

FACT SHEET

MERCURY AND AIR TOXICS STANDARDS FOR POWER PLANTS

ACTION

- On December 16, 2011, the Environmental Protection Agency (EPA) signed a rule to reduce emissions of toxic air pollutants from power plants. Specifically, these mercury and air toxics standards (MATS) for power plants will reduce emissions from new and existing coal- and oil-fired electric utility steam generating units (EGUs).
 - EPA also signed revisions to the new source performance standards (NSPS) for fossil-fuel-fired EGUs. This NSPS revises the standards that new coal- and oil-fired power plants must meet for particulate matter (PM), sulfur dioxide (SO₂), and nitrogen oxides (NO_x).
- MATS will reduce emissions of heavy metals, including mercury (Hg), arsenic (As), chromium (Cr), and nickel (Ni); and acid gases, including hydrochloric acid (HCl) and hydrofluoric acid (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 U.S. 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, which can impair children's ability to think and learn.
 - Mercury and other power plant emissions also damage the environment. Toxics pollute our nation's lakes and streams and contaminate 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 SO₂ and fine particle pollution, which will reduce particle concentrations in the air we breathe and prevent thousands of premature deaths and tens of thousands of heart attacks, bronchitis cases and asthma episodes.
- The final MATS rule is mostly unchanged from proposal. We used new information from the public comment process to adjust some aspects of the rule but the approach and methodology remain the same. Key changes include:
 - Some emissions limits are adjusted, including using filterable PM as a surrogate for the metal toxics limit
 - Revised definition of coal subcategories
 - Added subcategories for non-continental oil-fired units and limited use oil-fired units
 - Improved monitoring provisions for clarity and consistency; and
 - Provided an alternative compliance option for sources that plan to comply by averaging across multiple units.

- Existing sources generally will have up to 4 years if they need it to comply with MATS.
 - This includes the 3 years provided to all sources by the Clean Air Act. EPA’s analysis continues to demonstrate that this will be sufficient time for most, if not all, sources to comply.
 - Under the Clean Air Act, state permitting authorities can also grant an additional year as needed for technology installation. EPA expects this option to be broadly available.
- EPA is also providing a pathway for reliability critical units to obtain a schedule with up to an additional year to achieve compliance. This pathway is described in a separate enforcement policy document. The EPA believes there will be few, if any situations, in which this pathway will be needed.
- In the unlikely event that there are other situations where sources cannot come into compliance on a timely basis, consistent with its longstanding historical practice under the Clean Air Act, the EPA will address individual noncompliance circumstances (if there are any) on a case-by-case basis, at the appropriate time, to determine the appropriate response and resolution.

AFFECTED SOURCES

- Power plants are the largest U.S. source of several harmful pollutants. They are responsible for about 50 percent of mercury emissions, and 77 percent of acid gas emissions. They are also the leading source of emissions of other toxics, including arsenic, nickel, selenium and hexavalent chromium
 - EPA expects that dozens of coal-fired plants already meet at least some part of the standards; however, about 40 percent of coal-fired units covered by the rule still don’t use advanced controls.
- MATS applies to EGUs larger than 25 megawatts (MW) that burn coal or oil for the purpose of generating electricity for sale and distribution through the national electric grid to the public.
 - 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 estimates that there are approximately 1,400 units affected by this action -- approximately 1,100 existing coal-fired units and 300 oil fired units at about 600 power plants.
- The final MATS identifies two subcategories of coal-fired EGUs, four subcategories of oil-fired EGUs, and a subcategory for units that combust gasified coal or solid oil (integrated

gasification combined cycle (IGCC) units) based on the design, utilization, and/or location of the various types of boilers at different power plants. The rule includes emission standards and/or other requirements for each subcategory.

- The NSPS will affect EGUs that burn fossil fuel to produce steam. The steam is used to produce electricity for sale to the grid.
- The final standards will provide certainty to the power sector and level the playing field by setting nationwide emissions limits. All power plants will have to limit their toxic emissions – ultimately preventing 90 percent of the mercury in coal burned at power plants from being emitted into the air.

REQUIREMENTS

- For all existing and new coal-fired EGUs, the rule establishes numerical emission limits for mercury, PM (a surrogate for toxic non-mercury metals), and HCl (a surrogate for all toxic acid gases).
- For existing and new oil-fired EGUs, the standards establish numerical emission limits for PM (a surrogate for all toxic metals), HCl, and HF. EGUs may also show compliance with the HCl and HF limits by limiting the moisture content of their oil.
- The rule establishes alternative numeric emission standards, including SO₂ (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.
- The standards set work practices, instead of numerical 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 as a result of inefficient combustion, the work practice standards require an annual performance test program for each unit that includes inspection, adjustment, and/or maintenance and repairs to ensure optimal combustion.
- The standards also set work practices for limited-use oil-fired EGUs in the continental U.S.
- A range of widely available and economically feasible technologies, practices 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 fabric filters.
- The revisions to the NSPS for fossil-fuel-fired EGUS include revised numerical emission limits for PM, SO₂, and NO_x.

PUBLIC COMMENT AND OUTREACH

- EPA consulted with State, local, and tribal officials in developing the final rules and also worked with industry groups, unions and other stakeholders.

- EPA reviewed more than 900,000 public comments on the proposed rule, including more than 700,000 comments on MATS and more than 200,000 on the NSPS.
- EPA anticipates that the 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 rule.

BENEFITS AND COSTS

- MATS will cut emissions of toxic pollutants, many of which are of particular concern for children.
- EPA estimated a portion of the benefits associated with reducing human exposure to mercury but did not have data to estimate the full range of benefits associated with reducing exposure to other air toxics, ecosystem effects, or visibility impairment.
- In addition to the benefits of reducing exposure to air toxics, meeting these standards will reduce SO₂ and fine particle emissions, which will reduce concentrations of fine particles (PM_{2.5}) 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 rules would avoid:
 - ◆ 4,200 to 11,000 premature deaths,
 - ◆ 2,800 cases of chronic bronchitis,
 - ◆ 4,700 heart attacks,
 - ◆ 130,000 cases of aggravated asthma
 - ◆ 5,700 hospital and emergency room visits,
 - ◆ 6,300 cases of acute bronchitis,
 - ◆ 140,000 cases of respiratory symptoms,
 - ◆ 540,000 days when people miss work, and
 - ◆ 3.2 million days when people must restrict their activities
- EPA estimates the health benefits associated with meeting the standards for air toxics are \$37 billion to \$90 billion in 2016 (2007\$).
- EPA estimates the total national annual cost of this rule will be \$9.6 billion.

BACKGROUND

- On December 20, 2000, EPA made a determination 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 source categories that must be regulated. On January 30, 2004, EPA proposed section 112 standards for Hg emissions from coal-fired EGUs and nickel emissions from oil-fired EGUs, and, in the alternative, proposed to remove EGUs from the section 112 list based on a finding that it was neither appropriate nor necessary to regulate EGUs under this section of the Clean Air Act. At that time EPA also proposed to regulate mercury from coal-fired EGUs under CAA section 111. 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 section 112 list. EPA never finalized the proposed section 112 standards for Hg and Ni, but did finalize the regulation under section 111 to reduce mercury emissions from coal-fired EGUs. On February 8, 2008, the D.C. Circuit vacated both the 2005 Action to remove EGUs from the section 112 list and the section 111 rule to limit mercury emissions.
- The removal of EGUs from the 112 list was challenged in court. On February 8, 2008, the United States Court of Appeals 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, on March 16, 2011, EPA proposed 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. The proposal was published in the Federal Register on May 3, 2011.
- In accordance with a Consent Decree, the EPA Administrator has signed a final section 112 rule by December 16, 2011.
- On February 27, 2006, EPA promulgated amendments to the NSPS for PM, SO₂, and NO_x 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 final revisions to the NSPS are in response to that voluntary remand.

FOR MORE INFORMATION

- The rules are posted at: <http://www.epa.gov/mats>.
- Today's 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 MACT portion of MATS can be accessed using Docket ID No. EPA-HQ-OAR-2009-0234.
- Materials for the NSPS revisions can be accessed using Docket ID+ No. EPA-HQ-OAR-2011-0044.