

## FACT SHEET

### FINAL AIR TOXICS STANDARDS FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AT AREA SOURCE FACILITIES

#### ACTION

- On February 21, 2011, the Environmental Protection Agency (EPA) finalized a rule that will reduce emissions of toxic air pollutants from existing and new industrial, commercial, and institutional boilers located at area source facilities. An area source facility emits or has the potential to emit less than 10 tons per year (tpy) of any single air toxic or less than 25 tpy of any combination of air toxics.
- The final rule will reduce emissions of a number of toxic air pollutants including mercury, metals, and organic air toxics, which include dioxins.
- Boilers burn coal and other substances such as oil or biomass (e.g., wood) to produce steam or hot water, which is then used for energy or heat. They can also burn non-waste materials but do so usually only in small amounts.
  - The majority of area source boilers covered by this final rule are located at commercial and institutional facilities.
- The final rule covers boilers located at area source facilities that burn coal, oil, or biomass, or non-waste materials, but not boilers that burn only gaseous fuels or any solid waste.
- EPA is regulating area source boilers based on boiler design. Boilers are designed differently depending on what kind of fuel they burn: coal, oil or biomass. Also, the final rule sets different requirements for large and small boilers.
  - Large boilers have a heat input capacity equal to or greater than 10 million British thermal units per hour (Btu per hr).
  - Small boilers have a heat input capacity less than 10 million Btu per hour.
- This rulemaking will reduce toxic air pollutants, also known as hazardous air pollutants or air toxics. These pollutants are known or suspected to cause cancer and other serious health and environmental effects.
  - The rule would cut emissions of pollutants that are of particular concern for children. Mercury and lead can adversely affect developing brains – including effects on IQ, learning, and memory.
  - The rule will also reduce emissions of other pollutants including cadmium, dioxin, furans, formaldehyde and hydrochloric acid. These pollutants can cause cancer or other adverse health effects in adults and children.
  - Mercury, lead, dioxin, and furans can build up in the environment, causing serious environmental effects and harm to the food chain as well.

## **FINAL REQUIREMENTS**

- The final rule establishes standards to address emissions of mercury, particulate matter (PM) (as a surrogate for non-mercury metals), and carbon monoxide (CO) (as a surrogate for organic air toxics).
- For new boilers, the final rule requires the following:
  - Coal-fired boilers, with heat input equal or greater than 10 million Btu per hour, are required to meet emission limits for mercury, PM, and CO.
  - Biomass and oil-fired boilers, with heat input equal or greater than 10 million Btu per hour, must meet emission limits for PM.
  - Boilers with heat input less than 10 million Btu per hour must perform a boiler tune-up every two years.
- For existing boilers the final rule requires the following:
  - Coal-fired boilers, with heat input equal or greater than 10 million Btu per hour, are required to meet emission limits for mercury and CO.
  - Biomass boilers, oil-fired boilers, and small coal-fired boilers are not required to meet emission limits. They are required to meet a work practice standard or a management practice by performing a boiler tune-up every 2 years. By improving the combustion efficiency of the boiler, fuel usage can be reduced and losses from combustion imperfections can be minimized. Minimizing and optimizing fuel use will reduce emissions of mercury and all other air toxics.
  - All area source facilities with large boilers are required to conduct an energy assessment to identify cost-effective energy conservation measures.

## **BENEFITS AND COSTS**

- EPA estimates that the final rule will reduce nationwide emissions from existing and new area source boilers by approximately:
  - 330 tons per year (tpy) of total air toxics,
  - 90 pounds per year of mercury,
  - 320 tpy of non-mercury metals,
  - 9 tpy of polycyclic organic matter (POM), and
  - 2,500 tpy of PM
- These emissions reductions will lead to significant annual health benefits. In 2014, this rule will protect public health by avoiding:
  - 24 to 61 premature deaths,
  - 17 cases of chronic bronchitis,
  - 40 nonfatal heart attacks,
  - 40 hospital and emergency room visits,
  - 38 cases of acute bronchitis,
  - 800 cases of respiratory symptoms
  - 3,200 days when people miss work or school,
  - 420 cases of aggravated asthma, and
  - 19,000 days when people must restrict their activities.

- EPA estimates that the value of the benefits associated with reduced exposure to fine particles are \$210 million to \$520 million in the year 2014.
- EPA did not provide a monetary estimate the benefits associated with reducing exposure to air toxics or other air pollutants, ecosystem effects, or visibility impairment. However, the rule would cut emissions of pollutants that are of particular concern for children. Mercury and lead can adversely affect developing brains – including effects on IQ, learning, and memory.
- EPA estimates that there are approximately 187,000 existing area source boilers at 92,000 facilities in the United States and that approximately 2,400 new area source boilers will be installed over the next 3 years.
- The vast majority of area source boilers are estimated to be located at commercial and institutional facilities and generally owned or operated by small entities. EPA has limited the impact of the final rulemaking on small entities by requiring that only existing coal-fired boilers meet emission limits for mercury and CO, establishing work practices or management practices, instead of emission limits, for existing small coal-fired boilers of less than 10 million Btu per hour of heat input and all existing biomass boilers and oil-fired boilers, and exempting most area source boilers from Clean Air Act title V permit requirements.
- Installing and maintaining controls for this rule is estimated to cost \$487 million per year.

#### **KEY CHANGES FROM PROPOSAL**

- Key changes based on information and comments received on the proposal include:
  - Changed CO limits for biomass and oil-fired area source boilers from requiring maximum achievable control technology to generally available control technology - based management practices of tune-ups.
  - Changed requirements for new small units to a work practice standard instead of emission limits.

#### **SEPARATE BUT RELATED ACTIONS**

- EPA has finalized a rule that would reduce emissions of toxic air pollutants from new and existing industrial, commercial, and institutional boilers and process heaters located at *major* source facilities. A major source facility emits or has the potential to emit 10 or more tons per year (tpy) of any single air toxic or 25 tpy or more of any combination of air toxics.
- EPA has also finalized a rule to reduce air toxics from Commercial and Industrial Solid Waste Incinerators (CISWI). This final rule reflects the Agency’s final definition of non-hazardous solid waste.
- EPA has finalized a rule to reduce air toxics from sewage sludge incinerators (SSI). Sewage sludge incinerators are incinerators or combustion devices used to burn dewatered sewage. They are typically located at waste water treatment plants.

- EPA has finalized a definition of non-hazardous solid waste. The definition could potentially affect some units currently considered boilers by moving them into the category of commercial and industrial solid waste incinerators if they burn solid waste.

## **RECONSIDERATION**

- EPA also will issue a notice announcing that it will “reconsider” certain aspects of the boiler and CISWI rules. The SSI rule is not part of the reconsideration. The final boiler and CISWI rules reflect reasonable approaches consistent with the requirements of the Clean Air Act. However, some of the issues identified in the comments on our April 2010 proposals raised difficult technical issues that the Agency believes would benefit from additional public involvement. EPA is in the process of developing a proposed rule that will request additional comment on:
  - specific elements of the final rules that would benefit from additional public review and comment, and
  - any provisions that EPA proposes to modify or add after more fully evaluating the data and comments already received.

EPA will fully evaluate any petitions submitted to the Agency requesting that we reconsider specific aspects of these rules. Additional issues may be added for reconsideration as appropriate. Through the reconsideration process, EPA intends to ensure that the standards will protect the health of all Americans and be practical to implement.

## **BACKGROUND**

- The Clean Air Act (CAA) requires EPA to develop rules to reduce specific air toxics emissions (30 urban toxic pollutants) that have been identified as posing the greatest threat to public health in the largest number of urban areas as a result of emissions from certain categories of area sources. Industrial boilers and institutional/commercial boilers are listed as two of the area source categories for regulation.
- In addition, both industrial boilers and commercial/institutional boilers are on the list of CAA source categories which requires that those categories be subject to MACT regulation for specific air toxics. These two categories were included on the list because of emissions of mercury and POM.
- The final rule covers boilers located at area source facilities that burn coal, oil, or biomass, or non-waste materials. Natural gas-fired area source boilers are not part of the two categories being regulated.
- The standards for area sources in the listed categories must be technology-based. Standards for area sources can be based on either generally available control technology (GACT), or maximum achievable control technology (MACT).
- To determine GACT, we look at methods, practices and techniques that are commercially available and appropriate for use by the sources in the category. We consider the economic impacts on sources in the category and the technical capabilities of the firms to operate and maintain the emissions control systems.

- MACT can be based on the emissions reductions achievable through application of measures, processes, methods, systems, or techniques, but must at least meet minimum control levels as defined in the CAA. Economic impacts cannot be considered when determining those minimum control levels.
- The final standards for existing and new coal-fired boilers at area sources are based on MACT for mercury and CO, and on GACT for PM. The final standards for existing and new biomass boilers and existing and new oil-fired boilers at area sources are based on GACT.
- The schedule for completing this rule is part of a court order which requires the EPA Administrator to complete a final rule by February 21, 2011.

#### **FOR MORE INFORMATION**

- To download this final rule from EPA's Web site, go to: <http://www.epa.gov/airquality/combustion/actions.html>.
- Today's action and other background information are also available either electronically at <http://www.regulations.gov>, EPA's electronic public docket and comment system, or in hardcopy at the EPA Docket Center's Public Reading Room.
  - The Public Reading Room is located at EPA Headquarters, room number 3334 in the EPA West Building, 1301 Constitution Avenue, NW, Washington, DC. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding Federal holidays.
  - Visitors are required to show photographic identification, pass through a metal detector and sign the EPA visitor log. All visitor materials will be processed through an X-ray machine as well. Visitors will be provided a badge that must be visible at all times.
  - Materials for this proposed action can be accessed using Docket ID No. EPA-HQ-OAR-2008-0790.
- For further information about the final rule, contact Mr. Jim Eddinger of EPA's Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Energy Strategies Group at (919) 541-5426 or by e-mail at [Eddinger.jim@epa.gov](mailto:Eddinger.jim@epa.gov).