin (1992).
2. U.S. EPA (March 1991).
3. Carlin (1992).
4. Some analysts have even argued that prohibitions established by command-and-control regulations operate in part by creating economic incentives to comply (through the proper setting of fines and penalties), while pollution charges and other “market” incentives rely on governmental policing of the market or governmental definition of the goods (*i.e.*, pollution units).
5. A case can be made for including liability for damages to publicly-owned or managed natural resources within category (1) since payments are made to a government agency. It appears easier, however, to group them with other liability approaches.

Implementation Opportunities for Economic Incentives for Environmental Pollution Control

2. IMPLICATIONS OF SOCIAL NORMS

2.1. INTRODUCTION

The body of literature discussing the feasibility and use of economic incentives in environmental management is already extensive and new papers and publications continue to be added at a rapid rate. Most of what has been written to date has tended to focus on the goals of achieving economic efficiency in the regulation of environmentally harmful activities and cost effectiveness in the administration of the program. The extent to which incentive systems are consistent with or conflict with the traditional constraints and goals of our legal system has received little attention in the literature. Since the fundamental goal of our legal system is the promotion of justice in our society, it is appropriate to examine the extent to which this goal is furthered by the use of economic incentive mechanisms to achieve environmental protection. One way to do this is to examine these mechanisms in light of traditional legal objectives such as deterrence, just compensation, substantive and procedural fairness, and the discharge of legal duties and responsibilities.

This approach may be viewed as simply a different way of thinking about the same thing. However, the way we think about these things is important. Whether a particular economic incentive program will achieve broad public acceptance may depend on the public's perception of the theoretical foundation underlying the program. Are we imposing a fee on emissions merely to create an economic incentive for companies to install pollution control equipment or may the charge be viewed also as just compensation to the public for the use of the nation's air resources as a receptacle for the disposal of industrial wastes? Is an information disclosure system intended to provide consumers with information thought to be relevant to marketplace decision-making or is it also to be viewed as a way of fulfilling the legal duty to warn of known hazards created by one's conduct?

Judges frequently justify their decisions interpreting or enforcing statutes on the grounds that the decision will promote the underlying purposes of the statute in question. How the judge views the theoretical underpinnings of the statute, then, can frequently determine the outcome of the controversy. The acceptance or rejection of regulatory and non-regulatory approaches by advocates and implementing agencies can also depend upon whether those approaches are perceived as consistent or inconsistent with an agency's (or a statute's) traditional mission and purposes. Where new programs take into account their connection with underlying social norms, they are more likely to achieve acceptance and to produce success. Traditional legal concepts of environmental protection are among those features with which economic incentives must connect in order to be successful.

Approaching the examination of economic incentives from the perspective of legal theory, rather than purely economic theory, is also helpful in understanding the limitations on, and opportunities for, the exercise of administrative discretion to use economic incentives.

This Section explores an approach to developing an explicit framework for economic incentives, in a manner most consistent with the traditional constraints and goals of our legal system. This Section does not attempt to set the absolute bounds of possible economic incentive systems for the protection of the environment. Congress, by statute, can often go farther than prior legal approaches, subject only to constitutional constraints. Rather, this Section identifies and describes the basic outline of economic incentive systems that can achieve the greatest connection with underlying social norms.

2.2. BASIC APPROACH

Traditional principles of law arising in the environmental field are found primarily in the common law of nuisance. Nuisance law predates most of the statutes that created the regulatory approach we currently use to address air pollution, water pollution, hazardous waste, toxic substances, and other pollutants.

While the law of nuisance is superficially simple, it nevertheless developed a complex array of tools and tests to deal with environmental problems. The similarly outwardly simple world of economic incentives will also need to take these underlying complexities into account if it is to connect with the underlying legal tradition. Of course, Congress may enact laws that are more complex than nuisance law, and the power to regulate is broader than the power to abate a nuisance. What this means, however, is that economic incentive schemes can be no *less* sophisticated than the law of nuisance in their approach to environmental problems. The common law norms provided by nuisance law establish a floor beneath which economic schemes cannot reasonably go and still expect to find acceptance.

The parameters of nuisance law relevant to economic incentives are discussed in the following sections. A core principle is that where a polluter's discharge causes harm, the polluter must reduce the harm through the use of the best available technology, and must compensate for residual harm. Nuisance law did not recognize a right in the polluter to opt for payment *instead* of any reduction of the harm. But it also established a basis for payment for pollution that was allowed to continue. These features of traditional nuisance law provide the underlying bases for both marketable rights and pollution charges. Traditional legal principles relating to the disclosure of truthful information provide a basis for information-based economic incentive schemes and for private liability. Economic incentives that are linked to these traditional legal norms are more likely to achieve acceptance in the marketplace of policy alternatives.

2.3. PAYMENTS BASED ON POLLUTION DISCHARGES (DIRECT AND INDIRECT)

2.3.1. Theoretical Basis: Taxes/Fees and the Principle of Just Compensation

Charges on emissions can be viewed as taxes, penalties, fines, or fees, depending upon their principal purpose and underlying justification. Penalties and fines are used to punish unlawful conduct, and therefore cannot be applied to emissions or discharges which are in compliance with applicable statutes, regulations and permit conditions. They therefore are of limited value in any comprehensive pollution prevention program because they do not reach emissions and discharges which are unregulated or under-regulated. Taxes and fees, on the other hand, are imposed on conduct which is entirely lawful and can therefore be used as incentives to modify environmentally harmful behavior which is not otherwise subject to regulation.

As pointed out in other sections, whether a pollution charge is characterized as a tax or a fee has little significance in the determination of whether it has been lawfully enacted and imposed. Congress has broad power to delegate to EPA the authority to impose a charge on regulated activities, and the validity of the exercise of that power will rarely, if ever, turn on whether the charge is characterized as a tax or a fee. How a pollution charge is characterized can be important for other reasons, however.

The level of political and public acceptance and support for a system of pollution charges could very well depend on how the charge is characterized and justified. Viewed as a tax, a pollution charge will be faced with all of the negative political implications associated with taxes. Moreover, a purely tax based system of charges will not necessarily bear any relationship to goals associated with pollution control. However, viewed as a user fee—a fee for using the air and water resources of the nation—a pollution charge takes on a different connotation entirely. This concept of requiring payment for use of the environment as a disposal medium has been recognized as having the potential to attract broad public support.

[R]eformist leadership would gain enormous popular support for a program proclaiming that the air and water of America belongs to the people, and that polluters should pay if they wish to use it... [J]ust as firms are obligated to pay for other raw materials they require for their production process, they should be obligated to pay for the air and water they degrade.¹

Thus, if a pollution charge can be characterized as a fee for using the nation's environmental resources it may be able to attract more popular support than if it were characterized as a tax. There are other differences between the two as well.

Whether a particular charge can be categorized as a “tax” or “fee” depends mostly on the underlying purpose of the charge. If the principal purpose is to raise revenue for the general treasury, then the charge is clearly a tax. However, non-tax charges may also raise significant revenue but they will generally be categorized as fees if the principal purpose is to compensate the public for benefits conferred. These non-tax fees can be divided into two categories. The first category includes those fees which are intended to defray the cost of special governmental services. These fees are generally charged to the person who derives a benefit from the special services and are based on the cost of the service. Permit fees and license fees fall into this category.

A second category of non-tax fees is the user fee (or toll). This type of charge is generally made for the use of property or improvements to property. Tolls charged for the use of navigable rivers and canals and turnpike tolls fall within this category, as do grazing fees and other public commons user fees. Generally, user fees must be reasonably related to the purpose of fairly compensating the owner for the use of the property or improvement in question. The concept of fair compensation seems to include consideration of the value of the benefit derived by the user. It also includes consideration of a reasonable return on the property owner's investment, which in turn includes factors such as depletion, depreciation and degradation of the resource in question.

Both categories of fees can be distinguished from taxes in other respects. Fees are paid by choice in the sense that the party paying the fee has the option of not utilizing the governmental service or property and thereby avoiding the charge. Taxes, on the other hand, are generally viewed as more compulsory. Fees are paid by persons who derive a benefit from a governmental service or use of public property, which benefit is not shared by all members of society. Taxes are of more general applicability. Finally, the proceeds derived from fees are often reserved to defray the cost of the specific governmental service involved or to compensate for the use of public property. Taxes, on the other hand, are used to finance general governmental activity.

The idea that the government should charge polluters a fee for the use of the nation's air and water resources to dispose of their wastes is also consistent with the “polluter pays” principle and with the principle that the societal costs of pollution should be internalized as a cost of production of goods and services.

Depending on how the fee is calculated, the concept of the user fee can also be consistent with traditional legal norms requiring that compensation be paid to those who have suffered damages as the result of the interference with a public right. Under common law, a public nuisance is any unreasonable interference with a right common to the general public—such as the right to drink clean water and breathe healthy air. Once a public nuisance is found to exist, any person who suffers actual damage as a result is

entitled to be fairly compensated for the damages. The usefulness of nuisance law as a mechanism to require polluters to pay individuals who have been harmed by the pollution is limited in our modern-day society by the difficulty of proving, in accordance with the required standards of legal proof, the causal connection between the particular pollution in question and the particular harm suffered by the specific individual making the claim. The result is that many people who suffer harm from pollution go uncompensated and many polluters derive a corresponding windfall. A fee system offers a partial solution to this failure of nuisance law.

Modern risk assessment and damage assessment techniques can quantify with reasonable certainty the number of individuals who are likely to suffer harm from a specific level of pollution and some of the types of harm likely to be suffered -- both personal injury and property damage. The creation of a user fee system which would deprive the polluter of the windfall created by the practical difficulties preventing specific individuals from proving their claims would certainly be consistent with traditional conceptions of justice even though the public and not any specific individual would be the direct recipient of the proceeds. How the government then distributes the proceeds will determine the extent to which those actually suffering harm from the pollution in question receive an indirect benefit from the proceeds of the user fee. Thus the user fee can be a mechanism for the promotion of social justice consistent with common law norms, as well as an effective incentive for pollution control.

An emissions fee or effluent charge can be viewed as a user fee if one assumes that the air and water resources of the nation are held in trust by the governments of the United States and the several states for the benefit of present and future generations. Viewing government as trustee of these natural resources is to view government as the "owner," entitled to be fairly compensated for their use by polluters for the disposal of pollutants.

The principle that the United States, as public trustee of the nation's air and water resources, may recover compensation for their degradation is not without precedent. Congress has given recognition to this principle most recently in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which authorizes the recovery by the United States Government of damages for injury to, destruction of, or loss of "natural resources."² The term "natural resources" is defined in CERCLA to include "air, water, groundwater" and other such resources.³ If the United States Government may sue to recover for damage to the air and water resources of the nation, it would seem to follow that it may also charge a fee designed to compensate the public for damage to the nation's air and water resources caused by pollution.

Viewing a pollution charge system as a mechanism to require polluters to fairly compensate the public for the environmental damages which they are causing comports with traditional legal norms and accepted notions of justice. To be a true user fee and not

merely a tax, the charge must be related to the environmental degradation caused by the pollution in question.

While taxes on discharges are also lawful, the theoretical underpinnings are somewhat different. The “user fee” is closer to the traditional nuisance law concept of compensation.

2.3.2. Types of Activities Covered

A pollution charge system that is based on the underlying purpose of compensating the public for environmental harm caused by the pollution in question, is true to this underlying purpose if it charges only for the releases of contaminants to the environment which are harmful. The common law did not impose nuisance liability for releasing contaminants to the environment unless the harm was significant. Stated another way, *de minimis* harm did not trigger common law nuisance liability. Therefore, a pollution charge system based on the traditional principle of compensation must be carefully designed to ensure that the amount of a pollution charge which a polluter is required to pay is reasonably related to the environmental harm being caused by the pollution. A discharge fee that is based on essentially harmless emissions must be premised on other authorities, such as the legislature's power to tax.

A pollution charge on non-harmless discharges might be assessed on every pound or gallon of discharge above a certain level. This most clearly comports with the common law compensation principle. However, the cumulative nature of “harm” can also be recognized by assessing the charge on each pound or gallon, if the assessment is based on some sense of the aggregate impact. Indeed, a system could apply a differential charge, with a higher marginal rate applying to each additional unit of pollution; thus, the greater the aggregate discharge, the higher the fee for the last units.

Emissions fees and effluent charges can be applied most easily to point sources (and to those few non-point sources for which reliable emissions factors or discharge factors are known). Emissions and discharges from point sources can be accurately measured or calculated. The quantity and quality of emissions from most non-point sources are more difficult to determine. Since measurement or calculation is essential for a fee system based on quantity and quality of the emissions or discharges, non-point sources will be more difficult to include in any system.

However, in some cases, a fee charged on the use of an intermediate product from which the pollution originates may be a feasible alternative. This may provide a way to effectively place a charge on some non-point source emissions such as uncontrolled VOC emissions from dry cleaning establishments or pesticides used in agricultural operations.

Air emissions from stationary sources which are harmful to the public or the

environment are ideal candidates for the imposition of user fees. They can accurately be measured, and they degrade or cause harm to a natural resource. Emissions of pollutants which have been designated as hazardous air pollutants under the Clean Air Act Amendments of 1990 for which maximum achievable control technology (MACT) standards have not yet been promulgated fall into this category as do emissions of unregulated SARA Title III toxic substances. In both cases pollutants which have been determined to cause harm or risk of harm to the public or the environment are being disposed of into the air at absolutely no cost to the polluter.

Emissions of criteria pollutants in nonattainment areas are also good candidates for user fees. By definition they are harmful because they are being emitted into air which is already unhealthful. Finally, user fees provide a mechanism to further limit emissions of hazardous air pollutants for which MACT standards are set at a *level* which permits a residual health risk because of the lack of available control technology. In this case, an emission fee can provide an incentive for the development of new control technologies, before residual risk standards are adopted.

Discharges from point sources to the surface waters, including coastal waters, are also ideal candidates for the imposition of user fees. They can be effectively monitored and they actually cause harm or have the potential for causing harm to the receiving body of water. Discharges to the ground water tend not to be good candidates, not because they lack the potential for causing harm, but rather because it is more difficult to monitor them (except in the case of permitted deep well injection).

Fees on intermediate products may provide effective substitutes for fees on groundwater discharges where the quantity or quality of the discharge is difficult to determine. However, in cases where ground water discharge permits exist, or where other information exists which would provide a reliable basis for fee calculation, inclusion of groundwater discharges in the user fee system may be feasible.

2.3.3. Determination of the Rate or Amount of the Charge

If the underlying rationale for the charge is the user fee rationale of obtaining compensation for the public for use of the nation's air and water resources as a disposal medium for toxic substances, then the rate or amount of the fee should be tied to the environmental harm or threat of harm being caused by the emissions or discharges in question and not necessarily to the cost of pollution control equipment. Since environmental harm is a function of the quantity and toxicity of the substance in question, these factors should determine the amount of the charge. Other factors such as exposures are also relevant to harm, but are quite difficult to assess except on a case by case basis; quantity and toxicity have customarily served as proxies for regulatory purposes and may do so for pollution charges as well.

Implementation Opportunities for Economic Incentives for Environmental Pollution Control

One important question to be resolved is whether the specific determination of the charge should be included in the statute itself (e.g., \$1.00 per pound of specified substances) or whether the statute should delegate to EPA the authority to make the determination. The desired level of specificity in the legislation will vary depending upon one's objectives. Congress may wish to constrain EPA's fee-setting evaluations by specifying the factors to be considered in greater detail. For example, the legislation may provide that in addition to reflecting compensation for use of the resources, the fees must be set at a level sufficient to induce some modification of outputs by those emitters subject to the fees. EPA may itself desire some guidance, in order to insulate its fee process from challenges based on its inclusion of various factors. On the other hand, EPA may prefer a relatively unconstrained hand in fee-setting, thus allowing it to use those techniques and consider those factors that will optimize pollution prevention.

If the enabling statute ties the determination of the amount of the charge to the harm being caused by the emissions or discharges in question, there is a danger that a successful challenge to a charge on emissions or discharges of specific substances can be mounted on the grounds that the emissions or discharges in question are harmless, or that the amount of the charge is excessive in light of the harm. In order to avoid such challenges, EPA may feel compelled to conduct quantitative assessments of harm or risk for each substance for which charges are being made. Safeguards can be provided in the statute to reduce the risk of a successful challenge to EPA's rate determinations. For example, the statute can limit judicial review of agency decisions, can create a presumption that the agency decision is correct, and/or can provide for the payment of the fee in advance of the filing of a legal challenge.

It should be recognized that the design of a rational and comprehensive national user fee system is an extremely complex undertaking. Because of the wide variety of pollutants and the relative incomparability of the resulting risk streams, the difficulties in providing cross-media consistency are enormous. Because it will take time to develop an essentially rational system, consideration could be given to the establishment of an interim system of charges, perhaps statutory, to remain in place until a more rationalized system is developed. This will enable the system immediately to create incentives for pollution reduction and prevention and immediately to begin to generate revenue for public purposes.

2.3.4. The Relationship Between Federal and State Programs

If the United States government has the power, as trustee of the nation's air and water resources, to charge a fee for their use, so do the several states. Any national scheme of emissions fees and effluent charges must take into account in some fashion the possibility of similar state or local programs. Although there are a number of ways to deal with this problem, the simplest way is to provide for a credit against the federal obligation for the

payment of a similar state or local fee. It must be recognized, however, that such a credit system will gradually reduce federal revenues as more and more states-adopt their own fee systems.

2.3.5. The Equitable Distribution of the System's Benefits

If the underlying rationale of a system of emissions fees and effluent charges is to compensate the public for the harm caused by the pollution in question, then some significant portion of the revenues generated by the program must be dedicated to the mitigation of the harm. This can best be done by making funds available to the communities adversely affected by the pollution for programs, such as health monitoring programs, designed to mitigate or protect the adverse effects of pollution.

Significant portions of the revenues should also be available to help fund EPA's general pollution prevention activities, as well as to fund grants for pollution prevention and research and development of new pollution control technologies.

2.3.6. Form of User Fee Enabling Legislation

A draft bill has been prepared to illustrate the application of the legal principles discussed above (see Appendix G). The draft bill authorizes the establishment of a national system of emissions fees and effluent charges which must be reasonably related to the environmental harm or risk of harm caused by the emissions and discharges for which a fee or charge is imposed. The bill also authorizes the imposition of fees on intermediate products, the use of which causes pollution, where it is impractical or inefficient to impose a fee directly on emissions or discharges from the source in question.

Other approaches are possible, including the establishment of user fees on a statute by statute basis. The core principle, however, is to link the fee in some way to compensation for the harm caused by the "use" of the air, water, or other resources. Absent such a link, the fee essentially must be regarded as a tax, also lawful, but with a different theoretical underpinning.

2.4. TRADEABLE ALLOCATIONS AND PERMIT RIGHTS

2.4.1. Theoretical Basis

2.4.1.1. The Creation of Tradeable Rights, and the Right to Pollute

Emissions trading systems depend for their effectiveness on the creation of a private enforceable right to release a pre-determined quantity of a specific contaminant into the environment. In order for a trading system to work, the rights being traded must be

protected for some specific period of time. It is the creation of these rights which are sometimes referred to as “pollution rights” which is perhaps the most controversial aspect of emissions trading schemes. Opponents of such schemes argue that society has heretofore never recognized a right to pollute and therefore the creation of such rights is inconsistent with accepted social norms and community standards.

Since the legal principles developed through the common law process are generally considered reflective of the norms and standards of the community, it is appropriate to examine common law precedents to determine whether any right similar to the right to pollute has heretofore been recognized. It is important to delineate the limits of the polluter's right in order to determine the limits of any tradeable right that might be created by an economic incentive system. Two related areas of law illuminate the applicable principles: private and public nuisance law.

Private nuisance law has considerably more to say on the subject. First, it suggests that the limits of the right to a clean environment and the right to pollute the environment meet (and collide) at the point of actual harm to a person making reasonable use of his or her own property (or of the commons).

Nuisance law places significant strictures upon polluters' ability to discharge in instances where actual harm results from the discharge. Under Section 822 of the *Restatement of Torts*, liability for a private nuisance is imposed for “substantial” and “unreasonable” invasions of the right to private use and enjoyment of land. Conduct is “unreasonable” if that conduct is causing harm and it is economically and technically possible to correct the harm and such steps are not taken.

Although we tend to think of concepts such as “best available technology” as products of modern environmental regulation, the common law of nuisance required the use of best available technology long before pollution control became a subject of legislative or administrative regulation. In *Ebur v. Alloy Metal Wire Co.*,⁴ for example, the Pennsylvania Supreme Court stated:

If devices or more efficient management which would reduce the smoke, odors, gases, smudge and noises and vibrations issuing from its plant are available to the defendant at a reasonable expense, it is the duty of the defendant to secure such devices or management and, if it fails to do so, the smoke, noises, etc. emitting from its plant, may be regarded as unnecessary and unreasonable.

Similarly, the same court in *Herring v. H. W. Walker Co.*,⁵ stated:

A reasonable opportunity should be afforded the defendant to investigate methods available for the reduction of the emission of the milk and smoke, soot and ash

complained of, and the feasibility of installing such methods. If such methods do exist and may be installed in the defendant's plant at an expense which would not cause the defendant to cease operations (because of prohibitive expense) the defendant must be required to make such installation.

By defining economic feasibility as “an expense which would not cause the defendant to cease operation,” the court was going beyond a “zero profits” test for imposing an affirmative obligation. Thus, at common law, where a release of contaminants into the environment causes a judicially cognizable harm, the actor is under a legal obligation to use the best technology available to reduce the harm unless the cost would be so prohibitive that the company would be required to cease operations.

This obligation was imposed without regard to any balancing of equities—that is, without any balancing of the social utility of the polluting activity against the harm being suffered by the victims. Even where the cost of installing an air pollution control device is more than the harm being caused to the victims, so long as the harm is substantial, the common law of private nuisance requires the firm to install the pollution control device. Thus, there is no basis in the law of private nuisance for a “right” to pollute where there has been no attempt to undertake feasible precautions to reduce or eliminate the harm. Only in the event that it is not technologically and economically feasible for the polluter to install control devices to sufficiently reduce or eliminate the harm being caused by its emissions must the court balance the social utility of the defendant's activities against the harm being caused to the victims of the pollution.⁶ Balancing occurs in that case because cessation of the defendant's operations is the only way to remedy the harm being caused.

Where the cost of reducing pollution is prohibitive (in the sense that it would require cessation of the activity) and the social utility of the polluter's activity far outweighs the harm being caused by the pollution, the common law required the polluter to pay monetary damages. A modern example of this outcome is found in the case of *Boomer v. Atlantic Cement Co.*,⁷ in which adjoining landowners sought injunctive relief and damages against a cement producer whose air emissions and vibrations caused damage. The economic value of the cement mill to the community far exceeded the harm being caused to the plaintiffs, or for that matter, the entire value of their land. Merely balancing costs would have led to a decision favoring the mill; instead, the court entered an order requiring shut-down, but providing that the company could avoid a shut-down if it paid permanent damages to the affected landowners. Thus, even in a case where the balancing of equities is appropriate and where the balance tips easily in favor of the polluter, the common law requires the polluter to compensate the victims of its pollution for the harm suffered therefrom (at least where the amount of compensation would not be prohibitive).

In summary, the common law of private nuisance does not recognize any “right” to cause pollution of the environment where the pollution is causing harm to others of a

sufficient magnitude to trigger nuisance liability. Thus, if a marketable right can be said to be founded within traditional legal principles, it can only be a right which allows pollution *below the threshold of legal harm*. The system of payment of damages (in those cases that reached the stage of balancing because of infeasibility of controlling the discharge) did not provide the basis for a right in the polluter, but rather was a way of compensating for something that was recognized as a legal wrong.

The law of public nuisance is no less strict. Indeed, it allowed no balancing of the equities at all. The law of public nuisance applied when the state, as sovereign, acted to vindicate a harm either to the commons or to diffuse victims within the state. The only remedy was abatement (and in some instances, restitution for abatement costs incurred by the state).⁸ The only necessity was to demonstrate that a legal harm had occurred.

The common law is less clear, however, concerning what constitutes a sufficient harm to trigger nuisance liability. At common law, for a particular harm to be judicially recognized, it must be more than a *de minimis* invasion of a protected legal right. Discharges that do not reach this threshold may therefore be viewed as lawful. Consequently, the creation of a tradeable right to release contaminants into the environment up to a certain level is not necessarily inconsistent with common law principles developed in typical state jurisprudence.

Nuisance law eventually foundered on the problem of determining the level of significance of harm caused by pollution. The common law of nuisance provided an ineffective remedy to deal with environmental contamination, first, because courts were unwilling to draw the line between harmful and harmless pollution sufficiently low enough to protect society from the aggregate harm caused by pollution from many sources, and second, because standards of proof in an adjudicatory proceeding frequently cannot be met by a private plaintiff who is required to prove with admissible evidence that the pollution in question (and not someone else's pollution) has caused him actual injury (and not merely a risk of injury). Similar problems were faced by governmental plaintiffs attempting to show injury in a public nuisance suit. Not only that, but the common law seldom took into account damages to "the environment" (as opposed to human health and economic injuries). When the Clean Air Act of 1970 was enacted ambient air quality in virtually every urban and industrial area of the country greatly exceeded pollution concentration levels thought to be safe, attesting to the ineffectiveness of the common law of nuisance in protecting the public health.

Statutory law addressed these problems in the area of air pollution by the promulgation of Ambient Air Quality Standards defining the ambient levels of criteria pollutants above which harm to the public health (primary standards) or the public welfare (secondary standards) was expected to occur. Implementation plans were then designed with sufficiently stringent emission standards which, if complied with

uniformly throughout the geographical region in question, would result in attainment of the federally promulgated ambient air quality standards. The most heavily polluted areas were therefore required to enact the most stringent emissions standards. Less heavily polluted areas could achieve theoretical attainment of the ambient air quality standards with relatively less stringent emissions standards. Thus, to a large extent, under our present air pollution regulatory system, a harmful emission of a criteria pollutant is defined or determined by the extent to which it may interfere with the attainment of *ambient* air quality standards. If one accepts this definition as a sound and workable definition of legal harm, then an air pollution emissions trading system for criteria pollutants would be consistent with the historical development of common law principles if it were based on enforceable rights to emit air contaminants into the atmosphere at rates *which would not interfere with the attainment of federally promulgated ambient air quality standards.*⁹

The problem is somewhat different when dealing with emissions of Hazardous Air Pollutants (HAPs) or Air Toxics since National Ambient Air Quality Standards (NAAQSs) have not been promulgated for such pollutants. For the area of Air Toxics, the determination of the level of significant harm has become a matter of risk assessment. The risks to the surrounding population created by emissions of a particular HAP will vary from source to source because of differing topographical and meteorological conditions and a wide range of other site-specific conditions. However, once a regulatory level of risk for a particular HAP is determined, (e.g., a risk of 1 additional death in 100,000), and the existing risk presented by each source of the HAP in question is determined, a basis for a trading system would exist. For example, if a safe or acceptable level of risk for HAP emissions were set at 1 in 100,000, a system which would permit a source of emissions of a particular HAP creating a risk of 2 in 100,000 to choose between reducing those emissions to a risk level of 1 in 100,000 or acquiring a transferable right from a nearby source to emit the same or another HAP to a risk level of 1 in 100,000 would appear to achieve the same result in overall risk to the affected population.¹⁰ In order for this to be the case, both sides of the trade would need to take place in the same airshed.

In the area of water pollution control, the definition of a significant level of harm has also become a matter of regulatory rulemaking with in-stream water quality criteria being analogous to NAAQS and water quality based effluent limitations set forth in NPDES permits being analogous to emission standards. A water pollution trading scheme would be consistent with the principles developed by common law courts in nuisance cases so long as trades are limited to the same watershed or stream segment and so long as trades are not permitted to jeopardize the attainment or maintenance of in-stream water quality criteria in the affected stream segments.

By way of summary, although the common law does not explicitly recognize a legally protected right to release contaminants into the environment, a tradeable allocation

system is not inconsistent with the legal norms reflected in our common law legal system so long as the allocations being traded do not exceed the applicable level of significance and so long as no particular trade can interfere with the attainment of ambient (or water quality) standards.

2.4.1.2. The Assignment of Tradeable Rights: Existing Sources and New Sources

An initial question which must be addressed in the design of any tradeable allocation system is how and to whom the allocations should initially be distributed. There are three principal alternative methods to initially assign tradeable rights:

(a) *An auction system.* Under an auction system, the initial allocations will be offered to the highest bidders in an open market. Anyone who can pay the price is qualified to bid. All allocations are paid for and are revenue-producing.

(b) *Pro rata distribution to existing sources.* Under this system, the initial allocations are assigned pro rata to existing sources without charge.

© *A mixed system.* Under such a system, a proportion of the allocations are distributed pro rata among existing sources and a proportion are retained by the issuing authority for subsequent auction or sale. Such a system can be used to permit future expansion by auctioning or selling allocations to operators of new sources. It can also be used to “jump-start” a market trading system by establishing market prices in an open auction environment.

The law has evolved certain legal principles which may bear on the question of how tradeable rights should be initially assigned.

In the area of land use law, common law courts have developed a principle which protects a particular activity or use of property which was lawfully established and operating prior to a change in law making the activity or use unlawful. Such a use is referred to as a “non-conforming use.” The rule protecting non-conforming uses has been stated as follows:¹¹

[The rule] is premised upon the view that the owner of property to which a lawful non-conforming use has attached enjoys a vested property right thereto which may not be abrogated, unless it is a nuisance, or abandoned, or is extinguished by eminent domain ...

The right to conduct a non-conforming use actually vests as soon as the property owner expends money or incurs a liability in reliance on a building permit which he obtained under the existing ordinance. Of course, as pointed out in the *Gross* case, a property

owner cannot acquire a vested right to create or perpetuate a common law nuisance.

Although the common law recognizes that one can obtain a protected interest in a particular lawful status quo, which cannot be extinguished by government without compensation, the government enjoys substantial latitude in restricting the uses of property in order to protect the public health and general welfare. It is, however, conceivable that some tradeable rights allocation systems may implicate rights which may be considered protected.

For example, when dealing with an activity that becomes harmful to the public health or welfare only after a certain threshold is reached, an allocation system that allocates rights to those actors who engaged in the activity before the harmful threshold was reached may be desirable. In Telluride, Colorado, for example, wood burning stoves and fireplaces were recognized as undesirable only after the number of such wood burning units reached a critical level. The local governing body adopted an ordinance under which the total number of wood burning units in the community was capped at the existing level and all owners of existing units were issued a permit permitting its use. Under the ordinance, wood burning is permitted in new construction, however, only if the owner purchases two permits from the owners of existing units. This system gives at least implicit recognition to the concept of vested rights, but at the same time recognizes that rights which have not yet vested can be entirely extinguished without compensation.

Land use systems featuring transferrable development rights which have been adopted in Montgomery County and Talbot County, Maryland, and in The Pinelands, New Jersey, avoid the vested rights problem by initially assigning development rights to the existing landowners in return for limiting development of their lands.¹² In fact, most trading systems implemented to date have given recognition to the claim of owners of existing sources to an initial cost-free pro rata allocation of rights. Whether the recognition of this claim is constitutionally required would depend on the facts of each case. However, the rights which existing owners may have in the status quo must be given consideration in the design of any tradeable rights system.

An auction system would essentially require owners of existing sources to pay for the right to emit contaminants up to the threshold level of significance as determined by regulation, although if the auction price is prohibitive, it might impinge upon existing property rights. (For example, if Telluride had auctioned off fireplace permits to existing holders first before offering them to others, or required existing fireplace owners to pay a fixed license fee but then allowed them to sell the rights to others, this would probably not create a problem. On the other hand, if the city had held an entirely open auction, at some level the action might be deemed a prohibition on an activity that existing fireplace owners had an expectation of continuing. A correspondingly strong showing of public

purpose would be required if a “typical” outcome were the inability of existing fireplace owners to continue to operate because of the unavailability of licenses).

Conversely, auctioning tradeable rights to the owners of not yet existing sources would be entirely consistent with existing common law precedent because they do not have the same interest in the status quo as owners of existing sources. In summary, the auctioning of pollution rights non-preferentially raises more issues than either the cost-free assignment of the rights to existing sources or the preferential auction or sale of the rights to existing sources. (Nevertheless, many possible forms of open auction or non-preferential sale of rights are not problematic and are entirely in accordance with legal norms. In general, this is the case where rights are available, and the cost is not so prohibitive as to work a confiscation of the facility).

2.4.1.3. The Problem of the Unfair Creation of Windfalls

The ability to convert a tradeable pollution right to cash by selling it on the open market is a central feature of trading schemes. The idea that a polluter should thus be financially rewarded for reducing pollution has generated opposition to trading systems that economists have not appeared able to address effectively. *See e.g.*, Dudek and Palmisano (1988):¹³ “As to the claim that industry profits from emissions trading, this claim involves a moral or ethical paradigm to which economics does not necessarily speak....” Yet, even some of the most ardent proponents of economic efficiency agree that “there is more to justice than economics.”¹⁴ Is a system which rewards polluters for reducing pollution inherently unjust even though the goal of economic efficiency is furthered without sacrificing the goal of pollution reduction? There are no common law precedents which help us answer this question.

The common law principle of unjust enrichment gives legal force to the moral principle that one should not be permitted to enrich himself unfairly at the expense of another. However, this principle has never been applied to preclude the grant of a benefit by government. It is only applicable in the context of a private dispute between or among private parties.

Certainly, the idea that a polluter should be compensated for reducing its pollution is at variance with the principle discussed earlier in this paper that a polluter should be required to compensate the public for damages caused by his pollution. If, however, tradeable rights are limited to rights to release contaminants into the environment below the threshold of harm the two concepts are not necessarily conflicting. The simple fact that an owner of pollution rights can profit by selling them, standing alone, should not constitute grounds to render a tradeable rights system unjust as long as the system otherwise meets the objectives of improving environmental quality and achieving economic efficiency.

A more serious objection to tradeable rights systems is that they frequently result in windfalls for the owners of such rights without providing any corresponding environmental benefits. An example of this problem is presented by a plant shut-down or reduction in operations caused by factors entirely unrelated to environmental protection. Where a plant would have been shut down in any event for independent economic reasons, a system which would provide the owner of the plant with tradeable pollution credits as a result of the reduction in pollution caused by the shut-down, would simply provide the owner with a financial windfall without realizing any corresponding benefit in environmental quality. EPA's Bubble Policy has been criticized for creating the potential for these phantom credits.¹⁵ However, this is a problem that can be avoided in the careful design of a trading system by ensuring that process shut-downs or reductions in operations which might otherwise occur do not yield tradeable credits.¹⁶

2.4.2. Form of Tradeable Allocation Enabling Legislation

Title III of the illustrative bill (see Appendix G) has been prepared to illustrate how a tradeable rights system might be constructed. While tradeable rights are already extant under portions of the Clean Air Act and have been experimented with administratively under other laws, this discussion draft incorporates the insights derived from this analysis of underlying common law principles. It establishes a system that, consistent with those principles, does not recognize a tradeable right to do harm, but does authorize trades that fall below such a threshold. The draft also suggests a number of possible ways of defining the threshold below which trading may freely occur.

2.5. INFORMATION DISCLOSURE SYSTEMS

2.5.1. Theoretical Basis

EPCRA has demonstrated that the forced disclosure of information relating to the impact of a company's activities on the environment can create strong and effective incentives for the voluntary reduction of pollution. Programs requiring public disclosure of such information are highly cost effective because administrative costs of such programs are relatively very low. They are also highly efficient economically because the polluter is free to choose the low cost method of reduction. As the following discussion demonstrates, such systems are entirely consistent with the legal norms, reflected in our common law.

2.5.1.1. The Duty to Warn

The common law imposes on manufacturers and sellers of products the duty to warn consumers of any condition of their products which render the product in question unreasonably dangerous. A similar duty is imposed on occupiers of land to warn those

who come on to the land with the landowner's consent or knowledge of any unsafe condition on the premises. Finally, the general common law of negligence imposes the legal duty on all of us to take reasonable steps to warn others of any dangers which we might create.

The breach of the common law duty to warn can give rise to the imposition of personal monetary liability to any person injured in his person or property as a result. Thus, the communication of risk to those in danger is an objective which the common law seeks to further. Any regulatory system which requires companies to report for public disclosure information relating to the environmental harm caused by their industrial or commercial activities would further an important objective of the common law and thereby promote social justice.

2.5.1.2. The Duty to Disclose Material Facts

The common law of most jurisdictions requires parties to commercial transactions to fully disclose to the other party all facts relating to the subject matter of the transaction which may reasonably be expected to influence that party's decision to proceed with the transaction in question. The failure to disclose such facts is considered fraudulent providing the defrauded party with an election to either rescind the transaction or sue for monetary damages. Thus, the disclosure of sufficient information to permit a party to a transaction to make an informed decision is an objective which our common law seeks to further. Any regulatory system requiring companies to inform the public about the environmental impact of their products would further the underlying purpose of the common law and thereby promote social justice.

2.5.2. *The Relationship Between Federal and State Law: The Doctrine of Federal Pre-emption*

Any federal requirement that a manufacturer of a product issue a warning or instruction concerning its use may have the effect of pre-empting state common law requirements regarding the duty to warn. Any statute authorizing the establishment of information disclosure systems should therefore expressly preserve state laws dealing with the same subject matter.

2.6. ENFORCEMENT SYSTEMS

2.6.1. *Private Enforcement*

There appears to be a renewed interest in relying on private enforcement of environmental rights as a pollution control mechanism. In fact, an argument has been made that the private enforcement of such rights should be relied on exclusively to regulate activities which endanger environmental values.¹⁷ While proposals for exclusive

reliance on private enforcement are hopelessly unrealistic¹⁸, using private enforcement as a supplement to the economic incentive systems discussed herein could provide a useful backstop in those cases where the implementation of a particular incentive mechanism inadvertently causes localized harm. In order to make private enforcement an effective option some of the existing procedural obstacles to private enforcement must be overcome.

For example, standing to sue is often not granted to those potential private plaintiffs having the greatest incentives and resources to sue, such as national environmental advocacy groups. Moreover, transaction costs, such as the cost of obtaining expert witnesses and competent counsel are a great deterrent to the prosecution of private actions. Simplification of the nature of the proof necessary to prevail would go a long way in reducing these costs. Finally, realistic incentives should be provided to plaintiff's counsel in order to induce competent litigators to take private environmental enforcement cases. Any comprehensive legislation authorizing the use of incentive mechanisms should also contain provisions facilitating effective private enforcement in appropriate cases.

2.6.2. Government Enforcement

The collection of pollution charges should be treated no differently than the collection of taxes and all of the tools available to the tax collector should be made available to EPA to facilitate the collection of any authorized pollution charges. Likewise, civil and criminal sanctions which are imposed on tax evaders should be made available to EPA for imposition on persons who fail or refuse to pay the pollution charges in question.

Trading systems must be accompanied by enforcement provisions which would severely penalize unauthorized releases of contaminants into the environment. Where feasible continuous monitoring levies should be required and detected violations should automatically trigger the imposition of appropriate sanctions.

Information disclosure systems should be accompanied by stringent civil and criminal sanctions for the failure to provide the required information or the false reporting of required information.

2.7. CONCLUSIONS

Congress has wide latitude to legislate economic incentives, subject only to constitutional constraints. The EPA also has substantial latitude within its specific statutory mandates to construct such systems, as shown in the following chapters. Nevertheless, economic incentive systems that ignore their connection with deeply rooted legal norms (societal norms expressed in longstanding legal principles) risk rejection by policy makers, enforcers, administrators, and the public alike. It is the lack of recognition

of this connection that has rendered academic much of the consideration of economic incentives over the past two decades.

Legal norms provide a basis for pollution discharge fees (and product fees) on the theory of “compensation,” which requires that the fees bear some rational relationship to harm. They also provide a basis for tradeable allocations, provided that the allocations do not produce a harm which could otherwise be reduced (viz. the results of trades must not produce violations of ambient standards or increase relevant risk levels). They provide a basis for collection and dissemination of truthful information, inducing modifications of behavior in the marketplace. And they provide a basis for private and public enforcement.

Endnotes for Section 2

1. Ackerman and Stewart (1988).
 2. 42 U.S.C. § 9607(a)(4)(C).
 3. 42 U.S.C. § 9601(16).
 4. 304 Pa. 177, 187 (1931). A number of Pennsylvania cases have been used to illustrate the development of the common law in the environmental context because Pennsylvania has a well developed body of nuisance law which is illustrative of the common law of most industrialized states.
 5. 409 Pa. 126, 135 (1962).
- . Some commentators have missed this distinction, suggesting that the common law recognized a right to pollute where the social utility of the polluters' activities outweighed the social cost of the resulting pollution. For example, Posner (1972), p. 46 states:

The common law recognized the danger of assigning exclusive rights either to polluters or to their victims. Under the doctrine of nuisance, and cognate doctrines applicable to special areas such as water rights, courts followed a standard of reasonable use. Pollution was lawful if reasonable in the circumstances, which meant (but only approximately) if the benefit from continuing to pollute exceeded the cost to the victims of pollution of either tolerating or eliminating it, whichever was cheaper.

This statement oversimplifies the manner in which the common law of nuisance regulated pollution. As noted above, the relative benefit calculation rarely came into play as the common law of nuisance eventually developed.

7. 257 N.E.2d 870 (N.Y. 1970).

8. See Halper (1986 and 1987). See also Novick *et al.* (1987-92), ch. 6.01[2][c].
9. This is not to say that degradation of clean air up to the ambient standards should be permitted. Even the common law of nuisance gives some recognition to the concept of non-degradation by considering the character of the plaintiff's neighborhood in determining whether a particular intrusion will be considered "significant." See *e.g.*, *Hannum v. Gruber*, 364 Pa. 417, 31 A.2d 99 (1943) (a person who resides in a large city must not expect to be surrounded by the same level of quietude which prevails in rural areas).
10. In fact, the trading scheme need not necessarily be limited to HAP trading. If the source in question is able to find some less expensive way to reduce the risk of death to the surrounding population by a factor of 1 in 100,000, the overall risk to the population would be reduced by the required amount and the goal of maximum economic efficiency will be realized. A similar system, called a Risk Bubble, has been proposed. See Portney (1988). For a discussion of the problem in defining and trading comparable risks, see Baram (1987).
11. *Gross v. Zoning Board of Adjustment of City of Philadelphia* (1967).
12. Carlin (1992), pp. 5-10 to 5-12.
13. P. 237.
14. Posner (1972), pp. 25-26.
15. R. Liroff (1986), note 24, pp. 98-99.
16. See Dudek and Palmisano (1988), pp. 239-40.
17. See Anderson and Lead (1991).
18. See, for example, Brunet (1992).

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3. ADMINISTRATIVE OPPORTUNITIES

3.1. INTRODUCTION

This section, together with Appendices A-F, analyzes most of EPA's major authorizing statutes: the Clean Air Act, the Federal Water Pollution Control Act (FWPCA or Clean Water Act), the Toxic Substances Control Act (TSCA), the Safe Drinking Water Act (SDWA), the Emergency Planning and Community Right-to-Know Act (EPCRA), and the Pollution Prevention Act (PPA). These statutes are representative of many of the sorts of environmental regulatory authorities that EPA has, but other statutes may support additional and novel economic incentive programs. Statutes like the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Resource Conservation and Recovery Act (RCRA) deserve further study.¹

In analyzing the laws for potential opportunities to apply economic incentives, the authors began by classifying economic incentives into the first five of the categories shown in Table 1-2. The five categories and the subsections where they are discussed (where X stands for the Appendix letter) in each Appendix (A-F) are:

X.2. Payments to Government for Pollution Discharges—this category includes two distinct kinds of payments:

X.2.1. Environmental User Fees, based on volume or toxicity or other measures of direct discharge of pollutants to the environment, and

X.2.2. Fees on Inputs or Products—intended to discourage uses of particular chemicals or other substances that may have deleterious effects (either because of byproducts associated with their production, or because of their effects after disposal).

X.3. Deposit-Refund Systems—this category includes measures to encourage the return of used products, components, or packaging to their manufacturers and distributors. By doing so, these measures internalize the costs of disposal and encourage waste minimization and design for recycling.

X.4. Tradeable Permit Rights—this category includes market-based measures to allocate the burdens of pollution control to those entities that are able to achieve reductions in the most cost-effective manner, resulting in efficiency gains.

X.5. Information Disclosure—this category includes environmental labeling and public disclosure of information on processes, products, and emissions, which may affect consumer choices.

X.6. Liability for Environmental Damages—this category includes civil liability for

damage to the environment or human health; it encompasses governmental suits to recover natural resource damages and private suits to recover for environmental torts. These may produce changes in conduct in order to avoid such liability, and in effect, provide a liability-based alternative to environmental user fees.

Each of the statutes is examined in turn in the Appendices and summarized in Section 3.2.2 below in order to determine where they might sustain a program of economic incentives, looking at each of the five types of incentives.

3.2. HIGHLIGHTS OF THE FINDINGS

This subsection summarizes both the findings of Section 3.3, which examines some issues arising generally out of EPA's potential administrative initiation of incentive programs, and the findings of appendices A-F, which each explore a single statute to determine where it might now sustain a program of economic incentives. These highlights are further summarized in Table 3-1.

The reader should note that the emphasis in these findings is to identify *possible* opportunities to implement incentives. In implementing specific approaches, the agency will necessarily undertake more specific legal analyses.

3.2.1. General Issues

Some common issues about EPA's authority to initiate economic incentives administratively emerged from the analysis of individual statutes. The general considerations summarized here are discussed in greater detail in Section 3.3, below.

EPA can implement incentive systems not specifically described in statutes. Congress often delegates to the agency broad regulatory authority. In such cases, EPA ordinarily has discretion to take reasonable steps to fill in the regulatory gaps left by Congress.

A common issue is whether, if Congress has specified a command-and-control system in a statute, that precludes implementing another incentive system? In general, there is a presumption where Congress has given EPA broad regulatory powers, they will often include the power to adopt economic incentives in addition to traditional command-and-control requirements. The rule of statutory construction that expression of one thing implies exclusion of another has limited application.

Table 3-1: ADMINISTRATIVE POTENTIAL OF ENVIRONMENTAL LAWS FOR USING ECONOMIC INCENTIVES

Law	CAA	CWA	EPCRA	PPA	SDWA	TSCA
Authority for Incentives Generally	Broad	Potentially Broad	Narrow	Narrow	Narrow	Broad
Payments for Discharges (App. Sec.)	Yes § A.2.1	Possible § B.2.1	Limited § C.2.1	Limited § D.2.1	Limited § E.2.1	Potentially Broad § F.2.1
Fees on Inputs or Products	Yes § A.2.2	Possible § B.2.2	Limited § C.2.2	Limited § D.2.2	Limited § E.2.2	Potentially Broad § F.2.2
Deposit-refund Systems	Yes § A.3	Limited § B.3	No § C.3	No § D.3	No § E.3	Yes § F.3
Tradeable Permits	Yes § A.4	Yes § B.4	No § C.4	No § D.4	Limited § E.4	Yes § F.4
Information Disclosure	Yes § A.5	Yes § B.5	Yes § C.5	Yes § D.5	Yes § E.5	Yes § F.5
Liability	Via Civil Penalties § A.6	Via Civil Penalties § B.6	Limited § C.6	Limited § D.6	Via Civil Penalties § E.6	Via Civil Penalties § F.6

Explanation of Terms Used in Table 4-1:

Yes = available in some significant form.

Limited = available in narrow or restricted form.

Possible or Potential = indicates pivotal open legal issues surrounding use.

CAA = Clean Air Act. EPCRA = Emergency Planning and Community Right to Know Act. CWA = Clean Water Act. PPA = Pollution Prevention Act of 1992. SDWA = Safe Drinking Water Act. TSCA = Toxic Substances Control Act

The issue of special constitutional constraints on laws involving regulatory fees does not appear to present an impediment to pollution charges. The Constitution does not require the Congress to spell out the power to assess fees with any greater specificity than other powers. The Origination Clause requires bills creating taxes to originate in the House, but that restriction only applies to bills whose central purpose is taxation and does not lessen EPA's authorities to regulate under the environmental laws.

There are a few special statutory constraints on EPA's assessment of fees. Two laws, the Independent Offices Appropriation Act of 1952 and the Omnibus Budget Reconciliation Act of 1990, authorize and at the same time place restraints on EPA assessment of fees for services, activities, or things of value. Though these restraints arguably do not apply to regulatory fees, EPA will have to consider the applicability of these statutes when it establishes fee-based incentives.

EPA does not need specific authority to release information that could influence environmental behavior. Although certain laws restrict disclosure of trade secrets and other confidential information, EPA has broad inherent discretion to tell the public what it knows.

There are general mechanisms EPA can use to influence environmental liability. For example, EPA can expand liability under the negligence *per se* doctrine by defining reasonable environmental conduct through its regulations. On occasion, EPA regulations incidentally restrict state liability laws through preemption.

3.2.2. Specific Statutes

Every statute this report examined would support some form of enhanced economic incentive. In some of the statutes, EPA's authority is constrained, often by the limited scope of the statute. In others, EPA appears to have broad discretion to use economic incentives. The following is a brief summary of the points made in the individual statute appendices (A-F). Note that this discussion presents only a few of the many opportunities for implementing economic incentives identified in the appendices.

3.2.2.1. The Clean Air Act

The Clean Air Act is a multi-faceted, sweeping regulatory statute aimed at improving ambient air quality and addressing other air-pollution related problems, such as stratospheric ozone depletion.

The Act presents a recurring issue in deciding what economic incentives EPA may implement administratively—how should the agency interpret a statute that grants broad powers in some sections while directing the agency to implement specific kinds of

controls in others?

On the one hand, the Act gives regulators broad discretion to achieve clean air goals. At least twenty sections of the Act call for “control measures,” which arguably are defined to include economic incentives. Other sections give EPA authorities that would seem to support a range of economically based controls.

On the other hand, the Act explicitly directs EPA to establish certain economic control mechanisms, such as the allowance trading system for pollutants contributing to acid rain. Many of Congress's regulatory directives to EPA in the Act are quite explicit. Can EPA legitimately implement economic controls beyond those explicitly described in the Act?

This report cannot definitively address all the policy, political, and legal overtones of that question. As noted in Section 3.3 below, the courts must defer to EPA's permissible interpretations of its statutory authority. For that reason, EPA probably has considerable leeway to craft economic incentive programs within the bounds of the Act and other relevant laws.

As an example, consider Clean Air Act § 112(m)(6), 42 U.S.C. § 7412(m)(6), directing EPA to promulgate “control measures as may be necessary and appropriate” to control atmospheric deposition of hazardous air pollutants in the Great Lakes, Chesapeake Bay, and other water bodies. As discussed in Appendix A, the phrase “control measures” appears frequently in the Act, sometimes with explicit language explaining that the phrase encompasses economic incentives.

Under § 112 authority, then, EPA could adopt a whole range of economic incentives if they were appropriate and necessary to control hazardous air pollutant deposition. Some examples might include:

- A regulatory fee on emissions of hazardous air pollutants within an airshed linked to atmospheric deposition in the water body of concern.
- A fee assessed on fuels or other inputs associated with production of such hazardous pollutants.
- If such pollution were linked to incineration of particular products in municipal wastes, a deposit and refund system designed to segregate those products from the waste stream.
- A system of tradeable permit rights controlling emission of such pollutants within the airshed.

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- A requirement that emitters of such pollutants within the airshed make public reports on such emissions.
- A civil penalty assessment policy, for violations of regulations under this section, that reflects natural resource damages caused by the violation.

Besides the many general authorities like § 112(m)(6) that could support a spectrum of economic incentives, the Act contains many narrower authorities that would support economic incentives. Here are a few examples reflecting the wide range of options:

- Congress contemplated that the fees charged for permits would reflect the amount of pollutants discharged, and EPA has some latitude to adjust the fee schedule to create stronger or weaker incentives to reduce pollution of particular kinds or from particular sources.
- EPA could impose a regulatory fee on gasoline or gasoline additive sales under Clean Air Act § 211(c)(1)(A). Such action would be contingent on certain findings, and might have political costs, but it illustrates the broad powers EPA has under the Act.
- Under its Clean Air Act § 608 authority, EPA could set up a deposit-refund system for broad classes of ozone-depleting chemicals or the equipment that uses them.
- The Act contains many explicit authorizations of emissions offsets and trading, from marketable credits for oxygenated gasoline to consumption allowances for ozone-depleting chemicals.
- Under § 127, EPA can require states to adopt a variety of means to inform the public about areas that have failed to meet air quality standards.

As the last example suggests, in addition to direct regulation, the Act gives EPA several opportunities to steer the states toward establishing economic incentive programs. For example, §§ 182(g)(3)(C) and 187(D)(3) direct EPA to promulgate a model economic incentives plan for adoption in state implementation plans (SIPs) in certain areas not meeting air quality standards. Sections 110(a)(2)(F) and 114(a) allow EPA to require revised SIPs to include provisions for monitoring air emissions from all stationary sources and making that data available to the public.

3.2.2.2. The Emergency Planning and Community Right-to-Know Act

EPCRA establishes a system of planning for emergency releases of hazardous substances and a system of reporting and disclosure of the use and release of hazardous substances. In contrast to the Clean Air Act, EPCRA grants EPA no general regulatory powers.

EPA's best opportunity to establish economic-based incentives under EPCRA lies in expanding the basic information disclosure program under the Act. For example, EPA could dramatically expand the chemicals and industries covered under the Toxics Release Inventory through a few clearly authorized rulemakings. Incidentally, the Act may support some fee-based incentives and could expand liability under the negligence *per se* doctrine.

3.2.2.3. The Federal Water Pollution Control Act

The FWPCA (also called the Clean Water Act) is another source of broad authority for EPA, in this case directed at ending pollution of surface waters. However, the important role of the states in implementing the Act indirectly limits EPA's own authority. Also, the courts have required that EPA's controls of point sources of water pollution focus on direct control of the discharge, rather than indirect control of the discharger.

Nonetheless, the Act would likely support limited versions of each of the five kinds of incentives examined in this report. For example,

- Though EPA's authority to impose fees for pollution discharge is clouded by some contrary legislative history of the 1972 version of the Act, the current version of the Act may support effluent fees. At least seven states presently charge such fees as part of their implementation of the Act.
- The Act's § 319 non-point regulatory authority may allow creation of input surcharges or deposit-refund systems for fertilizers, pesticides, and other agricultural chemicals that contribute to non-point pollution.
- A strong case can be made for establishing permit trading systems for certain classes of pollutants, and in fact some states are experimenting with these systems on water-quality-limited lakes or streams.
- Under the Act, EPA acquires detailed information about the discharges of permit holders. It could justify publicizing this information aggressively if doing so would lead to reduced discharges.

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- EPA's assessment of civil penalties can partially reflect environmental damages caused by the pollution.

3.2.2.4. The Pollution Prevention Act

Like EPCRA, the PPA is primarily an information law. Its best known regulatory requirement expands EPCRA reports to include information on source reduction and recycling.

Though it grants little regulatory power, PPA gives EPA a broad mandate to pursue pollution prevention in all of EPA's programs. That mandate may help support innovative economic pollution prevention regulations adopted under the substantive regulatory authority of other acts.

EPA could also explore creative ways to expand and disseminate the information collected under the Act. For example, EPA could establish an aggressive publicity program recognizing the best and the worst practitioners of pollution prevention on a state, regional, and national basis.

3.2.2.5. The Safe Drinking Water Act

The SDWA directs EPA to set standards for drinking water safety and, with the states, to regulate both public water systems and underground injection of wastes that might affect drinking water.

Though EPA may have limited authority to assess fees or establish tradeable rights, the most obvious opportunities for economic incentives under this Act lie in the information provisions. EPA has clear authority here both to gather information from public water systems and to see that information is available to the systems' customers. For example, EPA has broad discretion to compel public water systems to inform the press about violations of drinking water standards, or to inform their customers through direct mailings.

3.2.2.6. The Toxic Substances Control Act

TSCA gives EPA regulatory authority to protect the public from unreasonable risks posed by chemical substances. Although it does not generally support sweeping regulations addressing broad problems, TSCA does give EPA discretion to implement solutions to problems concerning specific chemicals.

TSCA is one of the most flexible of EPA's regulatory authorities and can provide a basis for powerful programs using fees, deposits, tradeable permit rights, or information

disclosure. For example,

- TSCA § 6 arguably would support imposition of a fee on disposal of a particular chemical substance posing an unreasonable risk. Such a fee would have to qualify as among “the least burdensome requirement[s] ... necessary to protect adequately against such risk.”
- Similarly, EPA could use § 6 authority to impose fees on chemical substances as inputs or products.
- Section 6 authority would encompass deposit or take-back schemes for chemicals like solvents or paints that contribute to household hazardous waste.
- Using the § 6(a)(1)(B) authority to limit the amount of a substance manufactured, processed or distributed in commerce, EPA could establish marketable permit right programs.
- EPA could use TSCA authorities to require labels disclosing that products contain specific toxic substances.
- EPA could figure natural resource damages into its TSCA civil penalties policy.

3.3. ISSUES RELATING TO ALL STATUTES

Several common issues arise concerning EPA's ability to implement economic incentives administratively, no matter what statute EPA draws on to supply the underlying authority. This section of the report addresses those overarching issues in general terms. It identifies principles of statutory construction and legislation that might affect EPA's options. Obviously, these issues will require more specific analysis in the context of developing and implementing specific proposals.

3.3.1. General Issues of Regulatory Authority

Can EPA implement an incentive system not specifically described in a statute? EPA has no inherent legislative powers. One of the fundamental principles of the United States' system of government is the doctrine of separation of powers between the federal branches of government. Article I, § 8 of the Constitution enumerates the powers of Congress, which include the “Power . . . to make all Laws which shall be necessary and proper” for carrying out its legislative powers. Congress initially holds all legislative power.

However, it is a “longstanding principle that so long as Congress provides an

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administrative agency with standards guiding its actions such that a court could ‘ascertain whether the will of Congress has been obeyed,’” Congress may delegate legislative power to an administrative agency.² A delegation is constitutionally sufficient if Congress clearly delineates (1) the general policy, (2) the public agency that is to apply it, and (3) the boundaries of this delegated authority.³ Congress may meet these standards by a variety of methods. “These standards need not be tested in isolation. They derive much meaningful content from the purpose of the Act, its factual background and the statutory context in which they appear.”⁴

The delegation doctrine provides strict limits to Congress's ability to transfer its legislative authority. But those boundaries are set wide, and in only three cases has the U.S. Supreme Court held that Congress strayed outside them, the last being in 1936. This traditional hesitancy to invoke the delegation doctrine to overturn Acts of Congress, combined with the Court's statements that it will look beyond explicit statutory language to find the requisite guidelines and limits to agency action leads to the conclusion that the Court is unlikely to hold that a statute is an unconstitutional delegation of legislative power if it arguably delegates power to EPA to use economic incentives or other market mechanisms to achieve environmental policy goals.

If Congress gives the agency general regulatory authority in an area but does not spell out details, how much freedom does the agency have to fill in the legislative blanks? Congressional delegation to an agency on a particular question may be implicit rather than explicit. Many of EPA's statutes are silent on the issue of using the types of economic incentives and market mechanisms analyzed in this Report. In *Chevron U.S.A. v. Natural Resources Defense Council, Inc.*,⁵ however, the Supreme Court declared that if

the court determines Congress has not directly addressed the precise question at issue, the court does not simply impose its own construction on the statute, as would be necessary in the absence of an administrative interpretation. Rather, if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute.⁶

The Court's opinion emphasizes the political aspect of decisions by the EPA:

When a challenge to an agency construction of a statutory provision, fairly conceptualized, really centers on the wisdom of the agency's policy, rather than whether it is a reasonable choice within a gap left open by Congress, the challenge must fail. In such a case, federal judges—who have no constituency— have a duty to respect legitimate policy choices made by those who do.⁷

The Court also calls attention to the EPA's relationship with the Chief Executive, stating

that “[w]hile agencies are not directly accountable to the people, the Chief Executive is, and it is entirely appropriate for this political branch of the Government to make such policy choices—resolving the competing interests which Congress itself either inadvertently did not resolve, or intentionally left to be resolved by the agency charged with the administration of the statute in light of everyday realities.”⁸

The *Chevron* analysis involves two steps. The first is to determine whether “Congress has directly spoken to the precise question at issue.”⁹ Congress has not, in many of the pollution control statutes, directly addressed the use of specific economic incentives. The second step, then, is whether “the agency’s answer is based on a permissible construction of the statute. ...[A] court may not substitute its own construction of a statutory provision for a reasonable interpretation made by the administrator of an agency.”¹⁰ The courts accord “substantial deference ... to the interpretation of the authorizing statute by the agency authorized with administering it.”¹¹ An EPA decision to use a particular market mechanism or economic incentive should be upheld under *Chevron* if it is arguably consistent with the statute’s goals. The question for a court will be whether the action was reasonable. This leaves EPA with broad discretion to interpret the statutes it administers and to adopt means for implementing those statutes.

Some tenets of statutory construction, long embraced by courts to bring some consistency to the judicial interpretation of statutes, could tend to restrain EPA’s discretion to interpret statutes broadly. Among these is the maxim “*expressio unius est exclusio alterius*,” which means “the statement of one thing is the exclusion of others.” In the context of statutory interpretation, this means that “where a form of conduct, the manner of its performance, and the persons and things to which it refers are designated, there is an inference that all omissions should be understood as exclusions.”¹² Where a statute creates a regulatory scheme and prescribes the mode of regulation the rule would require that mode to be used exclusively.¹³ The rule is one of statutory construction, however, and not a rule of law.

As a rule of statutory construction and because it is based on inferences from the statutory language based on common experience, this rule has limited application. It is disregarded in many situations, including when the meaning of the statute is ambiguous, when to do so will serve the purpose of the statute, and when other aids to interpretation indicate that it should not apply.¹⁴ The rule also does not apply if there is evidence that Congress intended a different result.¹⁵ Critics of the rule argue that it is really used by courts only as a *post hoc* rationalization for results arrived at by a process more difficult to explain.¹⁶ Thus, the task of determining whether EPA is authorized to use a particular economic incentive requires an examination of the entire statute to ascertain the express or implied intent of Congress.¹⁷

In sum, for situations where Congress has given EPA broad regulatory powers, those

powers will often include the ability to implement economic incentives to achieve the regulatory goals of the statute. The precise limits on EPA's authority will vary depending on each particular grant of regulatory authority, and a specific legal review of any proposed mechanism and its statutory authority will be needed.

3.3.2. General Issues Specific to Fees

EPA's authority to assess fees can come from one of two sources: (1) a broad mandate to regulate found in a specific statute or (2) a specific statutory authority to assess fees, independent of any particular regulatory statute.

3.3.2.1. Fees Assessed Under Regulatory Authority

Where Congress has given EPA broad regulatory authority, that authority may well include the power to assess fees. In *Skinner v. Mid-America Pipeline Co.*, cited above, the plaintiffs argued that the power to tax is special and therefore that delegation of taxing power should be given stricter scrutiny than delegations of other powers. The Court disagreed, holding that “the delegation of discretionary authority under Congress' taxing power is subject to no constitutional scrutiny greater than that we have applied to other nondelegation challenges.”¹⁸ Thus, the analysis of whether EPA was properly delegated authority to use a particular economic or market tool is the same regardless of whether it imposes a fee, payment or tax or uses another tool that is clearly not a tax.

The Constitution places a special restriction on revenue-raising bills. Article I, § 7 of the Constitution mandates that “[a]ll Bills for raising Revenue [must] originate in the House of Representatives.” A question might arise whether EPA could assess a fee under a bill that originated in the Senate instead of the House. The test for whether a particular bill is a revenue bill rests upon the bill's “main purpose.”¹⁹ Revenue bills are “those that levy taxes in the strict sense of the word, and are not bills for other purposes which may incidentally create revenue.”²⁰ The Court has recently interpreted this general rule to mean that “a statute that creates a particular government program and that raises revenue to support that program, as opposed to a statute that raises revenue to support government generally, is not a 'Bill for raising Revenue' within the meaning of the Origination Clause.”²¹

EPA's main purpose of requiring payments for pollution or imposing fees on inputs or products would be to induce behavioral changes in those on whom the fee or payment was imposed. These mechanisms are used where markets fail, and serve as market surrogates so that environmentally detrimental externalities are more or less internalized in prices. In this way goods and services that cause environmental harm will cost more and, assuming that the incremental price increase accurately reflects the environmental cost and assuming that price is a determinant in purchasers' decisions, consumers will

purchase less of those goods and services resulting in less harm to the environment. The purpose of charging fees or requiring payments for pollution then is to achieve an environmental policy goal, not to raise general revenue. Thus, such fees or payments would not be required to originate in the House of Representatives and, therefore, EPA could impose a system requiring payments for pollution or fees on inputs or products without violating the Origination Clause.

3.3.2.2. Statutes Governing Fee Assessments

Where EPA has no general mandate to regulate that would support a fee, EPA still might be able to assess a fee under one of two specific fee-assessment statutes. And where EPA has a general regulatory mandate, these statutes contain restrictions that may affect fee assessments.

The Independent Office Appropriations Act, 31 U.S.C. § 9701, authorizes and encourages all federal agencies to assess fees for services and things of value provided. The statute states that the agency may base the fee on costs, value, public policy, and other relevant facts, suggesting that the fees may be adjusted to create regulatory incentives as well as to recoup government costs. 31 U.S.C. § 9701(b)(2). The courts have construed this language narrowly, basically restricting fees under this provision to agency costs for specific services or goods, with some possibility of also reflecting value conferred.²² The Act may support a user fee that incidentally has a regulatory effect, but it does not authorize the agency to craft a purely regulatory fee.

The Independent Office Appropriations Act does allow an agency to impose a hybrid cost recovery/incentive fee in situations where a statute specifically prescribes a base for determining charges that would act as an incentive.²³ So, for example, it does not preclude setting up a permit fee scheme under the new Clean Air amendments that reflects the tonnage of pollutants emitted by the permittee.²⁴

The second fee-setting authority applicable to EPA is more specific and potentially could be read as a constraint as well as an authorization. Section 6501 of the Omnibus Budget Reconciliation Act of 1990, 42 U.S.C. § 4370c, directs EPA to raise targeted sums through user fees, to help limit the growth of the federal deficit. Specifically, it states:

(a) Assessment and collection

The Administrator of the Environmental Protection Agency shall, by regulation, assess and collect fees and charges for services and activities carried out pursuant to laws administered by the Environmental Protection Agency.

(b) Amount of fees and charges

Fees and charges assessed pursuant to this section shall be in such amounts as may

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be necessary to ensure that the aggregate amount of fees and charges collected pursuant to this section, in excess of the amount of fees and charges collected under current law—

(1) in fiscal year 1991, is not less than \$28,000,000; and

(2) in each of fiscal years 1992, 1993, 1994, and 1995, is not less than \$38,000,000.

© **Limitation on fees and charges**

(1) The maximum aggregate amount of fees and charges in excess of the amounts being collected under current law which may be assessed and collected pursuant to this section in a fiscal year --

(A) for services and activities carried out pursuant to the Federal Water Pollution Control Act is \$10,000,000; and

(B) for services and activities in programs within the jurisdiction of the House Committee on Energy and Commerce and administered by the Environmental Protection Agency through the Administrator, shall be limited to such sums collected as of November 5, 1990, pursuant to sections 2625(b) and 2665(e) of Title 15 [TSCA §§ 26(b) & 305(e)], and such sums specifically authorized by the Clean Air Act Amendments of 1990.

(2) Any remaining amounts to be collected under this section shall be collected from services and programs administered by the Environmental Protection Agency other than those specified in subparagraphs (A) and (B) of paragraph (1).

(d) Rule of construction

Nothing in this section increases or diminishes the authority of the Administrator to promulgate regulations pursuant to the Independent Office Appropriations Act.

(e) Uses of fees

Fees and charges collected pursuant to this section shall be deposited into a special account for environmental services in the Treasury of the United States. Subject to appropriation Acts, such funds shall be available to the Environmental Protection Agency to carry out the activities for which such fees and charges are collected. Such funds shall remain available until expended.

The basic authority granted to EPA in 42 U.S.C. § 4370c is similar to the authority the agency already had to assess fees under the older Independent Office Appropriations Act provision, but it has some differences. First, the new language authorizes fee assessments for “services and activities,” while the old language authorizes assessments for “a service

or thing of value.” This change suggests that EPA may now be able to levy data collection charges and other fees covering activities where nothing of value passes to the regulated party.

Second, the new language is silent on how EPA should set the level of fees. Subsection (e) of the provision says that the fees should be deposited in a special account and used to support the activities for which they are collected. That suggests the *total* amount of fees collected should reflect the agency's costs. But must individual fees reflect individual activity costs, or may EPA adjust them to create a regulatory incentive effect? Congress was clearly aware that individual fee levels could be adjusted to regulatory effect. This same Congress passed the 1990 Clean Air Act Amendments. The permit fee provisions there contemplate permit fees based on the amount of pollutant emitted but designed to cover total administrative costs.²⁵ The gap in Congress's fee-setting directions in the budget reconciliation language, particularly with regard to fees for activities, which were not covered under the old law, suggests EPA has some discretion, under the *Chevron* doctrine, to fill in the blanks.

Third, the new language orders EPA to raise a minimum amount of money annually through fees, while the older provision merely gave the agency discretion to assess them. Further, the new section contains a limitation on fee assessments, in subsection (c). That subsection includes limits on fees assessed under the Federal Water Pollution Control Act and under acts within the jurisdiction of the House Energy and Commerce Committee, which include TSCA, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), PPA, EPCRA, SDWA, and the Clean Air Act. The conference report explains the Energy and Commerce limitation this way:

Further, no fees and charges may be derived from EPA programs within the jurisdiction of the House Committee on Energy and Commerce except as specifically authorized by the Clean Air Act Amendments of 1990, and fees collected pursuant to Sections 26(b) and 305(e)(2) of the Toxic Substances Control Act in effect on the date of enactment.²⁶

Is the statutory language an absolute bar on assessing fees under other sections of TSCA and the Clean Air Act or under other programs within Energy and Commerce jurisdiction? Does it bar all Clean Water Act fees in excess of \$10,000,000? Possibly not. It applies only to fees “assessed and collected pursuant to this section.”²⁷ Further, 42 U.S.C. § 4370c(d) states, “Nothing in this section increases or diminishes the authority of the Administrator to promulgate regulations pursuant to the Independent Office Appropriations Act.” These provisions suggest that the limitations apply to how much money EPA can count towards meeting the sums that the Budget Reconciliation Act assigned to EPA to collect. EPA may still retain discretionary authority under other

provisions to assess fees.

Nevertheless, these limitations reflect deep concern from Congress about how EPA should use its powers of assessment. These limitations suggest that it may be appropriate to consult with the congressional committees of jurisdiction before implementing significant new fee programs.

3.3.3. Information Releases

Some laws require EPA to disclose certain information; some prevent certain disclosures; but absent specific language, EPA has broad inherent discretion to tell the public what it knows.

EPA enforcers have recognized that publicity can work to multiply their enforcement efforts.²⁸ This tool, though, need not be limited to enforcement.

In almost every area, EPA can influence environmental behavior through information release. It could affect major air polluters by releasing an annual top ten list of worst emitters. It could affect consumer choice by publishing pollution-generation- and energy-use-per-item guides covering the manufacture of brand name consumer items. It could affect product design by annual design-for-recycling awards.

Such programs may have significant constraints and drawbacks. They may require support and participation from the highest levels of the agency or of government to get optimal visibility. Targets of negative campaigns may strongly resent the Agency. Some firms may invoke protection from disclosure for their trade secrets or other confidential business information, as provided by various environmental statutes.²⁹ Disclosure of protected information can expose individual public employees to criminal prosecution under 18 U.S.C. § 1905, and perhaps civil liability as well. Yet such campaigns can be effective. Even where a statute does not deal directly with information, EPA should consider how it could use its inherent powers to inform to better the environment.

3.3.4. A General Note on Liability

Though the focus of analysis on liability issues in this report is on actions taken directly to create liability or recoup compensation for environmental damages, EPA should be aware of two ways that regulatory actions can indirectly affect liability.

EPA regulations can make tort laws stricter through the negligence *per se* doctrine. Negligence is failure to take reasonable care. Courts often consider health and safety laws to reflect a government finding on what behavior is reasonable, and failure to comply with such laws is negligence *per se*.³⁰ For example, if a private water company violated

Safe Drinking Water Act standards, a plaintiff who could prove that the violation led to an injury would have a strong negligence case.³¹

Such liability is incidental to the central focus of most command and control regulations. Successful liability suits are much rarer than successful agency enforcement actions for failure to meet standards. Still, as the very existence of the Smith and Koorse article demonstrates, the regulated community is aware of this potential liability. Industry's large financial exposure from tort suits acts along with the fear of civil penalties as an inducement to comply with the law.

In contrast to the negligence *per se* doctrine, in cases where regulations tightly prescribe the behavior that caused or contributed to the harm, EPA regulations can actually eliminate state tort liability through the doctrine of preemption. For example, in *Papas v. Upjohn Co.*,³² a court dismissed a tort claim based on the failure of a pesticide label to give adequate warnings. The court held that since EPA registrations under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) completely control what may appear on pesticide labels, federal law has effectively preempted any claims of negligent behavior under state tort law.

3.4. CONCLUSIONS

Existing statutes give EPA an array of opportunities to implement new economic incentives for pollution control. Statutes like the Clean Air Act and TSCA grant the agency sweeping regulatory powers and would support a wide variety of economic tools in particular situations. Narrower statutes, like the Pollution Prevention Act or EPCRA, basically nonregulatory, will support fewer initiatives but still offer opportunities to the creative.

EPA can develop significant regulatory fee programs under the Clean Air Act and TSCA, and to a lesser degree under the Clean Water Act. TSCA and probably Clean Air will support deposit systems. Clean Air, Clean Water, and TSCA all could support tradeable permit systems. All six acts examined invite EPA to be more creative and aggressive in its use of information, and all six acts can influence tort liability or mimic it through a civil penalty program.

Endnotes for Section 3

1. For example, RCRA § 8005, 42 U.S.C. § 6985, would appear to authorize EPA to set up demonstration programs imposing charges that reflect disposal costs on packaging, containers, vehicles, and other manufactured goods, and to set up demonstration programs to promote recycling through modification of existing economic incentives.

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2. *Skinner v. Mid-America Pipeline*, 490 U.S. 212, 218, 109 S. Ct. 1726, —, 104 L. Ed. 2d 250, 259 (1989), quoting *Yakus v. United States*, 321 U.S. 414, 426, 64 S. Ct. 660, --, 88 L. Ed. 834, -- (1944).
3. *Skinner* at 219, quoting *American Power & Light Co. v. SEC*, 329 U.S. 90, 105, 67 S. Ct. 133, --, 91 L. Ed. 103, -- (1946).
4. *American Power & Light Co.*, at 104.
5. 467 US 837, 104 S. Ct. 2778, 81 L. Ed. 2d 694 (1984).
6. *Chevron* at 843.
7. *Chevron* at 866.
8. *Id.* at 865-66.
9. *Id.* at 842.
10. *Id.* at 843-44.
11. *Rust v. Sullivan*, 500 U.S. --, 111 S. Ct. --, 114 L. Ed. 2d 233 (1991).
12. Sutherland Stat. Const. § 47.23 (5th ed.) (citations omitted).
13. *Id.*
14. *Id.* § 47.25.
15. *Id.* § 47.23.
16. *United States v. Missouri Valley Const. Co.*, 741 F.2d 1542, 1552 (8th Cir. 1984) (Gibson, J., concurring in the result and dissenting).
17. *Massachusetts Trustees of Eastern Gas & Fuel Associates v. United States*, 312 F.2d 214 (1st Cir. 1963).
18. *Skinner* at 223.
19. *Twin City Bank v. Nebeker*, 167 U.S. 196, 203, 17 S.Ct. 766, --, 42 L.Ed. 134, -- (1897).
20. *Id.* at 202. See also *U.S. v. King*, 891 F.2d 780, 781 (10th Cir. 1989): “When the main purpose of the act is other than raising revenue, it is not subject to challenge under the origination clause.”
21. *U.S. v. Munoz-Flores*, 495 U.S. 385, 398, 110 S.Ct. 1964, 1972, 109 L.Ed. 2d 384, -- (1990). The Court noted that in *Millard v. Roberts*, 202 U.S. 429, 26 S.Ct. 674, 50 L.Ed. 1090 (1906), a statute was upheld that levied property taxes to support railroad projects. That Court rejected the Origination Clause claim, concluding that “[w]hatever taxes are imposed are but means to the purposes provided by the act.” 202 U.S. at 437.

22. The “value conferred” standard is more appropriate for sale of property, where the government is acting as property owner rather than regulator. See, e.g., *National Cable Television Ass'n v. United States*, 415 U.S. 336, 94 S. Ct. 1146, 39 L. Ed. 2d 370 (1974); *Federal Power Comm'n v. New England Power Co.*, 415 U.S. 345, 994 S. Ct. 1151, 39 L. Ed. 2d 383 (1974); *National Cable Television Ass'n v. Federal Communications Comm'n*, 554 F.2d 1094 (D.C. Cir. 1976); *Electronic Industries Ass'n v. Federal Communications Comm'n*, 554 F.2d 1109 (D.C. Cir. 1976); *Capitol Cities Communications, Inc. v. Federal Communications Comm'n*, 554 F.2d 1135 (D.C. Cir. 1976).
23. 31 U.S.C. § 9701(c)(2).
24. See Clean Air Act § 502(b)(3)(B)(I), 42 U.S.C. § 7661a(b)(3)(B)(I), discussed in more detail in the analysis of the Clean Air Act, below.
25. See Clean Air Act § 502(b)(3)(B), 42 U.S.C. § 7661a(b)(3)(B).
26. House Conf. Rpt. 101-964, 101st Cong., 2d Sess., 968.
27. 42 U.S.C. § 4370c(c)(1).
28. See U.S. EPA (1991), pp. 17-18.
29. E.g., EPCRA § 322, 42 U.S.C. § 11402, and the Clean Air Act § 114(c), 42 U.S.C. § 7414.
30. See Restatement, Second, Torts §§ 286-288.
31. Smith & Koorse (1988).
32. 926 F.2d 1019, 21 ELR 20898 (11th Cir. 1991).

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4. LEGISLATIVE OPTIONS

As shown in Section 3, existing statutes provide EPA with substantial authority to adopt economic incentive measures. Nevertheless, explicit statutory authority can materially assist the agency in developing and implementing such programs. Amendments could be useful in two ways. First, they could remove the ambiguities or impediments to economic incentives that exist in the laws currently, thus allowing administrative use of incentives without concern about their legal viability (see Section 3 and Appendices A-F). Second, they could create new economic incentive mechanisms not present in the underlying laws.

This Section examines some of the problems that policy makers will have to consider in drafting new authority for economic incentives. Section 4.1 considers some general issues that arise with most incentive programs. Section 4.2 reviews how existing statutes might be amended to enhance EPA's ability to craft appropriate incentive programs. Finally, Section 5.3 explores issues that a comprehensive incentives statute would raise.

4.1. GENERAL CONSIDERATIONS

Incentive programs raise some common issues that policy makers will have to consider in crafting new legislation. Among these are the following:

- Appropriate constraints on the exercise of regulatory discretion.
- The need to achieve an equitable distribution of the benefits and burdens of incentive systems.
- The extent to which the mechanisms enforce rights or discharge duties traditionally recognized by our legal system.
- The relationship between federal and state laws, and between the new incentives programs and existing regulatory systems.
- Practical problems involved in the legislative consideration, administrative implementation, or enforcement of the incentives.

Whether Congress adopts a statute-by statute approach to the creation of economic incentives or a more comprehensive scheme, it will need to resolve these issues explicitly. To the extent that these are unresolved, or resolved only implicitly in the legislation, the legislation is likely to produce confusion, resistance, and conflict. Implementation will suffer from continuing struggles over these issues as the agency seeks to secure, mediate,

or avoid their resolution.

4.1.1. Federal-State Relationships

One of these common issues, the Federal-state relationship, is of particular importance. As discussed in Section 3, some existing statutes offer broad opportunities for greater use of economic incentives, though primarily at the state and local level. Since most pollution concerns are heavily location dependent, it may be most efficient to implement incentives at the state and local level. However, the absence of broad Federal level to encourage greater use of incentives may retard their adoption by state and local agencies.

Under the Clean Air Act Amendments of 1990, states are authorized to implement a wide array of incentives as part of their SIPs, including marketable permits, emission fees, and deposit systems. Because many of the remaining air emission problems are highly localized in nature (CO₂ emissions being the only significant exception), the greatest opportunity for use of incentives is at the state and local level. Thus, if state and local pollution control authorities made fullest use of their ability to use incentives, there could be substantial aggregate savings in air pollution control costs.

The Clean Water Act authorizes relatively limited use of incentives, notably trading systems for water bodies that fail to meet water quality standards, and in this case the authority is not explicit. National discharge fees are not clearly authorized. However, at the state level, some states set NPDES fees based in part on the volume and toxicity of the discharges. Since water quality problems are local or regional in nature greater authorities for incentives in the Clean Water Act could encourage states to adopt incentives to meet their individual needs. With greater use of discharge fees by states under the NPDES system, water pollution control cost savings could also be substantial.

In the area of solid waste, a national system of incentives would be needed to achieve the projected savings from improved package design, reduced use of virgin materials and increased use of recycled materials.

4.1.2. Approaches to Federal Legislation

Policy makers have available two basic approaches to economic incentives legislation. They can tailor the incentives to particular media and existing regulatory mechanisms in a statute-by-statute approach. Alternatively, they can create comprehensive incentives authority without fundamentally distinguishing among the various media. The remainder of this chapter explores the two approaches and some of the specific issues raised by economic incentives legislation.

There are also two basic approaches that may be adopted under either a statute-

specific or comprehensive approach. The legislation may prescribe exactly what the incentives must be and how they will operate, or it could give the Administrator discretion (within certain parameters) to create the incentive mechanisms and adjust them to the requirements of the environmental problem at hand. Both the prescriptive approach and the administrative discretion approach need to address and resolve the issues identified in this section. The former resolves them in the legislation itself. The later would direct the Administrator to resolve them within certain guidelines.

4.2. A STATUTE-BY-STATUTE APPROACH

4.2.1. Legislation Needed

If we focus on the need to clarify or expand the availability of economic incentives under existing laws, a number of candidate amendments emerge.

For example, the Clean Air Act could be amended to provide greater flexibility in setting permit fees so that these could reflect damage to the environment or more directly affect polluting behavior. The existing Act limits fees to amounts that reimburse the agency for administering the program. Some of the "measures" and "control measures" authorized by the Act could also be made more explicit in order to assure their legal utility as a basis for economic incentives (see Appendix A).

The Clean Water Act could also be amended to clearly specify economic incentive measures. Specifically, the Act could be amended to remove the doubt created by early legislative history and subsequent court cases over whether and to what extent a fee can be charged and whether the discharger as well as the discharge is covered by the Act (see Appendix B). Amendments could also address the ambiguity created by the possible cap on fees resulting from the 1990 Omnibus Budget Reconciliation Act. (The Budget Reconciliation Act issue clouds fees that might be assessed under other acts as well.)

The Emergency Planning and Community Right-to-Know Act could be amended to apply fees to reportable substances. Such an amendment could create an incentive to under-report releases and so might conflict with EPCRA's original mission of information disclosure. On the other hand, the fee collectors would be able to work off a known baseline of previously reported discharges, and an EPCRA fee would create an incentive to reduce discharges of many currently unregulated pollutants. A more modest amendment would expand EPCRA's reporting requirements, both as to number of substances and number and type of reporting entities, taking advantage of the incentive power of information disclosure. The last Congress considered legislation along those lines under the rubric of a "Right-to-Know More" bill.

The Pollution Prevention Act could be amended to specify particular economic

incentives. It contains few direct authorities at present other than some information disclosure requirements.

The Safe Drinking Water Act currently contains few opportunities for economic incentives. Consequently, amendments will be needed if incentives are to be a significant part of the SDWA program.

The Toxic Substances Control Act contains a number of existing opportunities for economic incentives. Amendments could make these easier to use by changing the threshold of regulation (*e.g.*, unreasonable risk of injury) or the TSCA preference for using other statutes (TSCA § 6(c)) where possible. An amendment could also clarify the ambiguity on fees created by the 1990 Omnibus Budget Reconciliation Act.

Specific amendments to each law enacting specific new economic incentive tools are beyond the scope of this report. Some possible ideas are contained in EPA (1991). This is a highly complex issue and requires detailed policy determinations about what problems to attack with what economic incentives. That in turn requires a good understanding of the limits of existing systems, the nature of existing sources of pollution, and the sensitivity of those sources to economic incentives. Based upon such understanding, appropriate authorities could be targeted by amendment. The amendments themselves could take much the same form as those discussed in § 5.3 of this report on the comprehensive approach.

4.2.2. Advantages

There are many advantages to a statute-by-statute approach to economic incentives.

First, the incentives can be tailored to address particular problems to which they are well-suited. (For example, marketable permits make sense for a diffuse air pollution problem like acid rain).

Second, the implications of the incentives program can be more thoroughly explored in the context of the consideration of the legislation. Because of the focus of existing statutes on particular types of discharges or activities, the consequences of incentives can be better predicted and the incentive adjusted accordingly.

Third, the use of the economic incentives can be dovetailed with other regulatory considerations in the same statute. For example, an incentive system might require granting participants a variance from certain regulatory requirements. A statute-specific variance authority could clearly spell out the extent of a permissible variance. Such statute-specific authority is probably preferable to, and more likely to pass Congress than, a government-wide, comprehensive authority to grant administrative variances from any

environmental statute or regulation. The terms and conditions of the administrative variance can be set more clearly in specific legislation.

Fourth, the statute-by-statute approach may stay within a single congressional committee jurisdiction more easily than a more comprehensive or open-ended approach. While this is not certain, and while multiple committee consideration is not always a bad thing, nevertheless, it can affect the outcome and slow the pace of legislation.

Finally, because environmental statutes have been placed on a cycle where they come up for reauthorization in specific years, it may be easier to take a statute-by-statute approach. Congress is usually reluctant to amend a program before it is scheduled for reauthorization and prefers to adopt changes when it can consider fully all aspects of a program's operation. (Conversely, however, a comprehensive approach may cut through this process and avoid the long delays while statutes wait their turn, or while debate over every nuance of a single highly contentious statute awaits resolution.) Following the reauthorization cycle would be the most conventional route for achieving full consideration of economic incentive mechanisms.

4.2.3. Disadvantages

A statute-by-statute approach has several disadvantages as well.

First, it may be desirable to attack a number of similar environmental problems at once with the same or similar economic incentives (e.g., discharges into surface water and groundwater, or into water and air). If, however, only one (or none) of the statutes is up for reauthorization, it may be difficult to get Congress to focus upon the issue. Congress may also be understandably reluctant to "reopen" laws where it has recently finished a long and contentious process of debate and compromise. For example, reopening the Clean Air Act in the near future for substantive amendments, while possible, may not be a widely supported approach (particularly if the reopening draws a host of amendments and readjustments to other portions of the Act only recently brought to closure). It may be more attractive to Congress to enact a free-standing comprehensive bill.

Second, a statute-by-statute approach runs some risk of being insufficiently oriented to multi-media pollution effects. If, for example, a program imposes new fees on discharges to groundwater but not to surface water, or not to air, or not to land, resulting changes in behavior may produce undesirable shifts of pollution to other media. Similarly, if a program creates new information requirements, it may be undesirable to limit these to a single medium.

Finally, a statute-by-statute approach may provide insufficient flexibility to the Administrator. It may be that the best opportunities for using economic incentives occur

in different media or combinations of media, and should be implemented in varying sequences. A comprehensive statute could allow this. Typically, however, single statute amendments require that programs be implemented with respect to covered activities within specific times. The legislative process tends to demand immediate action after the parties have labored to craft a specific compromise. This may produce an overuse of some incentives in one medium before other areas have been addressed. A broader bill, in contrast, may allow the Administrator more flexibility to test alternative uses of economic incentives in different media and for different purposes.

Many of the considerations that will need to be taken into account in a statute-by-statute approach to economic incentives legislation are the same as those for a comprehensive economic incentives bill. The following section identifies these considerations and their implications.

4.3. A COMPREHENSIVE APPROACH

4.3.1. General Issues

As the above discussion suggested, a comprehensive statute offers advantages over a statute-by-statute approach. Statute-by-statute media boundaries can be artificial. As the United States discovered in the 1970s when strengthened Clean Air and Clean Water acts led to creation of more solid wastes, strong regulation in one medium can drive waste products into another, less regulated area. Incentives can have the same effect. Creating incentive packages that cover all media could help to avoid this problem.

On the other hand, a comprehensive statute offers some challenges as well. By cutting across media, it also cuts across institutional bounds and may be difficult to enact and implement in a coordinated fashion. The first institutional hurdle such a bill may face would be in Congress, where its comprehensive nature could lead to referral to multiple legislative committees, a fate that often kills all but high priority bills.

In fact, in drafting the bill policy makers would need to take into account the relationship between the economic incentives and existing regulatory programs. Either the bill itself, or the Administrator's activity within discretion provided by the bill, would need to devise a program that would pay close attention to existing law in order to avoid or resolve potential conflicts. Incentives need to be designed with a full understanding of how they will interact with command and control schemes already in place. This is important because in almost all cases, even when incentives serve as a central part of a regulatory program, command-and-control and enforcement structures are necessary adjuncts. For example, under a tradeable permit system, regulators will still have to implement command-and-control-style limits on pollution releases to prevent locally severe environmental impacts. They will still have to use some traditional enforcement

to discourage polluters from exceeding their permits.

Because a comprehensive statute would break some new ground, EPA could benefit from authority to try some of the more innovative approaches on a local or pilot project level. The Clean Air Act's § 249, 42 U.S.C. § 7589, program for clean-fuel vehicles in California is a good example of a local project authorized in recent environmental law. However, rather than specifying the project and the area, the law could probably give EPA some flexibility in choosing both. Considering the variety of tools that a comprehensive incentives statute would offer and the variety of problems the tools could be applied to, such flexibility seems in order.

These are some of the general issues; the remainder of Section 4.3 is a discussion of some more specific issues that arise under particular incentives. The discussion is organized in the same order as the types of economic incentives are listed in Table 1-2. Thus Section 4.3.2 discusses payments of government for pollution discharges, Section 4.3.3 deposit-refund systems, etc. Appendix G of this report illustrates how a comprehensive bill might address many of these issues. It is not intended to serve as a preferred approach or even as a model. Rather, it shows how various economic incentive mechanisms could be integrated into a single statute, and it highlights the types of issues that can arise in meshing such mechanisms with existing federal and state environmental laws. For example, the illustrative bill shows how the Administrator could be given authority to promulgate a system of discharge fees, to establish deposit-refund systems, to create marketable permits, and to enhance information disclosure. Appendix G does not address the creation of new federal environmental civil liability, another incentive discussed in this report.

Appendix G is one possible approach to the issues identified below. It delegates to the Administrator substantial discretion to structure each of the incentive programs as to media, pollutants affected, mechanisms, timing, allocations, and other issues. There are other possible approaches. For example, a comprehensive economic incentives statute could be more prescriptive, or it could delegate authority to the Administrator but place more limits on the exercise of administrative discretion.

Any of these approaches would need to take into account the issues identified below. Many of the issues raised here would also have to be resolved in crafting statute-by-statute incentive programs using these tools.

4.3.2. Payments Based on Pollution Discharges

4.3.2.1. Direct and Indirect Fees

The statute would need to identify what discharges EPA may assess and establish criteria that the Administrator could use in making a determination as to whether fees should be assessed directly on the discharge or indirectly on an input or product associated with the discharge. Where pollution is difficult to monitor or where it comes from many sources, a fee on an input might be more practical. For example, it might be more practical to tax the carbon content of fuels than to levy a tax on carbon dioxide emissions.

On the other hand, input fees can be inequitable where they fail to differentiate between “clean” and “dirty” users of an input. For example, a tax on the sulfur content of coal to control sulfur dioxide emissions would fail to reward coal users that installed pollution control equipment to remove the sulfur dioxide. Congress may want to allow EPA to cure such problems through variances, rebates, or other mechanisms for adjustment.

4.3.2.2. Pan-media Coverage

One of the reasons for adopting a comprehensive statute is to help solve problems that cross media boundaries. A carefully drafted fee statute could apply to pollution in all media, or perhaps could authorize the imposition of fees without regard to medium. Ideally, the statute would define pollution broadly enough so that fee programs could be developed that would address any degradation of the environment, although they would need to take account of the geographic nature of the pollution involved. Although the relationship could be very complex, it should be possible to develop sets of multi-media fees that would either not divert pollution to other media or divert it to the media where it will be the least damaging. Thus, a carefully constructed set of fees could apply to discharges of the same substance to air, water, groundwater, or land that would not result in diversion if that should be the desired objective, or it could create a preference for one or media based on harm, waste loading capacity, or other factors. The statute could give EPA latitude to craft fees appropriate to the problem. Fees imposed upon discharges to a single medium, however, risk diverting the release into a new medium.

4.3.2.3. Setting Fees Versus Quantity of Discharges

There are two general approaches that could be used to set fees paid to the government for pollution discharges. Probably the easiest approach would be for EPA (or state or local environmental agencies) to establish the environmentally allowable level of discharges (something they already often do), associated input use, or associated product output in the relevant geographic areas and then auction off permits for that level. In this

case, the “fee” levels would be determined by the market for the permits and would vary automatically with market forces without any further intervention by environmental regulatory groups except to change the level of allowable discharges. Such changes in the allowable discharges, inputs, or products might be needed to take account of faulty assumptions about the impact of a given level of discharges, inputs, or products on ambient pollution levels or because of changes in the desired ambient levels.

The second approach would be for either EPA (or state or local governments) or Congress to set the fee levels directly. This has the advantage that the fees would be more stable and predictable but the major disadvantage that adjusting what are almost certain to be non-optimum fees could well be difficult and will almost certainly lag needed changes. The first approach has the advantage that there would be a need for regulatory action only when there is a need to adjust the level of discharges, inputs, or products whereas the second approach would require regulatory action both when there is a need to adjust the level of discharges, inputs, or products and when the markets in which the polluters are involved change. For example, a determination that ambient pollution levels were too high would require regulatory adjustments under both approaches. But an increase in economic activity in a geographic area for non-environmental reasons would require regulatory action only under the second approach since auction prices for a fixed supply of permitted pollution discharges, inputs, or outputs would increase to compensate for the increased demand for them without any regulatory intervention.

4.3.2.4. Fee Levels

Setting fee levels to achieve pollution control targets under the second or fee approach would be a complex task, requiring a mix of science and experience. There would need to be a mechanism for fairly rapid adjustments as a result of changing market conditions. As a practical matter, EPA (or state or local regulatory authorities) would probably have to have some discretion to set and adjust such fees, perhaps within general limits established by Congress. Given the uncertainties of public response to any given fee level, it is unlikely that anyone—Congress or EPA—could set a fee that would result in the “optimum” level of pollution for all time. Legislatively-fixed fees would probably result in the need for constant adjustment by Congress, with possible resulting delays and uncertainties.

Congress could instruct EPA to base fees on one or more of several permissible objectives. From an economic perspective, the theoretical ideal would be to base such fees on the economic damages caused by the pollution involved. Specifically, the fee should then be set equal to the marginal damages caused by the pollution. Methodologies exist for determining most such damages and a wide variety of such estimates have been made over the past twenty years by environmental economists. Such estimates have not so far been made, however, for all the cases where they would be needed for a comprehensive

economic incentives statute. Under this approach the determination of these damages would probably become one of the primary issues in pollution control regulation. Because of the uncertainties in determining such damages, there could be substantial room for argument as to the marginal damages for each pollutant in each geographic area. Once determined, such damages would change with economic conditions and discharges by polluters and would need to be reestimated periodically. If determined accurately and in the absence of any other regulation of the pollutant involved, the resulting pollution level would be regarded by economists as the economically “optimum” level since the economic incentives for control would exactly equal the benefits from control.

Congress, however, could alternatively have EPA (or state or local governments) set a fee to recoup damages to public property caused by the pollution, or to recoup the benefits that accrued to the polluter from using an otherwise free resource. Or EPA could tailor a fee to achieve some ceiling for ambient pollution levels (although this could most easily be achieved through the auction rather than the fee approach). Or EPA could set it so as to create a general incentive for pollution prevention. The standards for setting the fee level could allow for some practical considerations. As a fall-back, EPA could be given the discretion to set the fee to encourage general reductions in emissions.

As noted in Section 2, if the fee-based system is designed to connect with underlying common law norms, the fee should have some relationship to the harm caused by the discharges. Alternatively, however, Congress could set the fee (or allow EPA to set the fee) based on any other considerations. Indeed, Congress could establish a floor or a ceiling on the fee and allow the Administrator discretion to set it with more precision within the statutory limits.

In setting standards, simplicity and clarity are important. Complex standards will invite litigation. Also, the more prescriptive and detailed the standards, the more likely that they will prove inappropriate to some applications.

Especially for input fees, where the correlation between the fee and the harm will not always be tight, fairness argues for the statute making provision for granting rebates or variances, where appropriate, to achieve the fee's goals.

4.3.2.5. Incremental Approach

A fee system can probably best be developed piecemeal, by particular classes of polluters or pollutants. A universal pollution fee would be a complex undertaking. The closest thing we have now to a pan-media, universal regulatory tool, the Toxics Release Inventory under EPCRA, covers only a portion of the many pollutants and sources. Especially for a tool that has never been tested on such a large scale, an incremental approach is much more realistic.

To help guide EPA's selection of classes on which impose a fee, the statute could suggest some guidelines or priorities.

4.3.2.6. Collection Authority

To avoid ambiguity, the statute will need to state who has the authority to collect the fees. EPA could get the task, as with the fees authorized under the 1990 Budget Reconciliation Act, or the Internal Revenue Service could, as with the taxes authorized under Superfund. Each agency has skills that could be useful in implementing fees.

4.3.2.7. Use of Fees

Policy makers may wish to dedicate the fees to a special fund, to be put to environmental use. If the fees are assessed at levels reflecting environmental damage, the fund could be dedicated to mitigation of that damage. Alternatively, it could be dedicated to activities for the general benefit of the environment. Finally, if the fee is viewed as a source of general revenue, it can be put into the general fund.

4.3.2.8. Coordination with Existing Laws

Policy makers may wish to resolve in the statute what impact the fee assessment will have on other aspects of the law. For example, if the fee is meant to reflect the damages caused by pollution, should payment of the fee reduce the polluter's liability if the pollution causes damages? Can injured parties sue the United States to disburse the fee? In general, the answer is likely to be no. The United States probably does not want to put itself in the position of indemnifying polluters or committing to particular expenditures.

Along the same lines, the statute can address whether payment of a fee will limit the government's ability to place restrictions on a polluter under other statutes. Fee systems do not automatically guard against locally dangerous concentrations of pollution or deterioration of a highly-valued resource such as a national park, a sole-source aquifer, or an endangered species. Congress may want to expressly reserve the government's authority to impose restrictions on polluters beyond the fee system.

Also, the statute drafters will need to reconcile how the new fees fit with other federal environmental assessments, such as the permit fees under the Clean Air Act. Congress designed the Clean Air fees primarily to defray the administrative costs of the permit program and secondarily to help create an incentive to reduce pollution. Since the Clean Air permit system will still have administrative costs, Congress may not want the new fees to supersede the old. A statute could direct EPA to weigh existing fees when setting the level of new fees.

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In deference to the states, policy makers will probably not want the statute to limit state or local powers to assess similar fees or to regulate pollution in other ways. If both the state and the federal government assess a fee to cover damages to the same public resources, some provision could be made for granting credit against the federal assessment for paying the state fee.

4.3.2.9. Enforcement

Enforcement, or at least the threat of enforcement, is a vital part of any fee system. The statute must spell out EPA's power to enforce fees. Implementation will be easiest if EPA has authority to enforce payment of the fees administratively, through orders to cease unassessed pollution or to pay outstanding fees. Due process requires that polluters be able to raise an administrative challenge to such action, though the statute may wish to require polluters first to pay the assessment (or obtain a hardship waiver from EPA). Otherwise, polluters may routinely challenge assessments to delay payments.

The statute could let citizens go to court to address a failure to collect fees from a particular polluter. Citizens would have an added incentive to bring delinquent polluters to justice if the statute offered a percentage of the outstanding fee as a bounty.

4.3.3. *Deposit-refund Systems*

4.3.3.1. Standards for Initiating

The statute could give EPA (or state or local governments) broad powers to institute deposit-refund systems, along with guidelines for when such systems would be appropriate. For example, it might authorize EPA to institute such programs upon finding that the economic benefits of doing so exceed the economic costs, or that insufficient incentive exists to dispose of particular items in an environmentally safe manner, or that public health or the environment would be served by separating particular items from the general waste stream.

4.3.3.2. Mechanics of the System

As a practical matter, the statute must either settle, or lay out guidelines for the Administrator to settle, many of the practical considerations of deposit systems. These considerations are often complex, interacting, and critical for the success of a particular application. Because of the interactions, a broad systems approach will usually be needed to design successful such applications. For example:

Do deposits apply only to retail sales, or to the entire sales chain? Usually the manufacturer or importer has the greatest influence over the design of a product. To

create the strongest incentives for pollution prevention, deposit systems would be designed to return the items all the way back up the chain—either physically or in terms of responsibility for safe disposal. Physically returning the goods to the manufacturer may not be necessary—it may even be wasteful if someone down the chain could easily divert the goods to recycling, reuse, or safe disposal. A well-designed system will be flexible enough to allow such diversions.

Must the buyer bear the cost of returning the goods to the seller, or must the seller pick up the goods? It may not be appropriate to place the burden of collection on retailers, but it may be reasonable to place it on those further up the sales chain. One approach would specify that the buyer must return the item to the place where the buyer took delivery, absent some other agreement with the seller. The law may also want to make provisions for sellers to create cooperative redemption centers for some kinds of goods, as has occurred in Germany, or for brokers to collect items and pass through deposits.

How large a deposit is required? The statute will probably want to give EPA some discretion in setting the deposit, considering the total cost of the item, the likelihood of environmental harm from improper handling, and the incentive needed to induce the buyer to return the used goods. For some items like tires and car batteries, where the buyer almost always brings the used item to the place of purchase of a new item anyway, no deposit may be necessary. It may be enough to simply require the seller to accept responsibility for the used good. In other cases, like beverage containers, a deposit is important to encourage third parties to collect improperly disposed of goods.

What condition must goods be in before a deposit can be reclaimed or before a seller is required to accept them back? For example, auto parts stores should be able to insist that returned motor oil not be mixed with solvents or other contaminants, and grocers should not have to accept broken bottles (though they should take crushed cans). Again, some discretion would let the agency draft rules applicable to specific situations.

Must a merchant take back and pay out on a returned item even if that particular item was not purchased from that store? For some highly mobile items like tires or auto batteries, and for items where third parties play an important role in returns, like beverage containers, sellers have to take back anyone's goods or the system will not work. On the other hand, an inflexible open take-back rule might encourage people to steal some kinds of items and return them for the deposit. EPA could have authority to tailor take-back regulations to the particular goods. For example, regulations could set limits on the number of deposits that could be reclaimed and could require the deposit to be mailed to the claimant, with records kept, in order to

discourage theft.

Must goods subject to a deposit bear a label to that effect? Labels can both alert the consumer to the possibility of reclaiming the deposit and prevent the seller from paying out on items sold before the deposit went into effect. However, labeling rules that work for beer cans might not work for tires. If the statute drafters cannot devise a universal labeling rule, they could give EPA authority to craft rules for specific goods.

The whole premise of a deposit system is that people are disposing of used goods improperly and causing environmental harm. How will the law prevent that same harm from happening after the items are returned to a seller? One way is to let EPA promulgate rules to ensure the safe handling, storage, transport, and disposal of returned goods. For example, if EPA sets up a deposit on consumer batteries, EPA might also need to prescribe rules requiring recycling returned batteries. Without such rules, the deposit system would be practically pointless.

To help enforce the statute and develop statistics on the waste stream, the statute could empower EPA to require sellers of covered goods to report on deposits collected and returned. To protect confidential business information, the statute could offer sellers an avenue to prevent public release of particular figures.

Are deposit-takers due any compensation for the expense of running the system? The statute could address that issue; in most state systems, the answer is "no." Complying with the law is merely another normal business expense, which the price of goods should reflect.

What happens to unclaimed deposits? Some "bottle bill" states have found that as many as a quarter of the deposits go unclaimed. In some states, the government reserves the right to claim unclaimed deposits.

4.3.3.3. Role of the States

Because so many states have deposit systems, the illustrative statute would raise issues of preemption. There is no reason to preempt state laws unless the federal government adopts an inconsistent deposit system. The statute could make that intent clear. Also, where there is no danger of inconsistency, the statute could give EPA authority to delegate implementation of a federal deposit system to the states. Careful consideration would be needed of the effect of differing deposit and return prices in adjoining states.

4.3.3.4. Enforcement

Like every other incentive system discussed here, deposit systems need to be backed up by enforcement provisions. These would include penalties for failure to collect a deposit and for failure to accept returned goods and penalties for violating rules of handling or disposal and for filing false reports. The statute could give EPA recourse to injunctive relief, and could create administrative and criminal sanctions, as well as civil.

4.3.4. Tradeable Permit Rights

4.3.4.1. Direct and Indirect Permits

The statute could allow EPA to establish tradeable permit systems controlling either direct release of pollutants or indirectly related activities. Permits governing related activities can help control pollution just as indirect fees can. For example, permits for the manufacture or importing of chlorofluorocarbons (CFCs) are a more practical means to control their emissions than permits for their release. The former apply to a relatively small group that can be easily monitored; the latter apply to almost every American household (because of refrigerators and air conditioners) and a large percentage of car owners (because of air conditioners).

Indirect tradeable permits, like indirect fees, can be inequitable if they fail to differentiate between "clean" and "dirty" users of an input, and can fail to guarantee a particular level of environmental quality. For example, in a rural area with airborne particulate pollution problems, EPA might wish to restrict use of wood for residential heating. A tradeable permit or rationing system for fuel wood would punish people with modern, clean-burning stoves. Giving such people larger permits would lead to undesirable increases in emissions if the permits were traded to people with dirty stoves.

4.3.4.2. Initial Allocations

Initial allocation of permits is a "high stakes" issue. In effect, the government is distributing a valuable good, one critical to the continued operation of the businesses receiving it. Section 2.4.1.2 of this report discusses some of the facets of this issue. Both the total number and the distribution of permits are important.

A related issue is whether the statute would make provisions for grants of permits to new facilities. Allowing EPA to give new facilities brand new permits defeats the cap on emissions built into tradeable permit systems. EPA might be able to grant new facilities permits that have come back to the government through abandonment, assessments, or confiscation, but a better system might be to sell or auction such "extra" permits.

EPA could even be given the power to withhold some permits for auction or direct sale, as under Clean Air Act § 416, 42 U.S.C. § 7651o. This helps ensure that a new or enlarged facility will always find some permits for sale, though the price may be high.

4.3.4.3. Coordination with Existing Regulations

A tradeable permit system will seldom stand alone; it will generally operate against a backdrop of other incentive or control mechanisms. If other laws continue to dictate pollution control actions, the tradeable permit system may be frustrated; if only tradeable permits are important, trading will allow potentially dangerous local increases in pollution levels. EPA will have to take care to coordinate regulations under other pollution laws to make them mesh with a permit trading system. Similarly, the permit system will have to yield to other environmental laws where unfettered permit trading would interfere with achieving the basic goals of the other laws.

4.3.4.4. Regulation of Trading and Banking

EPA could avoid some of the potential environmental drawbacks of tradeable permits if it had proper authority to regulate trading. The statute could place restrictions on trades to prevent local concentrations of releases, or direct EPA to do so.

Other regulatory bodies, having nothing to do with environmental concerns, may also be interested in regulating permit trading. For example, state public utility commissions may wish to regulate any permit trading that affects the expense or income of local utilities. The statute could clarify whether other bodies may place limits on permit trading.

Allowing EPA to assess fees on permit trades, in the form of dollars or reductions in the size of the permit, would help make the program self-funding and would give the agency an additional tool to promote improvements in overall environmental quality. Dollar fees could offset the costs of keeping track of permit distribution. Permit reductions would allow EPA to reduce the total amount of pollution released.

EPA could also regulate permit banking in the public interest. Depending on the particular pollution problem, EPA may wish to issue permits valid only for a particular time period or ones that may be saved for a later time. EPA may need to place special limits on use of banked permits to prevent temporary releases of damaging pollution levels. EPA may wish to assess a banking fee, or if a rapid, temporary fall in emissions is desired, offer incentives for banking. To do all this, the statute would have to grant EPA general discretion to tailor banking regulations to the particular circumstances at hand.

4.3.4.5. Assuring Long-term Availability of Tradeable Permits

Persons investing in a factory or other pollution source will want to be sure they have access to sufficient permits to operate the investment over its useful life, or for at least long enough to amortize their investment. The tradeable permit systems will have to have provisions either allowing persons to buy permits now for use in future years or assuring persons that permits will be available on the market in future years at a reasonable price.

The other side of this issue involves the power of EPA to reduce the overall amount of emissions permitted if this proves necessary to protect the environment. If EPA lacks this power, the nation may end up locking itself into a pollution control strategy that is too weak. If EPA has this power, the consequent unpredictability of the permit market may discourage long-term investments. The statute must strike a delicate balance here.

4.3.4.6. Promoting Overall Pollution Reductions

The statute could give EPA the flexibility to build incentives into tradeable permit systems to encourage improvements in overall environmental quality. Such incentives might include subsidies, in the form of extra permits, for experimentation and new technology. Or, they might involve means of reducing the total amount of pollution permitted, some of which have already been mentioned: a trading "fee" reducing the size of permits involved in trades, limits on permit use, or confiscation of unlawfully used permits.

4.3.4.7. Role of the States

In limited circumstances, it will make sense to delegate administration of an tradeable permit program to a state. Such delegation would be appropriate where permit trading was geographically limited to areas within a single state, but inappropriate with national systems.

4.3.4.8. Accounting and Record Keeping

Some body, logically EPA, needs to keep a public record of tradeable permits and emissions. Such accounting will be important both for EPA, in order to enforce the law, and for potential buyers of permits, who will want to make sure a seller's permits are genuine.

4.3.4.9. Enforcement

The statute must provide for enforcement of the tradeable permit system. It could allow EPA to levy penalties for pollution in excess of permitted levels or to issue orders

against such pollution. The statute could also address violations of reporting, trading, or banking rules. In addition to fines, the United States could have the authority to confiscate illegally used permits. The statute could have citizen suit provisions. It could provide criminal penalties for knowing or intentional violations.

4.3.5. Information Disclosure

4.3.5.1. What Information Must be Disclosed?

As with the other comprehensive incentives discussed here, the most useful authority will be a broad and flexible one that EPA can tailor to the problems at hand. The statute could give EPA general authority to order disclosure of data reasonably related to environmental pollution. Such data would include information directly about releases of pollution, information about pollution impacts on the environment, and information about products and their indirect or direct relation to pollution.

Though EPA commonly has authority to obtain information about pollutants regulated under command and control regimes, the new statute could grant authority to obtain information about any pollutant. It could include authority to order emission monitoring or other data collection. A factory manager's failure to be aware of the factory's pollution should not be an excuse for not reporting. The statute could also broaden EPA's authority to order polluters to conduct research to answer questions about a pollutant's fate in the environment. (EPA currently has authority to order some kinds of research and environmental monitoring under TSCA.)

As with existing monitoring and reporting provisions, EPA will need to set technical standards for collection of data. For the sake of uniformity and validity, standards are essential. The statute also should provide an exception to EPA's broad authority for information disclosure which allows firms to invoke protection for trade secrets and prevents their unauthorized disclosure to the public.

4.3.5.2. How and Where Should Information be Disclosed?

EPA will need some flexibility in specifying the means of disclosing the information. If the information concerns a product, EPA may wish to have it printed on the product label, to best influence consumers. If the data concern nearby residents of a polluter, EPA may wish the data reported to local residents and officials. If the data concern the activities of a corporation, EPA may wish them reported to shareholders or potential shareholders. If the data concern the use or suitability of land, EPA may want to have the information filed with local land ownership records.

4.3.5.3. Whistleblowers

To encourage honest and complete reporting, the statute could grant protection to whistleblowers and other private employees disclosing information to EPA in the public interest. Such protection could apply to anyone disclosing data to EPA relevant to compliance with any environmental law, but it should not automatically provide a license to release protected information, such as confidential business information.

4.3.5.4. Enforcement

As with the other incentive mechanisms discussed here, information disclosure requirements need to be backed up with provisions for enforcement. The questions here are similar to the enforcement questions under other mechanisms.

4.3.6. *Liability for Environmental Damage*

The following discussion presumes that a general incentives statute would create a direct new federal cause of action rather than use indirect means to increase pollution liability. Rather than augment civil penalty schemes or set out new rules of behavior that might influence state liability laws, the statute would allow the United States or other injured parties to sue polluters in federal court. (The illustrative bill in Appendix G does not contain such a liability provision.)

4.3.6.1. Federal Civil Liability

Creation of a broad cause of action for damages would be unusual under federal law. Such Federal remedies exist for civil rights violations, antitrust violations, and racketeering. A few Federal laws create a well-defined cause of action against highly regulated industries, like railroads. The Surface Mining Control and Reclamation Act creates a private cause of action for damages resulting from violation of mining regulations.¹ CERCLA creates a private cause of action to recoup specific response costs.²

A broad, far ranging liability statute offers one daunting drawback: unlike the other systems discussed here, a liability scheme would not be phased in. As of a particular date—the date of enactment or another date specified in the statute, conduct would become actionable. Another consideration to weigh is the uncertain effect a broad new cause of action might have on the workload of federal courts.

Given these caveats, policy makers would need to address what kinds of injury are actionable. Perhaps the simplest formula would allow actions for any injury to any person or property attributable to pollution.

The measure of damages is another issue that could be resolved in the statute or left to the courts to determine using common law principles. The criteria for awarding damages go to the heart of the nature of the incentive created by the law. If the purpose of the law is to drive society towards economic efficiency, the damages could reflect the cost of "making the plaintiff whole," repairing the injury done to the plaintiff.

Determining how much money will "make the plaintiff whole" is often difficult with environmental damage. Much of the damage will be speculative. Some may be to people not yet alive. Some may be to unique items that the current owner would not willingly sell. Some may be to items ordinarily not bought or sold. One partial solution is to allow EPA to promulgate rules for establishing damages to health or non-market resources. A plaintiff or defendant could invoke such rules to create a presumption of the level of damages, which the other party could then challenge with more specific evidence on market value.

Beyond economic efficiency, courts sometimes award damages on equitable grounds if the law allows. For example, a court might wish to prevent a defendant from being unjustly enriched by a wrongful act. If a factory's waste creates a health hazard for a city beyond science or the law's ability to estimate, a court could award damages that reflect the profit the company made through its acts. In circumstances where the defendant inflicted the injury deliberately, the court might be inclined to award punitive damages, if available.

Beyond monetary damages, the statute may wish to define the proper role of injunctive relief. Courts generally have the power to order defendants to stop ongoing activity causing injury when the traditional standards of equity permit such an order. For example, if a polluter threatened to destroy irreparably the pristine quality of a watershed, an injunction might be the federal government's only practical route to avert the injury.

4.3.6.2. Elements of a Case

To more fully define the nature of the liability that the statute creates, the statute could set out what the plaintiff must prove to establish liability.

First, what level of intent must be shown? Superfund, for example, requires no showing of intent; it imposes strict liability. Frequently the law imposes liability on injuries committed through negligence, that is, without reasonable care. In some cases, the law requires that actions be intentional in order to find liability.

Second, must a plaintiff prove that the defendant's actions *caused* the injury? That's a normal requirement in most liability cases, but it is not a requirement in a Superfund case,

for example. There, the plaintiff only has to show that a defendant's wastes were transported to a disposal site to make a *prima facie* case that the defendant is liable for the site's clean-up. Proving that a particular injury is due to a particular act of pollution can be difficult. One solution, short of abandoning causality, is to require proof of some basic elements of causality, such as that plaintiff's injury is of a type typically caused by defendant's pollution. At that point, the law could raise a presumption of causality, which the defendant would be free to disprove.

Third, what standard of proof is required? Normally, in a civil case, a plaintiff must establish his or her claims through the preponderance of evidence. Higher standards could be imposed, such as clear and convincing evidence or proof beyond reasonable doubt. The last is the usual standard in criminal proceedings.

Fourth, what defenses are available? For example, Superfund normally holds current landowners liable for the clean-up of a release site, however an "innocent landowner" defense protects owners who had no part in creating the release and took reasonable steps to prevent or mitigate it.

4.3.6.3. Who May Sue?

The law could allow private parties to seek damages for their own injuries or governments to seek damages for injury to common property, natural resources, and the interests of future generations. Where the government declines to pursue a case, a court could be authorized to certify an ordinary citizen to act as a "guardian ad litem" for these resources, if the court found the citizen would be a diligent and competent representative of the public interest. In such a case, any damages or settlement could go into a trust dedicated to mitigating or repairing the injury.

4.3.6.4. Relation to Other Laws

A Federal environmental liability statute would need to set out its relationship to other Federal laws, including those providing for "citizen suits" and those addressing governmental "trustees" to sue for natural resource damages. In addition, it would need to address the issue of preemption of state laws. Since most suits alleging environmental damage are currently based on state law and state common law, a Federal statute that did not preserve such laws could dramatically affect use of the courts and the actions of numerous interest groups. It is also the case that the questions of preemption would likely be at the core of any Congressional consideration of a Federal civil liability bill.

Endnotes for Section 4

1. SMCRA § 520(f), 30 U.S.C. § 1270(f).
2. CERCLA § 107(a), 42 U.S.C. § 9607(a).

5. CONCLUSIONS

In summary, there are opportunities for using a wide variety of approaches for implementing them at the Federal level.

The Report examines three basic approaches that could be used to achieve these savings, and concludes that where incentive programs take into account their connection with underlying social norms, they are more likely to achieve acceptance and to produce success.

Economic incentive systems that ignore their connection with deeply rooted norms (societal norms expressed in longstanding legal principles) risk rejection by policy makers, enforcers, administrators, and the public alike. Such norms provide a basis for pollution discharge fees (and product fees) on the theory of "compensation," which requires that the fees bear some rational relationship to harm. They also provide a basis for tradeable allocations, provided that the allocations do not create a harm which could otherwise be reduced (viz. the results of trades must not produce violations of ambient standards or increase relevant risk levels). They provide a basis for collection and dissemination of truthful information, inducing modifications of behavior in the marketplace. And they provide a basis for private and public enforcement. Thus, economic incentive programs that build upon underlying social norms may enjoy greater public acceptance than those that do not. Nevertheless, these norms do not set the outer bounds for economic incentive systems.

The three basic approaches considered are the following:

- (1) Use the authority that already exists in environmental laws to introduce economic incentives where feasible
- (2) Make changes in individual environmental statutes as they come up for reauthorization to allow increased use of incentives
- (3) Enact new legislation allowing the use of economic incentives on a multi-media basis.

In discussing (1), the report concludes that of the six laws surveyed, the Clean Air and the Toxic Substances Control Acts offer the broadest authority. The Clean Water Act offers potentially broad authority but there are important open legal issues in its use. The Emergency Planning and Community Right to Know, Pollution Prevention, and Safe Drinking Water Acts provide only narrow authority.

Although some of the existing Federal statutes offer broad opportunities for greater

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use of economic incentives, they do so primarily at the state and local level. Since most pollution concerns are heavily location dependent, it may be most efficient to implement incentives at the state and local level. However, the absence of Federal laws to encourage greater use of incentives may retard their adoption by state and local agencies.

Under the Clean Air Act Amendments of 1990, states are authorized to implement a wide array of incentives as part of their SIPs, including marketable permits, emission fees, and deposit systems. Because many of the remaining air emission problems are highly localized in nature (carbon dioxide emissions are perhaps the most significant exception), the greatest opportunity for use of incentives is at the state and local level. Thus, if state and local pollution control authorities made fullest use of their ability to use incentives, the aggregate savings could well approximate the totals projected above.

The Clean Water Act authorizes some use of incentives, notably trading systems for water bodies that fail to meet water quality standards, and in this case the authority is not explicit. National discharge fees are not clearly authorized. However, at the state level, some states set NPDES fees based in part on the volume and toxicity of the discharges. Since water quality problems are local or regional in nature, greater authorities for incentives in the Clean Water Act could encourage states to adopt incentives to meet their individual needs. With greater use of discharge fees by states under the NPDES system, water pollution control cost savings could approximate the savings projected above.

In the area of solid waste, a national system of incentives would be needed to achieve the projected savings from improved package design, reduced use of virgin materials and increased use of recycled materials.

With regard to the two legislative options (2) and (3), Congress has wide latitude to legislate economic incentives. The EPA also has substantial latitude within its specific statutory mandates to construct such systems. A comprehensive statute (3) offers advantages over a statute-by-statute approach (2). Statute-by-statute media boundaries can be artificial. As the United States discovered in the 1970s when strengthened Clean Air and Clean Water acts led to creation of more solid wastes, strong regulation in one medium can drive waste products into another, less regulated area. Incentives can have the same effect. Creating incentive packages that cover all media or that can be tailored to particular cross-media problems can help avoid this problem.

In fact, policy makers need to pay close attention to existing law in order to avoid or resolve potential conflicts. Incentives would need to be designed with a full understanding of how they will interact with command and control schemes already in place. This is important because in most cases, even when incentives serve as a central part of a regulatory program, command-and-control and enforcement structures are necessary adjuncts. For example, under a tradeable permit system, regulators will still

have to set emission limits. Traditional enforcement mechanisms will be needed to discourage polluters from exceeding their permits.

Because a comprehensive statute would break some new ground, EPA could benefit from authority to try some of the more innovative approaches on a local or pilot project level. However, rather than specifying the project and the area, the law could probably give EPA some flexibility in choosing both. Considering the variety of tools that a comprehensive incentives statute would offer and the variety of problems to which the tools could be applied, such flexibility seems in order.

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APPENDIX A. ADMINISTRATIVE OPTIONS UNDER THE CLEAN AIR ACT

A.1. GENERAL AUTHORITY

In 1990, Congress adopted significant new amendments to the Clean Air Act, 42 U.S.C. §§ 7401-7671q. Those provisions have substantially expanded the structure and substance of the Act. Some of the most noteworthy changes are a revised system for regulating toxic air emissions (§ 112, 42 U.S.C. § 7412); an entirely new scheme for regulating areas that have failed to attain the ambient air quality standards for ozone, carbon monoxide and particulate matter (§§ 181-193, 42 U.S.C. §§ 7511-7515); expanded requirements for motor vehicle emission standards, reformulated gasoline and low-emission vehicles (§§ 202-250, 42 U.S.C. §§ 7521-7590); an innovative program for reducing emissions of pollutants that cause acid rain through a system of emission allowances and transfers (§§ 401-416, 42 U.S.C. §§ 7651-7651o); a requirement that states administer a new program of operating permits for major pollution sources (§§ 501-507, 42 U.S.C. §§ 7661-7661f); and restrictions on production and consumption of substances that deplete stratospheric ozone (§§ 601-618, 42 U.S.C. §§ 7671-7671q).

Because the Clean Air Act has been so recently amended, it already contains a large number of provisions that explicitly authorize a wide variety of economic incentives. Beyond the many incentives that the Clean Air Act specifically mentions, it is difficult to be sure that additional incentives can be implemented by EPA without more explicit authorization by Congress. The level of detail which the Act uses in specifying the incentive mechanisms that EPA must adopt leaves EPA some room for expansion beyond the explicit terms of the statute in certain sections which contain generic references to economic incentives. In other sections, however, the particular type of incentive is described in such a specific fashion that EPA's discretion will be hampered by the rule of statutory construction *expressio unius est exclusio alterius*: When one thing is mentioned in a statute, it implies the exclusion of others. (See the general discussion of statutory construction in § 4.3.1 of this report.)

It is also important to note that the particular language of any section of the Act which EPA might rely upon in developing an economic incentive mechanism will determine how broadly an incentive may be made available to various sources of air pollution. For example, an emissions trading system allowable under one section of the Act might be narrower than that potentially available under another section. The regulations that might be adopted by EPA to implement any of the incentive mechanisms described below would need to spell out in detail the relationship of these alternatives to the emissions limits and air quality standards which those sources must satisfy under other sections of the Act (as EPA is currently doing with respect to its rules for economic incentives under § 182 (g) of the Act).

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General congressional approval for economic incentives can be found in the Act's findings and statement of purposes. The 1990 Amendments added a finding that states and local governments are responsible for achieving pollution prevention, which is defined as “the reduction or elimination, through *any measures*, of the amount of pollutants produced or created at the source.” § 101(a)(3), 42 U.S.C. § 7401(a)(3) (emphasis added). Congress further specified that “[a] primary goal of this Act is to encourage or otherwise promote reasonable Federal, State, and local governmental actions, consistent with the provisions of this Act, for pollution prevention.” § 101(c), 42 U.S.C. § 7401(c).

Reading these two statements together, EPA can argue that it is authorized to interpret quite broadly its mandates to prevent pollution through establishment of economic incentives (assuming, of course, that EPA can show that those incentives will actually lead to pollution reduction and/or prevention). That argument will be even stronger in situations where EPA is using its authorities under the Act to require that state and local agencies adopt economic incentives as part of their state implementation plans (SIPs) or state operating permit programs, as suggested by the use of the phrase “any measures” in § 101(a)(3), 42 U.S.C. § 7401(a)(3).

A similar, but possibly less persuasive, argument might also be made to authorize expanded federal requirements for economic incentives based on § 101(c), 42 U.S.C. § 7401(c). Furthermore, its reference to “Federal” actions might be used to argue that not only EPA, but also the Departments of Energy and Transportation can expand the range of economic incentives that they require, such as reducing vehicle-miles, increasing fuel efficiency, or subsidizing research and development for less polluting technologies.

Even prior to the 1990 Amendments, § 108(b)(1), 42 U.S.C. § 7401(b)(1), authorized EPA to make available to the states and other air pollution control agencies “information on air pollution control techniques.” This information is not just limited to control technologies and equipment, but is also supposed to include data on “emission reduction benefits,” on “alternative methods of prevention and control of air pollution,” and on “alternative fuels, processes, and operating methods which will result in elimination or significant reduction of emissions.” Until now, EPA has ignored and never exercised its authority to issue control technology guidances (CTGs) on “alternative methods of prevention and control” but has used them only to inform states about various kinds of equipment that will control air pollution; however, nothing in the Act requires such a crabbed reading of § 108(b)(1). Although this section does not authorize EPA rulemaking to require that states implement all of these “techniques,” it demonstrates at least that Congress was already interested in encouraging air pollution control agencies to find other, more cost-effective methods of reducing air pollution.

In the 1990 Amendments, Congress elaborated further on some of these techniques for

controlling air pollution and imposed several mandatory duties on EPA and the states, which define in greater detail the measures that must be used to reduce air emissions. In § 108(f)(1)(A), 42 U.S.C. § 7408(f)(1)(A), EPA is directed to “publish and make available to appropriate Federal, State, and local environmental and transportation agencies . . . information . . . regarding the formulation and emission reduction potential of transportation control measures . . . including, *but not limited to*” a list of sixteen methods or strategies for reducing air pollution from mobile sources. (emphasis added).

The definition of “transportation control measures” in § 108(f)(1)(A), 42 U.S.C. § 7408(f)(1)(A), is extremely comprehensive, and by its own terms is not even limited to the sixteen listed items. Thus it can be read expansively by EPA and can serve as authority for a wide range of economic incentives, so long as their chief purpose is to reduce air pollution from mobile sources. The only disadvantage of relying on this section is that it merely authorizes publication of information about such incentives and does not require that they be implemented by federal, state or local agencies. But, as discussed below, there are a number of other provisions of the Act which refer specifically to the implementation of these “transportation control measures” and thereby give EPA authority to require that they be adopted.

Similar, very broad but more mandatory authority for the adoption of economic incentives is found in § 110(a)(2)(A), 42 U.S.C. § 7410(a)(2), which specifies the contents of revised SIPs that states must submit for EPA's approval in order to adopt the new requirements of the 1990 Amendments. That section requires that each SIP “*shall -- (A) include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights).*” (emphasis added). The exact same definition of the phrase “control measures” is repeated in §§ 172(c)(6) and 302(y), 42 U.S.C. §§ 7502(c)(6) & 7602(y), with only the omission of the reference to “fees” in § 302(y). Section 110(a)(2)(A) thus authorizes EPA to require that all of the states' revised SIPs include a wide variety of economic incentives and suggests that the phrase “control measures” includes all types of economic incentives.

It is noteworthy that, like the list of transportation control measures in § 108(f), 42 U.S.C. § 7408(f), this list of economic incentives in § 110(a)(2)(A) is also not exclusive and leaves much room for EPA to devise a number of other incentives which states could be required to include in their SIPs. This definition enables EPA to rely upon the other sections of the Act (as discussed below) which require EPA to adopt “control measures” as authority for implementation of a wide variety of economic incentives. Furthermore, because § 108(f) also uses the phrase “control measures” in connection with transportation-related pollutants, the combination of that section with the definition of “control measures” in § 110(a)(2)(A) gives EPA very broad authority to require the adoption of economic incentives that will reduce emissions from mobile sources.

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Congress' intent to require that the states' SIP revisions include the newest, most efficient approaches to controlling air pollution—such as economic incentives—is further underscored in § 110(a)(2)(H), 42 U.S.C. § 7410(a)(2)(H), which was also added by the 1990 Amendments. That requires that each SIP must provide for a SIP revision “(I) from time to time as may be necessary to take account of . . . the availability of improved or more expeditious methods of attaining” the national ambient air quality standards (NAAQS). This provision also authorizes EPA to require that revised SIPs adopt economic incentives for controlling air pollution, so long as EPA can show that they will provide an “improved or more expeditious” method for attaining the NAAQS.

A.1.1. *EPA's Authorities to Adopt “Control Measures”*

Relying upon the foregoing analysis of the definition of the phrase “control measures,” EPA can include any of the six types of economic incentives discussed in this paper in its regulations implementing the following provisions of the Clean Air Act, which all employ the phrase “control measures”:

1. Under section 112(m)(6) (42 U.S.C. §7412(m)(6)), EPA's regulations to prevent the adverse public health and environmental effects from atmospheric deposition of hazardous air pollutants on the Great Lakes, Chesapeake Bay, Lake Champlain and coastal waters must include “control measures as may be necessary and appropriate to prevent such effects”;
2. Under section 112(n)(3) (42 U.S.C. §7412(n)(3)), standards promulgated by EPA for emissions of hazardous air pollutants from publicly owned treatment works may require “control measures that include pretreatment of discharges . . . and process or product substitutions or limitations that may be effective in reducing such emissions”;
3. Under sections 172(c)(1) and (6) (42 U.S.C. §7502(c)(1) and (6)), when a state prepares a revised SIP for a non-attainment area, that SIP “shall provide for the implementation of all reasonably available control measures” and these SIP revisions must include “such other control measures, means or techniques (including economic incentives such as fees, marketable permits and auctions of emission rights)”;
4. Under sections 183(b)(3) and (4) (42 U.S.C. §7511b(b)(3) and (4)), EPA is required to issue control technique guidelines for volatile organic compounds and particulate matter from certain sources (aerospace coating and solvents, shipbuilding operations and ship repairs), and those guidelines must provide for adoption of “best available control measures”;

5. Under sections 184(b)(2) and (c)(1) and (5) (42 U.S.C. §7511c(b)(2) and (c)(1) and (5)), EPA must prepare a study “identifying control measures capable of achieving emission reductions comparable to those achievable through vehicle refueling controls”; such measures must be implemented by the northeastern states in the ozone transport region (from Maine through D.C.); and the governors of those states may “develop recommendations for additional control measures to be applied within all or a part of such transport region,” which EPA must then review and “determine whether the control measures in the recommendations are necessary to bring any area in such region into attainment”;
6. Under section 188(e) (42 U.S.C. §7513(e)), states with serious particulate matter (PM-10) non-attainment areas which fail to meet the deadline for attainment are required to revise their SIPs to adopt the “most stringent measures” of any SIP, which in extreme ozone areas must include economic incentives (section 182(g)(5)), and, in deciding whether to grant those states an extension of their non-attainment dates, EPA “may consider” a number of factors including “the technological and economic feasibility of various control measures”;
7. Under sections 189(a)(1)(C) and (b)(1)(B) (42 U.S.C. §7513a(1)(C) and (b)(1)(b)), states that contain a PM-10 non-attainment area must revise their SIPs to “assure” implementation of “reasonably available control measures” in moderate areas and “best available control measures” in serious areas;
8. Under section 190 (42 U.S.C. §7513b), EPA is required to issue guidance for the states with PM-10 non-attainment areas as to “reasonably available control measures and best available control measures from four specific sources (urban fugitive dust, residential wood stoves, silvicultural and agricultural burning), and EPA must determine whether it is necessary to issue additional guidance on “reasonably available control measures and best available control measures” for other sources of particulate matter;
9. Under section 202(a)(3)(D) (42 U.S.C. §7521(a)(3)(D)), EPA is required to study the impact on air emissions of rebuilding heavy-duty engines and “may prescribe requirements to control rebuilding practices,” taking into account the time needed to develop and apply “requisite control measures, giving appropriate consideration to the cost of compliance within the period and energy and safety factors”;
10. Under section 302(y) (42 U.S.C. §7602(y)), whenever EPA must develop and implement a federal implementation plan (FIP) to replace an inadequate SIP, that FIP is defined as including “enforceable emission limitations or other control measures, means or techniques (including economic incentives, such as

marketable permits or auctions of emissions allowances).“

A.1.2. EPA's Authorities to Adopt "Transportation Control Measures"

As shown above, the phrase "transportation control measures" can also be interpreted as including economic incentives, based on the definitions in §§ 108(f) & 110(a)(2), 42 U.S.C. §§ 7408(f) & 7410(a)(2). Consequently, the Clean Air Act authorizes EPA to implement all five types of economic incentives in order to satisfy the Act's directives for "transportation control measures" in the following sections:

1. Under § 182(c)(5)(A), 42 U.S.C. § 7511a(c)(5)(A), in serious ozone non-attainment areas, the revised SIPs must include transportation control measures whenever projected emission levels are shown to be likely to exceed the NAAQS;
2. Under § 182(d)(1)(A), 42 U.S.C. § 7511a(d)(1)(A), in severe ozone non-attainment areas, SIP revisions must include transportation control measures just as in SIPs for serious ozone areas; these measures must offset any growth in ozone emissions from increased vehicle miles traveled or numbers of vehicle trips in the area and reduce emissions from motor vehicles as necessary to demonstrate that the area is making reasonable further progress towards reducing its ozone levels;
3. Under § 182(e)(4), 42 U.S.C. § 7511a(e)(4), in extreme ozone non-attainment areas (only Los Angeles currently), SIP revisions must include all of the transportation controls required for serious and severe areas, plus additional "traffic control measures applicable during heavy traffic hours to reduce the use of high polluting vehicles or heavy-duty vehicles, notwithstanding any other provision of law";
4. Under § 187(a)(2)(B), 42 U.S.C. § 7512a(a)(2)(B), there is a special rule for the Denver carbon monoxide (CO) non-attainment area which requires the adoption of transportation control measures (as defined in section 108(f)) for CO, just like those required for severe ozone areas in § 182(d)(1)(A), 42 U.S.C. § 7511a(d)(1)(A);
5. Under § 187(b)(2), 42 U.S.C. § 7512a(b)(2), all of the serious CO non-attainment areas must revise their SIPs to include transportation control measures for CO, just like Denver is required to do in § 187(a)(2)(B) and like the severe ozone areas are required to do in § 182(d)(1)(A).

The only restriction that the Clean Air Act imposes on EPA or the states for implementing transportation control measures in any of these non-attainment areas is set forth in § 246(h), 42 U.S.C. § 7586(h). That section creates an incentive favoring clean-fuel vehicles and provides that EPA must adopt a rule which exempts clean-fuel vehicles from "certain transportation control measures including time-of-day or day-of-week restrictions and

other similar measures that restrict vehicle usage.”

A.1.3. Authorities for EPA to Adopt “Economic Incentives”

In addition to the reference to all types of economic incentives in the definition of “control measures,” other sections of the Act authorize EPA to issue rules which require, or provide an opportunity for states to adopt, economic incentives by explicitly using the phrase “economic incentives.” Those sections specify the following:

1. Under § 182(g)(3)(C) & (4), 42 U.S.C. § 7511a(g)(3)(C) & (4), states that contain serious and severe ozone non-attainment areas have the option to adopt “an economic incentive program” in order to demonstrate that they can meet the applicable milestones for reducing their emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x); such a program must be consistent with rules and a model economic incentive plan promulgated by EPA and may include “a system of state emissions fees or a system of marketable permits, or a system of state fees on sale or manufacture of products the use of which contributes to ozone formation, or any combination of the foregoing or other similar measures” and may also include “any of the transportation control measures” defined in § 108(f), 42 U.S.C. § 7408(f);
2. Under § 182(g)(5), 42 U.S.C. § 7511a(g)(5), any extreme ozone non-attainment area (only Los Angeles now) is required to adopt the economic incentive program which meets all of the requirements of the rules and model plan promulgated by EPA under § 182(g)(4), 42 U.S.C. § 7511a(g)(4);
3. Under § 183(e)(4), 42 U.S.C. § 7511b(e)(4), EPA's regulations requiring reductions of VOC emissions from consumer and commercial products may include, as EPA “deems appropriate,” requirements for “registration and labeling, self-monitoring and reporting, prohibitions, limitations or economic incentives (including marketable permits and auctions of emissions rights) concerning the manufacture, processing, distribution, use, consumption, or disposal of the product”;
4. Under § 187(d)(3), 42 U.S.C. § 7512a(d)(3), any serious CO non-attainment area that fails to meet its CO emission reduction milestones is required to submit SIP revisions that implement an economic incentive and transportation control program, as provided in § 182(g)(4);
5. Under § 187(g), 42 U.S.C. § 7512a(g), any serious CO non-attainment area that fails to meet the NAAQS by its attainment deadline is also required to revise its SIP to include a program of economic incentives and transportation controls, as provided

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in § 182(g)(4).

A.1.4. *Other Authorities for EPA to Adopt All Types of Economic Incentives*

A number of other sections of the Clean Air Act employ different, but equally general terminology that might be interpreted as authorizing EPA to require adoption of all five types of economic incentives. Those phrases are italicized below in the description of the applicable sections of the Act.

1. Under § 112(d)(2), 42 U.S.C. § 7412(d)(2), EPA is required to promulgate emissions standards for hazardous air pollutants by applying “*measures, processes, methods, systems or techniques including, but not limited to, measures which -- (A) reduce the volume of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modification*”;
2. Under § 112(k)(3), 42 U.S.C. § 7412(k)(3), EPA is required to prepare and submit to Congress a comprehensive national strategy to control emissions of hazardous air pollutants from small, “area” sources in urban areas; that strategy must include “*specific actions to substantially reduce the public health risks posed by the release of hazardous air pollutants from area sources*” and must achieve not less than a 75 percent reduction of cancers attributable to these pollutants by controlling them through “*measures implemented by*” EPA or the states under the Clean Air Act or others laws, including TSCA, FIFRA and RCRA;
3. Under § 112(k)(4), 42 U.S.C. § 7412(k)(4), in addition to the national strategy, EPA is required to encourage and support state or local “*areawide strategies . . . intended to reduce risks from [toxic] emissions by area sources within a particular urban area*”;
4. Under § 112(n)(1)(A), 42 U.S.C. § 7412(n)(1)(A), EPA is required to study hazards to public health from pollutants emitted by electric utility steam generating units and to report to Congress on the “*alternative control strategies*” that might be implemented through EPA regulations in order to control those pollutants, but this study/report authority may not give EPA power to promulgate regulations until Congress has received and responded to that report;
5. Under § 112(n)(5), 42 U.S.C. § 7412(n)(5), Congress has similarly directed EPA to assess the health and environmental hazards from emissions of hydrogen sulfide from extraction of oil and natural gas and to report to Congress, as well as to implement “as appropriate” a “*control strategy*” for hydrogen sulfide emissions;

6. Section 129(e), 42 U.S.C. § 7429(e), requires that solid waste incineration units obtain operating permits and gives EPA and the states discretion whether to require that such units must “comply with emissions limitations or implement any *other measures*, if the Administrator or the state determines that emissions in the absence of such limitations or measures may reasonably be anticipated to endanger public health or the environment“;
7. Under the Act's provisions for preventing significant deterioration (PSD) of air quality, a different but equally comprehensive phrase—“*other measures*”—is frequently used to describe the pollution control mechanisms to be included in regulations that must be adopted by EPA (see §§ 161, 166(d), 169A(b)(2), & 169B(e)(2), 42 U.S.C. §§ 7471, 7476(d)), 7491(b)(2), & 7492(e)(2)); this requirement could also authorize EPA to include all five types of economic incentives in its PSD regulations;
8. Under § 175(a), 42 U.S.C. § 7505(a), even states which have attained the NAAQS appear to be given the option of including in their air quality maintenance plans all types of economic incentives through Congress' use of the phrase “*such additional measures*, if any, as may be necessary to ensure such maintenance“;
9. Section 179(d), 42 U.S.C. § 7509(d), employs the same phrase—“*such additional measures*” which presumably may include economic incentives—in cases when states with non-attainment areas fail to meet their attainment deadlines and are required to submit revised SIPs that must include “*all measures* that can feasibly be implemented in the area in light of technological achievability, costs, and any non-air quality and other air quality-related health and environmental impacts“;
10. Section 182(c)(2)(B)(ii), 42 U.S.C. § 7511a(c)(2)(B)(ii), uses the phrase “*all measures*” in requiring that states with serious ozone non-attainment areas must satisfy EPA that their revised SIPs will achieve reasonable further progress in reducing VOC emissions, by including “all measures that can feasibly be implemented in the area, in light of technological achievability,” which likewise is broad enough to encompass all five types of economic incentives;
11. Under § 182(c)(4), 42 U.S.C. § 7511a(c)(4), revised SIPs for serious ozone non-attainment areas and any other areas that choose to opt into the clean-fuel vehicle program must include “*all measures necessary* to make use of clean alternative fuels in clean-fuel vehicles . . . economic from the standpoint of vehicle owners“; and the same requirement applies to revised SIPs for severe and extreme ozone non-attainment areas (§ 182(d) & (e), 42 U.S.C. § 7511a(d) & (e));

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12. Under § 507(b)(2), 42 U.S.C. § 7661f(b)(2), EPA is required to issue guidance for states to use in preparing a program for technical and environmental compliance assistance to small business sources; this guidance must include “alternative control technologies and *pollution prevention methods* applicable to small business stationary sources,” which provides authorization for EPA to suggest in its guidance that states could adopt economic incentives. Section 507(f), 42 U.S.C. § 7661f(f), gives the states or EPA discretion to “reduce any fee required under this Act to take into account the financial resources of small business stationary sources.” Consequently, EPA or the states may choose not to require that small business sources pay either increased fees on pollution discharges or fees on their inputs or products;
13. Under § 615, 42 U.S.C. § 7671n, EPA is very broadly directed to adopt regulations to protect stratospheric ozone, which presumably can include all five types of economic incentives because EPA is authorized to “*control . . . any substance practice, process or activity [that] may reasonably be anticipated to affect the stratosphere, especially ozone in the stratosphere, and such effect may reasonably be anticipated to endanger public health or welfare*”;
14. The final provision granting broad authority for EPA to implement all five types of economic incentives is contained in sec. 808 of the Clean Air Act Amendments of 1990, P.L. 101-549 (see 42 U.S.C. § 7171 note or ELR Stat. CAA 184); that section requires a study by the Federal Energy Regulatory Commission, in consultation with EPA, of “rate incentives” in order to calculate the net environmental benefits of renewable energy sources and also requires them to submit to Congress model regulations “for incorporating the net environmental benefits into the regulatory treatment of renewable energy in order to provide economic compensation for those benefits,” which give EPA an opportunity to develop regulations creating all five types of economic incentives for the use of renewable energy (defined in sec. 808(a) as meaning “photovoltaic, solar thermal, wind geothermal and biomass energy production technologies”) in place of non-renewable energy sources.

A.2. PAYMENTS BASED ON POLLUTION DISCHARGES

A.2.1. *Environmental User Fees*

In addition to the many Clean Air Act sections described above which generally authorize EPA to implement all five types of economic incentives, there are several other sections that more specifically allow EPA to assess fees on discharges of air pollutants. In order to maximize the economic incentive to reduce such discharges through these fees,

EPA might consider setting a fee schedule—or directing states to do so—which weights the fees or makes them incremental, so that higher dollar amounts are owed for either (1) larger weights or volumes of emissions or (2) more toxic pollutants regardless of quantity. By contrast, if only a flat fee schedule charging the same amount per unit of pollutant is imposed without regard to their quantity or relative toxicity, there is little or no incentive to reduce the total volume of emissions unless the per unit fees are set at a very high level, which may not be feasible politically for either EPA or the states.

Sections 110(a)(2)(L) & 502(b)(3)(A), 42 U.S.C. §§ 7410(a)(2)(L) & 7661a(b)(3)(A), authorize EPA and the states to require that every major stationary source of any of the six criteria pollutants or 189 hazardous air pollutants pay a permitting fee which is sufficient to cover the “reasonable costs” of developing and administering the Act’s requirements for a permit program. Section 502(b)(3)(B)(iii), 42 U.S.C. § 7661a(b)(3)(B)(iii), further establishes a presumptive minimum permit fee of “not less than \$25 per ton of each regulated pollutant” but authorizes EPA to determine “such other amount as . . . adequately reflects the reasonable costs of the permit program.” With these authorities, EPA has considerable latitude in establishing the dollar amounts and fee schedule for operating permit fees so long as it does not exceed the general limits discussed in § 4.3.2 of this paper.

Both sections contain comprehensive, non-exclusive statements of what those costs might include and § 502(b)(3)(A), 42 U.S.C. § 7661a(b)(3)(A), specifies that those costs may be both “direct and indirect.” The only program costs which are specifically excluded from both sections are “any court costs or other costs associated with any enforcement action” (§§ 110(a)(2)(L)(ii) & 502(b)(3)(A)(ii), 42 U.S.C. §§ 7410(a)(2)(L)(ii) & 7661a(b)(3)(A)(ii)). Thus, EPA has broad authority to assess, and to require that states assess, permit fees that are high enough to create an economic incentive to reduce air emissions, so long as the total amount of fees collected does not exceed the reasonable costs of the operating permit program. Those reasonable costs are listed as “including,” but not being limited to, reviewing and acting upon permit applications, implementing and enforcing permit terms and conditions, monitoring emissions and ambient air quality, preparing regulations or guidance, conducting “modeling, analyses and demonstrations,” and preparing inventories and tracking emissions (§ 502(b)(3)(A)(i)-(vi), 42 U.S.C. § 7661a(b)(3)(A)(i)-(vi)).

EPA may also be able to collect fees for discharges of CFC emissions under the authority of § 608(a), 42 U.S.C. § 7671g(a). It requires EPA to promulgate regulations which establish “requirements” which are designed to “reduce the use and emissions” of both class I and class II CFCs and to “use alternative substances . . . or to minimize use of class I or class II substances, or to promote the use of safe alternatives.” The term

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“requirements” is so broad that it could properly serve as authority for EPA to assess discharge fees on class I and II CFC emissions.

Although carbon dioxide is neither a criteria pollutant under § 110, 42 U.S.C. § 7410, nor a toxic pollutant under § 112, 42 U.S.C. § 7412, it may be possible for EPA to impose a fee on emissions of CO₂. Authority for such a discharge fee may be provided in sec. 821 of the 1990 amendments, P.L. 101-549, 42 U.S.C. § 7651k note. That provision directs EPA to promulgate regulations which require that “all affected sources subject to Title V¹ [the operating permit program] . . . shall also monitor carbon dioxide emissions” and report such data to EPA. While this provision does not specifically mention assessment of a CO₂ discharge fee, it would certainly fall within the discretion of EPA to assess such a fee in order to pay for the costs of administering this additional aspect of the Title V operating permits program, just as the other operating permit fees are authorized by § 502(b)(3), 42 U.S.C. § 7661a(b)(3).

Assuming that EPA chooses to exercise its discretion to impose a CO₂ discharge fee, the greatest economic incentive for reductions of CO₂ emissions will be created if that fee schedule is also weighted to impose higher dollar amounts on sources that release the greatest amount of CO₂ per unit of energy created. Such a weighted CO₂ fee would likely translate into higher fees on coal, slightly lower fees on oil and lowest fees on natural gas. The authority of sec. 808 to create incentives for greater use of renewable energy sources might also be used by EPA to exempt such sources from the CO₂ fee, or to reduce their fee by comparison with sources of non-renewable energy, thereby creating a further incentive to rely upon renewable energy sources instead of non-renewable ones.

The Act calls for reduced or suspended fees for three types of sources. Under § 246(h), 42 U.S.C. § 7586(h), EPA is to exempt clean-fuel vehicles by rule from transportation control measures, presumably including fees, that might restrict vehicle usage. Under § 408(c)(4), 42 U.S.C. § 7651g(c)(4), utilities subject to Title IV's Phase I sulfur dioxide requirements are exempt from permit fees from 1995 to 1999. Under § 507(f), 42 U.S.C. § 7661f(f), the states or EPA may reduce the permit fees charged to small business

¹ This reference to Title V may be an error. The House and Senate Conference Report (H.R. Rep. No. 952, 101st Cong., 2d Sess. (1990), in the Joint Explanatory Statement of the Committee of Conference, explains that this provision requires “all sources subject to Title IV [emphasis added] to monitor their CO₂ emissions on an annual basis” (p. 348). If this was Congress's actual intent, then sec. 821 should apply only to the utilities subject to the Title IV acid rain provisions, but Congress has not yet acted to correct this possible drafting error.

stationary sources, as discussed above.

In addition, Congress included a “sense of the Congress” provision in the 1990 amendments that bears on the use of money collected through fees. Section 407 of P.L. 101-549, 42 U.S.C. § 7651 note, states that “[b]road based taxes and emissions fees that would provide for payment of the costs of achieving required emissions reductions by any party or parties *other than the sources required to achieve the reductions* are undesirable.” Congress's specific concern was that private actions taken to comply with the acid rain provisions not be subsidized through moneys raised by taxes or fees.

A.2.2. Fees on Inputs or Products

Other than EPA's many general authorities to adopt “control measures” which might include fees on inputs or products, a few sections of the Clean Air Act specifically authorize EPA to assess fees on inputs or products that will create or contribute to air pollution. All of these fee provisions relate to motor vehicles and other mobile sources of air pollution.

Section 211, 42 U.S.C. § 7545, authorizes EPA to impose such fees in two situations. The sale of fuel and fuel additives, for either motor vehicles or non-road vehicles, which may cause or contribute to air pollution can be controlled or prohibited by EPA under § 211(c)(1)(A), 42 U.S.C. § 7545(c)(1)(A). This section is the same authority that EPA used for its lead phase-down, as discussed above. Because it broadly authorizes EPA to issue regulations which “control” fuels and fuel additives, it could also be relied upon for EPA to exercise its discretion to impose a fee on sales of these items. EPA's authority to adopt these controls is limited only by the requirement to consider “all relevant medical and scientific evidence available . . . , including consideration of other technologically or *economically* feasible means of achieving emission standards” for motor vehicles (§ 211(c)(2)(A), 42 U.S.C. § 7545(c)(2)(A), *emphasis added*).

Similarly, § 211(c)(4)(C), 42 U.S.C. § 7545(c)(4)(C), authorizes states to “prescribe and enforce, for purposes of motor vehicle emission control, a *control* or prohibition respecting the use of a fuel or fuel additive” if their approved SIPs so provide (*emphasis added*). EPA may only approve such SIP provisions, however, if it “finds that the state control or prohibition is necessary to achieve the [NAAQS]” and that no other measures to achieve “timely attainment” exist or are reasonable or practicable. This general language allowing states to “control” fuel additives, like EPA's authority to do so, would appear to give EPA discretion to approve SIPs which impose fees on sales of fuels and fuel additives, so long as the other conditions for this subsection are satisfied.

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Both provisions of § 211(c), 42 U.S.C. § 7545(c), might also be interpreted to authorize EPA and the states to charge extra fees for gasoline sales. Nevertheless, EPA and the states could only impose such federal or state “gas taxes” if they could demonstrate that they have satisfied the restrictions imposed by subsections 211(c)(1)(A), (2)(A) and (4)(C), concerning other economically feasible, reasonable or practicable measures to achieve emission standards or timely attainment.

EPA is given explicit authority to impose a “user fee” in order “to recover the costs of testing of fuel additives” as required in § 211(j)(3), 42 U.S.C. § 7545(j)(3). That product-based fee must be paid to EPA by persons who propose to register the additive, but it cannot exceed \$20,000 per additive. Nevertheless, if EPA can show the costs of testing such fuel additives are this high, it can assess user fees up to that maximum amount. Similarly, § 217(a), 42 U.S.C. § 7552(a), gives EPA discretion to establish “fees to recover all reasonable costs” of certifying new vehicles and engines, as well as for monitoring and testing both new and “in-use” vehicles and engines for compliance. That fee schedule can apply to both foreign and domestic manufacturers, and EPA's discretion in setting those fees is restricted only by the requirement that they be “based on such factors as [EPA] finds appropriate and equitable and nondiscriminatory, including the number of vehicles or engines produced under a certificate of conformity.” Fees on heavy-duty engines and vehicles cannot “exceed a reasonable amount to recover an appropriate portion of such reasonable costs.” *Id.* So long as EPA can demonstrate that these certification fees are designed to recover only EPA's “reasonable costs” of certification, it should be able to set the fee schedule at graduated levels which are lower for engines and vehicles that achieve greater fuel economy and higher for those with lower fuel economy. In this manner, EPA can create a significant incentive for manufacturers to produce more “gas sippers” and reduce production of “gas guzzlers.”

Section 249(f)(1) & (2), 42 U.S.C. § 7589(f)(1) & (2), give EPA authority to promulgate regulations allowing any state which contains a serious, severe or extreme ozone non-attainment area the option to opt into California's clean-fuel vehicle pilot program by including in its SIP “incentives for the sale or use” of clean-fuel vehicles and of “clean alternative fuels.” Those “incentives” are specified as including “any or all of the following:” a new vehicle registration fee, an exemption for clean-fuel vehicles from high occupancy vehicle or trip reduction requirements, and a preference for clean-fuel vehicles to use existing parking spaces (§ 249(f)(3), 42 U.S.C. § 7589(f)(3)). The only restriction on these incentives is that they cannot apply to “covered fleet vehicles.”

For states that choose to opt into the clean-fuel program, the new car registration fee provided in their SIPs must be “at least 1 percent of the cost of the vehicle” and presumably could be much higher, so long as the states can show that this fee will

“provide financial incentives to purchasers of clean-fuel vehicles and to vehicle dealers who sell high volumes or high percentages of clean-fuel vehicles” (§ 249(f)(3)(A), 42 U.S.C. § 7589(f)(3)(A), emphasis added). The fee can also be used by the states to “defray the administrative costs of the incentive program.” *Id.* Thus, EPA can specify in its regulations a schedule for registration fees levels which are lowest for clean-fuel and/or fuel-efficient vehicles (“gas sippers”) and very high for “gas guzzlers.” In this manner, EPA can also create a strong economic incentive for purchases of clean-fuel vehicles with high fuel economy, and a disincentive for vehicles that burn regular fuel and/or achieve low fuel economy.

The principal restriction on EPA's ability to collect fees on transportation-related products is contained in § 110(c)(2)(B) & (D)(i), 42 U.S.C. § 7410(c)(2)(B) & (D)(i). Those provisions of the 1977 Clean Air Act were not changed by the 1990 Amendments. They prohibit EPA from requiring that states include in their SIPs a parking surcharge or a program for reviewing “indirect sources,” which are defined as including “a facility, building, structure, installation, real property, road or highway which attracts, or may attract, mobile sources of air pollution” (§ 110(a)(5)(C), 42 U.S.C. § 7410(a)(5)(C)). EPA also may not impose such parking surcharges or indirect source reviews as part of a FIP, unless they “apply only to federally assisted highways, airports, and other major federally assisted indirect sources and federally owned or operated indirect sources” (§ 110(a)(5)(B), 42 U.S.C. § 7410(a)(5)(B)). These provisions thus remove any discretion that EPA might otherwise have to impose fees on parking unless they are assessed in connection with the federally assisted, owned or operated sources that are not covered by this restriction. Nevertheless, this exemption for federal sources should enable EPA to require such parking surcharges and indirect source reviews for all federal facilities, which may as a practical matter cover a large number of mobile sources of air pollution, in an area where a FIP has been promulgated by EPA due to lack of an adequate SIP.

Although the 1990 Amendments did not remove these restrictions on parking surcharges and other fees for indirect sources, they did add authority for EPA to impose a prohibition on approval by the Secretary of Transportation of any grants for federally funded highway projects in states that fail to submit adequate revised SIPs for non-attainment areas or to implement those SIPs. In cases where the highway sanctions must be imposed, it may still be possible for states to obtain grants from DoT for programs to limit or restrict vehicle use, such as “road use charges, tolls, parking surcharges, or other pricing mechanisms, . . . or vehicle registration programs” and for “other transportation-related programs” which EPA and DoT find “would improve air quality and would not encourage single occupancy vehicle capacity” (§ 179(b)(1)(B)(vi) & (viii), 42 U.S.C. § 7509(b)(1)(B)(vi) & (viii)). It is not very likely that EPA will have many occasions to impose these extreme highway sanctions on many states, but these fee and surcharge

provisions are available in that event and will provide EPA with another mechanism for creating economic incentives to reduce air pollution from mobile sources by assessing fees and charges on vehicle use.

A.3. DEPOSIT-REFUND SYSTEMS

A wide variety of deposit-refund systems designed to reduce air pollution might be established by EPA in reliance upon all of the general authorities for economic incentives that are discussed in section I. These provisions for “control measures” and other “incentives” or “strategies” might be interpreted by EPA as authorizing deposit-refund systems for scrapping old vehicles or old vehicle parts or for users of chemicals, that produce toxic air pollution. Otherwise, there are only two sections of the Clean Air Act that specifically provide for such deposits and refunds. They apply to the recapture and recycling of Class I (chlorofluorocarbons (CFCs), carbon tetrachloride, methyl chloroform), and Class II (hydrochlorofluorocarbons (HCFCs)) substances.

Section 608(a)(3), 42 U.S.C. § 7671g(a)(3), requires that EPA promulgate regulations establishing standards for the use and disposal of all these substances and specifies that those regulations “shall include requirements that -- (A) reduce the use and emission of such substances to the lowest achievable level, and (B) *maximize the recapture and recycling of such substances*” (emphasis added). This broad language authorizes EPA to regulate how these substances are used and disposed and can support EPA regulations establishing requirements to pay deposits upon purchasing them and to receive refunds upon return of unused quantities. This section also covers “the service, repair and disposal of appliances and industrial process refrigeration,” which suggests that such a deposit-refund system could also be established for purchasing and finally disposing of the appliances and equipment that use these substances, as well as the substances themselves.

A similar provision for regulating the recycling of these substances during the servicing of motor vehicle air conditioners is contained in § 609(a), 42 U.S.C. § 7671h(a). That section requires EPA to establish “standards and requirements regarding the servicing” of these air conditioners, which must include a requirement that such servicing be performed “using approved refrigerant recycling equipment” by a person who has been properly trained and certified to use such recycling equipment (§ 609(c), 42 U.S.C. § 7671h(c)). EPA could rely upon this authority to promulgate a deposit-refund system as one of the requirements for recycling the refrigerants used in motor vehicle air conditioners.

A.4. TRADEABLE PERMIT RIGHTS

Perhaps the best publicized provision of the Clean Air Act is Title IV's system of tradeable emission allowances for sulfur dioxide (SO₂) and nitrogen oxides (NO_x) in order to control acid rain. But in addition to the detailed requirements for trading these SO₂ emission rights, the 1990 Amendments also created a number of opportunities for trading emissions of other pollutants.

For any air pollutants which may cause an area to be designated as a non-attainment area, §§ 172(b)(5) and 173(c) & (e), 42 U.S.C. §§ 7502(b)(5) and 7503(c) & (e), authorize EPA to require that states revise their SIPs to establish a permit program for both "construction and operation of new or modified major stationary sources anywhere in the nonattainment area." Under this program, permits to either construct or operate new or modified sources may only be issued if the source has obtained "sufficient offsetting emissions reductions" (§ 173(a)(1)(A), 42 U.S.C. § 7503(a)(1)(A)). Such offsets must be obtained through "emission reductions of such air pollutant from the same source or other sources in the same nonattainment area" except in limited circumstances where the offsets are obtained from another equally or more polluted area which contributes to the air pollution in the area where the source is located (§ 173(c)(1), 42 U.S.C. § 7503(c)(1)). Furthermore, such offsets must assure "an equal or greater reduction, as applicable, in the actual emissions of such air pollutant from the same or other sources in the area." *Id.*

A very limited opportunity for similar emission offsets of any pollutants in all non-attainment areas is established in § 173(e), 42 U.S.C. § 7503(e). That provision authorizes state permitting authorities, under certain conditions, to allow existing or modified major sources that test rocket engines or motors—there may be only one or two facilities that do this—to "offset by alternative or innovative means emission increases from rocket engine and motor firing, and cleaning related to such firing." As a practical matter, few facilities can take advantage of this offset authority.

Trading of VOC and NO_x emissions is authorized in serious ozone non-attainment areas under § 182(c)(2)(C), 42 U.S.C. § 7511a(c)(2)(C). That section requires EPA to issue guidance "concerning the conditions under which NO_x control may be substituted for VOC control or may be combined with VOC control in order to maximize the reduction in ozone air pollution." That guidance could allow states with ozone non-attainment areas to include in their revised SIPs, as part of their demonstration that they will make reasonable further progress towards reducing VOC emissions, a program to trade reductions of NO_x for VOC controls as long as the states can show that their overall levels of ozone are reduced to the maximum amount. This VOC and NO_x trading opportunity is also available for severe and extreme ozone non-attainment areas by virtue of § 182(d)

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& (e), 42 U.S.C. § 7511a(d) & (e), which incorporate by reference all of the requirements of § 182(c), 42 U.S.C. § 7511a(c), for serious areas.

Another opportunity for emissions trading in non-attainment areas is established by § 211(k), 42 U.S.C. § 7545(k), regarding reformulated gasoline for gasoline-fueled vehicles. EPA is required to promulgate regulations which “shall provide for the granting of an appropriate amount of credits” to those who refine, blend or import reformulated gasolines that have specified contents of oxygen, aromatic hydrocarbons and benzene (§ 211(k)(7)(A), 42 U.S.C. § 7545(k)(7)(A)). These credits can then be used by that person or transferred all or in part to another person so long as they are used within the same non-attainment area for the purpose of achieving reductions of VOCs during high ozone seasons and of toxic air pollutants throughout the year (§ 211(k)(1) & (7)(B), 42 U.S.C. § 7545(k)(1) & (7)(B)).

A similar program for marketable or tradeable emission credits is created to reduce CO by increasing use of fuels with higher oxygen content in CO non-attainment areas. Section 211(m), 42 U.S.C. § 7545(m), requires states that contain CO non-attainment areas to revise their SIPs to include, and EPA is required to promulgate guidelines for, “allowing the use of marketable oxygen credits from gasolines [during certain times of the year] . . . with higher oxygen content than required to offset the sale or use of gasoline with lower oxygen content than required” (§ 211(m)(5), 42 U.S.C. § 7545(m)(5)). The only restriction on this credit system is that credits cannot be transferred between non-attainment areas. *Id.*

Certain highly populated ozone and CO non-attainment areas are also required by § 246, 42 U.S.C. § 7586, to revise their SIPs to establish a clean-fuel vehicle program for centrally fueled fleets. That SIP revision must “provide for the issuance by the state of appropriate credits to a fleet operator” for purchasing additional clean-fuel vehicles or vehicles that meet more stringent emission standards, which EPA must establish for “Ultra-Low Emission Vehicles” (ULEVs) and “Zero Emissions Vehicles” (ZEVs) (§ 246(f)(1) & (4), 42 U.S.C. § 7586(f)(1) & (4)). EPA is responsible for issuing the regulations and administering this credit program (§ 246(f)(3), 42 U.S.C. § 7586(f)(3)), and the credits either may be used by the person who holds them or may be traded or sold to another person in the same non-attainment area (§ 246(f)(2)(A), 42 U.S.C. § 7586(f)(2)(A)). These credits may also “be held or banked for use at any later time, and when so used, such credits shall maintain the same value as if used at an earlier date.” *Id.*

In California, § 249, 42 U.S.C. § 7589, established a similar pilot test program to demonstrate the effectiveness of clean-fuel vehicles. That section gives EPA discretion to grant “an appropriate amount of credits” to motor vehicle manufacturers in order to

satisfy the requirement that certain numbers of clean-fuel vehicles be sold in California from 1996 onward (§ 249(c) & (d), 42 U.S.C. § 7589(c) & (d)). EPA is responsible for administering this credit program and for determining appropriate terms and conditions for making the credits available “after consideration of enforceability, environmental and economic factors” (§ 249(d)(1)(B) & (2), 42 U.S.C. § 7589(d)(1)(B) & (2)). Section 249(d)(1), 42 U.S.C. § 7589(d)(1), provides for credits to be earned by the sale of more clean-fuel vehicles than the required numbers or by sales of vehicles which meet the more stringent standards for ULEVs and ZEVs under § 246(f)(4), 42 U.S.C. § 7586(f)(4), but EPA has wide discretion to determine when to grant those credits. Manufacturers may either hold the credits to demonstrate compliance with their clean-fuel vehicle sales requirements or they may transfer some or all of their credits to other manufacturers. *Id.*

Section 328(a), 42 U.S.C. § 7627(a), authorizes EPA to adopt emissions trading rules for another category of sources, outer continental shelf activities which produce air pollution (“OCS sources”). For OCS sources within 25 miles of the states' seaward boundary, EPA's regulations may require, but are not limited to, compliance with “state and local requirements for emission controls, emission limitations, *offsets*, permitting, monitoring, testing and reporting” *Id.* (emphasis added). The only restriction is that these requirements be “the same as would be applicable if the source were located in the correspond [sic] onshore area.” *Id.* Thus, EPA has wide discretion to adopt a variety of economic incentives for OCS sources, and especially to establish a mechanism for them to offset their emissions by trading emissions rights with other sources of the same or similar pollutants.

In addition to the familiar emissions trading system for SO₂ and NO_x (which will not be described in detail in this paper), Title IV of the Clean Air Act contains other provisions which expand EPA's authority to establish tradeable emission rights beyond the sources listed in Title IV. Section 401(b), 42 U.S.C. § 7651(b), states that the purpose of Title IV, in addition to establishing the emission allocation and transfer system for SO₂ and NO_x, is “to encourage energy conservation, use of renewable and clean alternative technologies, and pollution prevention.” Thus, EPA might rely upon this purpose to require both (1) that sources already covered by Title IV implement additional economic incentives for reducing SO₂ and NO_x emissions, and (2) that sources of those pollutants not currently covered by Title IV be included in the allowance trading system. Some might argue, however, that this purpose section is not self-executing and requires further statutory directive for EPA to expand Title IV beyond just trading of SO₂ and NO_x.

The Act clearly provides two opportunities for other sources to opt into the Title IV emissions trading system. Section 410(a), 42 U.S.C. § 7651i(a), explicitly provides that owners or operators of “any unit”—defined as a “fossil fuel-fired combustion device”

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(§ 402(15), 42 U.S.C. § 7651a(15))—which emits SO₂ but is not covered by Title IV “may elect to designate that unit or source to become an affected unit and to receive allowances under this title.” Section 410(d), 42 U.S.C. § 7651i(d), authorizes a similar opt-in for owners or operators of “process sources” of SO₂. Although it requires EPA to promulgate regulations defining process sources, EPA cannot require them to participate in the Title IV allowance trading system. This language gives EPA discretion in determining what SO₂ sources will be covered by the definition of “process sources,” but those sources still will decide for themselves whether to opt into allowance trading.

Trading of CFC and HCFC production allowances is specifically provided in § 607, 42 U.S.C. § 7671(f), and EPA is required to promulgate rules to issue those allowances and govern their transfer. The major restriction on EPA's discretion is the requirement that “[s]uch rules shall insure that the transactions under the authority of this section will result in greater total reductions in the production in each year of [CFCs and HCFCs] than would occur in that year in the absence of such transactions” (§ 607(a), 42 U.S.C. § 7671f(a)). Those rules also must permit transfers of production allowances between different substances, so long as they are for the same year, and they must be calculated “on an ozone depletion weighted basis” (§ 607(b)(1), 42 U.S.C. § 7671f(b)(1)). Such interpollutant transfers are also restricted within groups of class I and class II substances, as listed in § 602, 42 U.S.C. § 7671a. The production allowances can be traded among producers so long as the transferor still achieves an “enforceable and quantifiable” net reduction in production (§ 607(c), 42 U.S.C. § 7671f(c)). EPA also is required to include in its rules provisions for issuance and trading of allowances for the “consumption” of CFCs and HCFCs “in the same manner as is applicable under this section to the trading of production allowances under this section” (§ 607(d), 42 U.S.C. § 7671f(d)). Thus the entire CFC/HCFC trading system can be expanded by EPA to include all those who use or consume Class I and Class II substances.

A.5. INFORMATION DISCLOSURE

Like the other five types of economic incentives discussed above, EPA might also require disclosure of information about air pollutants in reliance upon the general authorities discussed in section I. In addition, there are many specific provisions of the Clean Air Act which authorize EPA to require various forms of information disclosure, such as emissions monitoring, inventories, emissions reporting and making records available to the public. All of this information has the potential to influence public behavior, either through changes in activities or altered consumption of products, once the public is informed of their impacts on air quality.

Section 110(a)(2)(F), 42 U.S.C. § 7410(a)(2)(F), gives EPA discretion to prescribe that

revised SIPs (and any FIPs) must include a requirement for operators of stationary sources to install, maintain and replace equipment and implement (i) “other necessary steps . . . to monitor emissions from such sources,” and to prepare (ii) “periodic reports on the nature and amounts of emissions and emissions-related data from such sources.” This requirement is expanded in § 114(a)(1), 42 U.S.C. § 7414(a)(1), which gives EPA additional discretion to require information from air emission sources “on a one-time, periodic or continuous basis.” EPA’s information requirements may take the form of prescribing that sources “(A) establish and maintain such records [of emissions]; (B) make such reports; (C) install, use and maintain such monitoring equipment and use such audit procedures or methods; (D) sample such emissions . . . ; (E) keep records [of various other factors] when direct monitoring of emissions is impractical; (F) submit compliance certifications . . . ; and (G) provide such other information as the Administrator may reasonably require.” *Id.* (emphasis added). By relying on this very broad authority to require such monitoring and reporting of air emissions from stationary sources, which can include both point and fugitive sources, EPA can create a significant incentive for these sources to find ways to reduce their air emissions.

That incentive for emissions reduction can be strengthened further if EPA’s regulations provide that sources must make these monitoring data and reports available to the public, as required by § 114(c), 42 U.S.C. § 7414(c). The only exception to this public disclosure of air emissions records and reports is the usual protection for information which “would divulge methods or processes entitled to protection as trade secrets” (*id.*), and anyone who invokes that exception must make “a showing satisfactory to the Administrator” that disclosure of a trade secret would actually occur. *Id.*

Similar requirements for monitoring, recordkeeping and reporting, as well as disclosure of this information to the public, are also authorized for:

- Sources of hazardous air pollutants (§ 112 (d) & (j), 42 U.S.C. § 7412(d) & (j));
- Federally owned or operated facilities (§ 118(a), 42 U.S.C. § 7418(a));
- Solid waste incineration units (§ 129(c), 42 U.S.C. § 7429(c));
- Outer continental shelf sources (§ 328(a)(1), 42 U.S.C. § 7627(a)(1));
- Affected units and process sources of SO₂ and NO_x, which are covered by the requirements of Title IV and must install continuous emissions monitoring as required by EPA (§§ 410(d) & 412(a), 42 U.S.C. §§ 7651i(d) & 7651k(a)); and

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- All stationary sources of both hazardous and other pollutants which are subject to the requirements of Title V for operating permits (§§ 503(e) and 504(b) & (c), 42 U.S.C. §§ 7661b(e) and 7661c(b) & (c)).

For certain unregulated pollutants, such as radioactive particles, cadmium, arsenic and polycyclic organic matter, EPA is required by § 122(a), 42 U.S.C. § 7422(a), to determine whether they may cause or contribute to air pollution that may endanger public health and, if so, to include them on the list of hazardous air pollutants to be regulated through the mechanisms established in § 112, 42 U.S.C. § 7412, or to establish new source performance standards under § 111, 42 U.S.C. § 7411, for sources that emit these pollutants in significant amounts. This listing requirement was originally added to the Clean Air Act by the 1977 Amendments, but EPA still may revise this list of pollutants at any time (§ 122(b), 42 U.S.C. § 7422(b)).

Another information disclosure requirement from the 1977 Amendments may be especially effective in alerting the general public to the dangers connected with air pollution. Section 127, 42 U.S.C. § 7427, authorizes EPA to make grants to the states for the purpose of notifying the public “on a regular basis” whenever any of the NAAQS is exceeded, “to advise the public of the health hazards associated with such pollution, and to enhance public awareness of the measures which can be taken to prevent such standards from being exceeded and the ways in which the public can participate in regulatory and other efforts to improve air quality” (§ 127(a), 42 U.S.C. § 7427(a)). Thus, EPA has broad authority to require public disclosure of a wide variety of information about air pollution which may give the public incentives to alter their activities or purchases in order to produce less air pollution. EPA may even require such attention-grabbing devices as “the posting of warning signs on interstate highway access points to metropolitan areas or television, radio or press notices or information.” *Id.*

In all types of non-attainment areas the states' revised SIPs must also include “a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in such area, including such periodic revisions as the Administrator may determine necessary to assure that the requirements of this part are met” (§ 172(c)(3), 42 U.S.C. § 7502(c)(3)). Although this information gathering requirement applies only to the sources of certain pollutants for which the area is in non-attainment, this inventory of “actual emissions” will be extremely valuable to EPA, the states and the public in learning more about the quality of air in those non-attainment areas. By exercising its discretion to require frequent revisions of this inventory, EPA can create a significant incentive for sources to reduce their air emissions, and the public will benefit greatly from having access—for the first time—to accurate, current data on actual emissions of regulated air pollutants, rather than the unreliable estimates of air emissions currently provided only for toxic air pollutants through the Toxics Release Inventory

established in § 313 of EPCRA, 42 U.S.C. § 11023.²

In all ozone non-attainment areas, EPA has discretion to prescribe that the states' revised SIPs must include submission of emission statements for each stationary source of VOCs and NO_x. (§ 182(a)(3)(B)(i), 42 U.S.C. § 7511a(a)(3)(B)(i)). The first of those reports must be submitted by November 15, 1993, and subsequently "at least every year thereafter." *Id.* This provision thus authorizes EPA to require annual (or more frequent) reports "showing actual emissions" of VOCs and NO_x, like those required in § 172, 42 U.S.C. § 7502, which will further enhance the incentives for emission reduction and the benefits to the public from having more complete and accurate information on actual amounts of air pollutants being emitted.

In serious, severe and extreme ozone non-attainment areas, the revised SIPs must comply also with revised guidance which EPA must publish for "enhanced vehicle inspection and maintenance programs" (§ 182(c)(3)(B), 42 U.S.C. § 7511a(c)(3)(B)). That guidance can include any "program administration features necessary to reasonably assure that adequate management resources, tools and practices are in place to attain and maintain the performance standard [for reduced VOC and NO_x vehicle emissions]" (*id.*). Thus, EPA has broad authority to require that such enhanced inspection and maintenance (I&M) must include disclosure to the public of the results of vehicle emission testing and any other information which will create an incentive for the public to keep their vehicles in good repair and thereby reduce air pollution from mobile sources.

Similar requirements for records, reports and other information on the emissions limitations and fuel standards applicable to alternative fuels and clean-fuel vehicles must also be made available to the public by EPA under § 208(c), 42 U.S.C. § 7542(c). These information disclosures will presumably demonstrate the air pollution benefits achieved by alternative fuels and clean-fuel vehicles and, by comparison with similar public information about air emissions from conventional fuels and vehicles under § 182(c)(3), 42 U.S.C. § 7511a(c)(3), will further enhance the public's incentive to reduce air pollution by purchasing alternative fuels and clean-fuel vehicles. The only restriction on EPA's discretion to make this information public is again an exception for trade secrets, like the one provided in § 114, 42 U.S.C. § 7414, as discussed above.

A third broad information disclosure provision, added by the 1977 Amendments requires EPA to promulgate regulations to establish a nationwide air quality monitoring

²EPA's authority to require enhanced information disclosure under EPCRA is discussed in Appendix B of this report.

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system and to provide for “recordkeeping with respect to such monitoring data and for periodic analysis and reporting to the general public by the Administrator with respect to air quality based upon such data” (§ 319(4), 42 U.S.C. § 7619(4)). EPA can still rely upon this provision as authority to collect additional air quality monitoring data in areas or for pollutants which are not covered by the sections discussed above, and in this manner can disclose to the public comprehensive data on actual air quality on a schedule that is sufficiently frequent to make such information useful for those who must make decisions about projects, activities or even consumer purchases which will have an impact on reducing air emissions.

The new 1990 provisions of Title VI for protecting stratospheric ozone also authorize EPA to collect and disclose information on production, consumption and use of all the Class I and Class II substances:

- Every three years, EPA must monitor and report to Congress (and presumably the public) actual data on domestic and estimates of worldwide production, use and consumption of these substances (§ 603(d), 42 U.S.C. § 7671b(d));
- EPA must require every producer, importer or exporter of such substances to file a report on a quarterly basis (or some other schedule, but not less than annually) which discloses the amounts of such substances that are produced, imported or exported (§ 603(b), 42 U.S.C. § 7671b(b));
- EPA must promulgate regulations that “identify nonessential products that release Class I substances into the environment” and prohibit their sale or distribution, which would allow EPA to require that such products be clearly labeled and to provide information to potential consumers about the ban on the specific non-essential products listed (§ 610(a), (b) & (d), 42 U.S.C. § 7671i(a), (b) & (d));
- EPA must require labeling of containers and products which contain these substances, including specific requirements that such labels be “clearly legible and conspicuous” and include a warning set forth in the statute about the environmental harm caused by the substances (§ 611 (a)-(d), 42 U.S.C. § 7671j(a)-(d)); and
- EPA must publish both a list of safe alternatives for these substances and a list of prohibited substitutes, and must make available to the public any unpublished health and safety studies about chemical substitutes for Class I substances (§ 612(b), (d), & (e), 42 U.S.C. § 7671k(b), (d) & (e)).

Finally a number of miscellaneous provisions codified as notes to the Clean Air Act contain information disclosure requirements upon which EPA might rely as authority for collecting additional information about air pollutants and their health effects, as well as for making this information available to the public. These provisions require EPA to do the following:

1. Disclose public information on methods for mitigating levels of radon gas in homes, work places and educational institutions and on EPA's research on measuring, reducing and eliminating radon gas and other sources of indoor air pollution (secs. 118(k) and 403(a) & (b) of P.L. 99-499, 42 U.S.C. § 7401 note.);
2. Create a public registry of all known lakes that have been acidified due to acid deposition, to be known as the National Acid Lakes Registry, and to update it with additions and deletions as appropriate (sec. 405 of P.L. 101-549, the 1990 Clean Air Act Amendments, 42 U.S.C. § 7403 note);
3. Compile an emissions inventory of all sources of air pollution in regions along the US/Mexico border (sec. 815 of P.L. 101-549, 42 U.S.C. § 7509a note);
4. Establish an inventory, starting by January 1, 1995 and every five years thereafter, of national annual SO₂ emissions from industrial sources, covering all the years for which data are available and projecting the likely trend in SO₂ emissions over the following 20 years, and transmit this inventory in a report to Congress (sec. 406(a) of P.L. 101-549, 42 U.S.C. § 7651 note);
5. Require that all sources of carbon dioxide emissions which are covered by the operating permit requirements of Title V³ must monitor and report their CO₂ emissions to EPA and make available to the public the “aggregate annual total carbon dioxide emissions” from each unit, after having incorporated that data into a computer data base (sec. 821 of P.L. 101-549, 42 U.S.C. § 7651k note); and
6. Prepare and submit to Congress an inventory and report on all sources of methane emissions both within the US and abroad, including natural sources, and present “options outlining measures that could be implemented to stop or reduce the growth in atmospheric concentrations of methane from sources within the United States” (sec. 603 (a)-(e) of P.L. 101-549, 42 U.S.C. § 7671b note).

³Congress may have intended this to apply only to sources regulated under Title IV. See note 2 in this appendix.

A.6. LIABILITY FOR ENVIRONMENTAL DAMAGE

Although the 1990 Amendments substantially raised the potential civil and criminal liability for violations of the Act, they did not adopt a provision explicitly creating liability for damage to natural resources. Instead, EPA could rely upon its authority in § 113(e), 42 U.S.C. § 7413(e), which sets forth the criteria for EPA to use in assessing administrative civil penalties (as high as \$25,000 per day) to create a natural resource damage assessment system for air pollutants. Those criteria require EPA to “take into consideration (in addition to such other factors as justice may require)” a long list of items, including “the duration of the violation” and “the seriousness of the violation.” *Id.* These general phrases, combined with EPA’s discretion to adopt other factors that justice requires, might be interpreted to allow EPA to establish a requirement for payment of penalties for natural resource damages resulting from air pollution.

This authority may, in turn, be bolstered by any or all of the general authorities for implementing economic incentives which are described in Section A.1. For example, § 112(m)(6), 42 U.S.C. § 7412(m)(6)—which authorizes EPA to adopt “control measures” to prevent environmental effects from atmospheric deposition of hazardous air pollutants—could be the basis for imposing natural resource damage liability when those pollutants can be shown to affect the environment. The difficulty with this approach, however, will be for EPA to establish causation and provide proof that the air pollutants released by the alleged violator actually caused damage to the resources. In the absence of statutory language imposing strict liability on violators of the Clean Air Act, such a program for natural resource damage liability would be very difficult to implement and enforce.

APPENDIX B. ADMINISTRATIVE OPTIONS UNDER THE CLEAN WATER ACT

B.1. GENERAL AUTHORITY

Any incentive-based regulation under the Clean Water Act (CWA) will take place against the backdrop of the zero-discharge policy embodied in that statute. CWA § 101(a)(1), 33 U.S.C. § 1251(a)(1), unambiguously states that “it is the national goal that the discharge of pollutants into the navigable waters be eliminated . . . ,” and CWA § 301, 33 U.S.C. § 1311, further establishes a general prohibition on pollutant discharges, subject to those exceptions written into permits granted under CWA §§ 402 and 404, 33 U.S.C. §§ 1342 & 1344. Thus, the Act's policy purposes appear to embrace a wide variety of programs that have the potential for substantially reducing total discharge, as long as Congress has not prohibited them or expressly provided a more specific means of achieving the same goal.

Consistent with this notion, EPA was given broad discretion in its administration of the National Pollutant Discharge Elimination System (NPDES). CWA § 402(a), 33 U.S.C. § 1342(a), states that the Administrator may condition issuance of a permit on “data and information collection, reporting, and such other requirements as he deems appropriate.” (emphasis added). The catch-all language of this section provides a potential mechanism for imposing incentive-based regulations on pollutant discharges. However, there are two important constraints on EPA's exercise of its discretion under § 402. First, the Act itself limits the agency's ability to place substantive requirements on states that assume administration of NPDES, an option elected by over three-quarters of the states. Second, even where EPA issues permits directly, CWA case law holds that some nexus between EPA regulation and an actual or potential discharge is essential to EPA's authority to condition the permits.

CWA § 402(b), 33 U.S.C. § 1342(b), allows—indeed, encourages—the states to propose state programs for administering NPDES. Under the section, EPA is *required* to approve all proposals unless the program fails to meet a list of conditions specified in the statute and certain guidelines promulgated by EPA. *see EPA v. California ex rel. State Water Resources Control Board*, 426 U.S. 200, 208 (1976) (dicta). Those conditions relate to the state's ability to apply and enforce the applicable effluent guidelines; to inspect, monitor and require reports; and to provide procedural due process when considering applications. CWA §§ 402(b)(1)-(9) & 304(i)(2), 33 U.S.C. §§ 1342(b)(1)-(9) & 1314(i)(2). Assuming that these statutory ends are met, then, EPA apparently has no discretion to require that states adopt specific means of meeting them, or to place requirements on states' permit programs that go beyond the ones enumerated in § 402. Thus, while the

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§ 402(a) authority is broad enough to support several different kinds of economic incentives, it generally will apply only in states where EPA directly administers the NPDES, and not where states have assumed this authority under § 402(b).

Moreover, even where § 402(a) does apply, its scope is limited somewhat by CWA case law. In *NRDC v. EPA*, 859 F.2d 156, 170 (D.C. Cir. 1988) (*NRDC II*), the D.C. Circuit held that “the CWA does not empower the agency to regulate point sources themselves; rather, EPA's jurisdiction under the operative statute is limited to regulating the discharge of pollutants the agency is powerless to impose permit conditions unrelated to the discharge itself.” Accordingly, the court rejected EPA's general assertions of authority to place non-water quality conditions on permits, just as it earlier had rejected EPA's ban on construction of new sources pending environmental impact statements. See *NRDC v. EPA*, 822 F.2d 104, 126-31 (D.C. Cir. 1987) (*NRDC I*).

At the same time, the relationship of a given regulation to the discharge apparently will be generously construed. *NRDC I* also upheld a regulation requiring permit holders to report the presence of all toxics used or manufactured on the premises, regardless of whether they were being discharged, on the theory that they might accidentally be discharged. *Id.* at 117-19. Aside from providing authority for certain kinds of information disclosure (see § V of this appendix, below), this holding suggests that incentive-based regulations under § 402(a) should be valid even if they are *indirectly* related to discharge reduction.

In addition to § 402, the structure of the CWA indicates that Congress intended control of toxic discharges to be a distinct priority, and EPA's implicit authority in this area arguably goes above and beyond that granted for general administration of NPDES.¹ CWA § 101(a)(3), 33 U.S.C. § 1251(a)(3), states that “it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited,” and CWA § 307(a)(2), 33 U.S.C. § 1317(a)(2), authorizes the promulgation of more stringent effluent standards for toxics, including prohibitions. Moreover, the 1987 Amendments addressed this problem by requiring states to have individual control strategies for water quality-limited waters affected by toxics. CWA § 304(l)(1)(D), 33 U.S.C. § 1314(l)(1)(D); see *NRDC v. EPA*, 915 F.2d 1314 (9th Cir. 1990) (*NRDC III*). These control strategies are couched in terms of additional effluent limitations and water quality standards, but implementation of them presents a potential opportunity to apply incentives, especially where responsibility for

¹See, e.g., 33 U.S.C. § 1342(k) (compliance with permit issued under Section 402 deemed compliance with all requirements of Clean Water Act except for the Section 307 toxic pollutant standards).

implementation falls on EPA through state non-compliance or EPA disapproval of state plans. CWA § 304(I)(3), 33 U.S.C. § 1314(I)(3). Significantly, unlike state assumption of NPDES, the standards for EPA approval or disapproval of individual control strategies are *not* spelled out in the statute, *see* CWA § 304(I)(2), 33 U.S.C. § 1314(I)(2), which presumably leaves these standards to the Administrator's discretion.

Another distinct set of concerns is found in CWA § 319, 33 U.S.C. § 1329, also a part of the 1987 Amendments, which emphasizes the need to control nonpoint sources of pollution and requires the states to propose management programs targeted at such sources. Here again, the Administrator may disapprove the proposals in whole or in part; the standards for disapproval, while more explicit than those for individual control strategies for toxics, still leave EPA with more leeway than it has in reviewing state NPDES assumption. For instance, beyond stating a laundry list of minimum requirements for state nonpoint management programs, CWA § 319(b)(2), 33 U.S.C. § 1329(b)(2), the section also permits disapproval of a program if it “is not likely to satisfy, in whole or in part, the goals and requirements of this Act,” or if “the practices and measures proposed in such program or portion are not adequate to reduce the level of pollution” in the state resulting from nonpoint sources. § 319(d)(2)(A), (D), 33 U.S.C. § 1329(d)(2)(A), (D). Thus, if it can credibly be shown, as some have argued, that control of nonpoint sources will not occur without incentive-based regulations, then EPA arguably has the authority to require such regulations as a condition of approving state management programs for nonpoint sources.

One final potential mechanism for the establishment of several different kinds of incentive-based regulations is the abundant CWA authority directing EPA to fund development of innovative pollution control techniques, both directly and through grants to the states. CWA § 101(a)(6) states this mandate in terms of the “technology” necessary to reach the zero-discharge goal, while CWA § 101(a)(7) speaks broadly of the need to develop “programs for the control of nonpoint sources of pollution.” 33 U.S.C. §§ 1251(a)(6), (7). Accordingly, CWA §§ 105 and 106 provide the basic authority for grants and demonstration programs in pollution control, including pollution prevention, *see* 33 U.S.C. §§ 1255, 1256; and CWA § 319(h)(5)(B) gives priority to grants that will “implement innovative methods or practices for controlling nonpoint sources of pollution, including regulatory programs” 33 U.S.C. § 1329(h)(5)(B). Because economic incentives aimed at the production process will have a technology-forcing effect, it can be argued that language such as “innovative methods or practices” should be interpreted to include economic as well as technical innovations, thus allowing incentive-based programs to be funded through such grants.

B.2. PAYMENTS BASED ON POLLUTION DISCHARGES

B.2.1. *Environmental User Fees*

The possibility of requiring discharge fees under the CWA is complicated by the fact that during Senate deliberation on the 1972 Act, Senator William Proxmire proposed an amendment that would have established a schedule of effluent charges to supplement the Act's command-and-control provisions. His amendment was defeated on the Senate floor, and the House tabled a similar proposal without full consideration. Since it is a canon of statutory construction that "rejection of an amendment indicates that the legislature does not intend the bill to include the provisions embodied in the rejected amendment," EPA arguably is precluded from promulgating a general system of effluent charges.² Alternatively, assuming that several layers of amendments to the CWA and the evolution of the *Chevron* doctrine³ rendered this legislative history argument inconclusive at best, there are express provisions in the current Act that might be used as a basis for implementing or enhancing discharge fees.

At least seven states presently charge fees as part of their implementation of the NPDES program. R. Anderson, L. Hofmann and M. Rusin, *The Use of Economic Incentive Mechanisms in Environmental Management* 25 (1990) (American Petroleum Institute Research Paper #051). While some of these existing state fees take the volume and toxicity of the actual discharge into account, it appears that they primarily are intended to defray administrative costs, and that fee categories are not related closely enough to the rate of discharge to have a significant disincentive effect. EPA, *The United States Experience with Economic Incentives to Control Environmental Pollution* 3-2 (1992) (OPPE, No. 230-R-92-001) (hereinafter cited as *Incentives*). However, given that the NPDES monitoring system is already in place, and given EPA's authority under CWA § 402 to impose permit conditions related to the discharge, it arguably could establish a fee schedule that is more closely linked to the volume and toxicity of discharge and thus provide incentives for discharge reduction. The agency could implement such a schedule

²A fuller discussion of this argument can be found in W. Irwin and R. Liroff, *Economic Disincentives for Pollution Control: Legal, Political and Administrative Dimensions* 61-67 (1974) (Environmental Law Institute report prepared for the EPA Office of Research and Development). Significantly, even this roughly contemporary source found the legislative history to be ambiguous, concluding that "the rejection of the Proxmire amendment did not, of itself, preclude application of effluent charges." *Id.* at 67.

³ Discussed in § 4.3.1 of this report.

directly in states where it administers NPDES, and encourage other states to adopt similar fee schedules.

This § 402 authority is bolstered by the language of the Omnibus Budget Reconciliation Act of 1990, which authorized EPA to “assess and collect fees and charges for services and activities carried out pursuant to laws” it administers. 42 U.S.C. § 4370c(a). The issuance of NPDES permits clearly constitutes an EPA “activity” “carried out pursuant to” the CWA.⁴ While this section's origin in fiscal policy may suggest that Congress merely intended the fees to provide a source of funding for EPA programs, there is nothing that would prevent them from being linked directly to units of discharge and set at deterrent levels. However, the statute does provide that the total amount of additional new fees collected under the CWA may not exceed \$10,000,000. 42 U.S.C. § 4370c(c)(1)(A). Congress may have intended this limit as an absolute ceiling, or it may simply be a limit to the amount of fees collected under the CWA that may be credited to the revenue goals set in the Budget Reconciliation Act.

Last, CWA § 204 specifies that applicants for construction grants for publicly owned treatment works (POTWs) must adopt “a system of charges to assure that each recipient of waste treatment services . . . will pay its proportionate share . . . of the costs of operation and maintenance,” and directs the Administrator to issue “criteria against which to determine the adequacy of charges imposed on classes and categories of users reflecting all factors that influence the cost of waste treatment, including strength, volume, and delivery flow characteristics of waste.” 33 U.S.C. § 1284(b)(1)(A), (b)(2)(B). Thus, to the extent that the costs of operating a federally-funded POTW can be linked to discharges into it, those costs must be passed through to the indirect dischargers.

While the most common method of apportioning costs is by discharge volume, there is evidence that metering the actual pollutant level of discharges creates a disincentive effect. Incentives, *supra*, at 3-2. Due to the high costs of such metering, pollutant-based charges in practice are only imposed on the largest industrial users, *id.*, and § 204 expressly provides that costs may be apportioned among residential users using methods—such as ad valorem taxes—that do not relate to either volume or the pollutant level. 33 U.S.C. § 1284(b)(4). Nonetheless, if metering of pollutant levels can be said to assure the “adequacy of charges” imposed by POTWs, EPA has some authority to mandate it through the POTW guidelines.

⁴ Similarly, in the states where EPA administers the NPDES, the Independent Offices Appropriation Act authorizes it to collect a “fair and equitable” fee for permit applications. 31 U.S.C. § 9701. This language may provide additional authority for the imposition of discharge fees in those states.

B.2.2. Fees on Inputs or Products

CWA § 304(e) allows EPA to issue regulations for toxic and hazardous pollutants, “supplemental to any effluent limitations,” in order “to control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage which the Administrator determines are associated with or ancillary to the industrial manufacturing or treatment process . . . and may contribute significant amounts of such pollutants to navigable waters.” 33 U.S.C. § 1314(e). This “best management practices” authority provides EPA with some control over production processes even where it does not administer the NPDES, again on the condition that its regulations can be shown to relate to an actual or potential discharge of toxic substances. Applied to toxic inputs stored on the manufacturing premises, § 304(e) could justify the imposition of a fee on the purchase of such inputs, on the theory that resultant reduction of their use would minimize the risk of discharge and constitute an improved management practice. Such a fee would have to be designed within the constraints for fees and taxes discussed in § 4.3 of this report.

Similarly, CWA § 319 directs the states to identify and to implement “best management practices” for reducing pollution from nonpoint sources. 33 U.S.C. § 1329(b)(2). It is conceivable that these practices could include fees or other surcharges on the use of inputs, such as fertilizers and pesticides, that contribute to nonpoint pollution. However, unlike CWA § 304(e) regulation of toxics, § 319 is primarily implemented at the state level; as noted earlier, there is authority for an active federal role only in filling the gaps left by non-compliance, 33 U.S.C. § 1329(d), as well as in providing technical assistance and grant money for pilot programs, 33 U.S.C. §§ 1329(f), (h). Any insistence that such fees be imposed as a prerequisite to EPA approval of a state program would require some sort of finding that the program will be wholly ineffectual without the imposition of fees. See § I of this appendix, above.

Finally, CWA § 104(o) requires EPA to “conduct research and investigations on devices, systems, *incentives, pricing policy, and other methods* of reducing the total flow of sewage, including, but not limited to, unnecessary water consumption in order to reduce the requirements for, and the costs of, sewage and waste treatment services,” and to recommend legislation to implement the results of these studies. 33 U.S.C. § 1254(o) (emphasis added). While this section taken alone provides little more than research authority, it also suggests a way of looking at water itself as an input, the reduced use of which could lead to reduced discharge. That idea, coupled with additional substantive authority like the two sections just discussed or the general permitting power under § 402, could provide some basis for attaching fees to water consumption as a means of reducing total pollutant discharge.

B.3. DEPOSIT-REFUND SYSTEMS

Since regulation under the CWA must be related to discharge of pollutants into the navigable waters, there is little authority for conventional deposit-refund systems, which generally are concerned with the disposal of containers or other solid waste. However, it may be possible for states and EPA to use the CWA § 319 authority for controlling nonpoint source pollution to create a hybrid system that would impose a deposit on purchase of fertilizers, pesticides, and other agricultural chemicals, and give refunds for the return of any unused portion. The deposit paid on chemicals that get used would serve the same disincentive purpose as a surcharge, while the possibility of obtaining a refund on unused chemicals provides some incentive for conservation and careful handling of them.

B.4. TRADEABLE PERMIT RIGHTS

Permit trading schemes have been implemented in three states that administer the NPDES. One program in Wisconsin allows trades of biological oxygen demand allocations among point sources, while Colorado and North Carolina have enabled trading of phosphorus and other nutrients between point and nonpoint sources. Each of these programs was established on “water-quality limited” waters where, in addition to the CWA § 301 technology-based effluent standards, more stringent effluent limitations have been imposed in order to make the water suitable for a designated use. GAO, *Pollutant Trading Could Reduce Compliance Costs If Uncertainties Are Resolved* 3 (1992). In theory, trading of conventional pollutants in water quality-limited waters provides an effective means of reducing the total discharge, but the trades have been infrequent in practice. *Id.* at 3-4. Further, since trading in toxic pollutants may lead to “hot spots”—areas of concentrated toxic pollution—it arguably is incompatible with EPA’s mandate for control of toxic discharges.

As a legal matter, some notion of trading between pollutant sources is implicit in the determination of total maximum daily load (TMDL) under § 303, whereby states allocate pollutant loadings among all sources discharging into a body of water in order to meet the applicable water quality standard. See Farrow, *The Existing Basis and Potential for Damage Fees and Tradeable Allowances in the Clean Water Act* 11. Accordingly, existing EPA regulations note that “the TMDL process provides for nonpoint source control tradeoffs,” and allow for some relaxation of point source requirements if the nonpoint source requirements are tightened. 40 C.F.R. § 130.2(i); GAO at 5. From this starting point, it is a small and presumably reasonable step for a state administering its own NPDES program to let the market become the mechanism for ultimately determining all such allocations within the ceiling established by the TMDL.

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As seen in the discussion on general authority, EPA probably has authority under CWA § 402 to institute trading in states where it administers the NPDES program. The agency's own analysis likewise concludes that statutory silence on the issue of trading “can be construed as implicit approval as long as all other requirements are met,” but notes that the lack of express authority could create an uncertain climate that might not be so conducive to actual trades. See EPA, *The Benefits and Feasibility of Effluent Trading Between Point Sources 1-2* (1992) (hereinafter cited as *Effluent Trading*).

It appears that as a general matter, technology-based effluent standards are among the statutory requirements that would have to continue to be met in a CWA trading program. In other words, while dischargers would be able to purchase allocations enabling them to exceed water quality-based effluent limits, they would not be able to trade out of the applicable best available technology (BAT) or best practicable technology (BPT) requirement. The EPA study correctly notes that since these technology standards are mandated by the plain language of CWA § 301, 33 U.S.C. § 1311, they establish a “floor” below which trading is not permissible absent a statutory provision that expressly authorizes it. If there is no such provision in the present statute, then trading will only be feasible as a means of meeting the “second-tier” effluent standards that have been imposed on water quality-limited bodies of water.

One provision that arguably might provide some authority for trading below this technology floor is CWA § 301(c), which allows modification of the BAT standard upon a showing “that such modified requirements (1) will represent the maximum use of technology within the economic capability of the owner or operator; and (2) will result in reasonable further progress toward the elimination of the discharge of pollutants.” This “economic variance” does not permit modification below the BPT standard, nor may it be used to modify the BAT standard for toxics, *Chemical Mfrs. Ass'n v. NRDC*, 470 U.S. 116 (1985); moreover, § 301(j)(1)(B) appears to require that applications for the variance be filed within nine months of promulgation of the applicable effluent guideline. Where it does apply, this variance could be used to promote trading below the BAT standard as one possible form of “reasonable further progress,” but the additional requirement that economic hardship be shown before the source is excused from BAT compliance would severely limit any potential market for such trading.

Similarly, the Section 301(g) “water quality variance” allows EPA to modify the BAT requirement for certain named nonconventional pollutants if BPT requirements and water quality standards are met. The section does state that this variance may be granted only if “such modified requirements will not result in any additional requirements on any other point or nonpoint source,” language that arguably might prohibit the “modified requirements” that a trading scheme would impose on the sources whose discharge is

reduced under the scheme. However, it can also be argued that to the extent that these discharge reductions are *voluntarily* adopted (and compensated for by the sale of allowances), they would not be “requirements” at all. Accordingly, this section provides some authority for trading below the BAT (but *not* BPT) standards for ammonia, chlorine, color, iron, phenols, and such other non-conventional pollutants as EPA has listed under the section. Here again, however, the 270-day deadline of Section 301(j)(1)(B) appears to apply, thus potentially limiting the usefulness of the water-quality variance.

One final statutory obstacle to trading is CWA § 402(o), 33 U.S.C. § 1342(o), the “anti-backsliding” provision of the 1987 Amendments to the Act. Under that section, a water quality-based permit may not be renewed, reissued, or modified to contain less stringent effluent limitations than the previous permit. If it is strictly construed, this provision could prevent a source from purchasing allocations in order to increase its own discharge, even if such trading were in the context of an attempt to reduce the aggregate pollutant loading. *See* Effluent Trading, *supra*, at 3-5 & n.6. There are several exceptions to the section, one of which expressly exempts the two Section 301 variances discussed above. CWA § 402(o)(2)(E), 33 U.S.C. § 1342(o)(2)(E).

Another, much less clear, exception to the anti-backsliding requirement allows permit modification if “information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.” CWA § 402(o)(2)(B)(i), 33 U.S.C. § 1342(o)(2)(B)(i). On its face, the exception appears to refer to new *factual* information, as seen by its express mention of “revised regulations” as an example of information that does *not* trigger the exception. On that reading, institution of a trading program would be based less on “new information” than on a desire for “revised regulations,” and a new regime of permit trading would probably be subject to the anti-backsliding section.

However, Section 402(o)(2) also provides that this exception “shall not apply to any revised waste load allocations or any alternative grounds for translating water quality standards into effluent limitations, *except* where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters” (emphasis added). This convoluted language—an exception to an exclusion from the exception—could provide the basis for arguing that any revision of waste load allocations designed to reduce total discharge (as would be the case in a trading program) *is* the sort of information that is excepted from the anti-backsliding rule after all. This argument seems insufficiently conclusive to forestall a substantial legal challenge to trading based on the anti-backsliding provision.

B.5. INFORMATION DISCLOSURE

CWA § 308, 33 U.S.C. § 1318, requires point sources to monitor and record their discharges and make the records available to EPA. The section also states that such records “shall be available to the public” unless the disclosure would reveal trade secrets. CWA § 308(b)(2), 33 U.S.C. § 1318(b)(2). While CWA § 308(a) requires that data-gathering must be related to the objectives of the CWA, in practice that standard is a broad one. In *NRDC I*, discussed above, the court held that § 308, coupled with EPA's § 402(a)(2) authority to condition permits on data collection and reporting, authorized the imposition of a reporting requirement for all toxics on premises, regardless of whether they were actually being discharged. It found that “the statute's sweep is sufficient to justify broad information disclosure requirements relating to the Administrator's duties, as long as the disclosure demands which he imposes are 'reasonable.'” 822 F.2d at 119.

Additional authority for information gathering and disclosure is found in CWA § 304(l)(1)(C), 33 U.S.C. § 1314(l)(1)(C), which requires states to make “a determination of the specific point sources discharging any . . . toxic pollutant which is believed to be preventing or impairing . . . water quality and the amount of each such toxic pollutant discharged by each such source,” see *NRDC III*, 915 F.2d at 1314; and in CWA § 402(j), 33 U.S.C. § 1342(j), which makes NPDES permit applications and the resulting permits a matter of public record. Indeed, EPA has construed the latter disclosure requirement as an exception to the CWA § 308(b) protection for trade secrets, and this construction has yet to be successfully challenged in court. 40 C.F.R. § 122.7; see *NRDC I*, 822 F.2d at 120-21 (dicta).

It is unclear how much use these authorities allow EPA to make of this information beyond present practices. While the main goal of such requirements is enforcement, the breadth of the disclosure requirements, along with the express provisions for public access, suggest that the agency might engage in other forms of publicity if it could be shown that additional discharge reductions would occur. Indeed, as long as protection is extended to trade secrets, it may even be possible to require the permittees to disclose a summary of their discharge reports directly to the public. However, mandatory product labelling could be on shakier ground, as it would represent a more direct intrusion into the production process that seems less directly related to the discharge than does disclosure of existing reports that EPA already is using for enforcement purposes. It is quite easy to imagine an argument, based on *NRDC II*, that labelling requirements would be regulation of “point sources themselves,” and not just “the discharge itself”; or an argument, based on *NRDC I*, that labelling would constitute “unreasonable” interference with a firm's ability to market its products.

Last, CWA § 501 authorizes “a program which will provide official recognition by the United States Government to those industrial organizations and political subdivisions of States which . . . demonstrated an outstanding technological achievement or an innovative process, method, or device in their waste treatment and pollution abatement programs.” CWA § 501(e)(1), 33 U.S.C. § 1361(e)(1). Thus, EPA is free to publicize positive information as well as negative, and to create corresponding positive economic incentives.

B.6. LIABILITY FOR ENVIRONMENTAL DAMAGE

CWA § 505 provides that “any citizen may commence a civil action on his own behalf” against violators of the CWA, and further defines a “citizen” as any “person or persons having an interest which is or may be adversely affected.” CWA § 505(a), (g), 33 U.S.C. § 1365(a), (g). The section expressly authorizes application of the same penalties set forth for civil actions brought by EPA under CWA § 309(d), 33 U.S.C. § 1319(d), but neither section specifies the actual environmental damage as a measure of damages. Whether the suit is brought by a citizen or by EPA, courts are authorized to take into account “the seriousness of the violation or violations” when setting the level of the penalty. *Id.* Similarly, EPA's administrative penalties may “take into account the nature, circumstances, extent and gravity of the violation.” CWA § 309(g), 33 U.S.C. § 1319(g). Such general legal phrases may allow natural resource damages to be factored into the judicial or administrative tribunal's penalty calculations, but they rarely will result in predictable costs per unit of pollution, and they thus will have an imprecise disincentive effect on the dischargers. *See Incentives, supra*, at 6-3.

In addition, under CWA § 311(b)(7)(A), 33 U.S.C. § 1321(b)(7)(A), civil penalties for discharges of oil or hazardous substances may be set in “an amount up to \$1,000 per barrel of oil or unit of reportable quantity of hazardous substances discharged.” Since this penalty language is expressly cast in per-unit terms, it provides a basis for penalties that approximate natural resource damages. Presumably, if it is possible to estimate in advance a per-unit damage figure for spills of these substances, the penalties could be set at a level equal to estimated damages, thus providing a more precise economic incentive for avoiding spills. *See Farrow* at 5-8. Of course, since the level of actual damages depends as much on where the spills occur as on the nature of the spilled substances, it probably will not be possible to produce a schedule of penalties that is so finely-tuned that it would deter any possible spill in advance.

Moreover, CWA § 311(o)(1), 33 U.S.C. § 1321(o)(1), also provides that “[n]othing in this section shall effect or modify in any way the obligations of any owner or operator of any vessel, or of any owner or operator of any onshore facility or offshore facility to any person or agency under any provision of law for damages to any publicly owned or

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privately owned property resulting from a discharge of any oil or hazardous substance or from the removal of any such oil or hazardous substance.” Along with subsection (o)(2), which expressly disclaims any federal preemption of existing state laws pertaining to discharge of oil and hazardous substances, this subsection ensures that natural resource damages may be taken into account to the extent permitted under nuisance and toxic tort law.

APPENDIX C. ADMINISTRATIVE OPTIONS UNDER THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

C.1. GENERAL AUTHORITY

The Emergency Planning and Community Right-to-Know Act (EPCRA) is an information disclosure and planning statute. It sets up a system of state and local planning for response to releases of extremely hazardous substances, and it sets up a system of reporting and public disclosure for businesses handling or releasing hazardous substances (the Toxics Release Inventory or TRI).

C.2. PAYMENTS BASED ON POLLUTION DISCHARGES

C.2.1. *Environmental User Fees*

An ideal fee would be one assessed against industries submitting TRI data based on the amount of releases they reported. (This might create an incentive to under-report, a concern that EPA would have to weigh before adopting such a fee.) EPCRA grants no specific authority to assess such a fee. It gives EPA general authority to “prescribe such regulations as may be necessary to carry out this title.” EPCRA § 328, 42 U.S.C. § 11048. The basic thrust of EPCRA is informational. If it were necessary for EPA to raise money to cover the costs of the program, § 328 probably would support a fee that created an incidental incentive to reduce pollution. But a fee designed primarily for its incentive effect is probably not necessary to carry out the title.

EPA does have general authority to assess activity fees under 42 U.S.C. § 4370c, discussed in § 4.3.2 of this report. However, a fee for EPCRA data collection activity under that section would run up against the limitation against new fees under House Energy and Commerce Committee jurisdiction.

The only express provision in EPCRA regarding fees allows EPA to charge for access to the computer data base of the national toxic chemical inventory generated under the law. EPCRA § 313(j), 42 U.S.C. § 11023(j). Such charges create no incentives to improve environmental quality. If anything, by restricting public access to the inventory, such fees would tend to hamper the incentives created through the disclosure of inventory information.

In fact, EPA should consider adjusting any fees levied under § 313(j) to recoup most of the costs from any reporting companies that access the inventory to learn more about their competition, rather than from members of the public who access the inventory to learn

about polluters affecting their environment.

C.2.2. Fees on Inputs or Products

EPA might be able to assess fees on chemical inventories reported to local emergency planners and responders under EPCRA §§ 311 & 312, 42 U.S.C. §§ 11021 & 11022, but it probably would entail taking on some additional regulatory tasks to justify the fees. The two sections cited do not require submission of documents to EPA. To facilitate enforcement of the sections, EPA probably could use its general rulemaking authority under EPCRA § 328, 42 U.S.C. § 11048, to require submission to EPA of copies of documents submitted to local authorities or perhaps EPA could simply require submission of affidavits of compliance. The same rulemaking also could assess a fee to defray EPA's costs of processing the paperwork and enforcing the sections. This rather heavy-handed approach, creating a paperwork burden for the regulated community and the agency, probably would not rank high on anyone's list of potential anti-pollution efforts.

Alternatively, EPA might explore using its rulemaking authority to require that local emergency planners and responders assess fees on chemical inventories, to assure that the local officials have sufficient funds to carry out their functions. Such a rulemaking would highlight a legal sore spot in EPCRA: under our federalist system, the federal government may not have the power to order states and local communities to carry out these planning tasks. In almost every other federal environmental statute, states and localities are encouraged to take on environmental tasks through a system of carrots and sticks. EPCRA simply orders them to act. Elaborating on those orders could bring a touchy constitutional issue to a head, and may not be worth the risk.

C.3. DEPOSIT-REFUND SYSTEMS

Because the Act does not directly regulate sales of goods, EPA probably cannot use it to implement deposit-refund systems.

C.4. TRADING OF POLLUTION RIGHTS

Because the Act does not set any total limits on emissions, EPA probably cannot use it to implement tradeable permit right programs.

C.5. INFORMATION DISCLOSURE

EPA could readily expand EPCRA's highly successful information disclosure provisions. The key public disclosure provision of EPCRA is § 313, 42 U.S.C. § 11023, requiring certain businesses to file reports of any releases to the environment of listed chemicals above threshold amounts. EPA compiles these reports and makes them available to the public through the computer-based toxics release inventory (TRI). Public distribution of these data can affect company goodwill and consumer acceptance and can help potential toxic tort plaintiffs establish causation of their injuries.

EPA has the authority to expand EPCRA's reporting requirements to more classes of businesses. EPCRA § 313(b)(1)(b), 42 U.S.C. § 11023(b)(1)(B). Likely candidates include electric, gas, and sanitary services, Standard Industrial Code 49. EPA also could consider listing mines, incinerators, and federal facilities.

EPA also has authority to expand EPCRA reporting requirements to particular facilities. EPCRA § 313(b)(2), 42 U.S.C. § 11023(b)(2). Candidates include government-run facilities handling large amounts of hazardous materials, such as military bases and weapons production facilities. EPA also could consider including specific large RCRA-permitted facilities not already required to report.

In theory, EPA also could use this authority to require small facilities to report. (Facilities with fewer than ten employees are currently not required to report.) Small facilities like dry cleaners or wood preservers that have significant emissions could be included as appropriate.

EPA can expand the list of chemicals for which reporting is required, EPCRA § 313(d), 42 U.S.C. § 11023(d), or lower the reporting threshold for chemicals already on the list, EPCRA § 313(f)(2), 42 U.S.C. § 11023(f)(2).

EPA could use its general regulatory authority under § 328 to improve the quality of information obtained in the inventory. EPA cannot require monitoring beyond that required under other laws. EPCRA § 313(g)(2), 42 U.S.C. § 11023(g)(2). EPA could, however, define acceptable methods for estimating unmonitored releases, and could require that reporting industries use consistent estimation or monitoring methods from year to year in their reports.

Incidentally, EPA also could expand reporting requirements under the two other reporting sections of the Act. EPCRA §§ 311 & 312, 42 U.S.C. §§ 11021 & 11022, require reporting of information to state and local emergency planning and response officials, and

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such information is indirectly available to the public. EPA has limited discretion to expand those sections by lowering reporting thresholds or modifying reporting requirements.

EPA could do a much better job at making § 313 information available to the public through the TRI. Besides improving general outreach programs, EPA could be more aggressive in singling out particularly bad or particularly good environmental managers of toxic substances as reflected in the TRI, or taking other steps to increase the profile of the TRI in the press.

EPCRA § 313(l), 42 U.S.C. § 11023(l), read in an expansive light, would allow EPA to set up a public inventory of chemical releases parallel to the TRI and based on mass balance calculations of chemical releases. Read more narrowly, EPA's authority under the subsection ran only until 1991, long enough to prepare a five-year study, and was comprehensive only in states that already had a mass-balance reporting system. EPA's more expansive reading of EPCRA's information disclosure requirements must, nevertheless, keep in mind the provisions of § 322, 42 U.S.C. § 11402, which protect trade secrets from disclosure to the public in certain limited situations.

C.6. LIABILITY FOR ENVIRONMENTAL DAMAGE

EPCRA creates no new liabilities, and it expressly does not modify liabilities under other federal laws, EPCRA § 321(a)(3), 42 U.S.C. § 11041(a)(3).

It does facilitate toxic tort litigation by providing essential data about emissions to potential plaintiffs. Anything EPA could do to help make EPCRA data more accessible to potential plaintiffs would encourage future emission reductions.

EPCRA may indirectly affect tort liability standards under the negligence *per se* doctrine discussed in § 4.3.3 of this report. For example, if a business fails to provide emergency responders with information required under EPCRA §§ 311 or 312, 42 U.S.C. §§ 11021 or 11022, or fails to provide medical personnel with information required under § 323, 42 U.S.C. § 11043, and that failure contributes to some injury, EPCRA could facilitate the injured party's claim for damages.

EPCRA § 321(a)(2), 42 U.S.C. § 11041(a)(2), states that EPCRA shall not “affect” state and local law, and a defendant might argue that this provision precludes using EPCRA as a negligence *per se* standard. However, Congress wrote this savings provision to protect state and local right-to-know laws, not to put hurdles in front of tort plaintiffs. See, e.g., H.R. Conf. Rep. No. 962, 99th Cong., 2d Sess., at 302 (1986), H.R. Rep. No. 253, pt. 5, 99th

Cong., 1st Sess., at 97 (1985), *id.*, pt. 1, at 296, S. Rep. No. 11, 99th Cong., 1st Sess., at 15 (1985).

EPA could promulgate regulations under its general EPCRA authority, EPCRA § 328, 42 U.S.C. § 11048, making the obligations to provide data under sections 311, 312, or 323 more specific. For example, § 323 directs facilities to provide requested information to medical care givers “promptly” upon request and “immediately” in an emergency. EPA could set more definite time limits for responding to these information requests. These regulations would further define negligent conduct under the negligence *per se* doctrine.

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APPENDIX D. ADMINISTRATIVE OPTIONS UNDER THE POLLUTION PREVENTION ACT OF 1992

D.1. GENERAL AUTHORITY

The Pollution Prevention Act focuses on information rather than traditional command-and-control strategies for pollution control. Its approach is entirely consistent with the approach to economic incentives that this paper explores.

The Act gives EPA a general mandate to pursue source reduction in all its existing programs. Section 6002(b), 42 U.S.C. § 13101(b), declares a national policy to prevent or reduce pollution. Section 6604(b), 42 U.S.C. § 13104(b), directs the Administrator to establish and implement a strategy to promote source reduction. Subsection (a) of that section calls for establishment of an office to advise the various single-medium programs of the agency on source reduction, making it clear that the Act's mandate overlays the purposes and authorities of other acts. Section 6608, 42 U.S.C. § 13107, calls for regular reports to Congress on source reduction, including “opportunities for using existing regulatory programs, and incentives and disincentives to promote and assist source reduction.” Thus, the Pollution Prevention Act justifies the agency seeking incentives for source reduction in its air, water, and other programs, even if source reduction is not expressly mentioned in the underlying statutes.

Many of the general mechanisms discussed in this paper naturally promote source reduction. Assessing payments for discharges of pollution directly encourages source reduction efforts. Assessing fees against inputs or products can incidentally promote source reduction. Deposit and refund systems, by returning goods to the manufacturer for reuse or disposal, encourage the design of products with less waste. Tradeable permit right systems create incentives for polluters to explore source reduction alternatives that can earn them credits. Information disclosure—even the sort of self-assessment called for in the Pollution Prevention Act—can affect the choices of the plant manager, as consumer of industrial raw materials. Environmental liability too can be used to encourage source reduction; arguably, the biggest prod to source reduction has been CERCLA liability.

The specific authorities under the Act are limited. The Act directs EPA to implement a strategy for source reduction, including actions to “facilitate the adoption of source reduction techniques by businesses”, § 6604(b)(5), 42 U.S.C. § 13104(b)(5). The limited legislative history of the bill suggests that Congress did not intend to grant new regulatory powers to EPA, but did wish EPA to use information and market incentives to encourage pollution prevention. (“Instead of creating a new cumbersome regulatory program, the ... bill harnesses the power of public opinion and the markets to aid the

environment by giving the public a more complete picture of how a company manages, or prevents, the generation of waste.” remarks of Rep. Whittaker, 136 Cong. Rec. H13005 (daily ed., Oct. 26, 1990).)

D.2. PAYMENTS BASED ON POLLUTION DISCHARGES

EPA may be able to assess a user fee to help defray the costs of processing the information called for under § 6607, 42 U.S.C. § 13106. Section 6607 requires businesses reporting to the Toxic Release Inventory under EPCRA to include a toxic chemical recycling and source reduction report. Depending on the authority used to assess the fee, EPA may be able to adjust the fee somehow to reward source reduction efforts.

EPA may have authority to impose such a fee under the 1990 budget reconciliation provision, 42 U.S.C. § 4370c, discussed in § 4.3.2 of this report. That provision authorizes fees for “services and activities.” However, the PPA is one of the acts subject to the limitation on fee assessments in 42 U.S.C. § 4370c(c)(1)(B). As discussed earlier, Congress's intent in enacting that limitation may have been to restrict user fees assessed under a number of acts, including the PPA. EPA may wish to consult with the congressional committees of jurisdiction before calling for such fees.

Alternatively, EPA may be able to assess a fee under the Independent Agencies Appropriations Act, 31 U.S.C. § 9701. As discussed in § 4.3.2 of this report, that Act authorizes agencies to assess charges for “a service or thing of value.” Typically, agencies have used this provision to justify things like license fees, where the person asked to pay the fee clearly has received a benefit from the agency. It's unclear if this provision would support a fee for an activity like data collection. Also, under this provision the EPA would be limited to setting the fee based on the cost of collecting the data. The statute might not support adjusting the fee to reward source reduction efforts.

The Pollution Prevention Act has no direct authority for levying other sorts of fees or taxes, however the Act's general mandate to promote source reduction might help justify fee actions taken under other acts. For example, EPA might consider allowing limited fee reductions under the Clean Air Act permit fee program for sources that agree to follow aggressive source reduction programs.

D.3. DEPOSIT-REFUND SYSTEMS

Again, the Act gives EPA no direct authority to impose deposit and return programs, though it might help justify actions taken under other acts.

Section 6604(b)(11), 42 U.S.C. § 13103(b)(11), directs EPA to “identify opportunities to use Federal procurement to encourage source reduction.”

The government, with its tremendous purchasing power, could encourage source reduction through a unilateral mock-deposit system. Rather than requiring a deposit on goods purchased, the government could require, as a condition of sale, that sellers take back at no charge certain hazardous or potentially hazardous materials left over after goods are used. Examples might include left-over inks, cleaning solvents, used appliances, used vehicles and vehicle parts, and so forth. By returning these to the seller, the government would encourage development and sale of products that do not have hazardous components.

The question is, does EPA have the authority to impose take-back requirements on government purchases? The Pollution Prevention Act by itself does not seem to grant that authority. RCRA § 6002, 42 U.S.C. § 6962, grants EPA limited authority over federal procurement to encourage purchase of goods containing recovered materials, but the authority there is specific and does not cover actions to promote source reduction. EPA might explore pursuing the source reduction actions in a voluntary agreement with the GSA.

D.4. TRADEABLE PERMIT RIGHTS

Because the Act has no provisions for setting limits to emissions, it offers no possibilities for setting up credit and trading systems. It would certainly lend support to credit systems aimed at reducing hazardous source materials if authorized under other laws.

D.5. INFORMATION DISCLOSURE

Information disclosure is central to the Act. Section 6607, 42 U.S.C. § 13106, extends the right-to-know reporting requirements under EPCRA to include information about source reduction efforts. Section 6606, 42 U.S.C. § 13105, directs EPA to operate its public clearinghouse on source reduction. Section 6604(b)(13), 42 U.S.C. § 13104(b)(13), directs EPA to set up a program of annual awards for source reduction.

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These provisions would support a creative array of information disclosure actions. EPA could re-examine the information it currently requires under the reporting section of the Act. Such information as a source's total waste stream prior to recycling, the amount of waste recycled or treated on-site, the waste sent to individual publicly owned treatment works, or the results of mass balance calculations of chemical outputs would add to public understanding of a source's releases and would encourage source reduction.

EPA could establish source reduction awards by state or by region, for maximum local impact. Since the law directs EPA to recognize "outstanding" source reduction programs, EPA could recognize outstandingly bad as well as outstandingly good efforts. A concerted effort to inform local press about the actions of local business would also help spread the word.

EPA could do local outreach to government officials, emergency planners, press, and community leaders on source reduction efforts and opportunities. If better informed, these people might encourage local businesses to step up their source reduction efforts.

The Act directs EPA to do outreach directly to businesses. EPA could, for example, collect and offer materials on reducing costs by reducing hazardous materials handling.

D.6. ENVIRONMENTAL LIABILITY

The Act creates no new rights of action. Making information on source reduction freely available to plaintiffs in industrial toxic tort cases might indirectly promote source reduction. If a plaintiff could show that a defendant business failed to take advantage of readily available techniques to avoid use of hazardous materials and so reduce worker and community exposure, that showing might help support a claim of negligence or a demand for punitive damages. Of course, for optimal preventative impact, EPA must make sure that the industrial community knows that such information is readily available to plaintiffs.

APPENDIX E. ADMINISTRATIVE OPTIONS UNDER THE SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) combines two different approaches for improving the quality of water intended for human consumption. First, it requires EPA to promulgate national primary drinking water regulations (NPDWRs) that govern each contaminant which “may have any adverse effect on the health of persons and which is known or anticipated to occur in public water systems.”¹ SDWA § 1412(b)(3)(A), 42 U.S.C. § 300g-1(b)(3)(A). NPDWRs either establish a maximum contaminant level (MCL) for the contaminant or—if precise measurement is infeasible—describe and require treatment techniques known to reduce the level of contamination. SDWA § 1401(1)(C), 42 U.S.C. § 300f(1)(C).

In either version, the NPDWRs must be set at a level that prevents any known or anticipated adverse effects on human health to the extent feasible, where “feasible” generally will mean the use of the best available technology (BAT) proven efficacious under field conditions. SDWA § 1412(b)(4)-(7), 42 U.S.C. §§ 300g-1(b)(4)-(7). While NPDWRs provide a basis for state and EPA enforcement against the owners of public water systems, *see* SDWA §§ 1413 & 1414, 42 U.S.C. §§ 300g-2 & 300g-3, this portion of the Act does not regulate the actual discharges that may result in contamination of a PWS. *City of Evansville v. Kentucky Liquid Recycling, Inc.*, 604 F.2d 1008, 1016 (7th Cir. 1979).

Second, the Act authorizes EPA to require states to propose underground injection control (UIC) programs where “necessary to ensure that underground injection will not endanger drinking water sources” by resulting in contaminant levels that violate the NPDWRs or otherwise affect human health. SDWA §§ 1422(a) & 1421(d)(2), 42 U.S.C. § 300h-1(a); 42 U.S.C. § 300h(d)(2). Such programs must prohibit any underground injection that is not specifically authorized by state permit or state rule, and permit conditions or rules must ensure that injection will not endanger drinking water sources. SDWA § 1421(b)(1)(A)-(B), 42 U.S.C. § 300h(b)(1)(A)-(B). If the proposed program is approved by EPA, the state becomes the primary enforcement authority; if it is disapproved, EPA prescribes a program applicable to the state. SDWA § 1422(b)(3), (c), 42 U.S.C. § 300h-1(b)(3), (c).

¹A public water system (PWS) is defined as “a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly services at least twenty-five individuals.” SDWA § 1401(4), 42 U.S.C. § 300f(4).

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Because the SDWA is entirely health-oriented (for instance, it does not create jurisdiction over contamination of water supplies that will not be used for human consumption), any incentive-based regulations promulgated under it must operate within the constraint that is embodied in the NPDWRs: prevention of “known or anticipated adverse effects on the health of persons to the extent feasible.” SDWA § 1412(b)(7)(A), 42 U.S.C. § 300g-1(b)(7)(A). Within that constraint, there is an abundance of authority for various forms of information disclosure, and there also may be implicit authority for EPA or the states to apply in a limited fashion some of the other economic incentives discussed in this paper.

E.1. GENERAL AUTHORITY

Like the UIC programs, the PWS provisions are intended to be enforced by the states in the first instance. Section 1413 of the Act allows a state to assume primary enforcement authority for PWS standards by showing that it has adopted drinking water regulations that are at least as stringent as the NPDWRs, 42 U.S.C. § 300g-2, and virtually every state and territory has met this requirement. The section is largely silent as to what means may be chosen by the state to attain its substantive goals, but it does authorize EPA to prescribe by rule “the manner in which the determination [of state compliance with the requirements] is made . . . and the manner in which the Administrator may determine that such requirements are no longer met.” SDWA § 1413(b)(1), 42 U.S.C. § 300g-2(b)(1). Although procedural, this language arguably gives EPA the authority to impose incentive-based regulations on state PWS programs if such regulations are shown to be essential to attainment of the NPDWRs.

Similarly, while EPA approval of state UIC programs expressly depends on state adoption of the prohibition-and-permit structure discussed above, the agency also is directed to “avoid promulgation of requirements which would unnecessarily disrupt State underground injection control programs which are in effect and being enforced in a substantial number of States.” SDWA § 1421(b)(3)(B)(i), 42 U.S.C. § 300h(b)(3)(B)(i). Thus, in the case of UIC programs, any additional EPA regulation not only must be “necessary” to the protection of underground water supply, SDWA § 1421(b)(3)(B)(iii), 42 U.S.C. § 300h(b)(3)(B)(iii), it also must “avoid” disrupting the many pre-existing state programs.² Assuming that these requirements are met, the language of the section and the fact that it seems to contemplate *some* additional regulation arguably leaves EPA with

²The statute further provides that a regulation will “disrupt” an existing program “only if it would be infeasible to comply with both such regulation and the State underground injection control program.” 42 U.S.C. § 300h(b)(3)(B)(ii).

substantial authority to impose an incentive-based regime on state UIC programs.

In addition, EPA clearly has broad authority to *encourage* the states to adopt economic incentives in both programs. Section 1442 authorizes EPA to conduct research and provide technical assistance to the states on drinking water contamination and the provision of a safe supply of drinking water. 42 U.S.C. § 300j-1. While this section primarily enumerates “improved methods” of attaining these goals through technological advances, a reasonable interpretation of the statute could include research into and development of economic methods of reducing drinking water contamination. Section 1444 likewise authorizes grants for projects that “will demonstrate a new or improved method, approach, or technology, for providing a dependably safe supply of drinking water to the public.” 42 U.S.C. §§ 300j-3(a)(1), 300j-3a(a)(1).

E.2. PAYMENTS BASED ON POLLUTION DISCHARGES

E.2.1. *Environmental User Fees*

Since monitoring is an existing component of the state UIC programs, such programs could include (or be required to include) per-unit fees for underground injection of NPDWR pollutants; to the extent that states may already be charging fees for administration of their permit programs, those fees could be explicitly linked to the pollutant level of the discharge and set sufficiently high to encourage reductions below the permitted levels. However, because the SDWA only requires states to prohibit injections that “endanger drinking water” in the sense of potentially producing an NPDWR violation or otherwise affecting human health, 42 U.S.C. § 300h(d), there may be some question whether additional pollutant reductions below NPDWR levels fall within the health-based policy purposes of the Act and EPA's mandate under it.

Additionally, EPA's authority to impose discharge fees under the SDWA may be affected by the Omnibus Budget Reconciliation Act of 1990, which authorized the collection of fees in EPA programs. 42 U.S.C. § 4370c. As discussed in § 4.3.2 of this report, one possible reading of this section would preclude collection of fees in “programs within the jurisdiction of the House Committee on Energy and Commerce” except for TSCA and the Clean Air Act. Since the SDWA falls within the committee's jurisdiction, adoption of the restrictive reading would prevent EPA from imposing discharge fees.

E.2.2. Fees on Inputs or Products

While the UIC provisions clearly establish jurisdiction and enforcement authority over actual discharges, there is very little language in the Act to suggest that either states or EPA may extend jurisdiction one step further to include a discharger's production processes. States can request that EPA designate certain areas as "critical aquifer protection areas" or "wellhead protection areas." SDWA §§ 1427, 1428, 42 U.S.C. §§ 300h-6, 300h-7. Under these programs, states may take (and receive EPA grants for) several additional measures to protect sensitive groundwater sources, which arguably include regulation of persons whose discharges affect the designated area. See SDWA §§ 1427(f), 1428(a)(4), 42 U.S.C. §§ 300h-6(f), 300h-7(a)(4). Such measures, which also must have a basis in state law, conceivably could take the form of surcharges on the purchase of inputs that result in groundwater pollution within the designated area. Given the critical aquifer protection program's focus on "existing and potential point and nonpoint sources of ground water degradation," SDWA § 1427(f)(1)(B), 42 U.S.C. § 300h-6(f)(1)(B), and the wellhead program's focus on "all potential anthropogenic sources of contaminants which may have any adverse effect on the health of persons," SDWA § 1428(a)(3), 42 U.S.C. § 300h-7(a)(3), such a fee program could include not only manufacturing inputs, but also agricultural chemicals that leach into ground water.

E.3. DEPOSIT-REFUND SYSTEMS

Since the Act provides little jurisdiction over production processes or the sale of goods, it is unlikely that either portion of the Act could be used as the basis for a deposit-refund system.

E.4. TRADEABLE PERMIT RIGHTS

If several UIC permittees are contributing to contamination of the same aquifer with the same pollutants, it would be possible for the primary enforcement authority to adjust permits to reflect the trading of pollutant allowances among the permittees, assuming that the health-based standard of SDWA § 1421(d)(2), 42 U.S.C. § 300h(d)(2), continues to be met. Unless EPA is the primary enforcement authority, however, it may not be able to require implementation of trading schemes, which have some potential to "disrupt" a pre-existing state UIC program and thus could be barred by SDWA § 1421(b)(3)(B)(i), 42 U.S.C. § 300h(b)(3)(B)(i).

The SDWA's health-based requirements would appear to preclude trading that results in a public water supplier violating an NPDWR. Since drinking water from a PWS is a final product that generally goes straight to the public without opportunity for dispersion

into the medium or dilution by other sources, any violation of an NPDWR also is a violation of the express language of the Act. In theory, small suppliers in resort areas that are only seasonally inhabited could be exempted from the Act, but required to purchase allowances derived from additional pollutant reductions in other, more densely populated areas. Because the more contaminated water would only be available for consumption for part of the year, the increased health threat would be small and would be offset in theory by the increased margin of safety for a larger number of people secured by the purchase of allowances. However, it would be difficult to justify such explicitly utilitarian calculations without express authority in the existing Act.

Section 1415 does permit states to grant a “variance” to a PWS that has difficulty complying with the NPDWRs due to the quality of the raw water supply, and Section 1416 allows for “exemption” of a PWS that cannot comply because of “compelling factors,” including economic factors. 42 U.S.C. §§ 300g-4, 300g-5. Both of these designations are temporary, however, and contemplate prescription of schedules and control measures to bring the PWS into compliance. SDWA §§ 1415(a)(1)(A), 1416(b)(1), 42 U.S.C. §§ 300g-4(a)(1)(A), 300g-5(b)(1). Given the approach of the variance and exemption sections, which expressly address means of dealing with the varying costs of compliance among the public water systems, it is unlikely that they could serve as a basis for trading of pollutant allowances.

E.5. INFORMATION DISCLOSURE

The Act provides ample authority for disclosure of information from regulated parties to the EPA, from EPA to the public, and from the regulated parties directly to the public. Given the broad scope of the disclosure sections, as well as their express provisions for public access, the Act should already provide substantial incentive for compliance by public water systems and underground injectors. However, where the PWS is a utility operating as a monopolist, the incentive effect derives more from the threat of public outcry and adverse publicity than it does from customers' market decisions.

Section 1445, 42 U.S.C. § 300j-4, establishes the basic reporting and monitoring requirements under the Act. Every person subject to an NPDWR or a UIC permit program “shall establish and maintain such records, make such reports, conduct such monitoring, and provide such information as the Administrator may reasonably require by regulation” for SDWA administration and enforcement. SDWA § 1445(a)(1), 42 U.S.C. § 300j-4(a)(1). Further, public water systems are required to monitor several unregulated contaminants in accordance with EPA regulations, provide results of the monitoring to the primary enforcement authority, and notify EPA and persons served by the system that these results are available. SDWA § 1445(a)(2)-(5), 42 U.S.C. § 300j-4(a)(2)-(5). The above

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information must be kept confidential by the Administrator only if disclosure “would divulge trade secrets or secret processes,” except that information “shall be disclosed to the extent it deals with the level of contaminants in drinking water.” SDWA § 1445(d)(1), (2)(B), 42 U.S.C. § 300j-4(d)(1), (2)(B).

Section 1414(c) requires the owners of public water systems to give notice to their customers of any failure to comply with an MCL or NPDWR, of any failure to perform monitoring, or of the existence of any variances or exemptions from an MCL. 42 U.S.C. § 300g-3(c). The section allows EPA to regulate “form, manner, and frequency” of notice, but also prescribes minimum frequencies of notice depending on the seriousness of a violation. It further provides that notice “shall include notice by general circulation newspaper serving the area and, whenever appropriate, shall also include a press release to electronic media and individual mailings”; requires “a clear and readily understandable explanation of the violation, any potential adverse health effects, the steps that the system is taking . . . and the necessity for seeking alternative water supplies, if any”; and establishes civil penalties for failure to give notice. *Id.* EPA also is authorized to apply the same notice requirements to any unregulated contaminants being monitored under Section 1445.

Finally, where a state is primary enforcer of the PWS program, Section 1414(f) authorizes the EPA to hold public hearings on any public water system found not to be in compliance with the NPDWRs if petitioned to do so by the state, the PWS or its customers. *See* 42 U.S.C. § 300g-3(f). At the hearings, EPA may gather information on means for bringing the system into compliance and for protecting public health during the period of noncompliance, and “shall issue recommendations which shall be sent to such State and public water system and shall be made available to the public and communications media.” *Id.*

E.6. LIABILITY FOR ENVIRONMENTAL DAMAGES

EPA may bring civil actions for enforcement of the PWS and UIC standards. SDWA § 1414(b), 42 U.S.C. § 300g-3(b); SDWA § 1423(b), 42 U.S.C. § 300h-2(b). In each case, the court may issue injunctive relief and also may, “taking into account the seriousness of the violation, the population at risk, and other appropriate factors,” impose a civil penalty of up to \$25,000 per day. Violations also can result in administrative penalties, and the UIC penalty section expressly states that “the Administrator shall take into account appropriate factors, including . . . seriousness of the violation.” SDWA § 1423(c)(4)(B)(i), 42 U.S.C. § 300h-2(c)(4)(B)(i). Since the Act is concerned almost exclusively with health issues, it is unlikely that penalties will take into account any damages to natural resources independently of risks to public health, unless it can be argued that drinking water itself

is a natural resource for which compensation may be sought. *See NRDC v. EPA*, 812 F.2d 721 (D.C. Cir. 1987) (“public welfare” is distinct from “public health,” and thus not regulated by the SDWA).

Section 1449 allows citizen suits against SDWA violators, but limits the available statutory relief to costs and attorney fees. 42 U.S.C. §§ 300j-8(a), (d). However, the section does not modify or preempt “any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any requirement prescribed by or under this subchapter or to seek any other relief.” SDWA § 1449(e), 42 U.S.C. § 300j-8(e). Again, these rights likely are limited to recovery for health injuries, although there may be remedies under state tort law for property damage caused by certain uses of contaminated drinking water.

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APPENDIX F. ADMINISTRATIVE OPTIONS UNDER THE TOXIC SUBSTANCES CONTROL ACT

F.1. GENERAL AUTHORITY

The Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2601 *et seq.*, was enacted in 1976 to protect the public health and the environment from exposure to “unreasonable risks” from chemical substances and mixtures.

TSCA may support an economic incentives program. Any such program would rely on TSCA's express legislative policy that “adequate authority should exist to regulate chemical substances and mixtures which present an unreasonable risk of injury to health or the environment...” TSCA § 2(b)(2), 15 U.S.C. § 2601(b)(2). The Administrator is required to carry out TSCA “in a reasonable and prudent manner, and...shall consider the environmental, economic, and social impact of any action.” TSCA § 2(b)(3), 15 U.S.C. § 2601(b)(3). Reasonable consideration of these factors might serve to justify a use of economic incentive mechanisms.

The chief limitation on the use of TSCA is its focus on particular “chemical substances” and “mixtures” as to which findings must be made. (See TSCA § 3(2) & (8), 15 U.S.C. § 2602(2) & (8), for definitions of these terms.) A broad-brush program establishing incentives for a variety of substances is difficult. However, a targeted program of incentives directed at particular substances of concern is plainly feasible.

F.2. PAYMENTS BASED ON POLLUTION DISCHARGES

F.2.1. *Environmental User Fees*

Section 6 of TSCA, 15 U.S.C. § 2605, can be interpreted to authorize the imposition of a scheme of payments (based on volume, toxicity, location, or some other method) for disposal of substances. Section 6 applies wherever the Administrator finds that the “manufacture, processing, distribution in commerce, use, or disposal of a chemical substance or mixture, or...any combination of such activities, presents or will present an unreasonable risk of injury to health or the environment.” Upon making this finding, the Administrator may select among possible actions “necessary to protect adequately against such risk using the least burdensome requirements.” TSCA § 6(a), 15 U.S.C. § 2605(a).

Among the actions available to the Administrator is “a requirement *prohibiting or otherwise regulating any manner or method of disposal* of such substance or mixture, or of any article containing such substance or mixture, by its manufacturer or processor or by any

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other person who uses, or disposes of, it for commercial purposes.” TSCA § 6(a)(6)(A), 15 U.S.C. § 2605(a)(6)(A) (emphasis added).

Assuming the Administrator has made the base finding (of unreasonable risk of injury from some set of practices relating to the substance or mixture), this subsection may reasonably support the administrative imposition of a disposal fee. Two threshold issues arise in connection with this approach. First, must the Administrator determine that the risk arises *from* disposal in order to impose a requirement *upon* disposal? And second, is the imposition of a fee a requirement “prohibiting or otherwise regulating” a disposal “manner or method“?

It seems that the risk need not arise from disposal in order for a disposal fee to be imposed. The statute does not suggest that the imposition of requirements applicable to disposal under § 6 must be linked to a showing that the “unreasonable risk” arises from disposal, rather than from manufacturing, processing, distribution, or use. Given the absence of a direct link within the statute itself, it remains within EPA's discretion to use the “disposal” authority to address any form of “unreasonable risk.”¹ TSCA itself also provides statutory support for this interpretation. It appears to be within the Agency's discretion to determine that the “least burdensome” approach for dealing with risks from manufacture, processing, distribution, or use, while taking into account the “environmental, economic, and social impact” of the Administrator's action, may be to attack the risk indirectly. Thus, a constraint on disposal through the imposition of fees may be intended to reduce risks arising from handling practices, or to reduce the level of manufacture or use of the chemical substance or mixture.

Similarly, imposition of a fee can be construed as a least burdensome “regulation” of the “manner or method” of disposal. Only if the term “manner or method” requires the Administrator to prescribe or proscribe specific physical disposal practices, would a fee-based system fail to meet the statutory requirement. Alternatively, imposition of a fee may be justified as a qualified “prohibition” of disposal. The ability to prohibit disposal of a substance may include the implied power to condition its disposal, especially given the statute's admonition to take into account economic and social impacts and to operate under § 6 in the “least burdensome” manner. It would appear that imposition of a disposal fee is an acceptable approach to regulation under this section.

The use of § 6 depends upon the agency's ability to make the “unreasonable risk”

¹ Deference to this interpretation may be expected under *Chevron*. For a discussion of the *Chevron* doctrine, see § 4.3.1 of this report.

finding. If a risk from manufacture, distribution, handling, use, or disposal is “unreasonable,” can a mechanism (such as a fee) that is designed simply to *reduce* such use be justified?

It appears that it can. In *Corrosion Proof Fittings v. Environmental Protection Agency*, 947 F.2d 1201, 22 ELR 20037, holding clarified *per curiam*, 22 ELR 20304 (5th Cir. 1991), the court closely scrutinized the finding of unreasonable risk upon which the agency had premised its ban of asbestos uses. The court applied a sliding scale of risk and response: a ban might be appropriate for a widespread risk to many people, but a lesser response would be appropriate for a lesser risk. In the court's approach, the unreasonability of the risk is not simply a fixed threshold determination which then allows EPA to use the whole range of § 6 tools, but rather, the unreasonability of the risk is in part evaluated in terms of what § 6 tools can reduce it to reasonability and at what cost. (The court conflated the “unreasonable risk” and “least burdensome requirements” tests). Given this analysis, it would appear that a fee-based system could be justified upon a lesser showing of risk than some regulatory or prohibitory actions.

Given the opportunity under § 6(a)(6)(A) to promulgate a system of disposal fees (assuming EPA by rulemaking makes the appropriate risk findings), there are, nevertheless, some potential statutory obstacles.

First, TSCA already authorizes the imposition of fees under § 26(b)(1), 15 U.S.C. § 2625(b)(1). That section states that the Administrator may, by rule, require the payment of a reasonable fee from any person required to submit data under § 4 [testing data] or § 5 [pre-manufacture notification] “to defray the cost of administering this chapter.” *Id.* Such fees are capped at \$2,500 per fee (\$500 for small business concerns). EPA has promulgated fee regulations at 40 C.F.R. § 700.45. Given the express authority in § 26 for fees to implement §§ 4 and 5, can EPA assert implied authority to impose other fees under § 6? The answer is probably yes; § 26 (and the associated caps) would not apply to disposal fees assessed under § 6. By its own terms, § 26 applies only to fees assessed under §§ 4 and 5. The only issue is whether the express existence of a fee authority in § 26 necessarily implies that the Administrator lacks such authority under other sections. This issue, involving the doctrine of *expressio unius*, turns on a number of factors discussed in § 4.3.1 of this report. It would appear that § 6 is drafted broadly enough to serve as an independent fount of authority. Moreover, § 26 applies expressly only to fees used “to defray the costs of administering” the Act; if § 6 fees were used for some other purpose (and were deposited directly into the federal treasury), the conflict would be less likely.

Second, and more serious, is the issue of whether § 6501 of the Omnibus Budget Reconciliation Act of 1990, 42 U.S.C. § 4370c, prohibits the imposition of fees under TSCA

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other than those expressly authorized under § 26 (and certain radon-related fees specifically referenced in § 4370c). This provision is discussed generally in § 4.3.2 of this report. Under a number of reasonable constructions of the 1990 act, § 6 fees can be sustained.

TSCA imposes one other barrier to use of the authorities in § 6(a). Section 6(c) of TSCA provides that the authorities under § 6(a) may not be used if a risk of injury to health or the environment “could be eliminated or reduced to a sufficient extent by actions taken under another Federal law (or laws) administered in whole or in part by the Administrator” *unless* the Administrator makes a finding that it is in the public interest to use § 6(a) after considering (1) all relevant aspects of the risk, (2) a comparison of the estimated costs of compliance, and (3) the relative efficiency of the alternative approaches. 15 U.S.C. § 2605(c). With respect to disposal fee-based incentive systems under § 6(a)(6)(A), it would appear that there is no relevant statutory alternative, or, in the alternative, that these findings could be made.

In the alternative to reliance on § 6, another possible approach to a fee-based system might be ventured under § 4 of TSCA. The basis for use of § 4 is not as strong, however. Section 4 of TSCA authorizes the Administrator to require certain testing of chemical substances and mixtures. The thresholds for requiring testing are that insufficient data exist to determine the effects of such substances on health and the environment, and that either (1) the substance or mixture may present an unreasonable risk, or (2) it is produced in substantial quantities and will enter the environment in substantial quantities or cause substantial human exposure. As already noted, § 26 allows the Administrator to require fees in connection with § 4 for its administration. It may, therefore, be possible to construct a system based on § 4 in which the Administrator does field monitoring (e.g. for dioxins or specific bioaccumulating compounds) and assesses fees to support the monitoring program.

Problems with the § 4 approach include, first, the relatively low fee “cap” imposed by § 26. Second, there is a strong likelihood that 42 U.S.C. § 4370c(c)(1)(B) (whatever its effect on fees exacted under other parts of TSCA) appears to prohibit changes in the level of user fees already assessed by EPA under § 26 (which includes administration fees under § 4). And third, because § 4(b)(3)(B) appears to contemplate the testing being done by the manufacturer or processor, it may be more difficult to assess fees for a government-run environmental monitoring program.

Through a slightly more complex scheme under § 4, EPA might be able to achieve the benefits of a fee without directly collecting the fee. To use dioxin as an example, EPA could require persons releasing dioxins to a river to monitor the extent and environmental

impact of their releases. Such testing would be expensive, and if several dioxin sources were located on the river, they would end up duplicating each other's work. The testing rule could allow cooperative monitoring, provided each source's contribution to monitoring costs reflected its rate of dioxin production. (TSCA § 4(c), 15 U.S.C. § 2603(c), actually contemplates EPA allowing one person to rely on the testing of another if fair compensation is paid.) This would simultaneously give each source an incentive to reduce emissions relative to its neighbors and an incentive to make sure its neighbors were accurately reporting their releases.

F.2.2. Fees on Inputs or Products

Under § 6(a)(5), the Administrator may assess fees on inputs or products as a means of regulating their propensity to present an “unreasonable risk.” The same analysis applies here as in the preceding discussion of disposal fees. Specifically, § 6(a)(5) authorizes the Administrator, upon making the finding of unreasonable risk, to impose “a requirement prohibiting or otherwise regulating any manner or method of commercial use of such substance or mixture.” 15 U.S.C. § 2605(a)(5)(emphasis supplied). The same arguments and analyses apply as discussed above in connection with disposal fees.

Similarly, any authority the Administrator may have to impose fees for disposal under the § 4 testing provisions apply equally to fees for inputs or products. Section § 4 allows the Administrator to order testing in response to risks from “distribution in commerce, processing, [or] use” as well as to risks from disposal. TSCA § 4(a), 15 U.S.C. § 2603(a).

F.3. DEPOSIT-REFUND SYSTEMS

Both § 6(a)(5) and (6), 15 U.S.C. § 2605(a)(5),(6), would clearly sustain the institution of a deposit-refund system. Such a system might be used with respect to chemicals (like chlorofluorocarbons) that can be recaptured and reused. They also might apply to chemicals and mixtures that are not reusable, but whose disposal could pose significant problems. Regulatory prohibitions and constraints can be reinforced with economic ones.

A similar approach could be used without the deposit. Essentially, a take-back system might be imposed, modeled on the recent German requirement that certain goods if produced, must be accepted back by their distributor when discarded—as a way of encouraging the manufacturer's attention to what is manufactured and how it is ultimately disposed of. This might be a particularly useful way of getting at the problem of household hazardous waste—disposal of solvents, paints, etc.

F.4. TRADEABLE PERMIT RIGHTS

The creation of tradeable permit rights (or marketable rights generally) appears to be available as an option under TSCA. Several sections of the Act provide a potential basis for establishment of such a program.

Section 6(a)(1)(B), 15 U.S.C. § 2605(a)(1)(B), allows the Administrator to impose a requirement “limiting the amount of such substance or mixture which may be manufactured, processed, or distributed in commerce. Section 6(a)(2)(B), 15 U.S.C. § 2605(a)(2)(B), allows the Administrator to impose a requirement “limiting the amount of such substance or mixture which may be manufactured, processed, or distributed in commerce for (i) a particular use or (ii) a particular use in a concentration in excess of a level specified by the Administrator.” One way of limiting the amount may be to establish a total amount usable throughout the industry in the manufacture of a particular product or use, and to allocate the uses through a market mechanism.

Use of these provisions to support a marketable rights scheme would be similar to the fuel lead trading scheme adopted by EPA in 1982, 47 Fed. Reg. 49322 (Oct. 29, 1982), and the lead banking program adopted in 1985, 50 Fed. Reg. 13118 (Apr. 1, 1985). These programs were adopted under the authority of § 211 of the Clean Air Act, 42 U.S.C. § 7545. That section authorized the Administrator to promulgate regulations to:

control or prohibit the manufacture, introduction into commerce, offering for sale, or sale of any fuel or fuel additive for use in a motor vehicle or motor vehicle engine...if in the judgment of the Administrator any emission product of such fuel or fuel additive causes, or contributes, to air pollution which may reasonably be anticipated to endanger the public health or welfare...

42 U.S.C. § 7545(c). The regulations, 40 C.F.R. § 80.20, were based on this statutory language which is remarkably similar to that used in § 6(a)(1) and (2) of TSCA.

The EPA could also rely on TSCA § 6(a)(5), 15 U.S.C. § 2605(a)(5), which authorizes “a requirement prohibiting or otherwise regulating any manner or method of commercial use of such substance or mixture.” A marketable rights scheme targeted at limiting particular uses might be authorized under the authority of this section.

While the underlying authority to promulgate lead banking regulations was not the direct subject of judicial scrutiny, the lead banking program was described in *Union Oil of California v. U.S. Environmental Protection Agency*, 821 F. 2d 678 (D.C. Cir. 1987) and *United States v. Coastal Refining and Marketing, Inc.*, 911 F. 2d 1036 (5th Cir. 1990), which

dealt with ancillary and implementation issues. *See also* Anderson, R., L. Hofmann, and M. Rusin, "The Use of Economic Incentive Mechanisms in Environmental Management," Research Paper #051 (American Petroleum Institute, 1990) pp. 24-31 .

F.5. INFORMATION DISCLOSURE

Required labeling and disclosures of information even in the absence of a regulatory standard can lead to changes in product formulation and uses. For example, the formulation of a well-known typewriter correction fluid was changed by its manufacturer after California's Proposition 65, Cal. Health and Safety Code § 25112.5, required disclosure that it contained a substance known to the state to cause harmful effects.

TSCA contains a number of authorities which could be used to support labeling and information disclosures as incentive mechanisms. Section 6(a)(3) provides that where the Administrator determines that there is a reasonable basis to conclude that a chemical substance or mixture presents or will present an unreasonable risk of injury to health or the environment, one of the requirements that may be imposed is "that such substance or mixture or any article containing such substance or mixture be marked with or accompanied by clear and adequate warnings and instructions with respect to its use, distribution in commerce, or disposal or with respect to any combination of such activities." 15 U.S.C. § 2605(a)(3).

Essentially, this provision could be interpreted to authorize the Administrator to impose the functional equivalent of Proposition 65 notices where chemical substances or mixtures are manufactured, processed, used, or distributed (including on the products themselves), provided the "unreasonable risk of injury" threshold is met.

This clearly would support substantial product labeling and information where the uses in question might contribute to the risk.

An open question under § 6(a) is whether the fact that the chemical substance under *some* circumstances can pose an unreasonable risk of injury can also provide a basis for requiring labeling or disclosure in uses or circumstances where that risk is not presented. For example, a chemical substance may be harmless in the product in which it is marketed (e.g. plastic goods), but present "unreasonable risks" in its pure form (in which it is shipped to the manufacturer, handled by the workers, and disposed of as surplus or off-spec). Can the EPA require a notice on the end product in order to alert consumers to these earlier steps in the chain so that they can make better-informed decisions not to purchase the particular product, or to select a competing product not presenting the same hazards in manufacture? This would appear to be a complex legal issue. There is little

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guidance in the legislative history or in prior judicial constructions of TSCA to suggest an answer. The plain language of § 6(a)(3) suggests that this is not what Congress had in mind; however, deference to administrative interpretations and canons of construction for remedial legislation may support the opposing conclusion.

A second basis for requiring public disclosure of information under TSCA is provided by § 8(a). Section 8(a)(1)(A) confers on the Administrator broad authority to promulgate regulations requiring “each person (other than a small manufacturer or processor) who manufactures or processes or proposes to manufacture or process a chemical substance” to “maintain such records” and “submit to the Administrator such reports” as the Administrator “may reasonably require.” 15 U.S.C. § 2607(a)(1)(A). The standard “may reasonably require” is a classic delegation of discretion.

Section 8(a)(1)(A) may provide greater flexibility to the Administrator because, unlike § 6, its applicability is not limited to chemical substances that pose an “unreasonable risk.” However, § 8(a)(1)(A) does not include “mixtures,” and it applies only to manufacturers and processors, not to users or distributors.

Mixtures are addressed in § 8(a)(1)(B). That section provides recordkeeping and reporting authority to the Administrator (i) for mixtures and (ii) for small quantities of chemical substances manufactured or processed for research or analysis. Section 8(a)(1)(B) authorizes the Administrator to require recordkeeping or reporting for these categories of substances “only to the extent the Administrator determines” that such recordkeeping or reporting by manufacturers or processors “is necessary for the effective enforcement of this chapter.” 15 U.S.C. § 2607(a)(1)(B). This imposes a higher threshold for imposing the requirement than does § 8(a)(1)(A) with respect to chemical substances.

Section 8(a)(1)(B)'s reference to “necessary for...effective enforcement” suggests that a recordkeeping or reporting requirement for mixtures or for research quantities of chemical substances must be linked to enforcement of the “unreasonable risk” standard of § 6, the “substantial risk” standard of § 8(e), or to the administration of other testing or reporting requirements in the Act. But this conclusion is mitigated somewhat by *U.S. Environmental Protection Agency v. Alyeska Pipeline Service Co.*, 836 F.2d 443 (9th Cir. 1988). In *Alyeska*, a subpoena issued under TSCA § 11, which requires that it be for “information that the Administrator deems necessary,” was enforced even without a showing of a particular violation or even the likelihood of a violation. It may be possible to create a § 8(a)(1)(B) requirement based on a more generalized need without first establishing a requisite level of “risk.”

Taken together, the § 8(a)(1)(A) and (B) authorities provide a basis for requiring

disclosures. They do not expressly authorize labeling. However, the Administrator may be able to disclose the reported information in a variety of ways to the public in order to take advantage of the incentive of information dissemination.

Section 8(a)(2) identifies the kinds of information that may be required under these sections, which is limited to information “insofar as known to the person making the report or insofar as reasonably ascertainable.” It lists: name and identity of chemical, categories of use, total amounts manufactured and processed, byproducts, all existing environmental and health effects data, number of individuals exposed and estimates of exposures and duration, and disposal manner and method. 15 U.S.C. § 2607(a)(2).

This list is not exclusive, however. Section 8(a)(2) is *not* a limitation on § 8(a)(1). The legislative history makes this crystal clear: “The conference substitute provides an *illustrative* list of the kinds of activities for which recordkeeping and reporting may be required. The list includes such information as [(a)(2)].” 1976 U.S. Code Cong. & Adm. News 4565 (1976) (emphasis added). *See also id.* at 4512 (“this subsection also contains an illustrative list...”). Section 8(a)(2) does, however, provide that “to the extent feasible” the Administrator shall not use subsection (a)(1) to require any reporting which is “unnecessary or duplicative.” 42 U.S.C. § 2607(a)(2).

Although EPA has used § 8(a) to promulgate the Preliminary Assessment Information Rule (PAIR), 40 C.F.R. §§ 712.20-.30, and the Comprehensive Assessment Information Rule (CAIR), 40 C.F.R. §§ 704.200 - .225, these rules do not exhaust the agency's powers under § 8(a)(1) to require information from manufacturers and processors.

The Administrator is also authorized under § 8(c), 15 U.S.C. § 2607(c), to require manufacturers, processors, or distributors in commerce to maintain records of “significant adverse reactions to health or the environment.” While this is not a reporting requirement, the EPA has access to these records and may require the relevant party to submit copies thereof.

EPA's ability to use sections 8(a) and 8(c) as the basis for an information-based incentive system is constrained primarily by TSCA § 14, 15 U.S.C. 2613, which governs the preservation of “trade secrets.” In *Dow Chemical Co. v. U.S. Environmental Protection Agency*, 605 F. 2d 673, 683 (3d Cir. 1979), the court indicated that as a threshold matter, § 14 applies to information required under § 8. EPA has promulgated regulations dealing with procedures for ascertaining whether information is entitled to trade secret protection, 40 C.F.R. § 2.208, and specific regulations related to such claims under TSCA. 40 C.F.R. §§ 720.80, 704.7, 704.219. Much of the information which could be required by EPA (and particularly that related to public health issues) is not subject to trade secret protection

under the standards of the statute or the regulations. 40 C.F.R. §§ 720.80-.95

Other possible bases for information and information disclosures may exist under TSCA § 4, 15 U.S.C. § 2603. That section allows the Administrator, in the absence of sufficient data, to require testing of chemical substances and mixtures, either (1) where they may present an unreasonable risk of injury to health or the environment, or (2) where they will be produced in “substantial quantities” and will enter the environment in substantial quantities or create substantial human exposure. While the former test is the same as that of § 6, the latter provides an alternative that may be easier to meet. However, the threshold showing is still significant. *See Chemical Manufacturer's Assn. v. Environmental Protection Agency*, 899 F. 2d 344 (5th Cir. 1990) (remanding testing requirement to EPA with requirement that it develop criteria for what “substantial” means).

F.6. LIABILITY FOR ENVIRONMENTAL DAMAGES

No private right of action is created by TSCA. *Welch v. Schneider National Bulk Carriers*, 676 F. Supp. 571, 577-578 (D.N.J. 1987); *Johnson v. Koppers Co.*, 524 F. Supp. 1182, 1189 (N.D. Ohio 1981), app. dismiss. 705 F. 2d 451 (6th Cir. 1982). Whether or not TSCA creates a right of action in the United States for damage to natural resources is not settled.

The United States has used CERCLA for natural resources damages caused by releases of substances regulated under TSCA—e.g., PCBs. *In re Acushnet River and New Bedford Harbor Proceedings re Alleged PCB Pollution*, 716 F. Supp. 676 (D. Mass. 1989), 722 F. Supp. 893 (D. Mass. 1989).

The EPA may also be able to use natural resources damages as an intensifying factor in the penalty calculation for violations of TSCA. Section 16 specifically directs the Administrator to take into account “the nature, circumstances, extent, and gravity of the violations...and such other matters as justice may require.” 15 U.S.C. § 2615(a)(2)(B). The penalties are capped at \$25,000 per day of violation.

F.7. CONCLUSIONS

TSCA's emphasis on consideration of economic factors, and § 6's admonition to protect against unreasonable risk using the “least burdensome requirements,” suggest that TSCA may provide a substantial basis for economic incentive-type programs.

**APPENDIX G. ILLUSTRATIVE BILL AUTHORIZING THE USE OF
ECONOMIC INCENTIVES ON A MULTI-MEDIA BASIS**

**ILLUSTRATIVE BILL AUTHORIZING THE ESTABLISHMENT OF CHARGES
FOR THE USE OF THE ENVIRONMENT FOR WASTE DISPOSAL;
AUTHORIZING THE ESTABLISHMENT OF TAKE-BACK AND DEPOSIT
SYSTEMS; AUTHORIZING THE ESTABLISHMENT OF TRADEABLE
ALLOCATIONS SYSTEMS; AND AUTHORIZING INFORMATION DISCLOSURE
SYSTEMS TO FURTHER ENVIRONMENTAL PROTECTION AND
SUSTAINABILITY**

An Act to authorize and encourage the use of economic incentives to promote environmental quality, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Environmental Incentives Act".

SEC. 2. FINDINGS AND DECLARATION OF PURPOSE.

(a) FINDINGS.—The Congress finds and declares that—

- (1) the prevention of pollution of the nation's air and water resources can be advanced by the use of economic incentive based systems to regulate human activity harmful to the environment;
- (2) the use of economic incentive based systems can achieve savings in pollution control costs and in the costs of administering pollution control programs; and
- (3) economic incentive based systems should be used where, in the judgment of the Administrator, they can provide an effective supplement to existing regulatory programs.

(b) PURPOSES.—The purposes of this Act are—

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- (1) to provide the Administrator with clear authority to use economic incentive based systems;
- (2) to establish general parameters within which economic incentive systems may be used; and
- (3) to delegate to the Administrator the authority to provide by regulation the necessary detailed provisions of any economic incentive system adopted under this Act.

TITLE I—FEES

SEC. 101. ADDITIONAL FINDINGS AND OBJECTIVES.

(a) **ADDITIONAL FINDINGS.**—The Congress finds the following:

- (1) The United States, along with the several States, is public trustee of America's natural resources and environment.
- (2) It is the responsibility of the United States as public trustee to preserve and protect America's natural resources and environment for the benefit of present and future generations of mankind.
- (3) As public trustee of America's natural resources and environment, the United States should not permit the disposal of wastes into the environment without requiring the payment of fair compensation to the public for its use.
- (4) The goal of pollution prevention can be furthered by placing the societal cost of pollution on the polluter.
- (5) Charging user fees to all persons who use the environment for the disposal of wastes is consistent with the principle that the societal costs of pollution should be borne by the polluter.
- (6) User fees can be utilized to create effective incentives to prevent or reduce pollution.

(b) **OBJECTIVES.**—The purposes of this title are—

- (1) to impose a national system of charges upon activities that may contribute to degradation of the quality of the nation's environment;
- (2) to provide compensation to the public for degradation of the quality of the nation's environment; and
- (3) to provide economic incentives for the prevention of pollution.

SEC. 102. IMPOSITION OF FEES.

- (a) FEES ON RELEASES.—In carrying out the duties of public trustee of the nation's natural resources and environment, the Administrator may, by rule, assess fees to be paid by persons responsible for a release of pollutants.
- (b) FEES ON ASSOCIATED PRODUCTS.—
 - (1) In lieu of a fee authorized under subsection (a), the Administrator may, by rule, assess a fee on the manufacture, sale, purchase, use, or disposal of associated products or other substances whose manufacture, sale, purchase, use, or disposal is reasonably related to a release of pollutants. In deciding between assessing fees directly on releases or on associated products, the Administrator may consider such factors as the practicality of assessing and collecting such fees and the protective impact of such fees on the environment.
 - (2) The Administrator may, by rule, provide for reduction or rebates of fees imposed under this subsection in cases where the related release has been reduced or prevented by use of pollution control equipment or other methods.
- (c) INTERIM FEES.—The Administrator may by rule assess interim fees (on releases or on associated products) to be effective until final regulations promulgated under this section become effective. The Administrator may base interim fees upon the quantity of pollutants alone, or upon additional criteria listed in subsection (d).
- (d) CRITERIA FOR FEES.—The Administrator may base fees assessed under subsections (a) and (b) on the following factors:
 - (1) The quantity of pollutants released or likely to be released into the

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environment.

- (2) The level of harm caused or risked by the release. Such harm may include any factors that may cause or contribute to significant environmental harm or damage.
 - (3) The level of fees required to create a meaningful incentive for pollution prevention and reduction, particularly where the level of harm or risk of harm is uncertain.
- (e) **PRIORITIES.**—In imposing fees under this section, the Administrator shall give priority to assessing fees aimed at pollutants whose existing regulation, if any, has failed to prevent releases from causing or threatening significant environmental harm or damage.
- (f) **ADDITIONAL REQUIREMENTS.**—A rule promulgated under this section may require reporting of activities subject to a fee, recordkeeping, or other requirements related to the implementation and enforcement of a fee system.
- (g) **INTEREST.**—A rule promulgated under this section may specify the penalties and interest due on late or unpaid fees.

SEC. 103. SAVINGS PROVISIONS.

- (a) **LIABILITIES.**—
- (1) Assessment or payment of a fee under this title shall not be construed to reduce the payor's liability under State or Federal law for damages caused by release of pollutants.
 - (2) Assessment or payment of a fee under this title shall not create any right for any person to seek damages, reduction in damages, contribution, or indemnity from the United States, nor shall it affect the United States's liability or ability to seek damages for injuries caused by release of pollutants.
- (b) **STATE AND LOCAL FEES.**—
- (1) This title shall not be construed to preempt State or local fees for release of

pollutants.

- (2) Any person who pays a State or local fee that is identical to a Federal fee established under this title, or that differs from a fee established under this title only in the rate of assessment, shall be entitled to credit such payment against the amount assessed under the Federal fee.
- (c) **ADDITIONAL LIMITATIONS.**—Assessment or payment of a fee under this title shall not create a property right to release pollutants, nor shall it be construed to hamper the authority of the United States, the States, or local governments to place further restrictions or prohibitions on the release of pollutants or associated actions.

SEC. 104. CLEAN ENVIRONMENT FUND.

- (a) **COLLECTION OF FEES.**—The Administrator shall collect all fees assessed under this title.
- (b) **PAYMENT INTO SPECIAL FUND.**—All fees collected under this title and all fines, civil penalties, and permit fees collected by the Administrator and not required by other statutes to be deposited in a special fund shall be paid into a special fund in the United States Treasury to be known as the Clean Environment Fund.
- (c) **USE OF FUND.**—Subject to appropriation acts, such monies shall be available to the Environmental Protection Agency until expended for —
 - (1) grants for pollution prevention programs;
 - (2) grants for pollution control research and development projects;
 - (3) administrative expenses of the Environmental Protection Agency;
 - (4) grants to States, local governments, and private organizations to redress, mitigate, or investigate the effects of pollution (where the benefits of such actions accrue to the public, rather than specific individuals); and
 - (5) grants of rebates under this title.

SEC. 105. PROHIBITED ACTS.

It shall be unlawful for any person to (a) take an action subject to a fee promulgated under this title without paying the fee in full in a timely manner or (b) to otherwise violate rules promulgated under this title.

TITLE II—DEPOSIT-REFUND SYSTEMS

SEC. 201. DEFINITIONS.

As used in this title—

- (1) a dealer means a person who manufactures goods or imports or buys them for resale as part of a trade, profession, or business.
- (2) authorized representatives of the Administrator include the Administrator and authorized employees and contractors of the Administrator.

SEC. 202. GENERAL AUTHORITY.

- (a) TAKE-BACK SYSTEMS.—The Administrator may, by rule, require sellers of particular goods to take back, without charge, the used goods, the goods' packaging, or the waste products from the goods' normal use, if the Administrator finds that (1) such a take-back system would promote proper disposal or recovery of such items, (2) human health or the environment would be served by separating such items from the general waste stream, or (3) such a take-back system would promote more environmentally benign designs of goods or their packaging.
- (b) DEPOSITS.—
 - (1) In any take-back system created under subsection (a), the Administrator may also require sellers of goods to collect a deposit from the buyer when the goods are sold and refund the deposit to the person returning the item or items subject to take-back.
 - (2) In deciding whether to require a deposit, the Administrator may consider the likelihood of the items being disposed of improperly if not returned, the

level of harm to human health or the environment if the items are disposed of improperly, the level of incentive needed to induce the buyer or other persons to take back the items, or other similar factors. In setting the level of the deposit, the Administrator may consider any of these factors as well as the cost of the goods bearing the deposit.

(c) RULES GOVERNING RETURNS.—

- (1) The Administrator may prescribe rules governing the return of items and the refunding of deposits, including rules regarding the condition returned items must be presented in, the time and place for return and claiming of deposits (including who must bear the cost of transporting the items to the seller), the claiming of deposits by persons other than the buyer or from a dealer not the original seller, the manner of repayment of the deposit, and the keeping of records of the transaction. The Administrator shall design such rules to promote easy return of items and to discourage theft, fraud, or other unlawful acts associated with the transactions.
- (2) In the case of sales between dealers, the dealers may, as part of the sale contract, agree to conditions for the time and place of return and claiming of deposits different from those prescribed in the rules promulgated under this subsection.
- (3) In the case of sales to non-dealers, the Administrator may, by rule, allow sellers to establish central collection facilities to accept returns in addition to or in lieu of the point of sale. The Administrator may allow such central collection facilities only if the Administrator finds their creation and use will not discourage the return of items. In allowing such facilities, the Administrator may prescribe conditions for their creation and use designed to encourage return of items.

- (d) RULES GOVERNING HANDLING OF RETURNED ITEMS.—To protect human health and the environment, the Administrator may promulgate rules governing the storage, transport, treatment, recycling, reuse, or disposal of returned items. The Administrator may provide that such rules operate in lieu of some or all of the rules that may apply to such items under the Solid Waste Disposal Act as amended (42 U.S.C. §6901 et. seq.) or under a State program authorized in lieu of the Federal program under the Solid Waste Disposal Act if the Administrator finds that the rules promulgated under this subsection are at least as protective of human health and the environment as the displaced rules.

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(e) REPORTING AND INSPECTION.—

- (1) The Administrator may require sellers to keep records on items sold and taken back and deposits collected and returned, and may require any person involved in the storage, transport, treatment, recycling, reuse, or disposal of returned items to keep records of those activities.
- (2) The Administrator may require such records be maintained for a reasonable number of years and may require periodic reports of information from such records to the Administrator.
- (3) The authorized representatives of the Administrator, upon presenting credentials, shall have right of entry to, upon, or through any premises or vehicle used for the acceptance, storage, transport, treatment, recycling, reuse or disposal of an item governed by rules promulgated under this title, and may inspect or monitor equipment, goods, waste products, or records involved with such activities. Such access shall be limited to reasonable times, including unusual times if necessary for effective enforcement of this title.
- (4) Any information obtained by the Administrator under this section shall be available to the public, unless the seller or a buyer has established that the information includes confidential information.
- (5) To establish a claim of confidential information, a claimant must show to the Administrator's satisfaction that
 - (i) The claimant has not previously disclosed such information except to persons somehow bound to keep the information confidential;
 - (ii) The claimant is not required to make the information public under any other applicable law; and
 - (iii) Release of the information is likely to unduly harm the competitive position of the claimant or unduly invade the privacy of an individual.

- (f) LABELS AND INSTRUCTIVE INFORMATION.—To make buyers aware of their rights to return items and reclaim deposits, to make sellers better able to identify items for which a deposit refund may be claimed, or to promote the safe handling of returned goods, the Administrator may promulgate rules concerning the labeling

of goods subject to take-back or deposit systems and the informing of buyers of their rights or obligations at time of sale.

- (g) UNCLAIMED DEPOSITS.—The Administrator may, by rule, require dealers to pay to the United States Treasury sums equal to the deposits collected under this title that are unlikely to be reclaimed.

SEC. 203. STATE ACTIONS.

- (a) PREEMPTION.—A take-back or deposit system created under this title shall not preempt a pre-existing system established under State or local law unless the Administrator finds that the pre-existing system unduly burdens the implementation and administration of the Federal system. In making a finding of preemption, the Administrator may find an entire system is preempted or may preempt portions of a system, such as a portion involving specific goods or a portion setting the deposit at some level other than the Federal level.
- (b) ACCOMMODATION.—In creating Federal systems under this title, the Administrator shall take into account existing or proposed State and local systems and shall, to the extent practical, try to accommodate the existing systems to avoid preemption.
- (c) CONDITIONAL PREEMPTION.—If the Administrator finds that a State or local system would not interfere with the Federal system once the State or local government made particular changes to its system, the Administrator may stay preemption for a reasonable time and condition preemption on the State or local government's failure to make such changes.
- (d) SUBSEQUENT SYSTEMS.—Once the Administrator has promulgated a Federal take-back or deposit system, no new or amended State or local system involving the same goods may take effect until the Administrator has made a finding that the new or amended system will not unduly burden the implementation and administration of the Federal system.

SEC. 204. PROHIBITED ACTS.

It shall be unlawful for any person (a) to refuse to take back or return a deposit on an item as required by this title and the rules promulgated under it; (b) to report false, misleading, or incomplete information where rules promulgated under this title require

disclosure or reporting of information to the Administrator or others; (c) to deny entry to an authorized representative of the Administrator acting pursuant to this title; (d) to violate rules promulgated under this title concerning the storage, transport, treatment, recycling, reuse, or disposal of returned items; (e) to fail to pay unclaimed deposits due to the Administrator; or (f) to take any other action in violation of rules promulgated under this title.

TITLE III—TRADEABLE PERMITS

SEC. 301. DEFINITION.

As used in this Act, the term "allowance" means an authorization issued by the Administrator (a) to release a specific pollutant into the environment at a specified rate or quantity for or during a specific period of time; or (b) to import, manufacture, sell, purchase, use, or dispose of a specified quantity of an associated product.

SEC. 302. SCOPE OF AUTHORITY.

- (a) **GENERAL AUTHORITY.**—The Administrator may establish by rule pollution prevention and control programs using transferrable allowances to achieve standards and goals set out in any statute delegating authority to the Administrator to protect the environment.
- (b) **PROGRAM VARIATIONS.**—The Administrator's authority to establish allowance programs under this section includes, but is not limited to, the authority to establish programs with the following features:
 - (1) The Administrator may establish test or demonstration programs or may otherwise limit programs to specific areas or times if, in the Administrator's judgment, such limited programs would contribute to achieving the standards and goals.
 - (2) The Administrator may impose costs on the use of allowances or on any sale, trade, banking, or other transactions involving allowances. Costs imposed on transactions may include requirements that a portion of the allowances be returned to the Administrator unused.

- (3) The Administrator may provide for awards of additional allowances as an incentive to use existing allowances in ways that reduce the overall risk to human health or the environment.
 - (4) The Administrator may restrict the trading of allowances to within particular geographic areas, including airsheds and watersheds, to prevent local human health or environmental risks.
 - (5) The Administrator may provide for means to force sales or otherwise redistribute allowances to ensure some allowances are regularly available for purchase or allocation to new owners.
- (c) PROGRAM REQUIREMENTS.—Any program established under this section shall comply with the following standards:
- (1) The program shall allow holders of allowances to use, bank, sell, or trade allowances only in ways that do not result in significant environmental harm or damage.
 - (2) The Administrator may not issue or renew an allowance unless the Administrator finds that the allowance is not likely to be and has not been used to cause significant environmental harm or damage;
 - (3) No allowance may be issued or renewed for any period in excess of five years, however the Administrator may establish a presumption that an allowance will be renewed over a longer period if the holder and any previous holders have not violated this title and renewal is consistent with preventing significant environmental harm or damage.
 - (4) The program shall contain provisions for inspection and public reporting to facilitate enforcement.
- (d) INITIAL ALLOCATIONS.—The Administrator may establish any initial mechanism for allocation of allowances consistent with protection of human health and the environment, provided that such mechanism allows persons with prior investments of capital in enterprises engaging in activities requiring allowances at least a reasonable opportunity to obtain such allowances.

SEC. 303. ALLOWANCE TRACKING.

- (a) TRACKING SYSTEM.—As part of any program established under this title, the Administrator shall implement a system for tracking issuance, use, transfer, termination, and other actions affecting the ownership and validity of allowances. The Administrator shall design the system to facilitate determination of allowance ownership and validity by enforcers and potential allowance users.
- (b) DETRIMENTAL RELIANCE.—No liability shall attach to the Administrator, the United States, or any of its contractors, employees, or agents for injury caused by reliance on information obtained from such a tracking system.

SEC. 304. SAVINGS PROVISIONS.

- (a) RELATION TO ADDITIONAL REGULATIONS.—Establishment of an allowance system shall not be construed to hamper the authority of the United States to place further restrictions or prohibitions on releases of pollutants or other related actions governed by the system, nor shall an allowance system be construed to create private property rights.
- (b) STATE REGULATION.—This title shall not be construed to preempt State and local laws affecting allowance use or transactions unless such laws interfere with an allowance program's achievement of its environmental objectives.

SEC. 305. PROHIBITED ACTIONS.

- (a) IN GENERAL.—It shall be unlawful for any person to release a pollutant or undertake any other activity governed by an allowance program promulgated under this title unless that person is acting in conformance with an allowance and any regulations promulgated under this title. It shall thus also be unlawful to fail to keep or report complete and truthful records or to fail to allow inspections as required by an allowance program promulgated under this title.
- (b) NO ALLOWANCE SHIELD.—Holding or acting in conformance with an allowance shall not shield a person from the requirements of or excuse a violation of any other law.

TITLE IV—INFORMATION DISCLOSURE SYSTEMS

SEC. 401. PURPOSES.

The purposes of this title are—

- (a) to inform the public of the environmental impact of products placed in commerce so that the public can make better informed decisions concerning the purchase and use of such products;
- (b) to inform the public of the environmental impact of industrial or commercial activities so that the public can make better informed decisions with respect to such activities; and
- (c) to create effective incentives for the voluntary reduction of pollution and environmental risk.

SEC. 402. SCOPE OF AUTHORITY.

- (a) **IN GENERAL.**—To carry out the purposes of this title, the Administrator may, by rule, require public disclosure of any information concerning property or activities in or affecting interstate commerce.
- (b) **FORM OF DISCLOSURE.**—In establishing a program of disclosure under this section, the Administrator may order any reasonable form of disclosure that furthers the purposes of this title. Such forms may include, but are not limited to, product labeling, disclosures before sale, disclosures in advertisements, establishment of public data banks or clearinghouses, and establishment of information sources available through telecommunications.
- (c) **STANDARDS.**—As part of a rule establishing a program of disclosure under this section, the Administrator may establish standards for collection of the information to be disclosed, as well as provisions allowing verification of compliance with the disclosure program.
- (d) **MEASURE OF IMPACTS.**—Where feasible and useful in the judgment of the Administrator, programs of disclosure under this section shall include publication or disclosure of information designed to allow the public to intelligently evaluate

the environmental impact of such activities or products and compare the impact with that of similar activities and products.

SEC. 403. PROTECTION OF TRADE SECRETS.

Any records, reports or information obtained under this title shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that records, reports, or information, or any particular part thereof, (other than emission data) to which the Administrator has access under this title, if made public, would divulge methods or processes entitled to protection as trade secrets of such person, the Administrator shall consider such record, report or information or particular portion thereof confidential in accordance with the purposes of section 1905 of title 18, except that such record, report, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this Act or when relevant in any proceeding under this Act.

SEC. 404. EMPLOYEE PROTECTION.

- (a) **IN GENERAL.**—No person may fire, adversely change the terms and conditions of employment of, or in any other way discriminate against (or cause to be fired, adversely affected, or discriminated against) any employee or any representative of employees because such employee or representative has brought an enforcement action, testified in a government proceeding, or provided information to the Federal government that concerns compliance with this title, or with any other environmental protection law implemented by the Administrator.
- (b) **EXCEPTION.**—This section shall not apply to any employee who, acting without direction from the employer (or the employer's agent), deliberately violates an environmental protection law.
- (c) **GRIEVANCE PROCEDURE.**—Any employee or representative of employees who believes that he has been fired or discriminated against by any person in violation of subsection (a) of this section may seek relief according to the procedures in the Comprehensive Environmental Response, Compensation, and Liability Act §110 (b) & (c) [42 U.S.C. §9610 (b) & (c)], as if the violation were of subsection (a) of that section.

SEC. 405. SAVINGS PROVISION.

This title is not intended to preempt any State standards or regulations or any provision of State common law, and all such standards or regulations or provisions of common law are expressly preserved whether or not they may be construed as being in conflict with or inconsistent with any requirement enacted under this title.

SEC. 406. PROHIBITED ACTS.

It shall be unlawful for any person to fail to fully and truthfully disclose any information required under regulations promulgated under this title. It shall be unlawful for any person to take actions against an employee or representative of an employee prohibited by this title.

TITLE V—GENERAL PROVISIONS

SEC. 501. FEDERAL ENFORCEMENT.

(a) COMPLIANCE ORDERS.—

- (1) Whenever on the basis of any information the Administrator determines that any person has violated or is in violation of any requirement of this Act, including the prohibitions expressed in sections 105, 204, 305, and 405 of this Act, the Administrator may issue an order assessing a civil penalty for any past or current violation, requiring compliance immediately or within a specified time period (including requiring payment in full plus interest of any overdue fees), or both, or the Administrator may commence a civil action in the United States district court in the district in which the violation occurred for appropriate relief, including a temporary or permanent injunction.
- (2) Any order issued pursuant to this subsection may include a suspension or revocation of any allowance issued under this Act and shall state with reasonable specificity the nature of the violation. Any penalty assessed under the order shall not exceed \$30,000 per day of noncompliance for each violation of a requirement of this Act. In assessing such a penalty, the Administrator may take into account the nature, circumstances, extent, and

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gravity of the violation, and with respect to the violator, the ability to pay, any prior history of violations, the degree of culpability, the economic benefit or savings (if any) resulting from the violation, and other such matters as justice may require.

- (b) PUBLIC HEARING.—Any order issued under this section shall become final unless, no later than thirty days after the order is served, the person or persons named therein request a public hearing, and, if the order demands payment of an overdue fee with interest, submits to the Administrator the amount demanded, to be held in an escrow account. Upon such request (and submission) the Administrator shall promptly conduct a public hearing. In connection with any proceeding under this section, the Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may promulgate rules for discovery procedures.
- (c) VIOLATION OF COMPLIANCE ORDERS.—If a violator fails to take corrective action within the time specified in a compliance order, the Administrator may assess a civil penalty of not more than \$30,000 for each day of continued noncompliance with the order and the Administrator may suspend or revoke any allowance issued to the violator under this Act or any permit issued to the violator (whether issued by the Administrator or a State) pursuant to the Clean Air, the Federal Water Pollution Control, or the Solid Waste Disposal acts as amended.
- (d) KNOWING VIOLATIONS.—Any person who knowingly violates a provision of this Act or its implementing regulations, including violating the prohibitions expressed in sections 105, 204, 305, and 405, shall, upon conviction, be subject to a fine of not more than \$30,000 for each day of violation or imprisonment of not more than two years, or both.
- (e) CIVIL PENALTIES.—Any person who violates any requirement of this Act shall be liable to the United States for a civil penalty not to exceed \$30,000 for each such violation. Each day of violation shall, for the purposes of this subsection, constitute a separate violation.

SEC. 502. CITIZEN ACTIONS.

- (a) AUTHORITY TO BRING.—Except as provided in subsection (c) of this section, any person may commence a civil action on his own behalf—
 - (1) against any person (including the United States and any other government

instrumentality to the extent permitted by the Eleventh Amendment to the Constitution) who is alleged to have violated or to be in violation of any requirement of this Act or any order issued by the Administrator, or

- (2) against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this Act which is not discretionary.
- (b) JURISDICTION.—The district courts of the United States shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to hear such an case and grant appropriate relief, including injunctive relief.
 - (c) NOTICE.—No action may be commenced—
 - (1) Under subsection (a)(1) of this section
 - (A) prior to 60 days after the plaintiff has given notice of the violation to the Administrator and to any alleged violator, or
 - (B) if the Administrator has commenced and is diligently prosecuting a civil action in a court of the United States to require compliance with the requirement or order alleged to be violated, but in any such action in a court of the United States any person may intervene as of right.
 - (2) Under subsection (a)(2) of this section prior to 60 days after the plaintiff has given notice of such action to the Administrator.
 - (d) INTERVENTION.—In any action under this section, the Administrator, if not a party, may intervene as a matter of right at any time in the proceeding. A judgment in an action under this section to which the United States is not a party shall not, however, have any binding effect on the United States.
 - (e) AWARD OF COSTS, BOUNTIES, AND DAMAGES.—The court, in issuing any final order in any action brought pursuant to subsection (a) of this section, may award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever the court determines such award is appropriate. In addition, the court shall award the person or persons commencing the action a bounty of fifty percent of any civil penalties or delinquent fees and interest assessed by the court.

SEC. 503. GENERAL DEFINITIONS.

As used in this Act,—

- (1) the term "Administrator" means the Administrator of the Environmental Protection Agency.
- (2) the term "associated product" means a material imported, manufactured, purchased, sold, used, consumed, or disposed of, in whole or in part, in the production of goods or services.
- (3) the term "environment" includes water, air, and land and the interrelationship which exists among and between water, air, and land and all living things.
- (4) the term "person" includes an individual, partnership, corporation, association, State, political subdivision of a State, and any agency, department, or instrumentality of the United States and any officer, agency, or employee thereof.
- (5) the term "pollutant" means any solid, liquid, or gaseous substance, heat, or radioactivity.
- (6) the term "release of pollutants", or the term "release" used in reference to pollutants, means any action that introduces one or more pollutants into the environment, including spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing.
- (7) The term "significant environmental harm or damage" means any of the following:
 - (A) A significant risk of death, reproductive impairment, serious illness, or serious bodily injury to any human population or individual (including hypothetical individuals) as determined by the Administrator in accordance with generally accepted risk assessment methods;
 - (B) Actual bodily injury, illness or serious discomfort to any human population or individual;
 - (C) Actual physical damage to property or materials;
 - (D) A significant risk of death or reproductive impairment to plant, animal, or other life (other than the intended target of a pesticide or drug), as

determined by the Administrator in accordance with generally accepted risk assessment methods;

- (E) Actual death or reproductive impairment to a significant portion of any population of plant, animal or other life (other than the intended target of a pesticide or drug);
 - (F) Actual damage to any ecosystem;
 - (G) The actual impairment of any beneficial use of the air or water including recreational uses and visibility;
 - (H) Interference with the attainment or maintenance of any ambient air quality standard set by the Administrator or a State pursuant to provisions of the Clean Air Act, or any in-stream water quality criterion set by the Administrator or a State pursuant to provisions of the Federal Water Pollution Control Act.
- (8) the term "State" means a State, an Indian tribe, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or any other territory or possession of the United States.

SEC. 504. CORPORATE RESPONSIBILITY.

Any requirement, obligation, or duty that this Act imposes upon a corporation is also imposed upon the responsible officers of such corporation. Any administrative, civil, or criminal action that this Act authorizes to be brought against a corporation may also be brought against any responsible officer of such corporation.

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