
COMBINING LEGAL MANDATES WITH ECONOMICS IN THE APPLICATION OF ENVIRONMENTAL LAW

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SUMMARY

It has been the experience of United States Environmental Protection Agency (EPA) that strong environmental protection has helped, not hurt, the U.S. economy. EPA does not see the economy and the environment as being in conflict; instead they are mutually supporting. This paper discusses the role of monetary penalties in improving compliance with environmental requirements, analyzes how the 'polluter pays' principle has been implemented in the United States, and presents case studies on both civil and criminal penalties.

1 INTRODUCTION

This paper briefly describes the environmental enforcement challenges faced in the United States. We use sound economic approaches to apply the "polluter pays principle." Today EPA achieves very high compliance rates without being unduly punitive and usually without closing enterprises or causing unemployment. We see this linkage of law and economics as a key ingredient for our success in the U.S.

In the United States, this economic competition and resulting environmental degradation resulted in the creation of United States Environmental Protection Agency (EPA) in 1970. Since then, in the world's biggest economy, the EPA has been able to control pollution while at the same time allow our industries to be economically competitive in a global economy. Likewise, nations across the globe are privatizing, democratizing, transitioning, and rapidly developing. In many respects, the United States is a microcosm of all of these characteristics. Science and technology are key to solving or improving most environmental problems. Knowledge is also widely shared as to what makes good envi-

ronmental law. Many nations, however, lack the political will to enforce environmental laws. This lack of will arises from the perceived conflict between economic goals and the desire to protect the environment.

Responsibility for successful enforcement of environmental standards is in my office within the EPA, the Office of Enforcement and Compliance Assurance. In the enforcement of our environmental laws, we follow a philosophy of "Smart Enforcement," which is using the most appropriate tools to address the most significant problems to achieve the best outcomes. We also build in human economic motivators. As a result, we have made good progress toward including economic incentives within the effective enforcement of the law.

This paper is about pollution control, which we handle very effectively in the United States. EPA applies sound economic approaches by using the "polluter-pays principle." We see this linkage of law and economics as a key ingredient of our success in enforcing environmental law, and we recommend this approach to any nation.

2 ECONOMICS AND MAKING THE VIOLATOR PAY

In the United States, Congress created command-and-control statutory mandates that define prohibited acts and prescribe penalties. To execute this statutory intent, our core enforcement program has strategically focused on the “outlaws” or violators of environmental laws. EPA applies these laws with well-known rigor that creates the cognizance in the regulated community that violations are likely to be detected and followed by an enforcement response that imposes a heavy penalty or sanction. By making it unprofitable to fail to comply immediately, the government is able to get prompt, voluntary conformity or compliance from most companies. The rest we punish, deter or dissuade.

Our U.S. approach of large penalties, and sometimes imprisonment, may seem excessive today in countries where there is consideration of using economic instruments as the best way to encourage environmental compliance. Some countries enjoy a culture of greater cooperation, respect for government, and voluntary adherence to green values and laws. But in many parts of the world there is great poverty, corruption and chaos, for which only a very strong hand of government can exert any control. As a result, based on the experience of the U.S., it may be necessary to be very strong in command-and-control applications of economics-based enforcement instruments.

The goal of a pollution control economic policy instrument is to minimize unwanted “externalities” by having enterprises internalize all costs, including pollution control, in product pricing. Because the EPA is well known to be an effective enforcer, most regulated enterprises choose to pay for effective pollution control and do achieve compliance. As a result, fear of EPA enforcement is an important motivator for compliance. Whatever other motivation may be present, a small governmental expenditure on dissuasion or deterrence produces a huge investment in pollution control. In this way, the permitted and

lawful polluter internalizes the cost of pollution control.

For violators, we make sure that the costs to be internalized and paid are even higher. In a limited way, we have done this under some of our laws that require the clean up of sites and natural resources damaged by the release or improper disposal of hazardous wastes and substances. In an ideal or theoretical world, we would always price the natural resources – including air and water – damaged. But in most pollution control enforcement cases, it is neither necessary nor possible for EPA to price either the value of the natural resources damaged, or the cost of their clean up or restoration. Usually, violations of our laws do not involve catastrophic spills. Most violations result from routine operational mismanagement and everyday illegal pollution from chimneys, stacks and pipes from factories and other plant facilities. Indeed, it is very important to our overall success that EPA laws are applied early and preventively, usually before there is measurable natural resource damage or harm to public health.

For the EPA enforcement program, it is enough just to prove that the violating source discharged, emitted or released more pollutants to the environment than permitted or to prove that the facility operated outside of the law. Our source-based controls typically define the allowed parts per million or smaller for each chemical, and it is a violation to allow anything more to leave the chimney, stack or pipe. It is precisely because EPA does not either use ambient controls or try to measure environmental damage, but relies on source-based controls, that it has become possible for EPA to prove most routine violations. We do not have to prove the cost of the environmental damage or wrongful externalities. We look elsewhere. A starting point is the maximum penalty set by law; it provides the upper limit of the penalty amount. Under the typical EPA statute, each day of exceedance for each controlled chemical is a separate violation, and each day of violation may be penalized up to as much as \$32,500 per day. Violations continuing for a

period of time or for multiple pollutants can quickly reach tens or hundreds of millions of dollars. By referring to that maximum penalty, EPA quickly gets the attention of a violator.

The maximum penalty available by law often has little rational relationship to the facts and to economics. EPA's goal is not to use the highest possible penalties to cause unemployment by closing enterprises, but to keep enterprises open provided they operate in compliance. Assuming that a violating enterprise wants to remain open, EPA first requires the installation of all required pollution control equipment. Then, EPA takes the following three steps to provide economic incentives to violators to comply with the law.

2.1 Assessing "Compensatory" Penalty Component to Recover the Economic Benefit of Noncompliance

In this penalty calculation, EPA applies a very effective "economic instrument" by which "the polluting violator pays." In this regard, EPA's economic goal is to level the economic playing field in the enterprise sector of which the violator is a member. EPA sets the monetary penalty at a level that recovers from the violator the full "economic benefit of noncompliance," to recapture the violator's wrongful cost savings from not controlling pollution, and from undercutting non-polluting competitors. If this was not corrected, polluters would drive out compliers, and ultimately only lawbreakers would remain operating. To eliminate this unfair economic advantage, EPA calculates the wrongful savings by the violator as this "compensatory" element of the penalty. "BEN" is the name of EPA's model used to (<http://www.epa.gov/oeca/datasys/dsm2.html>) calculate the present value of the violator's failure to buy, install, and operate pollution-control technology. Because a violator should not be permitted to realize any illicit economic gain from a violation, this amount is almost always recovered and usually is not reduced in negotiations. EPA economists

have testified in court in support of the efficacy of BEN calculations, and judges have regularly upheld EPA's penalty assessment method as based on sound economics, principled, and fair. BEN is a huge success for us.

2.2 Adding the "Punitive" Component of the Penalty

BEN is only the beginning. We have found that if all an enterprise has to do is pay a penalty to restore the level playing field, most will just wait until they are caught. Instead, to create a reason for business to comply voluntarily and to deter others from not complying with the law, EPA increases the monetary penalty by the punitive – what we call "gravity based" – element of the penalty. This is adjusted up by considering factors such as the extent of departure from required behavior and whether there was the potential or actuality of environmental harm. At this point, if we have any information as to the value of the natural resources damaged, this may be considered not as a matter of economic compensation but as justification for an additional penalty that is a punishment. Finally, we may also adjust penalties downward in consideration of the defendant's cooperation and lack of prior offenses.

2.3 Reducing Penalties by the Value of Voluntary Work to Go Beyond Compliance

Beginning in 1991, EPA began developing ways to reduce payment as punishment and to do more to encourage environmentally desirable behavior – while still using our traditionally tough enforcement processes and large penalty assessments. We now may agree to reduce the punitive component of the final penalty assessment by the amount paid by the violator for certain extraordinary actions that the violator agrees to take to protect the environment or to assure future good behavior. These refinements by EPA policy have been well received by the public and by companies found in violation. As a result, EPA now has "carrots to accompany

the stick” These “carrots” encourage the right behavior, benefit the environment, and in many instances those communities that were impacted by violator’s actions.

Supplemental Environmental Projects (SEPs) are actions that qualify for such a penalty reduction. These must (1) be in addition to required compliance with EPA’s end-of-pipe or stack pollution control requirements; (2) “go beyond compliance” with EPA’s pollution control requirements, and thus be extraordinary projects that are even more protective of the environment than is legally required; and (3) cost no less than the amount of the penalty mitigated. EPA will not reduce its penalty more than the amount of the violator’s expenditure on a SEP. Because a violator should not be permitted to realize any economic gain from a violation, the economic benefit component of the penalty is always recovered and not mitigated. Penalty reductions for SEPs may only apply to reduce the punitive penalty, and usually at least some penalty must be paid so that no violation is “free.”

Some types of SEPs are:

- (1) production process (source reduction, waste minimization) changes to prevent pollution (not just control it);
- (2) environmental restoration or clean-up activities upstream, where others caused contamination, or of damage not caused by the violation; and
- (3) community emergency planning and preparedness assistance, such as providing hazardous materials control equipment or training to local governments that must respond to pollution emergencies. To calculate the cost of the SEP on economic principles, we use a computerized economic model.

2.4 EPA’s Enforcement Policies on Environmental Auditing

In the United States, permitted polluters must self-monitor pollution control performance and report certain self-monitoring results. Beyond this, there is no legal requirement for companies to conduct

comprehensive self-audits or to develop environmental management systems. EPA welcomes the activities of the industry-based International Standards Organization (ISO) that encourage environmental audits or environmental management systems (EMS).

However, because the ISO 14000 program does not address compliance per se, it does not fulfill EPA legal requirements. So, EPA by policy incorporated environmental auditing firmly within the enforcement process, an achievement that we believe to be highly significant and perhaps unique. Starting in 1986, a violator’s voluntary agreement to do an environmental audit may be the basis for a substantial reduction in the punitive portion of its EPA penalty assessment. Additional penalty reductions may be given to government agencies or nonprofit organizations that are violators, provided they use their money to come into compliance and remain so. Also, small enterprises in violation now may receive total penalty credit and pay no penalty if they agree to perform continuous environmental self-audits to report and correct violations. EPA invites violators to “voluntarily” conduct an audit (which EPA cannot legally require), rather like a voluntary Supplemental Environmental Project that the government will reward in the same way. It is EPA’s reputation for tough enforcement that has greatly increased the use of auditing. A 1995 survey showed that in the U.S. more than 90% of the responding enterprises that conducted environmental audits did so to find and correct environmental violations before they were found by government inspectors and punished! (While the cost of the audit is credited to reduce the penalty, the cost of correcting or achieving compliance based upon the audit’s findings – which by law must be done anyway – is not credited.)

Even where EPA has not identified a violation, EPA’s audit policy encourages companies to discover violations and disclose them to EPA. This must be done in a way that is systematic, prompt and independent. The company must agree to correct and remediate harm, prevent recur-

rence, make information publicly available and cooperate with regulators. EPA reserves to the government the right to protect the public health and the environment in cases of serious violation. EPA's audit policy does not excuse and does not apply where there are repeat violations or there is a pattern of violations, imminent or substantial endangerment or serious actual harm, criminal conduct or substantial economic benefit from noncompliance. There is no total amnesty.

2.5 Environmental Auditing in Relationship to Criminal Cases

Where a criminal case is filed, for many years it also has been the policy of national prosecutors and many national judges to encourage environmental auditing. A guilty environmental offender may receive a reduced sentence where there was already in effect a good faith environmental auditing or compliance program. Similarly, an offender can expect some leniency when, reasonably promptly after becoming aware of the crime, the offender reports it to government authorities, cooperates and accepts responsibility. Also, when sentencing an environmental offender, leniency may be shown to the offender who agrees to begin an effective environmental auditing program to prevent and detect future violations. In this way, criminal punishment, like civil penalties, is reduced to encourage and reward environmental auditing.

EPA by policy will not initiate criminal cases against companies that voluntarily and promptly disclose and correct violations and meet the specific conditions of the audit policy. But where an enterprise or its employees ignore audit reports of violations, are willfully blind to violations or conceal or condone continuing non-compliance, any audit report may become what we call a "smoking gun" or strong evidence of guilt. Then, the audit report may be evidence of knowledge of violations, intent to continue to violate, and thus actual criminal behavior of the most serious kind.

3 CASE STUDIES

These principles can be illustrated with two examples of U.S. cases. Usually EPA files a formal complaint with a court or administrative judge to begin the enforcement action based on violations. Civil court proceedings and administrative cases seek monetary penalties paid to the U.S. Treasury, and a court order, if needed, to stop an illegal or dangerous activity or to require a clean up. The filed complaint brings industry lawyers to the table to negotiate with the government over the resolution of the problems. Because EPA collects good evidence of violations, most cases are settled without trial.

3.1 Civil Case Example

The "Petroleum Refinery Initiative," is one of the most successful enforcement initiatives undertaken by the EPA (<http://www.epa.gov/compliance/civil/programs/caa/oil/index.html>). This initiative illustrates how "global" agreements (addressing major sources of pollutants at all of an enterprise's facilities at once) in a specific sector are economically feasible while improving environmental performance. Since 2000, EPA has entered into settlements for environmental compliance with petroleum refining companies that control approximately 40 percent of the nation's refining capacity in more than 20 of our 50 states. Negotiations are continuing with refiners representing another 40 percent of the nation's refining capacity. Taken as a whole, these settlements will (based on the settling companies' estimates) result in a reduction of atmospheric emissions of nearly 45,000 tons of nitrogen oxide, more than 95,000 tons of sulphur dioxide, and large reductions of benzene, volatile organic compounds and particulate matter. The companies agreed to invest nearly \$2 billion in control technologies, pay civil penalties of \$36.8 million, and perform Supplemental Environmental Projects valued at approximately \$25 million. One SEP was the donation of an island for a county park, another to install pollution controls on pub-

lic school buses.

The Petroleum Refinery Initiative applied an innovative, enterprise-wide approach, addressing major sources of pollutants at all of an enterprise's refineries at once, rather than taking a traditional facility-by-facility, violation-by-violation enforcement path. This approach enabled EPA and refining companies to efficiently and quickly address many environmental problems presented by this large and complex industrial sector.

By agreeing to address pollution problems in a coordinated, enterprise-wide basis, settling refiners were able to receive the first refinery-wide emission caps negotiated in a consent decree. By avoiding a chimney-by-chimney regulatory approach, these plant-wide caps enhance a refiner's flexibility for producing fuels. These caps are expected to help eliminate production problems that could limit fuel supplies and raise prices, to improve plant efficiency, and to significantly reduce emissions. The refineries also agreed to use the most modern control technologies. For example, detection and repair of leaking equipment and benzene waste will be controlled by measures exceeding what is required by national law. Moreover, in some instances, as permitted by law, settling refineries are partnering to develop new and better control technology.

These cases illustrate that there is almost always some penalty money paid to the government, even when an enterprise eventually cooperates. The U.S. approach to environmental enforcement which includes payment of penalties is a strong deterrent to future violations. Without penalties, even for the first violation, most companies would not comply until they are caught. Moreover, the government does not have the resources to prosecute all of those companies that are out of compliance. Therefore, the EPA almost always imposes a cash penalty. We find that this creates an atmosphere in which enterprises will choose to comply because they are "deterred" from committing violations, and because they believe that our system is fair. We estimate that in the U.S. the rate of compliance with

EPA requirements is between 80% and 95% in various programs.

3.2 Criminal Case Example

In criminal cases, the government seeks prison time for individuals who commit environmental crimes. In the United States, while we have been developing economic incentives to encourage compliance, simultaneously we have strengthened our means to compel it using forms of dissuasion exceeding what can be achieved by economics and monetary penalties. Today we have a national force of about 225 EPA pollution control police officers. They increase the stakes for industry. Sending to prison those managers and workers who pollute intentionally is very popular with the American people, who regard environmental crime as unacceptable behavior.

For example, treatment as criminals is both appropriate and necessary for international businesses that smuggle chlorofluorocarbons (CFCs). Within the U.S. the market for illegal CFCs is as profitable to smugglers as illegal narcotic drugs. EPA's national environmental police, together with customs and revenue police, find these criminals and bring them to our Department of Justice for prosecution.

The case of AGA International Corporation and Barry Himes is one of many in the U.S. against smugglers who would undercut the Montreal Protocol on Substances that Deplete the Ozone Layer. Mr. Himes imported CFCs from Russia and China that were shipped through Canada into the U.S. Between 1996 and 1998, more than one million pounds of CFCs were imported illegally, falsely described as recycled. The criminals used various shell companies and offshore bank accounts in the Bahamas and Antigua to conceal their control of these transactions to defeat efforts by tax authorities to collect the substantial excise tax that the U.S. imposed to promote use of ozone-friendly replacement products.

Himes was charged as a criminal and pled guilty in a national court. In 2003,

he was sentenced to six and a half years in prison and ordered to pay \$1.8 million in restitution and a fine of \$12,500. Mr. Himes had previously forfeited to the government more than \$3 million in property including an expensive home, car and jewelry. His principal colleague was sentenced to a term of four years in prison and ordered to pay \$1.2 million in restitution. Ten other persons pled guilty and each received an average of one and half years in prison.

This criminal case illustrates that sometimes deterrence fails. To an economist, it may seem crude or incorrect to say that such command-and-control enforcement illustrates the application of an economic instrument. To this I can only answer that surely criminal polluters “pay” dearly when they receive such sentences. A major advantage to society of having the criminal proceedings and penalties available is that this tool produces so great a deterrent effect that usually it seldom has to be used.

As economists observe, good information is essential to making rational choices. For this reason, EPA regularly issues announcements regarding significant enforcement case filings and conclusions. We are very transparent, even making available on the Internet the compliance records of violators. From anywhere in the world, you can visit our Internet site to see if an enterprise operating in the United States has performed within the law or is in violation (<http://www.epa.gov/echo>). If a violating enterprise is coming to your nation, we want you to know so that you may consider imposing special permit conditions and surveillance.

4 CONCLUSION

This paper has described how in the U.S. we use sound economic approaches to apply the “polluter pays principle.” Today EPA achieves very high compliance rates without being unduly punitive and usually without closing enterprises or causing unemployment. We see this linkage of law and economics as a key ingredient for our success in the U.S., and we recommend this approach to any nation that would effectively enforce its environmental law.

The United States Environmental Protection Agency wants to cooperate with all nations seeking better environmental enforcement. We readily collaborate with all like-minded nations that ask our help to improve their domestic environmental enforcement capacity, and nations that want to develop cases against international environmental criminals. EPA is ready to be a partner in this effort.

5 REFERENCE

This paper was presented to the Organisation for Economic Co-operation and Development on December 1-2, 2004, at its Global Forum for Sustainable Development in Paris. Ms. Harris has served as the United States Environmental Protection Agency’s number-two enforcement official since 2001. She is also a Co-Chair of the International Network for Environmental Compliance and Enforcement (INECE).

ENVIRONMENT COOPERATION BETWEEN THE PROVINCE OF OVERIJSSSEL AND THE ENVIRONMENTAL COMMITTEE OF THE CHAMBERS OF COMMERCE

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SUMMARY

The province of Overijssel and the Environmental Committee of the Chamber of Commerce (representing the trade industry) joined forces in a cooperation program. The province and the Environmental Committee consult each other regularly (three to four times a year). Agreements made in these meetings are agreements between the province, the Chambers of Commerce, and the Federation of Netherlands Industry and Employers Central Region. These parties consider it important that the Overijssel environmental partners develop their mutual activities in cooperation, which is why they want to stimulate the coherence by consultation and by developing mutual activities. In 2004, the first collective program was implemented. This paper discusses the targets achieved, the projects continued in 2005, and the outcomes of the cooperation project.

1 INTRODUCTION

The province of Overijssel and the Environmental Committee of the Chamber of Commerce (representing the trade industry) joined forces in a cooperation program to achieve concrete results. The province of Overijssel is convinced that the economy and the environment should be balanced, with room for both entrepreneurship and limit the burden on the environment. As it is, we strive for safer and healthier living conditions in Overijssel.

This cooperation program contributes to a cleaner environment by removing a number of impediments. The program combines knowledge and skills of the trade and industry and the authorities of Overijssel. The province and trade association have agreed on projects they will implement together. Such a far-reaching cooper-

ation is unique in the Netherlands, and only possible due to two crucial aspects.

First, both the authorities and the industry group feel responsible for approaching a number of collective spearheads of the environmental policy. We also want to start and implement them together. No fat documents, but actually off to work and using knowledge, skills and financial means as effectively as possible!

Second, acknowledging the own responsibility has been of major influence in forming the cooperation. Respect and room for the typical roles of the authorities and the trade and industry give both parties the necessary room to implement projects collectively. "Trust" is a key word!

Environmental policy is one of the main subjects of the Chambers of Commerce in Overijssel. Environmental policy remains an important surrounding factor.