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Final-Form Rulemaking  
Outdoor Wood-Fired Boilers  
25 *Pa. Code* Section 123.14

Environmental Quality Board Meeting  
Harrisburg, PA  
July 13, 2010

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# Why was the Outdoor Wood-Fired Boiler Rulemaking Initiated?

- The Department receives numerous citizen complaints related to health concerns, odors, and smoke.
  - Complaints have been received from 53 of the 67 counties within the Commonwealth.
  - Smallest conventional OWBs emit ~ 1 ton particulate matter (PM) annually (mostly PM<sub>2.5</sub>). Emissions from a single OWB are equivalent to emissions from approximately 205 oil furnaces and 8,000 natural gas furnaces.
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# Pollutants of Concern - Fine Particulate Matter and Hazardous Air Pollutants

- PM2.5 can penetrate the deepest part of the lungs and may even get into the bloodstream.
  - Health concerns: irritation of the airways, coughing; difficulty breathing; decreased lung function; asthma attacks; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease.
  - Susceptible populations to PM2.5 exposure: people with asthma, diabetes, and heart and lung disease; all older adults; and all children under 4 years old. This accounts for approximately 50% of the American population.
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# Federal and State Outdoor Wood-Fired Boiler Initiatives

- The EPA and some OWB manufacturers developed a voluntary program to promote the manufacture and sale of cleaner-burning OWBs.
  - They developed a Phase 2 emission standard of 0.32 lbs PM/MMBtu heat output in October 2008. OWBs that are 90% cleaner burning qualify for the program.
  - To date, the EPA has qualified 14 Phase 2 OWB models made by nine manufacturers.
  - Eight Mid-Atlantic and New England states have enacted OWB legislation or proposed regulations that establish Phase 2 particulate matter standards for new OWBs.
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# Environmental Quality Board Public Participation Process

- September 15, 2009 – The Board approved the proposed OWB rulemaking.
  - October 17, 2009 – Published notice of the proposed rulemaking at 39 Pa. B. 6068; the 119-day comment period closed on February 12, 2010.
  - Public hearings on the proposed rulemaking were held in five locations:
    - Harrisburg – November 30, 2009
    - Wilkes-Barre – December 1, 2009
    - Cranberry Township – December 2, 2009
    - Williamsport – December 3, 2009
    - Coudersport – January 13, 2010
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# Environmental Quality Board Public Participation Process

- Substantial public interest in the proposed rulemaking
  - Comments received from ~ 2,000 commentators. Most comments fell into one of three categories:
    - Full support (538)
    - Support a state regulation contingent with revisions being made to the proposed regulation (723)
    - Opposed (745)
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# Supportive Comments

- Adverse health effects including heart disease, lung disease and premature death.
  - Allergies, asthma and lung and cardiovascular disease are exacerbated.
  - PM emissions.
  - Inability to enjoy personal property; smoke, malodors and burning of garbage prevent outside enjoyment.
  - Ground-level smoke due to short stacks.
  - Quality of life is significantly reduced by OWBs; rights to clean air are being infringed upon.
  - Local governments are unable or unwilling to adequately control the operation of OWBs.
  - Summer use: A seasonal prohibition of OWBs should be adopted.
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# Opposing Comments

- Regulating OWBs should be a local issue.
  - Too much government interference.
  - Opacity monitoring should not be included because it is a subjective measure.
  - The setback requirements are excessive and unnecessary for Phase 2 OWBs.
  - The stack height requirements are excessive for both new and existing OWBs.
  - The stack height requirements for existing OWBs are one-size-fits-all and retroactive.
  - Existing OWBs should be grandfathered unless they are determined to be creating a nuisance.
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# Final-Form Rulemaking Outdoor Wood-Fired Boilers

**DEP is proposing a prospective regulation that grandfathers provisions for existing units.**

## **Changes from Proposed to Final Rulemaking:**

- Grandfathers OWBs already in use; no new stack heights are required.
  - Adds a sell-through provision for non-Phase 2 OWBs through May 31, 2011.
    - The non-Phase 2 OWBs must be installed a minimum of 150 feet from the nearest property line.
    - The non-Phase 2 OWBs must have a permanently attached stack that extends a minimum of 10 feet above the ground, and
    - Is installed according to the manufacturer's specifications.
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# Final-Form Rulemaking Outdoor Wood-Fired Boilers

## Changes from Proposed to Final Rulemaking:

- Adds an exemption for OWBs transferred as part of a real estate transaction.
  - Clarifies the definition of OWB to exclude boilers equal to or greater than 350,000 BTU/HR, which are considered commercial units.
  - Adds two additional definitions: “New Phase 2 OWBs” and “Non-Phase 2 OWBs.”
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# Final-Form Rulemaking Outdoor Wood-Fired Boilers

## Changes from Proposed to Final Rulemaking:

- Reduces stack height requirement for new Phase 2 OWBs – the permanently attached stack must extend a minimum of 10 feet above the ground and be installed according to the manufacturer's specifications.
  - Reduces the setback requirements for new Phase 2 OWBs from 150 feet from the nearest property line to 50 feet from the nearest property line.
  - Deletes the listing of applicable regulatory requirements and added a general statement requiring OWBs to be operated in accordance with applicable Commonwealth, county and local laws and regulations.
  - Removes all written notice and recordkeeping requirements.
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# Final-Form Rulemaking – Outdoor Wood-Fired Boilers

## Costs to the regulated community:

- Manufacturers – One time cost for:
    - Research and development
    - Testing and certification for each new model (~\$30,000 + shipping)
    - Qualifying units will be certified by EPA and labeled accordingly.
  - There are three PA manufacturers:
    - Mahoning Outdoor Furnaces is field testing a Phase 2 model.
    - Freedom Outdoor Furnaces and Corle Building Systems believe their models meet the Phase 2 standards, but have not tested them.
  - Purchasers – Phase 2 OWBs are approximately 15% more costly. These costs are offset by being much more efficient:
    - Older models cost between \$8,000 - \$18,000
    - Cleaner-burning models cost between \$9,200 - \$20,700
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# Final-Form Rulemaking Outdoor Wood-Fired Boilers

## **Advisory Committee Review:**

- The Air Quality Technical Advisory Committee reviewed the final-form rulemaking on May 29, 2010, and unanimously concurred with the Department's recommendation to seek Board approval, with the following recommendations:
    - All OWBs should have a minimum stack height of 10 feet.
    - New Phase 2 OWBs should be set back 150 feet from the nearest occupied structure not within the property boundaries.
    - Non-Phase 2 OWBs not used as the sole source of heat or hot water should not be operated after May 15 of each year or before September 30 of each year.
    - Each year, retailers of OWBs should report to the Department the model of OWBs sold and the zip code of the buyers.
    - The Department should consider a buy-back program for non-Phase 2 OWBs.
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# Final-Form Rulemaking Outdoor Wood-Fired Boilers

## **Advisory Committee Review:**

- The Small Business Compliance Advisory Committee reviewed the final-form rulemaking on April 28, 2010, and unanimously concurred with the Department's recommendation to seek Board approval, with the following recommendations:
    - The written notice and recordkeeping provisions of proposed subsections 123.14(i) and (j) should be reinstated in the final-form rulemaking.
    - Grant monies should be provided for purchase and installation of Phase 2 OWBs that will replace non-Phase 2 OWBs.
  - The Department also consulted with the Agricultural Advisory Board on April 21, 2010, and the Citizens Advisory Council on March 16, 2010, and May 6, 2010. No official recommendations were submitted to the Department from these two groups.
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# Final-Form Rulemaking Outdoor Wood-Fired Boilers

- When compared with a conventional model, PM2.5 emissions will be reduced by 90% for every Phase 2 OWB that is installed after the effective date of this rulemaking.
  - The operation and environmental impact of existing OWBs will also be improved by the use of allowed fuels.
  - If adopted by the Board, the final rulemaking will be submitted to the EPA for approval as a revision to the State Implementation Plan.
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**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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