

CONTROLLING EMISSIONS OF HAZARDOUS AIR POLLUTANTS



Wade Utility Plant, Lafayette, IN. @ Purdue University

Overview

This article is a [USA](#)-centric treatment of regulation through the year 2011 directed at control of hazardous [air pollution](#) emissions from boiler operations. The issues addressed are chiefly those of administrative functions rather than new legislative initiatives.

Summary of U.S. EPA Actions in 2010-11

On June 4, 2010, the U.S. Environmental Protection Agency (EPA) proposed Maximum Achievable Control Technology standards for boilers (the “Boiler MACT”), as Congress required in the 1990 amendments to Section 112 of the Clean Air Act. Boilers are used as power sources throughout industry and for power or heat by large commercial establishments and institutions. Thus, there is widespread interest in the proposed rule’s requirements and their potential effects.

EPA proposed the regulations because it has found, based on emissions data, that boilers (including coal-fired and [biomass](#)-fired boilers) are major sources of hazardous [air pollutants](#) (HAPs). The Clean Air Act defines a major source as any facility that emits 10 tons or more of a single listed HAP or 25 tons of any combination of HAPs annually. The HAPs themselves (187 substances) were listed by Congress in the 1990 Clean Air Act Amendments.

The proposed rule would replace a rule promulgated September 13, 2004, and subsequently vacated and remanded to the agency by the Washington DC Circuit Court of Appeals. EPA is under a court order to promulgate a replacement rule by February 21, 2011. In order to revise the proposal based on new information it has received, the agency asked in early December that the deadline be postponed to April 2012, but the court refused EPA's request. Following promulgation, existing facilities would normally have three years to comply with the standards, but EPA has now indicated that it intends to grant requests to reconsider the rules following promulgation, potentially delaying implementation beyond three years.

The rule as proposed in June 2010 would affect 13,555 boilers and process heaters, with capital costs of \$9.5 billion, according to the agency; annualized costs, which spread the costs of capital over the expected life of the equipment and include operating and maintenance expenses as well, are estimated at \$2.9 billion per year. A majority of these costs would be borne by coal-fired and biomass-fired boilers, which together account for only 7.4% of all the units covered by the rule. In order to comply, the coal-fired and biomass-fired units might need to install fabric filters to achieve control of [mercury](#) and particulate matter; wet scrubbers to meet limits on hydrogen chloride and other acid gases; replacement burners, tune-ups, and combustion controls for carbon monoxide and organic HAPs; and [carbon](#) injection for mercury, dioxins, and furans. Most boilers—85% of those affected by the rule—are fueled by natural gas. Natural-gas-powered boilers would experience cost savings under the rule, according to the agency.

EPA estimates that the benefits—including the avoidance of 1,900 to 4,800 premature deaths annually—would outweigh the costs by at least \$14 billion per year. The affected industries have raised a number of objections to the proposal. Besides potential economic impacts, one issue is whether EPA should have identified additional subcategories within the boiler universe, giving it greater flexibility to set standards. Others maintain that the agency should have used its authority to set less stringent standards for hydrogen chloride and other acid gases (which make up 61% of the total HAP emissions). Another issue is whether EPA's method of identifying the emissions of the best performing existing units correctly interprets the agency's statutory authority.

Numerous congressional offices have written the EPA Administrator concerning the proposed rule. EPA's response has been to indicate that the final rule will “most assuredly” differ from the proposal. This report also briefly discusses three related rules that EPA proposed at the same time as the Boiler MACT, dealing with smaller “area source” boilers and with commercial and industrial boilers that burn solid waste (the “CISWI Rule”).

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