

**Reconsideration Proposal for
Boilers at Area Sources,
Boilers/Process Heaters at Major Sources, and
Commercial/Industrial Solid Waste Incinerators
and
Proposed Definition of
“Non-Hazardous Solid Waste”**

EPA’s Office of Air and Radiation
December 2, 2011





Overview

- ❑ On December 2, 2011, EPA proposed reconsidered standards for toxic air pollutants from boilers at major and area sources and certain solid waste incinerators.
 - ❑ The proposals would maintain public health protections through significant reductions in toxic air emissions, increase the flexibility of these standards, and address compliance concerns raised by industry and labor groups.
 - ❑ They are based on extensive analysis and review and consideration of data and input from states, environmental groups, industry, and the public.
- ❑ When EPA issued standards in March 2011, the agency also announced it intended to reconsider those standards under a Clean Air Act process that allows the agency to seek additional public review and comment to ensure full transparency.
- ❑ The December proposed reconsidered standards would cost-effectively protect Americans from mercury, particle pollution, lead and other harmful pollutants released by boilers and incinerators. These pollutants can lead to developmental disabilities in children, as well as cancer, heart disease, aggravated asthma and premature death.
- ❑ In addition to the Agency's reconsideration efforts, EPA received more than 50 petitions to reconsider, clarify, and amend certain provisions of the March rules.
- ❑ The proposed December rules address issues identified in the Agency's reconsiderations and subsequent petitions and considers the additional information and data submitted to the Agency.
 - ❑ There will be a 60-day comment period and the opportunity for a public hearing on this proposed reconsideration. We expect to finalize the reconsideration by spring 2012.



Health Benefits

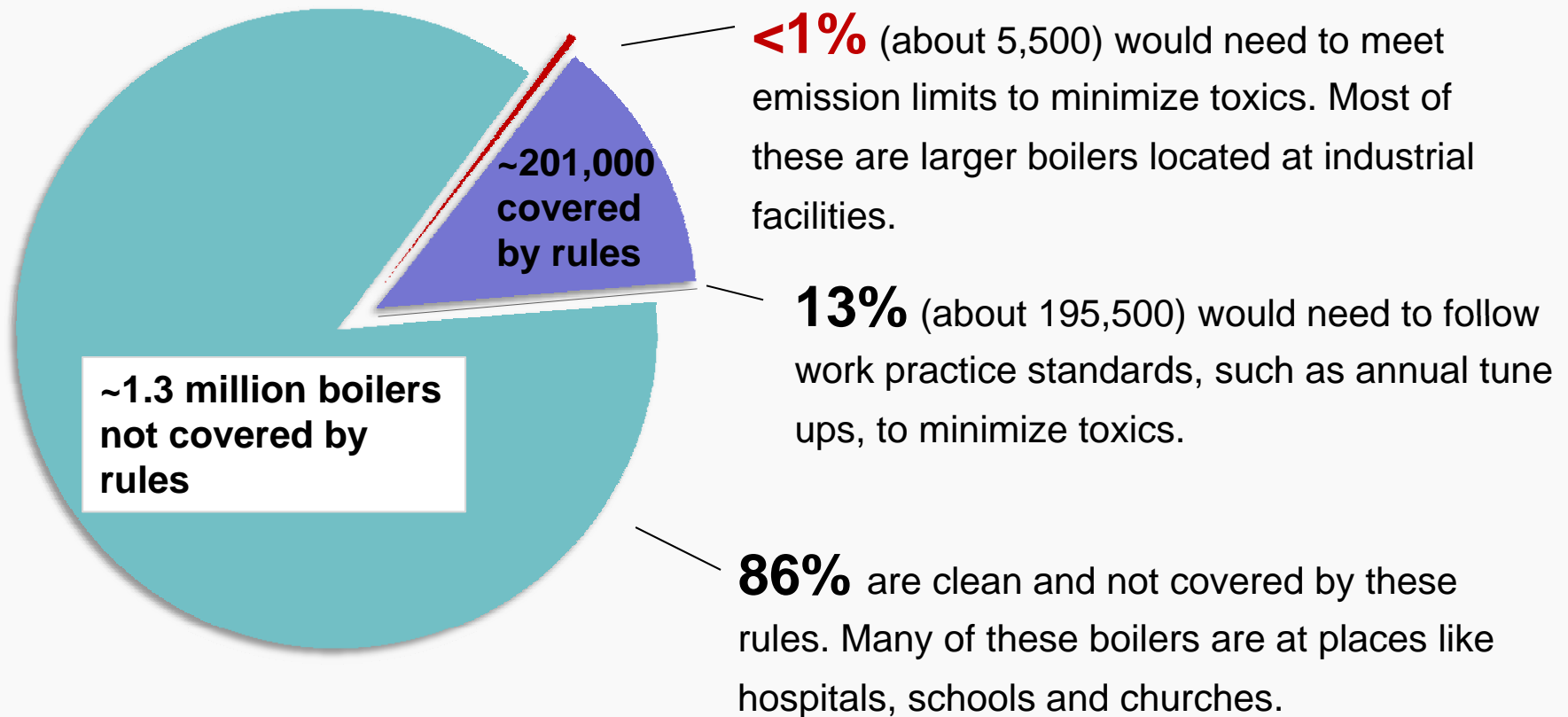
- ❑ The proposed changes would cut emissions of pollutants such as mercury, particle pollution, sulfur dioxide, dioxin, lead, and nitrogen dioxide.
- ❑ These pollutants can cause a range of dangerous health effects - from developmental disabilities in children to cancer, heart attacks and premature death.
- ❑ The proposed standards would have direct benefits to many communities where people live very close to these units.
- ❑ Together, the standards will avoid up to 8,100 premature deaths, 5,100 heart attacks, and 52,000 cases of aggravated asthma.
- ❑ EPA estimates that Americans would receive \$12 to \$30 in health benefits for every dollar spent to meet the proposed standards.





The Right Standards for the Right Boilers

Of 1.5 million boilers in the U.S.,
less than 1% would need to meet emission limits





Timeline

- ❑ March 2011: EPA issued final rules
 - ❑ Boiler major source rule
 - ❑ Boiler area source rule
 - ❑ Commercial and industrial solid waste incineration (CISWI) rule

- ❑ Concurrently, EPA initiated a reconsideration process affecting all three rules:
 - ❑ Address technical issues that arose from public comments
 - ❑ Give the public ample opportunity to comment on changes in the final rule that were not in the proposal

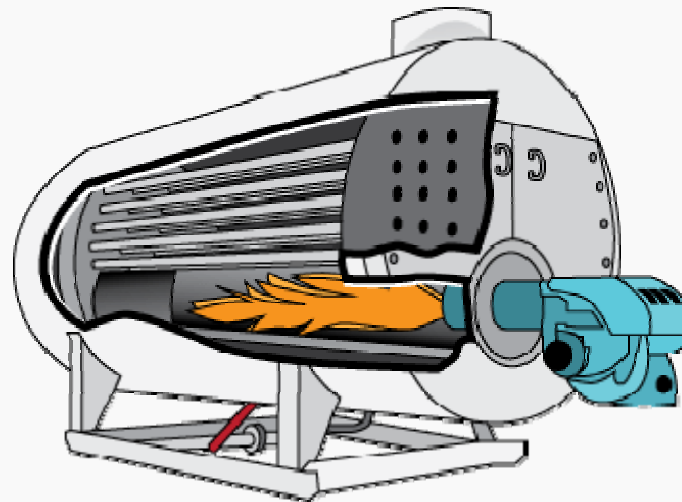
- ❑ May 16, 2011: EPA announced a stay of the Boiler major source and CISWI rules and solicited additional input, through July 15, 2011, on these rules

- ❑ December 2, 2011: EPA proposed reconsideration. Comment periods will be 60 days and there will be an opportunity for a public hearing.



What is a boiler?

- ❑ There are more than 1.5 million boilers in the US. Boilers burn fuel, including natural gas, fuel oil, coal, biomass (e.g., wood), or other gas to produce steam or hot water. The steam is used to produce electricity, drive an industrial process, or provide heat.
- ❑ Most boilers are at smaller emitting sources, burn natural gas and have low emissions of air pollution. Many others burn other fuels, and emit toxic air pollutants like mercury, lead and particle pollution. EPA is putting in place standards that are more than 10 years overdue to cut those emissions and protect American families.
- ❑ From the outside, a boiler looks like a large, rounded tank. The pipes deliver fuel, air, and water to the boiler. Stacks vent emissions to air pollution control equipment or the atmosphere. Controls on the tank regulate fuel, oxygen and pressure. Inside the boiler, fuel is burned to produce steam that is piped away from the tank to produce electricity or provide heat elsewhere.





How many boilers are there and where are they used?

- ❑ **Boilers located at small sources of air toxics emissions are known as area source boilers.** There are about 1.5 million boilers located at small sources of air pollutants, including universities, hospitals, hotels and commercial buildings. About 187,000 boilers would be covered by EPA's area source boiler rule. The rest, about 1.3 million boilers, burn natural gas and are not covered by EPA's area source boiler rule.
- ❑ **Boilers at large sources of air toxics emissions are known as major source boilers.** There are about 14,000 boilers located at large sources of air pollutants, including refineries, chemical plants, and other industrial facilities.
- ❑ The reconsidered standards would have direct benefits to many communities where people live, work, and play.

What would these rules require boiler owners to do?

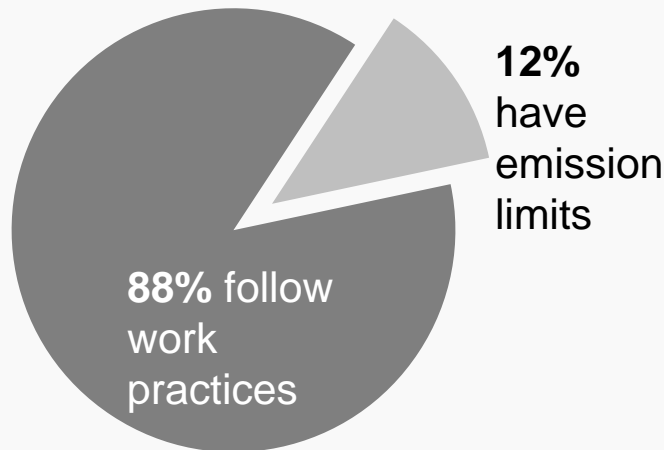
- ❑ Even though small boilers are the majority of the units covered by these rules, most of the toxic air emissions from the nation's boilers come from a limited number of large units. These proposed rules would set the right standards for the right boilers. The standards would cut air emissions of mercury, particle pollution, dioxin, lead and nitrogen dioxide. These pollutants can cause a range of dangerous health effects from developmental disabilities in children to cancer, heart attacks and premature death.



Breakdown of Major and Area Source Boilers

Major Source Boilers

About 14,000 covered units

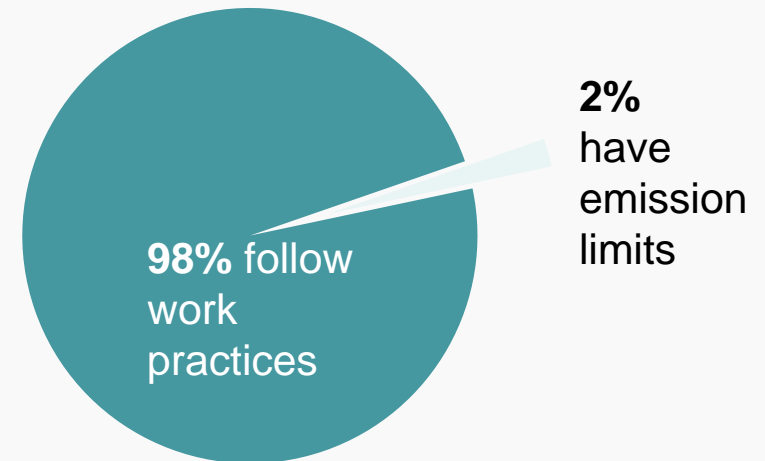


88% (about 12,300) would need to follow work practice standards, such as annual tune ups, to minimize toxics.

12% (about 1,750) would need to meet emission limits to minimize toxics.

Area Source Boilers

About 187,000 covered units
No natural gas boilers are covered by this rule.



98% (about 183,300) would need to follow work practice standards, such as annual tune ups, to minimize toxics.

2% (about 3,700) would need to meet emission limits to minimize toxics



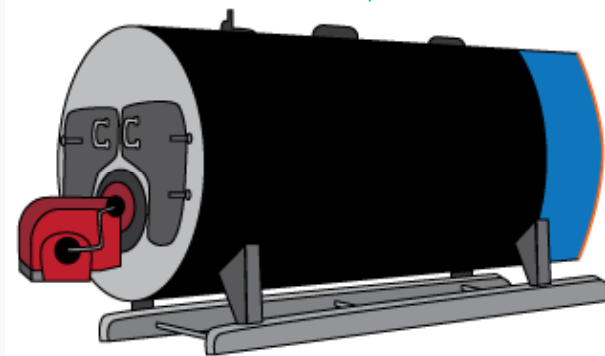
Boilers

- ❑ EPA's proposal would result in significant health benefits – mostly by reducing air pollution from less than one percent of all the boilers located in the US.
- ❑ For these high emitting boilers, EPA is proposing targeted emissions limits that are health protective and provide industry with practical, cost-effective options to meet the standards. Costs for major source units also will include compliance, monitoring and recordkeeping.
- ❑ These limits are based on currently available technologies that are in use by sources across the country.
- ❑ Area source boilers that burn natural gas are not covered by these regulations. Generally, neither are small boilers at small institutions, such as churches and schools.

Less than 1% of boilers need to meet limits

About 1.3 million are clean and do nothing under these rules

About 195,500 will only need to do annual tune ups to reduce toxics



About 5,500 may need to use controls to reduce toxics and meet emission limits



Boilers and CISWI

- ❑ These rules are developed under sections 112 and 129 of the Clean Air Act, two provisions that target toxic air pollution.
- ❑ Under these sections, EPA is required to set technology-based standards for toxic air pollutants, reflective of levels achieved by the best performing sources.
- ❑ For CISWI units, EPA is proposing revised emission limits for certain units that reflect the best performing commercial and industrial waste incineration units.
- ❑ Existing boilers at major source facilities have three years to comply with these standards and can obtain an additional year beyond that, if technology cannot be installed in time. Existing CISWI units have up to 5 years to comply.



Proposed Changes to March 2011 Boiler and CISWI Rules

- Maintain significant health benefits
- Propose standards that are based on the best available data and methodologies
- Provide additional flexibility where data warrant it
- Propose achievable emission limits



Petitions and Data Submissions

- ❑ During the reconsideration process, EPA received more than 50 petitions for reconsideration from industries and industry groups, industrial energy efficiency groups, states, and Sierra Club
 - ❑ Boiler major source rule: 29 petitions
 - ❑ Boiler area source rule: 10 petitions
 - ❑ CISWI rule: 17 petitions

- ❑ As of July 15, 2011, industry provided additional data for our analysis and consideration
 - ❑ Boiler major source rule:
 - ❑ Data on 150 emission tests from 108 units, including at least 8 tests each for mercury, particulate matter (PM), dioxins, carbon monoxide (CO), hydrogen chloride (HCl), and total selected metals
 - ❑ CO continuous emission monitoring system (CEMS) data
 - ❑ Data on mercury, chlorine, and metals fuel analyses from 2 facilities and a metals analysis from 1 facility
 - ❑ CISWI rule:
 - 12 ❑ Approximately 20 data submissions, with majority pertaining to energy recovery units



Proposed Changes: Boilers and Process Heaters at Major Sources

There are approximately 14,000 major source boilers in the US. 88% of those would be required to conduct periodic tune-ups and one-time energy audits. 12% would be required to take steps to meet emission standards if they do not already meet the standards.

Based on additional data provided after the agency issued final standards in March and on additional analyses, EPA is proposing to:

- ❑ **Create new subcategories for light and heavy industrial liquids** to reflect design differences in the boilers that burn these fuels. This change will improve the standards' achievability.
- ❑ **Set new emissions limits for PM** that are different for each solid fuel subcategory (e.g., biomass, coal) to better reflect real-world operating conditions.
- ❑ **Set new emissions limits for carbon monoxide** based on newly submitted data that shows CO emissions from boilers vary greatly. EPA is proposing to set new limits to more adequately capture that variability.
- ❑ **Allow an alternative total selective metals emissions limit** to regulate air toxics, allowing more flexibility and decreasing compliance costs
- ❑ **Replace numeric dioxin emissions limits with work practice standards** based on a robust analysis that shows dioxin emissions are below levels that can be accurately detected.
- ❑ **Increase flexibility in compliance monitoring** to remove continuous emissions monitoring requirements for particle pollution for biomass units and to propose a carbon monoxide standard that is based on either stack testing or continuous monitoring.
- ❑ **Revise emissions limits for units located outside the continental United States** to better reflect the unique operating conditions associated with these units.
- ❑ **Continue to allow units burning clean gases** to qualify for work practice standards instead of numeric emissions limits, maintaining flexibility and achievability.



Proposed Changes: Boilers at Area Sources

EPA is continuing to require work practice standards, including routine maintenance and tune-ups for 98 percent of area source boilers. Only 2 percent of area source boilers would need to meet emissions limits.

Based on additional data provided after the agency issued final standards in March and on additional analyses, EPA is proposing to:

- ❑ **Change Initial Tune-up Schedule:** To increase flexibility for most of these sources, EPA is proposing to create additional subcategories and require initial compliance tune-ups after two years instead of after the first year.

- ❑ **Alter Tune-up Schedule for Seasonal Use and Temporary Area Source Units:** EPA is proposing to require seasonal operators to conduct tune-ups every five years instead of every other year. These units are operated less frequently and have less of a need to conduct tune-ups than boilers that are operated year-round.



Proposed Changes: CISWI

Based on additional data provided after the agency issued final standards in March and on additional analyses, EPA is proposing to:

- Revise emission limits including those for dioxin and mercury.
- Clarify what units would fall under the definition of CISWI.
- Revise some monitoring requirements, which will provide facilities with more flexibility in achieving standards and lower compliance costs.



Proposed Revisions to Identification of Non-Hazardous Secondary Materials that are Solid Waste Final Rule

- ❑ EPA is also proposing targeted revisions to the final rule which identified which non-hazardous secondary materials can be burned in boiler or solid waste incinerators. Following the release of that final rule, the regulated community had expressed concerns regarding the regulatory criteria for a non-hazardous secondary material to be considered a legitimate, non-waste fuel, and how to demonstrate compliance with those criteria. EPA has re-examined the final rule and is proposing the following clarifications and amendments:
 - ❑ Clarify that certain materials are already included within the scope of biomass, that is considered a traditional fuel under those regulations;
 - ❑ Include a process for an owner or operator of a facility to petition EPA for a determination, based on a balancing of the legitimacy criteria and such other relevant factors, that such non-hazardous secondary material is not considered a solid waste when used as a fuel;
 - ❑ Identify a number of secondary materials, including resinated wood products, as non-wastes when used as a fuel; and
 - ❑ Revise the legitimacy criteria to expressly allow the comparison of groups of contaminants and clarify that contaminant comparisons may be made for any traditional fuel for which a combustion unit is designed to burn.