



U.S. Environmental Protection Agency

Clean Air Mercury Rule

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On March 15, 2005, EPA issued the first-ever federal rule to permanently cap and reduce mercury emissions from coal-fired power plants. This rule makes the United States the first country in the world to regulate mercury emissions from coal-fired power plants.

- The Clean Air Mercury Rule will build on EPA's Clean Air Interstate Rule (CAIR) to significantly reduce emissions from coal-fired power plants -- the largest remaining sources of mercury emissions in the country. When fully implemented, these rules will reduce utility emissions of mercury from 48 tons a year to 15 tons, a reduction of nearly 70 percent.
- CAIR and the Clean Air Mercury Rule are important components of the Bush Administration's plan to improve air quality. The Administration remains committed to working with Congress to help advance the President's Clear Skies legislation in order to achieve greater certainty and nationwide emission reductions, but believes the U.S. needs regulations in place now.
- EPA believes it makes sense to address mercury, SO₂ and NO_x emissions simultaneously through CAIR and the Clean Air Mercury Rule. These rules will protect public health and the environment without interfering with the steady flow of affordable energy for American consumers and business.
- The Clean Air Mercury Rule establishes "standards of performance" limiting mercury emissions from new and existing coal-fired power plants and creates a market-based cap-and-trade program that will reduce nationwide utility emissions of mercury in two distinct phases. The first phase cap is 38 tons and emissions will be reduced by taking advantage of "co-benefit" reductions -- that is, mercury reductions achieved by reducing sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions under CAIR. In the second phase, due in 2018, coal-fired power plants will be subject to a second cap, which will reduce emissions to 15 tons upon full implementation.
- New coal-fired power plants ("new" means construction starting on or after Jan. 30, 2004) will have to meet stringent new source performance standards in addition to being subject to the caps.
- Mercury is a toxic, persistent pollutant that accumulates in the food chain. Mercury in the air is a global problem. While fossil fuel-fired power plants are the largest remaining source of human-generated mercury emissions in the United States, they contribute only a small amount (about 1 percent) of total annual mercury emissions worldwide.

transported regionally and deposited domestically, and it will reduce emissions that contribute to atmospheric mercury worldwide.

Mercury Emissions - A Global Problem

- Mercury emitted from coal-fired power plants comes from mercury in coal, which is released when the coal is burned. While coal-fired power plants are the largest remaining source of human-generated mercury emissions in the United States, they contribute very little to the global mercury pool. Recent estimates of annual total global mercury emissions from all sources -- both natural and human-generated -- range from roughly 4,400 to 7,500 tons per year. Human-caused U.S. mercury emissions are estimated to account for roughly 3 percent of the global total, and U.S. coal-fired power plants are estimated to account for only about 1 percent.
- EPA has conducted extensive analyses on mercury emissions from coal-fired power plants and subsequent regional patterns of deposition to U.S. waters. Those analyses conclude that regional transport of mercury emission from coal-fired power plants in the U.S. is responsible for very little of the mercury in U.S. waters. That small contribution will be significantly reduced after EPA's Clean Air Interstate Rule and Clean Air Mercury Rule are implemented.
 - U.S. coal-fired power plants emit mercury in three different forms: oxidized mercury (likely to deposit within the U.S.); elemental mercury, which travels hundreds and thousands of miles before depositing to land and water; and mercury that is in particulate form.
 - Because mercury can be transported thousands of miles in the atmosphere, and because many types of fish are caught and sold globally, effective exposure reduction will require reductions in global emissions.
 - The United States is leading an effort within the United Nations Environment Programme to create a program that would establish partnerships designed to help developing countries reduce mercury emissions. The partnerships will leverage resources, technical expertise, technology transfer, and information exchanges to provide immediate effective action that will result in tangible reductions of mercury use and emissions. It accelerates the work of the UNEP Mercury program, originally proposed by the U.S. at the 2003 UNEP Governing Council meeting.

Mercury and Fish

- Concentrations of mercury in the air are usually low. However, atmospheric mercury falls to Earth through rain, snow and dry deposition and enters lakes, rivers and estuaries. Once there, it can transform into, methylmercury, and can build up in fish tissue.
- Americans are exposed to methylmercury primarily by eating contaminated fish. Because the developing fetus is the most sensitive to the toxic effects of methylmercury, women of childbearing age are regarded as the population of greatest concern. Children who are exposed to methylmercury before birth may be at increased risk of poor performance on neurobehavioral tasks, such as those measuring attention, fine motor function, language skills, visual-spatial abilities and verbal memory.

Revision of December 2000 Finding

- Also on March 15, 2005, in a separate but related action, EPA revised and reversed its December 2000 finding that it was "appropriate and necessary" to regulate coal- and oil-fired coal-fired power plants under section 112 of the Clean Air Act. We are taking this action because we now believe that the December 2000 finding lacked foundation and because recent information demonstrates that it is not appropriate or necessary to regulate coal- and oil-fired utility units under section 112.

from these plants.

Cap and Trade Basics

- Today's rule establishes a cap-and-trade system for mercury that is based on EPA's proven Acid Rain Program. The Acid Rain Program has produced remarkable and demonstrable results, reducing SO₂ emissions faster and at far lower costs than anticipated, and resulting in wide-ranging environmental improvements.
- In the Clean Air Mercury Rule, EPA has assigned each state and two tribes an emissions "budget" for mercury, and each state must submit a State Plan revision detailing how it will meet its budget for reducing mercury from coal-fired power plants. Two tribes that have coal-fired power plants that will be affected by this rule also have been assigned a mercury emissions budget.
- Today's rule includes a model cap-and-trade program that states can adopt to achieve and maintain their mercury emissions budgets. States may join the trading program by adopting the model trading rule in state regulations, or they may adopt regulations that mirror the necessary components of the model trading rule.
- Although states and tribes are not required to adopt the EPA-administered cap-and-trade program, the Agency believes most will do so. The state and tribal emission budgets are permanent, regardless of growth in the electric sector.
- The mandatory declining emissions caps in the Clean Air Mercury Rule, coupled with significant penalties for noncompliance, will ensure that the rule's mercury reduction requirements are achieved and sustained. At the same time, stringent emission monitoring and reporting requirements ensure that monitored data are accurate, that reporting is consistent among sources – and that the emission reductions occur. The flexibility of allowance trading creates financial incentives for coal-fired power plants to look for new and low-cost ways to reduce emissions and improve the effectiveness of pollution control equipment.

The Benefits of Cap-and-Trade Regulation over MACT

- For both a cap-and-trade system and a MACT, emissions limits are established and must be achieved.
- However, under a cap-and-trade system reductions and caps emissions are capped permanently and nationwide emissions can only go down. The ability to bank unused allowances for future use can lead to early reductions of mercury. A trading approach is forward-looking in its assessment of technology because it provides a continuous incentive for technology innovation.
- A traditional Section 112(d) MACT approach sets standards based on technology performance. Each plant subject to a MACT must meet a specific emissions limit. However, benefits of MACT are not always permanent: With shifts in coal use and with economic growth, nationwide emission reductions could erode over time. In addition, a MACT approach would not create as much continuous incentive for the development of new mercury control technology.

For More Information

- More information about mercury, EPA's efforts to reduce mercury emissions, and today's rule is available at www.epa.gov/mercury.
- More information about EPA/FDA's fish advisory go to website www.cfsan.fda.gov/~frf/sea-mehg.html

<http://www.epa.gov/mercuryrule/basic.htm>

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2005

2008



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