

## FACT SHEET

### FINAL AIR TOXICS STANDARDS FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS AT MAJOR SOURCE FACILITIES

#### ACTION

- On February 21, 2011, the Environmental Protection Agency (EPA) finalized a rule that will reduce emissions of toxic air pollutants from new and existing industrial, commercial, and institutional boilers and process heaters 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.
- The final rule will reduce emissions of a number of toxic air pollutants including mercury, other metals, and organic air toxics, which include polycyclic organic matter (POM) and dioxins. Toxic air pollutants, also known as hazardous air pollutants or air toxics, are those pollutants known or suspected of causing cancer and other serious health effects.
- Boilers burn fuels, including natural gas, fuel oil, coal, biomass (e.g., wood), refinery gas, or other gas to produce steam. The steam is used to produce electricity or provide heat. Process heaters heat raw or intermediate materials during an industrial process. The boilers and process heaters that would be covered by these standards do not burn solid waste unless they are exempt under the Clean Air Act from standards for incinerators.
- Boilers and process heaters are used at industrial facilities and may stand alone to provide heat for commercial facilities. The majority of major source boilers and process heaters are located at industrial facilities.
- EPA has identified 15 different subcategories of boilers and process heaters based on the design of the various types of units. The final rule includes specific requirements for each subcategory.

#### FINAL REQUIREMENTS

- For all new and existing natural gas- and refinery gas-fired units, the final rule establishes a work practice standard, instead of numeric emission limits. The operator will be required to perform an annual tune-up for each unit. Units combusting other gases can qualify for work practice standards by demonstrating that they burn “clean fuel,” with contaminant levels similar to natural gas.
- For all new and existing units with a heat input capacity less than 10 million British thermal units per hour (MMBtu/hr), the final rule establishes a work practice standard instead of numeric emission limits. The operator will be required to perform a tune-up for each unit once every 2 years.

- The final rule establishes a work practice standard instead of numeric emission limits for all new and existing “limited use” boilers. The operator will be required to perform a tune-up for each unit once every 2 years. These units are operated less than 10 percent of the year as emergency and backup boilers to supplement process power needs.
- The final rule establishes numeric emission limits for all other existing and new boilers and process heaters located at major sources (including those that burn coal and biomass). The final rule establishes emission limits for:
  - mercury,
  - dioxin,
  - particulate matter (PM) (as a surrogate for non-mercury metals),
  - hydrogen chloride (HCl) (as a surrogate for acid gases), and
  - carbon monoxide (CO) (as a surrogate for non-dioxin organic air toxics).
- The final rule requires monitoring to assure compliance with emission limits. The largest major source boilers must continuously monitor their particle emissions as a surrogate for metals such as lead and chromium. All units larger than 10 MMBtu/hr must monitor oxygen as a measure of good combustion. The final rule also requires monitoring to assure the boiler and pollution controls are operating within appropriate parameters.
- Existing major source facilities are required to conduct a one-time energy assessment to identify cost-effective energy conservation measures.

## **BENEFITS AND COSTS**

- EPA estimates that there are approximately 13,840 boilers and process heaters at major sources in the United States and that approximately 47 new units would be installed over the next 3 years.
- EPA estimates that implementation of the rulemaking will reduce nationwide emissions from major source boilers and process heaters by:
  - 1.4 tons per year (tpy) of mercury,
  - 2,700 tpy of non-mercury metals,
  - 30,000 tpy of HCl,
  - 47,000 tpy of PM,
  - 440,000 tpy of SO<sub>2</sub>, and
  - 7,000 tpy of volatile organic compounds.
- These emissions reductions will lead to significant annual health benefits. In 2014, this rule will protect public health from exposure to fine particles and ozone by avoiding:
  - 2,500 to 6,500 premature deaths,
  - 1,600 cases of chronic bronchitis,
  - 4,000 nonfatal heart attacks,
  - 4,300 hospital and emergency room visits,
  - 3,700 cases of acute bronchitis,
  - 78,000 cases of respiratory symptoms,

- 310,000 days when people miss work or school,
  - 41,000 cases of aggravated asthma, and
  - 1,900,000 days when people must restrict their activities.
- EPA estimates that the value of the benefits associated with reduced exposure to fine particles and ozone are \$22 billion to \$54 billion in 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 costs for this rule will be approximately \$1.5 billion per year. This includes costs we expect industry to incur to comply with the rule and the rule’s broader impact on the economy.

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

- Key changes based on new information and public comment include:
  - Created a solid fuel category instead of separate biomass and coal subcategories for PM, mercury, and HCl. Biomass fuel emissions are generally lower in mercury and HCl than coal emissions.
  - Units burning gases other than natural gas and refinery gas can qualify for work practice standards by demonstrating that their fuel contaminant levels are similar to natural gas.
  - Added subcategories for combination suspension/grate burners, limited-use units, and non-continental liquid units.
  - Replaced emissions limits with work practice standards for new boilers with a heat input capacity less than 10 million British thermal units per hour and extended work practice standards to limited-use units.
  - Added work practice standards, in lieu of numeric emission limits, for periods of startup and shutdown.
- The Agency did not receive information sufficient to form a basis for the development of a health-based emissions limit (HBEL) for acid gases, specifically hydrochloric acid or HCL, hydrogen cyanide, hydrogen fluoride, and chlorine, as well as emissions from other sources in the facilities that have boilers.

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

- EPA has finalized a rule to reduce emissions of toxic air pollutants from new and existing industrial, commercial, and institutional boilers and process heaters located at *area* source facilities. An area source facility has the potential to emit less than 10 tpy of any single air toxic or less than 25 tpy 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. Sewage sludge incinerators (SSI) 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 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 CAA requires EPA to develop rules to reduce air toxics emissions from categories of facilities that emit one or more of 187 listed toxic air pollutants. These rules require the application of emissions limits based on maximum achievable control technology.
- EPA identified industrial boilers, commercial and institutional boilers, and process heaters as categories of major sources for which emission standards must be developed.
- 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.
  - On September 13, 2004, EPA promulgated national emission standards for hazardous air pollutants for new and existing industrial/commercial/ institutional boilers and process heaters.
  - On June 19, 2007, the United States Court of Appeals for the District of Columbia Circuit vacated and remanded the 2004 standards because it vacated in the same decision an EPA definitional rule that included units combusting solid waste for energy recovery as boilers instead of as incinerators.

## FOR MORE INFORMATION

- The final rule is posted at: [http://www.epa.gov/air quality/combustion/actions.html](http://www.epa.gov/air_quality/combustion/actions.html).
- Today's final rule 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 in the EPA Headquarters Library, Room Number 3334 in the EPA West Building, located at 1301 Constitution Ave., 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 final action can be accessed using Docket ID No. EPA-HQ-OAR-2002-0058.
- For further information about the final rule, contact Mr. Brian Shrager of EPA's Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Energy Strategies Group at (919) 541-7689 or by e-mail at [shrager.brian@epa.gov](mailto:shrager.brian@epa.gov).