

FACT SHEET

EPA Boiler Standards: Department of Energy and Department of Agriculture Technical Assistance for Boiler Operators and Owners

On February 21, 2011 EPA issued Clean Air Act pollution standards that apply to large and small boilers located at a wide range of industrial facilities and institutions. Boilers covered by the new standards will not be required to comply until after February 2014. EPA estimates that the total number of boilers affected by the standards is about 200,000, of which 187,000 are small boilers.

In order to reach this large and diverse set of sources with the information and resources needed to comply with the new standards, EPA is working with the Departments of Energy (DOE) and Agriculture (USDA) to provide facilities and institutions with technical assistance that will help boilers burn cleaner and more efficiently, thus cutting harmful pollution and reducing operation costs at the same time.

Boiler Classifications under the Clean Air Act

Under the Clean Air Act, EPA classifies sources by the amount of toxic pollution they emit. A “major source” facility emits 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 identified 15 different subcategories of major source boilers and process heaters based on the design of the various types of units. The final rule includes specific requirements for each subcategory. Sources that emit less than 10 tpy of any single air toxic or 25 tpy of any combination of air toxics are classified as “area sources.”

Major source boilers and process heaters are used at industrial facilities such as refineries, chemical and manufacturing plants, and paper mills and may stand alone to provide heat for commercial facilities such as shopping malls or institutional facilities such as universities. The majority of major source boilers and process heaters are located at industrial facilities.

Area source boilers burn coal, oil or biomass, such as wood, to produce energy or heat. Boilers in this category are used in manufacturing, processing, mining, refining, or any other industry. The majority of area source boilers, however, are located at commercial and institutional facilities such as medical centers or municipal buildings.

Outlined below are the types of assistance that DOE and USDA are planning to provide to boiler owners and operators and summaries of major and area source requirements that will protect air quality and public health by requiring cost-effective, practical, and readily available technologies and work practices.

DOE Assistance for Major Source Industrial Boilers and Process Heaters

DOE has joined EPA in an effort to help ensure that major sources burning coal and oil have information on cost-effective clean energy strategies for compliance. DOE is currently engaged in providing technical information on clean energy options to industry through its regional Clean Energy Application Centers. DOE will provide site-specific technical and cost information to the major source facilities that are currently burning coal or oil in their boilers. These facilities may have opportunities to develop compliance strategies, such as combined heat and power that are cleaner, more energy efficient, and that can have a positive economic return for the plant over time. These opportunities can be considered alongside investment in pollution controls to

comply with the standards in the rule. This assistance effort will begin once the reconsideration is complete; DOE will be prepared to visit these coal- and oil-fired facilities to discuss these clean energy options. DOE will provide the facilities identified above with information on potential funding and financing opportunities. Facilities that make use of this outreach can potentially develop strategies to reduce their emissions to comply with the regulations while adding to their bottom line.

In addition, the boiler tune-up portion of the regulation can save facilities energy-related costs, and the energy audit portion of the regulation will identify additional energy and cost savings. Additional efficiencies can be achieved if a facility chooses to comply through the installation of more advanced energy saving measures identified in the energy audit. DOE will provide to all affected sources information on financial incentives available at the local, state, utility and federal level to assist them in undertaking a boiler tune-up and/or energy audit.

USDA Assistance and Outreach to Major and Area Source Boilers

Working with EPA, USDA will be reaching out to facilities that have boilers that burn biomass to make sure that they understand the regulation, its cost- and energy-saving features, and the benefits that can accrue as a result. This USDA outreach effort will outline the difference between the proposed and final regulations, and it will focus on providing practical information such as what the work practice standards are, and advice on how to conduct an energy audit, and a biennial tune-up.

Major and Area Source Boilers and Process Heater Summary

Major Source 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 their fuel contaminant levels are 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.
- For all new and existing limited use units, which are units that operate less than 876 hours per year, 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 numeric emission limits for all other existing and new boilers and process heaters located at major sources – including those fired by coal or 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).

- Existing major source facilities are required to conduct an energy assessment to identify cost-effective energy conservation measures.

Area Source 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.
- 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 would be required to conduct an energy assessment to identify cost-effective energy conservation measures.

Benefits

- Together, EPA estimates that pollution reductions required by these standards will prevent more than 2,600 premature deaths, 4,100 heart attacks, and 42,000 asthma attacks. EPA estimates that Americans will receive 10 to 24 dollars in health benefits for every dollar spent to meet the standards.

More information

For more information on these standards: <http://www.epa.gov/airquality/combustion.html>