Commitment to Continued Mercury Emissions Reductions, and Air Quality Improvement

EPA reports that the nation's air quality has improved dramatically over the past several decades. Emissions of sulfur dioxide (SO_2) and nitrogen oxide (NOx) from coal-fired power plants have been reduced by 40% since 1980. These reductions have been accomplished while electricity from coal has increased approximately 70%.

The "co-benefits" of mercury (Hg) removal from pollution control technologies for PM, NOx, and SO_2, have already reduced mercury emissions from coal-fired power plants by almost 40% to 48 tons. Mercury emissions will decline even further by 2010 through the expanded use of NOx and SO2 control technologies required by EPA's proposed Interstate Air Quality Rule (IAQR). These impressive Hg removal rates are being accomplished despite the unavailability of mercury specific removal technologies. The industry is committed to additional mercury reductions, and is leading the way in the development of mercury specific removal technologies in order to achieve the goal of limiting emissions to 15 tons per year by 2018 – a 70% decrease from current levels. Until those technologies are fully tested and commercially available, mercury emission reductions must be set at achievable levels that do not jeopardize the Nation's supply of reliable and affordable electricity.

Advances in Removal Technology

The government and private industry are researching and developing new technologies that would remove mercury from coal-fired power plants on a consistent, reliable and predictable basis for all coals. The technologies are in various stages of development, but none are commercially available at this time. EPA estimates that mercury specific removal technologies capable of 50-70% removal rates will not be commercially available until 2010 - at the earliest. Until mercury specific removal technologies are proven for a sufficient duration in commercial use, it is premature and unwise to base regulation on their hypothetical performance.

Coal: Vital to Generation of Electricity and National Economy

Coal is the most abundant and affordable domestic energy resource. Coal currently accounts for over 85% of US energy reserves and produces over 50% of our nation's electricity. The Energy Information Administration estimates that by 2025, we will need a 59% increase in coal-fired generation (112 GW of new capacity) to meet future electricity demand. Regulations designed to further reduce mercury emissions must not jeopardize the nation's ability to utilize this domestic strategic energy resource and must not disadvantage any specific coal rank in the marketplace.

Air quality policies have resulted in a sharp increase in the use of natural gas for electric utility power generation. Natural gas consumption by electric utilities accounts for almost 94% of the increase in domestic demand for natural gas since 1992. As a result, residential, commercial and industrial consumers have paid $130 billion more for natural gas in the last 46 months alone. These sharp price increases continue to impair the competitive position of US manufacturing companies in domestic and world markets. The Industrial Energy Consumers of America have called for any utility mercury rule to not directly or indirectly increase the demand for natural gas. Such an outcome can be achieved only if mercury regulations contain standards that are achievable by existing and new power plants and do not place any rank of coal at a market disadvantage.

Sources of Mercury

Mercury (Hg) is a naturally occurring element present in the environment in vapor, solid and liquid states. Mercury is released into the atmosphere by natural sources (e.g., volcanoes, oceans and soils) and through manmade processes (e.g., medical, municipal and hazardous waste combustion, cement manufacturing, fossil fuel combustion). Total U.S. manmade emissions are about 3% of the global total. US utility emissions, while one-third of emissions in the US, are only 1% of the global total. Mercury emissions are transported over long distances. It is important to note that much of the mercury found in US land and waterways originated outside the US.

Human Exposure

The principal pathway for human exposure to mercury is through fish consumption. The magnitude of human exposure to mercury depends on the level of mercury in the fish consumed and the amount of fish consumed. Most mercury exposure in the US comes from eating salt-water fish (tuna, swordfish, etc.).

Analysts have been unable to quantify potential public health benefits from the EPA mercury rulemaking, including any statistically significant reduction in mercury exposure or related risks among women of childbearing age. Despite the lack of evidence linking power plant mercury emissions to adverse health effects, the coal and electric utility industries support continued emission reductions.

Regulatory Options

EPA proposed three alternative ways to reduce mercury emissions from coal-fired power plants:

(1) A MACT (Maximum Achievable Control Technology) standard that establishes specific emission limits, based on coal rank, each coal-fired power plant would have to meet by 2008.
(2) A national cap and trade system.
(3) An optional cap and trade system where individual states can choose to participate.

The final rule must be: 1) achievable and affordable, 2) fuel neutral (not cause a switch to natural gas), and 3) coal neutral (not put any coal type at a market disadvantage).

The Proposed MACT and New Source Standards Will Jeopardize US Coal and Electricity Supply

A recent study[1] by AEMS, LLC, and RW Crawford Energy (AEMS study) uncovers serious inadequacies with the methodologies and data used to determine the proposed source emissions levels under a MACT standard. These inadequacies render the agency's analysis incomplete and deficient for determining mercury reduction value data and are not reliable for making important regulatory policy decisions that will have significant implications for the availability and cost of our electricity and the economic viability of our domestic coal industry.

The EPA's data represent, at best, a limited "snapshot" of emissions from a few units, taken over a very short period of time, with a limited number of coals. The data do not account for the wide variability of coals and process conditions encompassed by the full fleet of coal-fired power plants. Given the high degree of uncertainty in the data, it is impossible to say that a large portion of coal used today could comply with these proposed MACT standards, even when burned in plants fitted with the best control technologies. And, for new power plants necessary to meet future electricity demand more than 80% of bituminous coals, 90% of subbituminous coals and 75% of lignite coals will be unable to comply with the proposed new source standards with any degree of confidence. In sum, the proposed standards will place a substantial portion of US coal reserves of all ranks in jeopardy of not being able to be used by the electric power industry.

Cap and Trade Alternative Is More Efficient and Effective

The agency's proposed alternative emission trading programs, under sections 111(d) and 112(n)(1), recognize the inherent cost-effectiveness of emission trading compared to traditional command-and-control regulation. The enormously successful acid rain SO2 trading program demonstrates that a well-designed cap-and-trade regulation is far superior to a MACT command–and-control regulation in achieving real emission reductions in a cost effective manner. The flexibility inherent in a national emission trading program, combined with a phased approach to decreasing emissions levels, would provide needed time for the testing, demonstration and commercialization of mercury control technologies. It will also provide the economic incentive for future advances in mercury removal technologies that will result in even further reductions than under a MACT rule.

Of the two cap-and-trade alternatives that EPA is considering, the 112(n)(1) option is more likely to achieve these objectives, because it offers the basis for a national allocation of emission allowances independent of state SIP processes. However, an effective national cap-and-trade program must be designed to avoid allocations that would place certain coal ranks at a distinct market disadvantage thereby precluding the optimal use of our most abundant and secure domestic energy source.

Emission Trading Allowance Allocations and Timing

EPA should implement a national cap-and-trade program that would allow time for the collection of accurate and reliable emissions data necessary to set achievable reduction goals, select equitable emissions allocations among coal ranks, and capture the benefits of future technological innovation. The program should be implemented in three phases:

Phase I: Reductions to co-benefit levels from mercury reductions achieved under companion Interstate Air Quality Rule for reducing SO2 and NOx. Require installation of mercury emission monitoring equipment in 2008; collect and analyze monitoring data during 2009-2011 to determine actual Hg reductions from IAQR rule; provide statistical basis for a fair allocation of emission allowances for coal types; and assess commercial availability and performance of mercury-specific removal technologies.

Phase II: Establish an interim emissions cap to take effect in 2015 based upon the monitoring data and commercial availability of mercury specific removal technologies

Phase III: Impose a final emissions cap of 15 tons to take effect in 2018.

(Footnotes)

1 AEMS, LLC, *Review and Critique of Data and Methodologies used in EPA Proposed Utility Mercury MACT Rulemaking*, April 2004.

For further information

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