Order Code RS21403
January 29, 2003

EPA's Water Quality Trading Policy

name redacted
Specialist in Resources and Environmental Policy
Resources, Science, and Industry Division

Summary

On January 13, 2003, the Environmental Protection Agency announced a Water Quality Trading Policy intended as an innovative approach to assist industry and municipalities in meeting Clean Water Act obligations. Trading allows one source to meet regulatory requirements by buying credit for pollutant reductions from another source that has lower pollution control costs. The policy revises a 2002 proposal which reflected lessons learned from a similar trading policy issued by the Clinton Administration in 1996. Water quality or effluent trading projects have occurred in the United States since the early 1980s. The new policy is generally supported by industry groups, state and local governments, and agriculture groups. Environmental groups are split on the concept. Some argue that it is not lawful and are critical that the Bush Administration policy lacks a number of details that they regard as necessary. Others support the concept, with adequate safeguards, as a valuable tool in cleaning up waterways. Congress has conducted some oversight of water quality trading and could continue doing so as the new policy is implemented. Legislation to codify a water trading policy in the Clean Water Act could be considered, as well. This report provides background on water quality trading and the EPA policy. It will not be updated.

What is Water Quality Trading?

The Clean Water Act (CWA) provides a two-tiered approach to water quality protection. At a minimum, all point source dischargers (i.e., industrial facilities and municipal sewage treatment plants) must attain technology-based requirements to limit pollutant concentrations in effluents. These requirements take the form of nationally uniform standards which are incorporated in discharge permits issued to individual facilities. The Act also requires that point sources meet more stringent effluent limitations in certain circumstances. If technology-based controls are insufficient to attain state-established ambient water quality standards for specific waterbodies, these standards serve as the regulatory basis for developing more stringent effluent limitations to be applied to point sources or other dischargers through additional control measures.

Since enactment of the CWA in 1972 (P.L. 92-500), the nation has made much progress towards the Act's water quality goals through its program of technology-based effluent limits for industrial and municipal point sources. However, as the Environmental

Protection Agency (EPA) and states have succeeded in regulating and reducing pollution from point sources, the relative importance of nonpoint source pollution to water quality has increased. Overall, data indicate that almost 40% of waters evaluated by states do not meet applicable standards and are impaired for one or more desired uses. Nonpoint pollution (rainfall runoff from urban, suburban, and agricultural areas, for example) is believed to be the dominant cause of remaining water quality impairment in many areas, but is subject to much less Clean Water Act regulation than is point source pollution.

Policymakers now seek new policy approaches to continue progress towards water quality improvements. Increasingly, many are interested in market-based alternatives to traditional regulation. Water quality trading is one of the market-based innovations of interest. The basic theory behind effluent trading is that certain dischargers may be able to achieve the same degree of control as others in the same area, but at lower expense. Under a trading program, some dischargers could avoid a costly treatment upgrade by paying for, or otherwise arranging, equivalent or greater reductions in discharges from other facilities or sources that discharge into the same receiving waters. The attraction of trading is that it reduces the total cost of compliance for the regulated community and provides monetary compensation for those who exceed minimum requirements for reducing pollutants. The common denominator is providing flexibility in allocating pollution control responsibilities so as to achieve water quality goals more cost-effectively. Trading is a supplement to, not a substitute for, core regulatory programs.

Water quality or effluent trading concepts have long been advocated by academics and economists as a means of achieving environmental objectives cost-effectively.[1] A few projects were initiated in the early 1980s by local groups who were searching for a means to avoid additional, and increasingly expensive, restrictions on point source discharges. In the area of air quality, trading received significant endorsement in 1990 with enactment of Clean Air Act amendments; Title IV of that act authorized a formal program for electric utilities to trade sulfur dioxide emissions, which cause acid rain and affect human health. The acid rain program is widely believed to be one of the most successful environmental programs of recent times.[2]

During the 1990s, the Clinton Administration pursued a number of initiatives to reform the management of environmental programs. As part of that effort, in January 1996, EPA issued a policy statement to encourage effluent trading in watersheds.[3] Soon thereafter, the Clinton EPA issued a Draft Framework to implement that trading policy. It identified a series of conditions necessary for trading and a template of regulatory, economic, and technical issues to facilitate evaluation of trading opportunities.[4] Although this document was never released as a final framework, it served to encourage

---

[1] See, for example, Faeth, Paul. "Market-Based Incentives and Water Quality." World Resources Institute, 1999. Available at: [http://www.igc.org/wri/incentives/faeth.html]

[2] Burtraw, Dallas and Byron Swift. "A New Standard of Performance: Analysis of the Clean Air Act's Acid Rain Program." Environmental Law Reporter, vol. 33, August 1996: 10411-10423.

[3] U.S. Environmental Protection Agency. "Effluent trading in watersheds policy statement." *Federal Register*, vol. 61, no. 28, Feb. 9, 1996: 4994-4996.

[4] U.S. Environmental Protection Agency. "Draft Framework Document for Watershed-based Effluent Trading, May 30, 1996." [http://www.epa.gov/OWOW/watershed/framework.html]

development of a number of new trading projects around the country, some partly supported with EPA grant funding and technical assistance. Since the 1980s, there have been about 35 trading programs or activities (including studies and pilots) in the United States. Trades have been approved for about one-third of these, but actual trades have occurred in only a few.[5]

In 2002, the Bush EPA proposed a new water quality trading policy, building on the 1996 policy statement and lessons learned from activities over the last two decades. The final policy, superseding the 1996 statement and 2002 draft, was issued January 13, 2003.[6]

Summary of the New Policy

The new EPA policy is intended to guide and encourage states, interstate agencies, and tribal governments in developing trading programs and projects. It identifies a number of objectives, such as to establish economic incentives for voluntary pollutant reductions from point and nonpoint sources within a watershed, and to reduce the cost of compliance with water quality-based requirements. It describes several basic characteristics for trades that occur under the policy. For example, it states that trading must be consistent with the CWA and should not result in violations of water quality standards. EPA does not support trading to achieve technology-based standards; that is, a source that has not yet attained regulatory or permit requirements may not trade some of those requirements with other sources in the watershed. The policy endorses trading of credits for nutrients and sediment loads, but trading of other pollutants that pose a higher environmental risk may only be considered on a case-by-case basis. The Agency does not currently support trading of persistent, bioaccumulative, and toxic chemicals (PBTs) and plans to conduct future pilot projects to obtain information on trading of PBTs. The policy states that trading should occur within a watershed or similar defined area. Thus, facilities may not purchase credits from an unrelated geographic area to meet a pollutant reduction to address a local water quality need.

Under the new policy, trades should have certain common elements, including: appropriate legal authority; clearly defined units of trade; standardized protocols to quantify pollutant loads, reductions, and credits; mechanisms to determine and ensure compliance; and periodic assessments of the environmental effectiveness (e.g., monitoring or studies to quantify pollutant reductions) and economic effectiveness (in terms of the number and types of trades, transaction and administrative costs). The policy states that, in the case of trades between point and nonpoint sources, the point source permittee shall have ultimate responsibility for compliance. Specific trades may be identified in discharge permits, the policy says, but it is flexible in how this might occur. A permit might, for example, contain general conditions that authorize trading, or it might set variable permit limits to be adjusted up or down based on credits generated or used. EPA says that, in general, it will not exercise higher scrutiny of trading than it does of other CWA programs (i.e., EPA approval of individual trades will not be required). One aspect of oversight, however, is public involvement: trading programs should require public participation from the earliest point, the policy says.

---

[5] Environomics. "A Summary of U.S. Effluent Trading and Offset Projects." U.S.E.P.A., Office of Water, November 1999. 47 p. [http://www.epa.gov/owow/watershed/trading/traenvrn.pdf]

[6] See: [http://www.epa.gov/owow/watershed/trading/tradingpolicy.html]

Five distinct water pollution trading scenarios have emerged:

- Under **point/point source trading**, designated point sources trade permitted discharge allowances only among themselves, with one point source negotiating to buy a portion of the loading allocation of effluent allowances from another point source in the trading area.

- Under **point/nonpoint source trading**, regulated point source dischargers are allowed to pay for reductions in nonpoint source control within their watersheds in lieu of upgrading their control technology.

- **Nonpoint/nonpoint source trading** provides a mechanism to achieve nonpoint source reductions beyond those obtainable through point/nonpoint source trading. It may be appropriate where new nonpoint sources enter a watershed and are subject to stricter erosion or runoff standards under state and local law than are existing nonpoint sources. New nonpoint sources may be able to meet requirements at least cost by a combination of on-site controls and off-site controls acquired through trades with existing nonpoint sources in that area.

- Industries that discharge wastes to a municipal sewer system for treatment at a publicly owned treatment works (POTW) facility are often required to pretreat certain of their wastes which could interfere with the POTW's operation. **Pretreatment trading** allows industrial dischargers in a community to allocate control efforts among themselves, so that the total quantity of a pollutant entering the POTW either would not change as a result of trading or could be reduced overall.

- Under **intra-plant trading**, a single point source allocates its total allowed pollutant discharges among its outfalls in a cost-effective manner. Existing clean water regulations for the iron and steel industry specifically allow intra-plant trading to meet regulatory requirements.

Trading and TMDLs. Trading finds considerable support from many in connection with implementing the Clean Water Act's Total Maximum Daily Load (TMDL) program. A TMDL is essentially a budget to allocate additional pollutant reductions which are needed to attain standards in waters that remain impaired even after application of technology-based controls by industry and municipalities. Implementation of the Act's TMDL program has recently been propelled by judicial and administrative actions across the country; EPA estimates that as many as 40,000 TMDLs need to be developed for over 20,000 waterbodies where standards are not being met. (For information, see CRS Report 97-831, *Clean Water Act and Total Maximum Daily Loads (TMDLs) of Pollutants*.)

Trading is viewed as offering flexible approaches to improving water quality in the many areas where TMDLs will be required. One prominent example is in Long Island Sound. EPA has approved a TMDL that will require a 58.5% reduction of nitrogen from sources in New York and Connecticut. Most of the nitrogen that reaches the Sound is from municipal sewage treatment plants. Connecticut adopted legislation authorizing a

general watershed permit to regulate all of the nitrogen discharged by 80 of these plants and setting annual nitrogen limits. If a facility removes more than its annual limit, it has credits to sell, and if a facility does not meet its limit, it must buy credits. State officials estimate that sewage treatment facilities will save $200 million in capital construction costs as a result of using trades to attain nitrogen limits.[7] In other watersheds where TMDLs are being developed, many supporters hope that trading opportunities will bring nonpoint sources more fully into the process of achieving water quality improvements.

Issues of Concern. Many state and local governments, as well as industry and wastewater treatment groups, support the new EPA policy, especially as a possible mechanism to meet TMDL requirements. Agriculture groups also are supportive, so long as nonpoint sources can continue to participate in trading voluntarily and will continue to generally be outside the jurisdiction of CWA enforcement, including litigation.

Environmental groups are somewhat split on the issue of water quality trading. Some argue that trades are not legal under the Clean Water Act, saying that there is no provision in the law that contemplates a point source buying what amounts to displaced compliance from another source.[8] Environmental critics fear that trading will be used as a way to avoid regulatory requirements of the Clean Water Act, even though EPA points out the policy prohibits any trade that would violate water quality standards. These groups are critical of what they view as a number of significant loopholes in the policy. The policy is flawed, they say, because it does not entirely prohibit trading of toxic discharges and thus could result in toxic "hot spots"; fails to mandate a reliable method for calculating discharges from nonpoint sources and requiring ratios of better than 1:1 for trades between point and nonpoint sources, to account for the uncertainty of nonpoint sources in achieving and maintaining pollutant reductions over time; and gives no guidance as to how caps on discharges should be set and decline over time. Thus, while the EPA policy supports pre-TMDL trading in impaired waters to achieve progress towards standards, critics say that trading in impaired waters should only be allowed after TMDL pollutant caps have been established and after sources in the watershed recognize the pollutant reductions that are needed in order to achieve standards.

Some environmental groups, such as the National Wildlife Federation, believe that trading can be a valuable tool in cleaning up waterways, provided that it is done with adequate safeguards. Another group, the Environmental Defense Fund, has participated in developing trading projects in several locations, including the Tar-Pamlico nutrient reduction trading program in North Carolina. Still, environmental groups that support such activities identify several necessary safeguards to ensure that water quality is protected. These include TMDLs as a prerequisite, good compliance records by participating sources, having adequate trading ratios, setting pollutant limits in discharge permits, EPA oversight, public participation, and ensuring sufficient monitoring both to establish baseline conditions for trades and to assess pollutant reductions. For trades involving nonpoint sources, enforceability is a critical issue for environmental advocates. This is because, unlike the CWA permitting program for point source controls, the Act

---

[7] Statement of Thomas Morrissey, Connecticut Department of Environmental Protection. Hearing held by the House Transportation and Infrastructure, Water Resources and Environment Subcommittee, June 13, 2002.

[8] Statement of Rena Steinzor, on behalf of the Center for Progressive Regulation. Ibid.

contains no federally enforceable, permit-based program to secure nonpoint source controls. While point source controls are enforceable through citizen suits, nonpoint source controls are not.[9]

The new EPA policy opens the door to increased trading; whether this occurs will depend on many factors. EPA has acknowledged that trades are very site-specific and require a number of important conditions, including: there must be a sufficient number of sources that contribute a significant portion of the total pollutant load in the watershed; there must be a water quality goal for the watershed that necessitates action; there must be accurate and sufficient data with which to establish targets and measure reductions; there must be economic gains from the trade (in terms of the marginal cost of pollutant reductions); and there must be an institutional structure to facilitate trading and monitor results.[10] Further, it is unknown whether the flexibility that EPA attempted to incorporate in the policy (which some environmental advocates view as loopholes) will be sufficient to encourage new projects. Industry groups–while generally supportive–might have preferred not including some of the environmental safeguards that the policy contains, such as the prohibition on trading to achieve technology-based standards or the bar on trading across watersheds, if the policy is to offer significant incentive to trading.

Congressional Interest in Water Quality Trading

Congressional interest in these issues has been limited. Trading is not currently addressed in the Clean Water Act, but EPA officials have long held the view that it is already allowed under the law. As noted above, some environmental critics believe that water quality trading is unlawful, and even some advocates agree that articulating such a policy in the Act would be beneficial. In the 104th Congress, the House passed a comprehensive CWA reauthorization bill (H.R. 961) with a provision that would have authorized modification of discharge permit requirements for conventional or toxic pollutants to allow for trading between sources. The Senate did not consider this House-passed bill. No other legislation dealing with water quality trading has been proposed since then. In the 107th Congress, the House Transportation and Infrastructure Subcommittee on Water Resources and Environment held a hearing in June 2002 to examine EPA's efforts to foster innovative market-based approaches to improving the nation's water quality. In the 108th Congress, Members and committees may pursue additional oversight of water quality trading, especially as EPA, states, and others implement the new policy. Legislation to codify a water trading policy in the Clean Water Act could be considered, as well.

---

[9] National Wildlife Federation. *A New Tool for Water Quality, Making Watershed-Based Trading Work for You*. June 1999. 56 p. [http://www.nwf.org/watersheds/newtool.html]

[10] U.S. Environmental Protection Agency, Office of Water. *Incentive Analysis for Clean Water Act Reauthorization: Point Source/Nonpoint Source Trading for Nutrient Discharge Reductions*. April 1992. 1 vol.