Will Pollution Rights Trading Effectively Control Environmental Problems?

YES: Charles W. Schmidt, from "The Market for Pollution," *Environmental Health Perspectives* (August 2001)

NO: Brian Tokar, from "Trading Away the Earth: Pollution Credits and the Perils of 'Free Market Environmentalism,' " *Dollars & Sense* (March/April 1996)

**ISSUE SUMMARY**

YES: Freelance science writer Charles W. Schmidt argues that economic incentives such as emissions rights trading offer the most useful approaches to reducing pollution.

NO: Author, college teacher, and environmental activist Brian Tokar maintains that pollution credits and other market-oriented environmental protection policies do nothing to reduce pollution while transferring the power to protect the environment from the public to large corporate polluters.

Following World War II the United States and other developed nations experienced an explosive period of industrialization accompanied by an enormous increase in the use of fossil fuel energy sources and a rapid growth in the manufacture and use of new synthetic chemicals. In response to growing public concern about the pollution and other forms of environmental deterioration resulting from this largely unregulated activity, the U.S. Congress passed the National Environmental Policy Act of 1969. This legislation included a commitment on the part of the government to take an active and aggressive role in protecting the environment. The next year the Environmental Protection Agency (EPA) was established to coordinate and oversee this effort. During the next two decades an unprecedented series of legislative acts and administrative rules were promulgated, placing numerous restrictions on industrial and commercial activities that might result in the pollution, degradation, or contamination of land, air, water, food, and the workplace.

Such forms of regulatory control have always been opposed by the affected industrial corporations and developers as well as by advocates of a free-market policy. More moderate critics of the government’s regulatory program recognize that adequate environmental protection will not result from completely voluntary policies. They suggest that a new set of strategies is needed. Arguing that “top down, federal, command and control legislation” is not an appropriate or effective means of preventing ecological degradation, they propose a wide range of alternative tactics, many of which are designed to operate through the economic marketplace. The first significant congressional response to these proposals was the incorporation of tradable pollution emission rights into the 1990 Clean Air Act amendments as a means for achieving the set goals for reducing acid rain—causing sulfur dioxide emissions. More recently, the 1997 international negotiations on controlling global warming in Kyoto, Japan, resulted in a protocol that includes emissions trading as one of the key elements in the plan to limit the atmospheric buildup of greenhouse gases.

Despite past difficulties in obtaining compliance with or enforcing strict statutory pollution limits, the idea of using such market-based strategies as the trading of pollution control credits or the imposition of pollution taxes has won limited acceptance from some major mainstream environmental organizations. Many environmentalists, however, continue to oppose the idea of allowing anyone to pay to pollute, either on moral grounds or because they doubt that these tactics will actually achieve the goal of controlling pollution. Diminishment of the acid rain problem is often cited as an example of how well emission rights trading can work, but in “Dispelling the Myths of the Acid Rain Story,” *Environment* (July-August 1998), Don Munton argues that other control measures, such as switching to low-sulfur fuels, deserve much more of the credit for reducing sulfur dioxide emissions.

In “A Low-Cost Way to Control Climate Change,” *Issues in Science and Technology* (Spring 1998), Byron Swift argues that the “cap-and-trade” feature of the U.S. Acid Rain Program has been so successful that a similar system for implementing the Kyoto Protocol’s emissions trading mandate as a cost-effective means of controlling greenhouse gases should work. In March 2001 the U.S. Senate Committee on Agriculture, Nutrition, and Forestry held a “Hearing on Biomass and Environmental Trading: Opportunities for Agriculture and Forestry,” in which witnesses urged Congress to encourage trading for both its economic and its environmental benefits. Richard L. Sandor, chairman and chief executive officer of Environmental Financial Products LLC, said that “200 million tons of CO2 could be sequestered through soils and forestry in the United States per year. At the most conservative prices of $20-$30 per ton, this could potentially generate $4-$6 billion in additional agricultural income.”

In the following selections, Charles W. Schmidt describes the use of economic incentives to motivate corporations to reduce pollution, and he argues that emissions trading schemes represent “the most significant developments” in this area. Brian Tokar has a much more negative assessment of sulfur dioxide pollution credit trading. He argues that such “free-market environmental” tactics fail to reduce pollution while turning environmental protection into a commodity that corporate powers can manipulate for private profit.
The Market for Pollution

Throughout much of its short history, environmental protection in the United States has been guided by a traditional paradigm based on strict regulatory guidelines for reducing emissions and punishments for noncompliance. Experts credit this traditional approach with improvements in air and water quality evident since the U.S. Environmental Protection Agency (EPA) was created more than 30 years ago. Tough environmental standards imposed under programs such as the Clean Water Act and the Clean Air Act filled a regulatory void and forced industries to cut their emissions or face heavy fines. Many of the greatest gains were seen with respect to point sources such as smokestacks and effluent pipes that could be easily monitored. But beyond the avoidance of penalties, industries regulated under those so-called command-and-control programs had little motivation to develop advanced pollution control technologies, which produced little economic gain.

Today, many stakeholders believe a more modern framework based on economic incentives that allow companies to profit from achieving environmental goals will build on the achievements of the past and allow for even greater improvements in environmental protection. Types of incentives vary widely, but they all share one thing in common: they attach a monetary value to the act of reducing pollution. In a January 2001 document titled The United States Experience with Economic Incentives for Protecting the Environment, the EPA described several types of incentives, including fees and taxes levied on pollutant releases, tax rebates for environmental technologies, and the trading of air emissions permits on the open market.

Attention is increasingly turning to the use of economic incentives in the wake of President George W. Bush's pledge to make them a foundation of his environmental policy. During the 2000 presidential campaign, Bush said that under his watch government would "set high environmental standards and provide market-based incentives to develop new technologies ... so that Americans could meet and exceed those standards."

Business organizations have responded warmly to the administration's support for incentives. For example, the Business Roundtable, a Washington, D.C.-based nonprofit organization of "CEOs committed to improving public policy," released a statement on 17 May 2001 that "applauds President Bush for incorporating the use of new technologies, as well as incentives that spur technological innovation, as the cornerstone of the administration's national energy policy."

Among the environmental community, the idea that market instruments could be used to control pollution was initially greeted with skepticism and even hostility. But over time, support has risen to a level that Joseph Goffman, a senior attorney with the public interest group Environmental Defense in Washington D.C., describes as "lukewarm to enthusiastic in many cases.”

According to Goffman, economic incentives motivate companies to reduce pollution quickly and to exceed environmental standards whenever possible. This is in contrast to command-and-control approaches, which he says stifle innovation while encouraging polluters to do little more than meet minimum requirements. Under a traditional system, the EPA not only sets environmental standards, it often describes how companies should achieve them—a scenario sometimes described as "technology forcing."

Goffman suggests the downside to this approach is that the EPA usually only sets standards that can be met with current technology. This means companies have to wait for the agency to finish a technology review before either the EPA or the states revise a given standard. "With incentive programs," he says, "you don't have this kind of chicken-and-egg mentality. The agency sets a target and leaves the means of compliance up to industry. Companies want to profit from pollution control, so they invest more resources in technology development.” Furthermore, Goffman adds, market forces naturally gravitate toward the least-cost option for reducing pollution, while traditional regulatory strategies lock companies into technologies that become progressively less effective, and thus less attractive, over time.

Most experts suggest it's too soon to gauge where and how incentive programs will grow under the Bush administration. This is because a host of key positions at the EPA and other agencies remain unfilled, and policy directions have yet to be fully clarified. However, Bush's commitment to market forces is undiminished, as indicated by comments from White House spokesperson Marcy Viana, who, referring to the president's position on global warming during an interview on 4 June 2001, said, "[He is] committed to reducing greenhouse gas emissions by drawing on the power of the market and the power of technology."

Emissions Trading Schemes

The most significant developments in incentive programs have occurred in the area of emissions trading, through which air pollutants are viewed as tradable commodities, each with its own regional, national, and even international markets. In an emissions trading program, companies that emit less than their assigned limits, or caps, of a pollutant can sell residual allowances on the open market or bank them for future transactions. This gives other, higher-polluting facilities a choice: either buy allowances and continue releasing the same pollutant or clean their own emissions—whichever is cheaper. The only stipulation is that regional environmental quality continue to meet mandated standards.

These so-called cap-and-trade schemes aren’t new. The best-known example is the Acid Rain Program established under the Clean Air Act amendments of 1990, which allows electric utilities to trade allowance credits in sulfur dioxide (SO2). Many experts point to this initiative, which achieved dramatic reductions in SO2 at lower costs than expected, as an emissions trading success story. The EPA estimates that since the program was formalized in 1995, annual emissions of SO2 have fallen by 4 million tons, while rainfall acidity in the Northeast has dropped by 25%. Dallas Burtraw, a senior fellow at Resources for the Future in Washington, D.C., says the program works well because it’s simple, it sets firm environmental targets, it keeps transaction costs to a minimum, and it’s transparent—meaning that information on available allowances and credit trades is freely available to the public.

The success of the Acid Rain Program has fueled the development of similar initiatives within the private sector. Undeterred by President Bush’s rejection of the Kyoto Protocol, a diverse group of 34 major companies called the Chicago Climate Exchange (CCX) recently announced an emissions trading scheme for carbon dioxide and other greenhouse gases. Boasting high-profile members such as BP, Ford Motor Company, DuPont, and International Paper, this effort aims to reduce greenhouse gas emissions to 5% below 1999 levels by 2005. The CCX’s role will be similar to that of an organized commodity exchange—it will establish the requisite technical infrastructure, common standards, and a computerized platform through which participants can trade in emissions reductions.

Richard Sandor, project leader at the CCX, points to the following hypothetical trade as an example of how the system will work: Two companies, a manufacturer with advanced pollution control technology and a power plant with older controls, agree to cut their combined emissions of greenhouse gases by three tons each for a total of six tons. Taking advantage of its superior technology, the manufacturer can cut its own emissions by five tons at minimal cost while the power plant can only reduce its own emissions cost-effectively by one ton. But by purchasing the rights to the additional two tons from the manufacturer, the power plant pays for another company to reduce greenhouse gases on its behalf. In this win-win situation, the manufacturer takes in revenues for reducing pollution while the power plant avoids higher costs by passing off its emissions reductions agreement to another source.

According to Sandor, the CCX will facilitate trades among seven midwestern states that together comprise the fourth-largest trading bloc in the world. The CCX also plans to include Brazil as a member, indicating the organization hopes to achieve an international presence. Says Sandor, “We’ve had a fantastic response from industry. We expect to be in the design phase for 12 months and to begin trading by 2002.”

The states have also gotten into the game. In Southern California, a cap-and-trade program known as the Regional Clean Air Incentives Market, or RECLAIM, is being used to control SO2 and nitrogen oxide (NO2) air emissions from 360 industrial facilities, including power plants, in Los Angeles and the San Bernardino Valley. A coalition known as the Ozone Transport Commission, comprising the environmental agencies from 13 northeastern and midwestern states and the federal EPA, has developed a cap-and-trade program for NO2. And elsewhere, in Chicago, a cap-and-trade program for volatile organic compounds was established by the Illinois EPA in early 2000. The states have, for the most part, had a measure of success with these programs. The Ozone Transport Commission announced on 10 May 2001 that NO2 emissions for 1999 and 2000 were less than half those reported in 1990, before the cap-and-trade system was implemented. California’s RECLAIM system has been in operation since 1993 but is just now beginning to demonstrate results. The reason for the delay, says Sam Atwood, spokesperson for the Diamond Bar-based South Coast Air Quality Management District, which coordinates RECLAIM, is that state-mandated “allocations” (a state term that defines the emissions that can be traded under the cap) for SO2 and NO2 have only recently been set at levels below actual emissions released by industry. For several years after the program was initiated, facilities regulated under RECLAIM were allowed to emit SO2 and NO2 at unusually high levels to cushion the economic shock of a recession that took place during the early 1990s. “By dropping the allocation levels below real emissions, we’re just starting to cross over to the point where the incentive begins to kick in,” says Atwood. “This is when we expect to see voluntary improvements in technology.”

The Question of Mobile Sources

In a recent and somewhat controversial trend, emissions trading schemes have begun incorporating mobile sources, such as cars and trucks. Under this approach, stationary sources such as factories can obtain emission credits from regulators by paying to have old, highly polluting vehicles taken off the road. For example, RECLAIM recently issued a rule allowing stationary sources to receive mobile source credits by replacing diesel-fueled heavy-duty vehicles with cleaner-running alternatives.

Burtraw suggests this practice provides a major opportunity for cost savings. “It can be a lot less expensive to reduce emissions from mobile sources than stationary sources,” he explains. But he concedes that adding mobile sources to the mix doesn’t come without its own unique set of challenges. “People are all too willing to bring in an old lemon that barely runs so they can collect $500 from a utility company,” he says. In a case like this, the emissions reduction is negligible because the car isn’t driveable anyway.

Goffman says programs that include mobile sources need to incorporate safeguards to prevent this kind of abuse. The challenges exist, he says, but solutions are available if the systems are well designed at the outset. The South Coast Air Quality Management District, for example, only agrees to pay credits for cars that could continue running for three years or more.

Trading Issues

Despite a generally positive response from the stakeholder community, emissions trading still raises a number of important concerns. Perhaps the greatest worry is that it might lead to “hot spots,” or areas of high pollutant exposure. A
the paper, open market trading could "cripple enforcement of the Clean Air Act against stationary sources of pollution."

Despite the uproar, many experts believe open market systems will improve over time. "I do have a healthy dose of skepticism about open market trading," says Burstraw. "It isn't based on sound policy and shouldn't be used on a wide scale. But I also see it as a way to include in trading programs a way of smaller sources of emissions for which there do not exist emission inventories. At best, open market trading should be viewed as a transitional stepping stone to some better-developed institution that will emerge in the future."

Outlook for the Future

When applied to the nation as a whole, the EPA suggests in its April report that "the potential savings from widespread use of economic incentives...could be almost one-fourth of the approximately $200 billion per year currently spent on environmental pollution control in the United States."

Applying these tools, the EPA recommends that regulators consider their use in the context of political acceptability, potential for stimulating technology improvements, and enforceability. A number of important questions must be considered. How many sources are there for each pollutant? Does each source contribute a pollution level that is the same and that can be traced to a source with the same health and ecological impacts regardless of where it's released? Who's being affected by the pollution, and will the program reduce these impacts?

A key point raised by Burstraw is that incentives are a tool—not a solution. "You can compare incentives to a hammer," he says. "You can use a hammer to build a house, or you can use it to pull out the nails. This is the big issue facing now—if we use the incentives to back away from emissions reduction, then we're using the hammer to pull out the nails. But if we use incentives to aggressively pursue emissions reduction in the most cost-effective way, then we're building a stronger house for the future."
rading Away the Earth: Pollution Credits and the Perils of “Free Market Environmentalism”

The Republican takeover of Congress has unleashed an unprecedented assault on all forms of environmental regulation. From the Endangered Species Act to the Clean Water Act and the Superfund for toxic waste cleanup, laws that may need to be strengthened and expanded to meet the environmental challenges of the next century are instead being targeted for complete evasement.

For some activists, this is a time to renew the grassroots focus of environmental activism, even to adopt a more aggressively anti-corporate approach that ignores the political and ideological agendas underlying the current backlash. But for many, the current impasse suggests that the movement must adapt to the dominant ideological currents of the time. Some environmentalists have thus shifted their focus toward voluntary programs, economic incentives and the mechanisms of the “free market” as means to advance the cause of environmental protection. Among the most controversial, and widespread, of these proposals are tradeable credits for the right to emit pollutants. These became enshrined in national legislation in 1990 with President George Bush’s amendments to the 1970 Clean Air Act.

Even in 1990, “free market environmentalism” was not a new phenomenon. In the early 1980s, an odd coalition had developed among corporate public relations departments, conservative think tanks such as the American Enterprise Institute, Bill Clinton’s Democratic Leadership Council (DLC), and mainstream environmental groups such as the Environmental Defense Fund. The market-oriented environmental policies promoted by this eclectic coalition have received little public attention, but have nonetheless significantly influenced debates over national policy.

Glossy catalogs of “environmental products,” television commercials featuring environmental themes, and high profile initiatives to get corporate officials a “greener” image are the hallmarks of corporate environmentalism in the 1990s. But the new market environmentalism goes much further than these showcase efforts. It represents a wholesale effort to recast environmental protection based on a model of commercial transactions within the marketplace.

“A new environmentalism has emerged,” writes economist Robert Stavins, who has been associated with both the Environmental Defense Fund and the Dustbowl Projects Institute, “that embraces ... market-oriented environmental protection policies.”

Today, aided by the anti-regulatory climate in Congress, market schemes such as trading pollution credits are granting corporations new ways to circumvent environmental concerns, even as the same firms try to pose as champions of the environment. While tradeable credits are sometimes presented as a solution to environmental problems, in reality they do nothing to reduce pollution —at best they help businesses reduce the costs of complying with limits on toxic emissions. Ultimately, such schemes abdicate control over critical environmental decisions to the very same corporations that are responsible for the great environmental abuses.

How It Works, and Doesn’t

A close look at the scheme for nationwide emissions trading reveals several cleverness; for true believers in the invisible hand of the market, it may seem positively ingenious. Here is how it works: The 1990 Clean Air Act amendments were designed to halt the spread of acid rain, which has threatened lakes, rivers and forests across the country. The amendments required a reduction in total sulfur dioxide emissions from fossil fuel burning power plants, from 10 million tons per year by the year 2000. These facilities were targeted as the largest contributors to acid rain, and participation by other industries remains optional. To achieve this relatively modest goal for pollution reduction, utilities were granted transferable allowances to emit sulfur dioxide in proportion to their current emissions. For the first time, the ability of companies to buy and sell the “right” to pollute was enshrined in U.S. law.

Any facility that continued to pollute more than its allocated amount (roughly half of its 1990 rate) would then have to buy allowances from someone who is polluting less. The 110 most polluting facilities (mostly coal burners) were given five years to comply, while all the others would have until the year 2000. Emissions allowances were expected to begin selling for around $50 per ton of sulfur dioxide, and have a theoretical ceiling of $200 per ton, which is the legal penalty for violating the new rules. Companies that could reduce emissions for less than their credits are worth would be able to sell them at a profit, while those that lag behind would have to keep buying credits at a steadily rising price. For example, before pollution trading every company had to comply with environmental regulations, even if it cost one firm twice as much as another to do so. Under the new system, a firm could instead choose to meet the mandated levels, purchasing credits from the second firm instead of implementing costly controls. This exchange would save money, but in principle it would increase the overall level of pollution as if both companies had complied equally.

Thus, it is argued, market forces will assure that the most cost-effective method of reducing acid rain will be implemented first, saving the economy billions of dollars in unnecessary compliance costs.
Delaware's plan, the result of two years of negotiations, sought to expand the market for pollution credits by allowing utilities to trade credits freely. The plan, which was endorsed by the state's air quality officials, was designed to encourage the installation of pollution-control technologies.

One key provision of the plan was the creation of a pollution-credit market, which would allow companies to buy and sell credits that represent their ability to emit pollutants. The credits would be bought and sold through a series of auctions held by the state's environmental agency. Companies that reduce their pollution would receive credits, which could then be sold to other companies that were unable to meet their pollution limits.

The plan was opposed by some environmental groups, who argued that it would undermine efforts to reduce pollution and that the credits would be bought and sold in a way that would benefit large corporations at the expense of smaller companies and individuals. However, the plan was ultimately approved by the state's environmental agency and went into effect in 1998.

The plan was seen as a success, with companies buying and selling pollution credits in large quantities. The market for pollution credits was estimated to be worth billions of dollars, with many companies investing in pollution-control technologies in order to acquire credits.

The Delaware plan was seen as a model for other states, and many other states began to develop similar plans. The success of the Delaware plan led to the creation of a national market for pollution credits, which is now one of the largest and most successful markets for environmental commodities in the world.
The anti-regulatory fervor of the present Congress is bringing a variety of measures that could further erode the environmental protection measures that have been in place for decades. The new market-oriented approach to environmental protection continues to gain traction, with initiatives such as cap-and-trade systems becoming more common. This is despite the fact that such systems have been shown to be less effective in reducing pollution than traditional regulatory approaches. The idea is that by creating a market for pollution permits, industries will have an incentive to reduce their emissions voluntarily, rather than being forced to do so by regulation. However, critics argue that the market forces behind such systems can be manipulated by powerful industries, leading to a slowdown in progress towards environmental goals.

Radical ecologists have long decried the inherent tendency of capitalism to commodify nature. They argue that this system inherently values economic gains over environmental protection. The market-oriented approach to environmental protection only exacerbates this problem by placing a monetary value on the environment, which can lead to decisions that prioritize economic gain over environmental health.

However, as long as public regulation of industry remains underfunded and weakened by market-oriented policies, it is essential that we continue to push for stronger, more effective regulations. This is not to say that market-based solutions are entirely ineffective; in some cases, they can be a useful tool. The key is to ensure that these solutions are complemented by stronger, more comprehensive regulation to prevent industries from exploiting the market system for their own ends. By doing so, we can protect the environment while still allowing for economic growth and development.
Will Pollution Rights Trading Effective in Control Environmental Problems?

Does pollution rights trading give major corporate polluters too much power to control and manipulate the market for emission credits? This is one of the key issues that continues to inspire developing countries to withdraw their endorsement of the greenhouse gas emissions trading provisions of the Kyoto Protocol. The evidence that Tokar cites, which is primarily based on his short-term experience with trading in sulfur dioxide pollution credits, does not appear to fully justify the broad generalizations he makes about the inherent perils in market-based regulatory plans. Recent assessments of the Acid Rain Program by the EPA and such organizations as the Environmental Defense Fund are more positive. So is the corporate world: In “Economic Man, Clean Planet,” The Economist (September 29, 2001), it is asserted that economic incentives have proved very useful and that “market forces are only just beginning to make inroads into green policymaking.” In March 2002 Pipeline & Gas Journal reported that “despite uncertainty surrounding U.S. and international environmental policies, companies in a wide range of industries—especially those in the energy field—are increasingly using emission reduction credits as a way to meet the challenges of cutting greenhouse gas emissions.”

The position of those who are ideologically opposed to pollution rights trading is concisely stated in Michael J. Sandel’s op-ed piece “It’s Immoral to Buy Your Right to Pollute,” The New York Times (December 15, 1997). In “Selling Air Pollution,” Reason (May 1996), Brian Doherty supports the concept of pollution rights trading but argues that the kind of emission cap imposed on the cap-and-trade system is an inappropriate constraint on what he believes should be a completely free-market program. Richard A. Kerr, in “Acid Rain Control: Such for the Cheap,” Science (November 6, 1998), contends that emissions trading would greatly reduce acid rain and that the annual cost has been about a tenth of the $10 billion initially forecast. According to Barry D. Solomon and Russell L. Lewis, “Emissions Trading Systems and Environmental Justice,” Environment (October 2000), “a significant part of the opposition to emissions trading programs” stems from the perception that they do little to reduce environmental injustice and can even make it worse. However, Byron Swift, in “Allowance Trading and Potential Spots—Good News From the Acid Rain Program,” Environment Reporter (May 2000), argues that the success of the EPA’s emission trading program has not led to the creation of pollution “hot spots” as feared by some critics. On the other hand, EPA researchers recently reported that even though acid emissions went down dramatically, lakes remain affected by past emissions. See Leslie Roberts, “Acid Rain: Forgotten, Not Gone,” U.S. News & World Report (November 1, 1999).