

## FACT SHEET

### PROPOSED MERCURY AND AIR TOXICS STANDARDS

#### ACTION

- On March 16, 2011, the Environmental Protection Agency (EPA) issued a proposed rule that would reduce emissions of toxic air pollutants from power plants. Specifically, the proposal would reduce emissions from new and existing coal- and oil-fired electric utility steam generating units (EGUs).
  - EPA is also proposing to revise the new source performance standards (NSPS) for fossil-fuel-fired EGUs. This NSPS would revise the standards new coal- and oil-fired power plants must meet for particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and nitrogen oxides (NO<sub>x</sub>).
- The proposed toxics rule would reduce emissions of heavy metals, including mercury (Hg), arsenic, chromium, and nickel, and acid gases, including hydrogen chloride (HCl) and hydrogen fluoride (HF). These toxic air pollutants, also known as hazardous air pollutants or air toxics, are known or suspected of causing cancer and other serious health effects.
- Power plants are the largest source of mercury emissions to the air. Once mercury from the air reaches water, microorganisms can change it into methylmercury, a highly toxic form that builds up in fish. People are primarily exposed to mercury by eating contaminated fish.
  - Methylmercury exposure is a particular concern for women of childbearing age, unborn babies, and young children because studies have linked high levels of methylmercury to damage to the developing nervous system. This damage can impair children's ability to think and learn.
  - Mercury and other power plant emissions also damage the environment and pollute our nation's lakes, streams, and fish.
- Other toxic metals emitted from power plants, such as arsenic, chromium and nickel can cause cancer. Reducing toxic power plant emissions will also cut fine particle pollution and prevent thousands of premature deaths and tens of thousands of heart attacks, bronchitis cases and asthma episodes.
- As part of this rulemaking, EPA is also proposing monitoring changes and other minor amendments to the industrial, commercial, and institutional steam generating units (i.e., boilers) NSPS, but does not propose to amend those emission standards.
- EPA will take public comment on this action for 60 days following publication of the proposal in the Federal Register.
  - EPA will hold public hearings on the proposal in Atlanta, GA, Chicago, IL, and Philadelphia, PA. Details on the timing and location for those hearings will be made available soon in a separate Federal Register notice and posted at <http://www.epa.gov/airquality/powerplanttoxics/>

## **AFFECTED SOURCES**

- The mercury and air toxics standards will affect EGUs that burn coal or oil for the purpose of generating electricity for sale and distribution through the national electric grid to the public are affected by this rule.
  - These include investor-owned units as well as units owned by the Federal government, municipalities, and cooperatives that provide electricity for commercial, industrial, and residential uses.
  - EPA has identified two different subcategories of coal-fired EGUs, two different subcategories of oil-fired EGUs, and a subcategory for units that combust gasified coal or solid oil (Integrated gasification and combined cycle (IGCC) units) based on the design of the various types of boilers at different power plants. The proposed air toxics rule includes emission standards and other requirements for each subcategory.
- EPA estimates that there are approximately 1,350 units affected by this action. Approximately 1,200 existing coal-fired units and 150 oil fired units at about 525 power plants.
- The NSPS will affect boilers that burn fuels, including coal, oil, or natural gas to produce steam. The steam is used to produce electricity or provide heat.
  - Boilers are used at industrial facilities (e.g., refineries, chemical and manufacturing plants, and paper mills), commercial establishments (e.g., stores/malls, laundries, apartments, restaurants, hotels/motels), and institutional facilities (e.g., medical centers, educational and religious facilities, and municipal buildings).

## **REQUIREMENTS**

- For all existing and new coal-fired EGUs, the proposed standards would establish numerical emission limits for mercury, PM (a surrogate for toxic non-mercury metals), and HCl (a surrogate for toxic acid gases).
- For all existing and new oil-fired EGUs, the proposed toxics rule would establish numerical emission limits for total metals, HCl, and HF. Compliance with the metals standards is through fuel testing.
- The proposal would establish alternative standards, including SO<sub>2</sub> (as an alternate to HCl), individual non-mercury metal air toxics (as an alternate to PM), and total non-mercury metal air toxics (as an alternate to PM) for certain subcategories of power plants.
- A range of widely available, technical and economically feasible practices, technologies, and compliance strategies are available to power plants to meet the emission limits, including wet and dry scrubbers, dry sorbent injection systems, activated carbon injection systems, and baghouses.

- The proposed standards would establish work practices, instead of numerical emission limits, to limit emissions of organic air toxics, including dioxin/furan, from existing and new coal- and oil-fired power plants. Because dioxins and furans form from inefficient combustion, the proposed work practice standards would require an annual performance test program for each EGU that would include inspection, adjustment, and/or maintenance and repairs to ensure optimal combustion.
- The proposed revisions to the NSPS would include revised numerical EGU emission limits for PM, SO<sub>2</sub>, and NO<sub>x</sub>.

## **BENEFITS AND COSTS**

- Power plants are the largest source of several harmful pollutants. They are responsible for 50 percent of mercury emissions, over 50 percent of acid gas emissions, and about 25 percent of toxic metal emissions in the United States.
  - Coal-fired power plants are responsible for 99 percent of mercury emissions and the bulk the other pollutants from the power sector.
  - EPA expects that dozens of coal-fired plants already meet at least some part of the proposed standards, however, about 44 percent of all coal-fired plants lack advanced pollution control equipment.
- The updated standards will provide certainty and level the playing field so that all power plants will have to limit their toxic emissions – ultimately preventing 91 percent of the mercury in burned coal from being emitted into the air. The rule provides up to 4 years for facilities to meet the standards.
- EPA did not estimate the benefits associated with reducing exposure to air toxics or other air pollutants, ecosystem effects, or visibility impairment. However, the proposed toxics 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.
- In addition to the benefits of reducing exposure to air toxics, these standards would reduce concentrations of fine particles (PM<sub>2.5</sub>) in our air. This will significantly improve public health by preventing hundreds of thousands of illnesses and thousands of premature deaths each year.
- In 2016, these proposed rules would avoid:
  - ◆ 6,800 – 17,000 premature deaths,
  - ◆ 4,500 cases of chronic bronchitis,
  - ◆ 11,000 nonfatal heart attacks,
  - ◆ 12,200 hospital and emergency room visits,
  - ◆ 11,000 cases of acute bronchitis,
  - ◆ 220,000 cases of respiratory symptoms,
  - ◆ 850,000 days when people miss work,
  - ◆ 120,000 cases of aggravated asthma, and
  - ◆ 5.1 million days when people must restrict their activities

- EPA estimates the health benefits associated with reduced exposure to fine particles are \$59 billion to \$140 billion in 2016 (2007\$).
- EPA estimates the total national annual cost of this rule will be \$10.9 billion in the year 2016.
- EPA anticipates that the proposed toxics rule may have a significant economic impact on small entities. Thus, as required by section 609(b) of the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), we conducted outreach to small entities and convened a Small Business Advocacy Review (SBAR) Panel to obtain advice and recommendations from representatives of the small entities that potentially would be subject to the requirements of the proposed toxics rule.
- EPA also consulted with State, local, and tribal officials in the process of developing the proposed toxics rule to permit them to have input into its development.

## **BACKGROUND**

- On December 20, 2000, EPA made a determination under the Clean Air Act that it was appropriate and necessary to regulate coal- and oil-fired EGUs under CAA section 112 and added such units to the CAA section 112(c) list (112 list) of sources that must be regulated. On January 30, 2004, EPA proposed section 112 standards for Hg emissions from coal-fired EGUs and nickel (Ni) emissions from oil-fired EGUs, and, in the alternative, proposed to remove EGUs from the 112 list based on a finding that it was neither appropriate nor necessary to regulate EGUs under this section of the Clean Air Act. On March 29, 2005, EPA issued a final revision of the appropriate and necessary finding for coal- and oil-fired EGUs and removed such units from the 112 list. EPA never finalized the proposed section 112 standards for Hg and Ni.
- The removal of EGUs from the 112 list was challenged in court. On February 8, 2008, the court determined that EPA violated the CAA by removing EGUs from the 112 list. As a result, EGUs remain a CAA section 112(c) listed source category.
- In response to the D.C. Circuit Court's vacatur, EPA is proposing section 112 air toxics standards for all coal- and oil-fired EGUs that reflect the application of the maximum achievable control technology (MACT) consistent with the requirements of the CAA.
- This proposed toxics rule would regulate units at both major and area sources. Major sources are those that have the potential to emit 10 tpy or more of any one air toxic or 25 tpy or more of any combination of air toxics.
- In accordance with a Consent Decree, the EPA Administrator must sign a final section 112 rule by November 16, 2011.
- On February 27, 2006, EPA promulgated amendments to the NSPS for PM, SO<sub>2</sub>, and NO<sub>x</sub>

contained in the standards of performance for EGUs. EPA was subsequently sued on the amendments and on September 2, 2009, was granted a voluntary remand without vacatur of the 2006 amendments. The proposed revisions to the NSPS are in response to that voluntary remand.

## **HOW TO COMMENT**

- EPA will accept comment on the proposal until July 5, 2011. Comments on the proposed toxics rule should be identified by Docket ID No. EPA-HQ-OAR-2009-0234. Comments on the proposed NSPS revisions should be identified by Docket ID No. EPA-HQ-OAR-2011-0044. All comments may be submitted by one of the following methods:
  - [www.regulations.gov](http://www.regulations.gov): Follow the on-line instructions for submitting comments.
  - E-mail: Comments may be sent by electronic mail (e-mail) to [a-and-r-Docket@epa.gov](mailto:a-and-r-Docket@epa.gov).
  - Fax: Fax your comments to: 202-566-1741.
  - Mail: Send your comments to: Air and Radiation Docket and Information Center, Environmental Protection Agency, Mail Code: 2822T, 1200 Pennsylvania Ave., NW, Washington, DC, 20460.
  - Hand Delivery or Courier: Deliver your comments to: EPA Docket Center, Room 3334, 1301 Constitution Ave., NW, Washington, DC, 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

## **FOR MORE INFORMATION**

- The proposed rules are posted at:  
<http://www.epa.gov/airquality/powerplanttoxics/actions.html>.
- Today's proposed rules 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 the proposed toxics rule can be accessed using Docket ID No. EPA-HQ-OAR-2009-0234.
  - Materials for the proposed NSPS revisions can be accessed using Docket ID No. EPA-HQ-OAR-2011-0044.