



# Fighting Mercury Emissions

## COLORADO COMPANY WEIGHS IN

By Lisa Cohn

IN OCTOBER, THE Pennsylvania Environmental Quality Board approved a proposed rule that would cut mercury emissions from coal-fired plants 90 percent by 2015. The rule, which is more stringent than the federal Environmental Protection Agency's Clean Air Mercury Rule, was headed for the state's Independent Regulatory Review Commission.

Like Pennsylvania, 21 other states are now considering or moving toward sidestepping the federal EPA's Clean Air Mercury Rule, choosing instead tougher regulations designed to cut mercury emissions from coal-fired plants by up to 90 percent, according to a September report from the National Wildlife Federation, "States Tackling Mercury Pollution From Coal-Burning Power Plants."

For mercury-control equipment supplier ADA-ES, Inc. in Littleton, Colo., the states' insistence on enacting strict mercury-control regulations is good news. ADA-ES has booked 10 mercury-control system contracts in 2006 alone, and 12 to date, says company president Michael D. Durham.

ADA-ES is the first company to use a carbon powder – much like the carbon used in water filtration systems – to convert mercury, a gas, into powder. The resulting powder is then collected by the plant's particle-collection device – either an electrostatic precipitator or a filter baghouse, explains Durham.

Overall, 27 U.S. power plant owners have purchased mercury-control equipment systems, with most of the orders in 2006, says Chad S. Whiteman, deputy director of the Institute of Clean Air Companies, based in Washington.

At the heart of the emission-control effort are concerns that mercury levels in fish are too high for safe consumption by pregnant women. Coal-fired plants are now the largest source of the mercury that finds its way into fish.

"Pregnant women who consume fish that have high levels of mercury are at risk of having children with developmental problems," says Mark Wenzler, director of the Clean Air Program for the National Parks Conservation Association, in Washington. "There's also growing concern that wildlife is also susceptible to mercury," he says. Those worries prompted the EPA to create its controversial Clean Air Mercury Rule, designed to reduce utility emissions of mercury by about 70 percent by 2018, with an intermediate step in 2010. States are required to submit plans by Nov. 17.

Opponents of the rule claim that it's too weak. Not only does it call for a mere maximum 70 percent reduction in emissions, they say; it allows utilities to trade emission

credits. Trading credits could create mercury "hot spots" in states whose utilities rely largely on coal to produce electricity, notes Jennifer Heller, mercury campaign manager for the National Wildlife Foundation, in Washington.

"The cap and trade program won't reduce mercury pollution evenly across the country," she says. "If a state that cleans up quicker is able to

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sell credits, you are basically outsourcing pollution to somewhere else."

The ADA-ES system is capable of exceeding the EPA's 70 percent standard and capturing 90 to 95 percent of the mercury, says Durham. The company's systems inject carbon powder into the flue gas of a coal plant, upstream of the plant's existing particle-collection device.

The mercury reacts with the carbon and becomes a powder, and then is picked up by the plant's electrostatic precipitator or filter baghouse, he explains.

Two years ago, testing revealed that the ADA-ES system removed only 70 percent of mercury emissions from western coal and 90 percent from eastern coal. ADA-ES then added a chemical to the carbon to provide for 90 percent removal, Durham says. The systems in some cases now remove up to 95 percent of mercury when the coal plant uses a fabric filter or baghouse as the particle-collection device.

Not only has ADA-ES fine-tuned its technology in recent years. The company has simultaneously uncovered ways to reduce the cost of its systems.

"Three to four years ago, the cost of controlling mercury from western coal was \$50,000 to \$100,000 per pound. Now the costs are below \$10,000 a pound," Durham says. "Most plants can be controlled for about 1 percent of the retail cost of electricity."

The demand for the ADA-ES and similar systems will be driven in part by how many states opt for stricter mercury-emission controls.

In the United States, 1,100 coal-fired boilers produce more than 50 percent of electricity. However, it won't be difficult for many of the boiler owners to meet the EPA's initial 2010 requirements, says Ron Norman, a managing consultant in PA Consulting Group's Global Energy Practice.

"As a general rule, the initial 2010 standard is not a dramatic reduction from current emission levels," he says. However, if many states follow the lead of Pennsylvania and adopt regulations that call for up to 90 percent mercury removal, utilities doing business in coal-dependent regions may be hit hard.

"We're talking about billions of dollars," Norman says.

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#### WAL-MART'S BULB CRUSADE

Wal-Mart seeks to sell 100 million compact fluorescent bulbs a year.

H. Lee Scott Jr., Wal-Mart CEO, told the *New York Times* in January, "The environment is begging for the Wal-Mart business model."

If successful, Wal-Mart will boost sales of the bulbs by 50 percent and save consumers \$3 billion a year on electric bills.

A compact fluorescent bulb lasts 10 times longer than a conventional bulb and uses 75 percent less electricity, saving consumers \$30. The energy savings associated with each bulb will translate, on average, into a 450-pound reduction in greenhouse gas emissions, the *Times* reported.