

# EPA's Mercury Rulemaking: Expanding CAA Trading Programs

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**M**ercury, nicknamed quicksilver by Aristotle, is a metal originating from the earth's crust that man can neither create nor destroy. It is also a human nerve toxin potentially affecting the brain and spinal cord at sufficiently high doses. Because of its persistence, widespread distribution in the environment, and toxicity, regulation of mercury in our environment and food has been a priority for the U.S. Environmental Protection Agency (EPA), state agencies, and other countries.

Most harmful human exposure to mercury comes from consuming methylmercury in contaminated seafood. Methylmercury forms when mercury emitted into the atmosphere returns to earth in rain or snow, becomes deposited in water and soil, and undergoes a process called methylation. Methylmercury bioaccumulates in certain types of fish and shellfish, and this led forty-five states to issue seafood mercury advisories in 2003. See EPA, *MERCURY MAPS*, available at [www.epa.gov](http://www.epa.gov).

EPA estimates that roughly 60 percent of the air-borne mercury deposited in the United States originates from domestic man-made sources, and much of this mercury is emitted by domestic coal-burning power plants. EPA, *THE MERCURY WHITE PAPER* (2000). EPA published a regulatory finding in December 2000 addressing hazardous air pollutants, including mercury, emitted from coal- and oil-fired power plants. *Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units*, 65 Fed. Reg. 79,825 (Dec. 20, 2000). In that finding, known as the *Utility Air Toxics Determination*, EPA stated it was "appropriate and necessary" to regulate these emissions under Section 112 of the Clean Air Act. This prompted EPA to conduct further review to develop proposed controls on mercury emissions from these facilities.

On January 30, 2004, EPA published a proposed rule for public comment with two alternative approaches to controlling power plant mercury emissions. Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed

Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 69 Fed. Reg. 4652 (Jan. 30, 2004) (Proposed Utility Mercury Reductions Rule). The first approach was to regulate mercury emissions as a hazardous air pollutant under Section 112(d) of the Clean Air Act. This would have required power plants to attain mercury emissions standards reflecting the industry's "maximum achievable control technology" (MACT), after taking into account cost and non-air quality health and environmental impacts. 42 U.S.C. § 7412(d) (1990). Existing power plants would have been subject to the Section 112(d) "MACT floor," requiring them to meet or exceed the average emission limitations realized by the top 12 percent of power plants for which EPA has data. New plants would have also faced a MACT floor, requiring them to meet or exceed the control level achieved in practice by the best controlled similar source as determined by EPA. EPA predicted that this "command and control" regulatory regime would reduce mercury emissions nationwide by 29 percent from 48 tons per year (tpy) to 34 tpy by 2007.

In the alternative, EPA proposed the creation of a market-based mercury emissions cap-and-trade program under either Section 111 or Section 112 of the Clean Air Act. Once implemented, such programs would reduce mercury emissions from power plants in two phases. The first phase would establish a nationwide mercury emissions cap of 34 tpy to be achieved by 2010, the same 29 percent reduction that the proposed MACT approach would achieve by 2007. The second phase would set the nationwide cap at 15 tpy to be achieved by 2018, ultimately cutting emissions by nearly 70 percent. EPA would allocate specified amounts of mercury emission allowances to each state, the states would distribute these allowances to utilities, and utilities could in turn trade allowances among themselves. No utility would be able to emit beyond the amount of its allowances without triggering significant automatic penalties. Thus, emission reductions would be achieved by limiting the overall number of allowances available. In addition, sites would have incentives to reduce mercury emissions in order to bank or sell their excess allowances in the open market. Connected with its cap-and-trade pro-

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posal, EPA revised and proposed to withdraw its December 2000 “appropriate and necessary” finding for regulation under Section 112 in order to gain the flexibility to explore innovative alternatives to reduce mercury emissions.

The January 2004 proposal sparked intense public discussion over the proper and most effective means to regulate mercury emissions in the United States. Environmental groups and certain states favored the command-and-control approach of Section 112(d), which would apply MACT standards to individual power plants across the board, but argued that EPA’s proposed emission limits were less stringent than required under the MACT floor analysis. Other groups, including power companies, preferred the cap-and-trade alternative which would reduce emissions while affording some flexibility at the individual facility level. Industry supported the legal validity of the cap-and-trade approach, while environmental groups and some states argued that this approach lacks any legal basis. The debate over all aspects of EPA’s rulemaking resulted in hundreds of thousands of comments to the EPA docket. In response, EPA published further details on the proposed cap-and-trade program and extended the public comment period by moving the final rule deadline from December 15, 2004 to March 15, 2005.

On March 15, 2005, EPA finalized the mercury rule and established emission standards based on a Section 111 cap-and-trade approach, five days after issuing a separate but related rule establishing a cap-and-trade program for NO<sub>x</sub> and SO<sub>x</sub> emissions in the eastern United States. See The Clean Air Mercury Rule, 70 Fed. Reg. 28,605 (Mar. 15, 2005); Clean Air Interstate Rule (Mar. 10, 2005), 70 Fed. Reg. 25,162 (May 12, 2005) (Clean Air Interstate Rule). The agency maintained that addressing mercury, NO<sub>x</sub>, and SO<sub>x</sub> emissions simultaneously through both rules would protect public health and the environment without disrupting energy prices for American consumers and business. The Clean Air Mercury Rule reduces mercury emissions from power plants under the originally proposed two-phase capping approach. The first phase sets a 38 tpy emissions cap by 2010, and the second phase caps emissions at 15 tpy by 2018 for an eventual net emissions reduction of over 70 percent. The emissions reductions outlined in the Clean Air Mercury Rule will be attained through mercury emission budgets for each state in combination with the mercury reductions achieved by reducing NO<sub>x</sub> and SO<sub>x</sub> emissions under the Clean Air Interstate Rule. The rule carries penalties for noncompliance: any facility that exceeds its emission allowances must surrender

sufficient allowances to EPA to offset those emissions, and surrender allowances *from the next control period* equal to three times the excess emissions.

The Clean Air Mercury Rule’s Section 111 approach does not require uniform standards of performance for every source. However, it contemplates that such standards could be implemented and enforced on the basis of an aggregated, industrywide approach that allows interstate trading among facilities so long as the required performance targets are met for individual states as a whole. On the other hand, states are free to create their own mercury emission control regimes, including ones that regulate emissions on the individual facility level, so long as they meet or exceed the limitations set by the Clean Air Mercury Rule.

As justification for regulating mercury air emissions under Section 111 rather than Section 112, EPA withdrew its December 2000 finding that regulating power plant mercury emissions under Section 112 is “appropriate and necessary.” Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants From Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units From the Section 112(c) List, 70 Fed. Reg. 15,994 (Mar. 29, 2005) (EPA Revised 2000 Finding). EPA determined that mercury emissions from utilities, after accounting for reductions due to the Clean Air Mercury Rule and the Clean Air Interstate Rule, do not rise to the level of a public health hazard, so it is therefore not

“appropriate and necessary” to regulate these emissions under Section 112 in light of all available information. EPA based its determination on fish tissue-sampling data, water quality data and criteria, and exposure testing for the most sensitive sections of the United States population. Environmental groups have already expressed their opposition to EPA’s withdrawal of its Section 112(n) determination, and nine states have sued the agency in the United States Court of Appeals for the District of Columbia Circuit. See *New Jersey v. EPA*, D.C. Cir. No. 05-1097 (Mar. 29, 2005).

### *Debate and Controversy Surrounding EPA’s Rulemaking Authority*

The debate over the regulation of power plant mercury emissions, which has grown more intense after EPA’s announcement of the Clean Air Mercury Rule, turns in part on differences of opinion over whether and under what provisions the Clean Air Act authorizes a mercury trading regime. In particular, environmentalists and

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similarly minded groups are concerned that a cap-and-trade approach not only lacks legal justification, but also could inadvertently contribute to enhanced mercury deposits in certain parts of the United States, creating mercury “hot spots” that would pose serious health threats to local communities. This dispute, discussed below, is certain to be presented to the D.C. Court of Appeals for resolution.

Three provisions of the Clean Air Act arguably provide EPA with authority to establish the mercury emission control alternatives outlined in its January 2004 proposal. First, once the administrator has determined that regulating power plant mercury emissions is “appropriate and necessary” under Section 112(n), Section 112(d) of the Act empowers EPA to regulate mercury under a command-and-control regime consistent with the maximum degree of emission reductions EPA deems achievable. Alternatively, EPA took the position that it could create a cap-and-trade regime under either Section 111 or Section 112(n) of the Clean Air Act, under the principles of deference to administrative agencies adopted by the Supreme Court in *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984).

Section 112(d) states, “The Administrator shall promulgate regulations establishing emission standards for . . . sources and area sources of hazardous air pollutants” in accordance with “the maximum degree of reduction in emissions . . . that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing sources . . .” 42 U.S.C. § 7412(d)(1)-(2) (1990). Proponents of EPA’s January 2004 proposal to regulate mercury emissions under Section 112(d) praised its potential uniformity, but took issue with how EPA sought to apply its authority under this provision and the stringency of the proposed requirements. EPA’s MACT proposal relied on existing pollution control technologies for other pollutants (e.g., NO<sub>x</sub> and SO<sub>x</sub>), and it would have established separate MACT floors for different categories of coal based on the mercury control levels achieved by these technologies. EPA based this approach upon its belief that there are currently no adequately demonstrated mercury emission control systems in place for coal-fired power plants, and therefore MACT standards must be derived from existing technologies for other pollutants.

When EPA issued its proposed rule in January 2004, critics argued that the agency could use its MACT

authority to require emerging mercury technologies like activated carbon injection (ACI), which could achieve higher levels of mercury control. On the other hand, industry argued that a source-by-source MACT approach is overly inflexible and that MACT standards could in fact stifle development of new technologies that would achieve greater mercury emission reductions than those attainable from current methods of control. Furthermore, industry expressed fear that MACT provisions, which typically give sources three years to comply with emission reduction requirements, simply do not allow sufficient time to establish and deploy mercury control technology throughout the power plant industry.

Second, Section 111 authorizes EPA to regulate mercury emissions by establishing standards of performance for new and existing sources through state implementation plan (SIP)-like procedures. While Section 111 primarily has been used to establish New Source Performance Standards (NSPS), Section 111(d)(1) of the Act authorizes EPA to “prescribe regulations which shall establish a procedure . . . under which each State shall submit to the Administrator a plan which establishes standards of performance for any existing source for any air pollutant,” provided certain enumerated criteria are met. 42 U.S.C. § 7411(d)(1)(B) (1990). Section 111(a) defines “standards of performance” as the degree of emissions limitation achievable through the application of the best emission reduction system that EPA determines has been adequately demonstrated. *Id.* § 7411(a)(1).

Environmental groups and some states have insisted that both legal precedent and the legislative history of Section 111 precluded the trading program outlined in the Clean Air Mercury Rule. However, throughout the rulemaking process, EPA’s position was that the legislative history and the plain language of the Clean Air Act do not demonstrate an “unambiguously expressed intent” to preclude cap-and-trade programs and therefore “the question for the court is whether the agency’s answer is based on a permissible construction of the statute.” *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. at 843. In the Proposed Utility Mercury Reductions Rule, EPA claimed that a cap-and-trade program could be based on a permissible construction of Section 111.

Environmental and similarly minded groups asserted the plain language of Section 111 suggests that emission standards must be achieved at a facility-specific level. They also cited to a prior court decision rejecting an

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EPA trading program under Section 111. See *ASARCO, Inc. v. EPA*, 578 F.2d 319 (D.C. Cir. 1978) (“[U]nder the bubble concept an operator who alters one of its facilities so that its emission of some pollutant increases might avoid application of the NSPS by simultaneously equipping other plant facilities with additional, but inferior, pollution control technology . . . the bubble concept thus postpones the time when the best technology must be employed. . .”). As reinforcement, they cited the conference committee for the 1970 Clean Air Act Amendments, which referenced a correlation between the command-and-control regimes of Section 111 and Section 112. See Committee on Public Works, *A Legislative History of the Clean Air Act Amendments of 1970*, at 130 (1974) (stating that Section 111 “require[s] that new major industry plants such as power plants . . . achieve a standard of emission performance based on the latest available control technology. . .”).

According to environmentalists, when Congress added language to Section 112(n) during the 1990 amendments providing for alternate control strategies, the legislative history demonstrates that it merely contemplated fuel switching or similar types of approaches, and Congress did not intend to authorize cap-and-trade programs created under Section 111.

The 1990 Clean Air Act Amendments incorporate two conflicting versions of Section 111(d), the Senate version and the House version. The Senate version would not permit the regulation of any hazardous air pollutant, including mercury, under that subsection. The House version would not permit regulation under Section 111(d) of any source category regulated under Section 112. The former clearly would preclude EPA’s proposed trading program under Section 111, while the latter would not. EPA discusses this issue in its preamble and proffers a statutory interpretation that rejects the Senate version in favor of the House version. Environmental groups will undoubtedly challenge this interpretation on the ground that both versions appear in the final law, and it is not clear whether a court will agree with EPA.

Several industry groups are concerned about the Clean Air Mercury Rule’s Section 111 trading policy because they fear that several states will not opt into the trading program and instead will adopt more stringent MACT-type standards under state law. Section 111(d) provides that, like NSPS, standards of performance for existing sources are to be implemented and enforced by the states so long as they establish procedures the agency deems adequate. If states elect to

adopt their own standards, industry groups believe this will render the Clean Air Mercury Rule’s cap-and-trade program less effective. It would undermine a “national” trading program wherein larger plants have incentives to adopt improved control technologies in order to sell excess allowances to smaller plants, which cannot take advantage of economies of scale. Industry groups maintain that when states opt out of EPA’s proposed trading plan, or choose not to link their trading programs into a national regime, larger facilities will have far less demand for their excess allowances and thus less incentive and financial wherewithal to reduce emissions in a timely manner. Pennsylvania, New Hampshire, and Massachusetts have already decided to do this.

Third, Section 112(n) directs EPA to regulate emissions of hazardous air pollutants once the Administrator has determined that such regulation is warranted. Section 112(n)(1)(A) lays out a four-step process: (1) EPA must perform a study and submit a report to Congress on “the hazards to public health reasonably anticipated to occur as a result of emissions” of hazardous air pollutants by power plants after imposition of the other requirements of the Clean Air Act; (2) EPA must develop control strategies for such emissions and describe them in the report; (3) EPA must determine whether, based on the results of its study, regulation is “appropriate and necessary;” and (4) if EPA finds it appropriate and nec-

essary, EPA must regulate utility emissions “under this section [of the Act].” 42 U.S.C. § 7412(n) (1990). While these provisions require a determination by EPA that control of utility mercury emissions is “appropriate and necessary,” Section 112(n) proponents claimed that once this criterion is met that subsection grants EPA broad discretion on how best to regulate mercury emissions so as to address reasonably anticipated public health hazards.

Prior to EPA’s withdrawal of its December 2000 “appropriate and necessary” finding, opinions differed among cap-and-trade proponents over whether EPA should have relied upon Section 111 or Section 112(n) as the authority for the Clean Air Mercury Rule. While some states preferred Section 111, which gives them the ability to adopt more stringent controls than those offered by the Clean Air Mercury Rule if necessary, many industry groups favored Section 112(n), which vests regulatory authority solely in the federal government. Utilities felt that a cap-and-trade program at the national level was appropriate because the hazards posed by mercury emissions from power plants

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are primarily due to their contribution to the global mercury pool, and not due to local deposition. Moreover, they argued that mercury emissions are a national issue, so initial regulation at the federal level was warranted.

Conversely, industry critics argued that Section 112(n) falls short of an independent grant of authority to regulate under Section 112 outside of the Section 112(d) MACT standards. They claimed the language of Section 112(n) merely enumerates EPA's duties and obligations when submitting a report to Congress, as opposed to a congressional grant of jurisdiction to regulate outside of Section 112(d). Underscoring the Section 112(n) language that "The Administrator shall regulate electric utility steam generating units *under this section*, if the Administrator finds such regulation is appropriate and necessary. . . ." 42 U.S.C. § 7412(n) (1990), these groups maintained that Congress intended EPA to regulate *solely* under the MACT standards of Section 112(d), because that is the part of Section 112 that provides substantive standards for regulating hazardous air pollutants. In response, industry groups claimed the term "under this section" shows that Congress intended to delegate authority to EPA to flesh out the regulatory framework for coal-fired power plants—to give the agency the *option* of regulating under Section 112(d) or using "alternative control strategies" under Section 112(n), whichever mechanism EPA deems to be most appropriate. Environmental groups also stated that even if Section 112(n) did represent an independent source of regulatory authority under certain circumstances, no cap-and-trade program could be "appropriate and necessary" to address the public health hazard because it would contribute to dangerous mercury hot spots.

### ***Hot Spot Risk from Mercury Cap-and-Trade Programs***

There is concern in certain environmental and health circles that cap-and-trade programs, such as the one described in the Clean Air Mercury Rule, could create unintended mercury hot spots that would adversely effect communities and environments. Methylmercury hot spots would theoretically arise near facilities that opt to increase emissions by purchasing emission allowances from facilities that overregulate. Groups fear that when mercury is emitted from power plant stacks, some of it will be deposited as precipitation in the local vicinity and converted into toxic methylmercury.

Industry groups and EPA dismiss the potential for mercury hot spots from power plant emissions. They cite reports and computer modeling studies that find no differences in methylmercury concentration levels across broad geographic areas where power plants are located. See EPA, MERCURY STUDY REPORT TO CONGRESS (Dec.

1997). See also EPA, GREAT WATERS: 3RD REPORT (2000), *available at* [www.epa.gov](http://www.epa.gov). They also draw upon data indicating that two-thirds of the mercury emissions from domestic power plants enter the global atmospheric pool as opposed to being deposited either locally or regionally. Finally, they point to successful cap-and-trade programs already in existence for NO<sub>x</sub> and SO<sub>x</sub>, which have not resulted in hot spots. See EPA, ACID RAIN PROGRAM: 2001 PROGRESS REPORT, *available at* [www.epa.gov](http://www.epa.gov).

Cap-and-trade detractors distinguish mercury, which they claim can deposit locally as well as regionally and globally, from SO<sub>x</sub>, which they depict as depositing regionally and globally only. Environmentalists claim that while a significant amount of mercury emissions enters the global atmospheric pool, they have data showing that a portion of this mercury can deposit locally as well as regionally. They cite various scientific reports indicating that certain areas, such as the Boston–Washington corridor, receive high levels of mercury deposits originating from sources in the United States. See MICHAEL STORE, OUT OF CONTROL AND CLOSE TO HOME: MERCURY POLLUTION FROM POWER PLANTS (2003), *available at* [www.environmentaldefense.org](http://www.environmentaldefense.org). These data, they argue, demonstrate the impact of local and regional sources on mercury deposits and methylmercury bioaccumulation. They therefore feel it is dangerous to institute a market-driven cap-and-trade program that does not curtail the number of allowances potentially available to individual facilities.

This concern was recently reaffirmed by EPA's Office of Inspector General (OIG), which stated in its February 3, 2005 evaluation report, "the Acid Rain program controls for SO<sub>2</sub> emissions, which are primarily deposited regionally and globally, not locally, while mercury can deposit locally as well as regionally and globally." OIG, EVALUATION REPORT:

ADDITIONAL ANALYSIS OF MERCURY EMISSIONS NEEDED BEFORE EPA FINALIZES RULES FOR COAL-FIRED ELECTRIC UTILITIES (2005), *available at* [www.epa.gov/oig](http://www.epa.gov/oig). OIG recommended that EPA conduct further review to assess the risk of mercury hot spots before proceeding with its final rule. However, EPA ultimately decided that it possessed sufficient data to analyze this risk and overcome these concerns by the scheduled March 15, 2005 rulemaking deadline, in the end finding that this risk was unfounded.

It will be interesting to see how each of these arguments will withstand judicial scrutiny now that the final rule is open to legal challenge. Regardless of how courts rule, EPA's approach to controlling mercury emissions will be controversial and subjected to criticism. While the judicial outcome is hard to predict, the final holding will have important implications for Sections 111 and 112 of the Clean Air Act and, depending on the outcome, could set the stage for further rulemaking and perhaps legislation. 