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February 12, 2010

2010 FEB 12 PM 4:40

INDEPENDENT REGULATORY  
REVIEW COMMISSION

**By Electronic Submission**

Environmental Quality Board  
P.O. Box 8477  
Harrisburg, PA 17105-8477

Re: Proposed Regulation of Outdoor Wood-Fired Boilers  
39 Pa. Bull. 6068 (October 17, 2009)

Dear Environmental Quality Board:

We are writing in support of regulation of Outdoor Wood-Fired Boilers (OWBs). Following the unanimous recommendation of the Air Quality Technical Advisory Committee,<sup>1</sup> the Department of Environmental Protection (Department) worked with the Environmental Quality Board (Board) to develop and propose regulations for these units, which present severe health and nuisance problems for Pennsylvanians. OWBs also represent a large source of uncontrolled emissions of fine particles (PM<sub>2.5</sub>) at a time when new regulatory requirements<sup>2</sup> highlight the urgent need to reduce these emissions.

- I. Pennsylvania needs a strong OWB rule to protect the public health and prevent nuisances.
  - A. The Board's final rule must vindicate the Commonwealth's policy regarding the public health, safety, and well-being of its citizens.

Under the Pennsylvania Constitution, the people have a right to clean air.<sup>3</sup> In the Air Pollution Control Act (APCA), the General Assembly declared that it is the policy of the Commonwealth of Pennsylvania to protect the air resources of the Commonwealth to the degree necessary for the protection of public health, safety and well-being of its citizens, as well as the protection of the comfort and convenience of the public.<sup>4</sup> This declaration replaced a prior version that qualified this policy with the phrase "as shall be technically feasible [and] economically reasonable[.]"<sup>5</sup> The new language constituted "a marked shift from combating air pollution within limitations of technical feasibility and economic reasonableness to protection not only of the air resource itself, but also of the public health, property, and recreational

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<sup>1</sup> Pennsylvania Department of Environmental Protection, Air Quality Technical Advisory Committee, Minutes of Feb. 12, 2009 and May 28, 2009, available at <http://www.dep.state.pa.us/dep/subject/advcoun/aqtac/aqtac2009.htm> (last visited Feb. 8, 2010).

<sup>2</sup> See, e.g., Air Quality Designations for the 2006 24-Hour Fine Particle (PM<sub>2.5</sub>) National Ambient Air Quality Standards; Final Rule, 74 Fed. Reg. 58,688 (Nov. 13, 2009).

<sup>3</sup> Pa. Const. art. I, § 27.

<sup>4</sup> 35 P.S. § 4002(a)(i, iii) (2010).

<sup>5</sup> 35 P.S. § 4002 (1960).

resources of the Commonwealth."<sup>6</sup> Under the APCA, the Board has the power and the duty to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution.<sup>7</sup> Therefore, by the Pennsylvania Constitution, by statute, and by precedent, the touchstone of the Board's final decision on the proposed regulations must be the public health, safety, and well-being of its citizens.

B. Pollution from wood-fired boilers poses significant health risks, and the proposed rule should be strengthened to account for benefits from pollutants besides PM2.5 and benefits for children.

The Board's discussions of the adverse health consequences of OWBs and the benefits of the proposed regulation both focus on fine particles, or PM2.5.<sup>8</sup> One study has showed fine particle levels at a distance of 50 to 150 feet from a single operating OWB exceeding the 24-hour national health standard for fine particles.<sup>9</sup> According to the United States Environmental Protection Agency (U.S. EPA):

Health studies have shown significant associations between exposure to PM2.5 and premature death from heart and lung disease. PM2.5 can also aggravate heart and lung diseases and has been linked to effects such as cardiovascular symptoms, cardiac arrhythmias, heart attacks, respiratory symptoms, asthma attacks, and bronchitis. These effects can result in increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days. Individuals that may be particularly sensitive to PM2.5 exposure include people with heart or lung disease, older adults, and children.<sup>10</sup>

Because of these serious health effects, we agree with the Board that PM2.5, by itself, would be an urgent reason to move forward with regulation of OWBs.<sup>11</sup> However, combustion in OWBs creates emissions of other pollutants which create cancer and non-cancer risks. This includes carcinogenic polycyclic aromatic hydrocarbons (PAHs) and acute respiratory and cardiovascular risks from the entire mixture of emissions.<sup>12</sup> To the extent that the proposed rule fails to account

<sup>6</sup> Rushton Mining Co. v. Commonwealth, 328 A.2d 185, 186 (Pa. Commw. 1974), citing Act of June 12, 1968, P.L. 163 §1. See also Commonwealth v. Pa. Power Co., 416 A.2d 995 (Pa. 1980).

<sup>7</sup> 35 P.S. § 4005.

<sup>8</sup> 39 Pa. Bull. at 6068-69, 6070.

<sup>9</sup> New York Attorney General, "Smoke Gets in Your Lungs: Outdoor Wood Boilers in New York State", rev. March 2008, at 5, available at

<http://www.oag.state.ny.us/bureaus/environmental/pdfs/Smoke%20Gets%20in%20Your%20Lungs%20Revised%20March%202008.pdf> (last visited Feb. 7, 2010) ("New York Attorney General Report"; see also U.S. EPA, Strategies for Reducing Residential Wood Smoke, Oct. 29, 2009, available at

<http://www.epa.gov/ttn/oarpg/t1/memoranda/strategies-doc-8-11-09.pdf> (last visited Feb. 7, 2010) ("one old dirty unit can result in fine particle levels above [National Ambient Air Quality Standards]").

<sup>10</sup> Air Quality Designations for the 2006 24-Hour Fine Particle (PM2.5) National Ambient Air Quality Standards; Final Rule, 74 Fed. Reg. 58,688 (Nov. 13, 2009).

<sup>11</sup> Northeast States for Coordinated Air Use Management (NESCAUM), Assessment of Outdoor Wood-Fired Boilers rev. June 2006, at 4-1 ("NESCAUM Assessment") ("The abundance of fine particulates in wood smoke presents perhaps the most serious health risk to exposed populations...").

<sup>12</sup> David R. Brown, et al., *An Assessment of Risk from Particulate Released from Outdoor Wood Boilers*, 13 Human and Ecological Risk Assessment 191, 192 (2007). See also NESCAUM Assessment at 4-1.

for the additional benefits created by reducing or dispersing pollutants besides PM2.5 from OWBs, a full accounting for these benefits would support a stronger and more protective rule.

Further, according to U.S. EPA, children are more susceptible to wood smoke, as their respiratory systems are still developing and they breathe more air (and air pollution) per pound of body weight than adults.<sup>13</sup> The proposed rule makes no more than a passing mention of the effects of OWB emissions on children.<sup>14</sup> Again, to the extent that the Department has underestimated the benefits of a stronger rule on children's health, the rule should be strengthened as explained below.

C. Wood-fired boilers in Pennsylvania threaten the health and quality of life of nearby neighbors.

A boy sits in his home. Suddenly, a neighbor walks in the front door, lights a cigarette, and forces the boy to smoke it. Shocking? Yes. But this is like the situation some OWB users perpetrate on neighbors, who have no escape from the dangerous pollution that permeates yards and homes. We have heard reports of headaches, watery eyes, burning noses, sore throats, coughing, aggravation of asthma and emphysema, and other health effects from OWBs in Pennsylvania.

Dangerous and foul emissions from OWBs arise from such factors as the primitive combustion technology, poor dispersion of emissions, and combustion of improper materials.<sup>15</sup> The Board acknowledges that "[t]here are many citizen complaints regarding the operation of OWBs."<sup>16</sup> Because emissions impact neighboring homes and property, the Board must adopt a regulation that will protect neighbors of OWBs from these severe health and nuisance effects.

D. To protect our citizens, Pennsylvania must attain national health standards.

Part or all of twenty-two Pennsylvania counties fail to meet national health standards for PM2.5<sup>17</sup>, putting their residents at risk of the health effects of OWBs. Under the Clean Air Act,<sup>18</sup> the Department and other agencies must develop plans that will reduce pollution, meet national standards, and protect the public health.

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<sup>13</sup> U.S. EPA, Burn Wise: Consumers--Health Effects webpage, <http://www.epa.gov/burnwise/healtheffects.html> (last visited Feb. 2, 2010).

<sup>14</sup> 39 Pa. Bull. at 6069.

<sup>15</sup> Vermont Department of Environmental Conservation, Air Pollution Control Division, "Outdoor Wood-Fired Boilers: A Controversial Wood Heating Technology" (2006), available at <http://www.vtwoodsmoke.org/pdf/OWB-VTFactSheet.pdf> (last visited Feb. 12, 2010).

<sup>16</sup> 39 Pa. Bull. at 6069. See also New York Attorney General Report at 5 ("State health and environmental agencies have received a growing number of complaints from owners and neighbors that OWBs produce thick, acrid, foul smoke that permeates buildings and homes, causing not only a nuisance, but also environmental degradation and health problems").

<sup>17</sup> 40 C.F.R. § 81.339. The counties are Allegheny (Liberty-Clairton and remainder), Armstrong, Beaver, Bucks, Butler, Cambria, Chester, Cumberland, Dauphin, Delaware, Greene (part), Indiana (part), Lancaster, Lawrence (part), Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Washington, Westmoreland, and York.

<sup>18</sup> 42 U.S.C. § 7410(a).

As noted above, wood-fired boilers create significant air pollution. "In comparison to other emissions, one OWB produces approximately as much PM 2.5 per hour as two heavy duty diesel trucks, 45 passenger cars, 1000 oil furnaces, or 1800 gas furnaces."<sup>19</sup> According to the Department, 12,000 outdoor wood-fired boilers had been purchased in Pennsylvania as of 2006<sup>20</sup>; many more have been sold since. The presence of these thousands of high-polluting OWBs adds thousands of tons of PM2.5 to Pennsylvania's air at a time when Pennsylvania is under a mandate to reduce this pollution and meet national health standards.

E. While county and municipal ordinances may offer some relief, the urgent situation presented by OWBs requires statewide regulation.

County and municipal governments are close to the nuisance impacts presented by OWBs, and effectively enforced ordinances could provide relief to many neighbors beleaguered by OWB pollution. The Department has designed a model ordinance for OWBs that touches on many of the same substantive requirements as the proposed rule.<sup>21</sup> Monroe County has also prepared a model ordinance "intended to ensure that outdoor wood-fired burners/furnaces are utilized in a manner that does not create a nuisance and is not detrimental to the health safety and general welfare..."<sup>22</sup>

For several reasons, however, county and municipal ordinances do not offer a comprehensive solution to the effects of OWBs across Pennsylvania:

- There are thousands of OWBs across the Commonwealth in diverse jurisdictions.
- Few counties and municipalities have adopted ordinances that target OWBs.
- County and municipal enforcement is uneven across the state.
- The Department has special expertise in the operation and control of sources of air pollution.

Under these circumstances, and with the number of OWBs in Pennsylvania growing, a statewide rule is essential to protect the public health and quality of life.

II. The statewide OWB rule must not impair existing legal remedies.

A. All available air pollution remedies under the APCA must continue to apply to OWBs.

<sup>19</sup> New York Attorney General Report at 9.

<sup>20</sup> Environmental Quality Board, Minutes, September 15, 2009 at 2, available at <http://files.dep.state.pa.us/PublicParticipation/Public%20Participation%20Center/PubPartCenterPortalFiles/Environmental%20Quality%20Board/2009/111709/sept152009eqbminutes.pdf> (last visited Feb. 8, 2010).

<sup>21</sup> Pennsylvania DEP, Model Ordinance for Outdoor Wood-Fired Boilers, available at <http://www.dep.state.pa.us/dep/deputate/airwaste/aq/openburn/docs/ModelBoilOrd.pdf> (last visited Feb. 4, 2010).

<sup>22</sup> Monroe County, Pennsylvania, Outdoor Wood-Fired Burner/Furnace Model Ordinance, available at [http://www.co.monroe.pa.us/planning\\_records/lib/planning\\_records/planning/model\\_outdoor\\_wood-fired\\_burners\\_7-25-08.pdf](http://www.co.monroe.pa.us/planning_records/lib/planning_records/planning/model_outdoor_wood-fired_burners_7-25-08.pdf) (last visited Feb. 8, 2010) ("Monroe County Model Ordinance"). This model ordinance includes, among other things, a permit requirement, setbacks, minimum stack heights, and penalties for noncompliance.

The Board proposes that "a person may not use or operate an outdoor wood-fired boiler in this Commonwealth unless it complies with all applicable Commonwealth regulations and statutes", including those regarding air pollution, fugitive emissions, odor limitations, limitations on visible emissions, unlawful conduct, and public nuisances.<sup>23</sup>

We support this aspect of the Board's proposal. The operation of OWBs raises compliance issues under all of these statutory and regulatory provisions, and the Commonwealth needs all available tools to respond. Additionally, citizens must retain the authority to enforce these rules against OWBs under the APCA.<sup>24</sup>

B. We request that the Board affirm that this regulation is not intended to limit tort remedies.

Given the widespread effects of OWBs, it is important that all remedies remain available to citizens impacted by this pollution after the Board adopts its new OWB rule. As a general matter, compliance with a statute or regulation "does not establish as a matter of law the exercise of due care".<sup>25</sup> The APCA affirms in detail that its remedies are additional and cumulative, and, among other things, preserves all rights under the common law to abate pollution.<sup>26</sup>

With regard to OWBs, operator compliance with a final regulation such as the one now proposed will offer improvements to health and quality of life. However, compliance may not assure prevention of torts such as nuisance, trespass, and negligence against neighbors at all locations. For example, an OWB that burns only clean wood may still emit smoke and odor that reaches neighbors. Minimum stack heights do not ensure dispersion where a flue stream exits at low velocity. Meteorology and topography may guide pollution to a nearby home, despite compliance with setback requirements.

Recognizing these issues, the Board's proposed rule requires notice to OWB buyers "that the stack height and setback requirements [regarding OWBs] may not be adequate in some areas of the Commonwealth due to terrain that could render the operation of the [OWB] a nuisance or public health hazard."<sup>27</sup> We request that the Board affirm in response to our comments that the provisions of this rule are considered minimum standards only and, consistent with the APCA, these provisions are not intended to limit other remedies.

III. Other states have responded to public health and nuisance threats from OWBs.

Pennsylvania is not alone in responding to the threats of OWBs. However, the Pennsylvania proposed rule is less stringent than some regulations elsewhere.

A. Washington

<sup>23</sup> 39 Pa. Bull. 6068, 6072-73 (Oct. 17, 2009), citing 25 Pa. Code §§ 121.7, 123.1, 123.31, and 123.41, and 35 P.S. §§ 4008, 4013.

<sup>24</sup> 35 P.S. § 4013.6.

<sup>25</sup> S. Gerald Litvin & Gerald Austin McHugh, 3 Pennsylvania Torts § 1.22 (1996) (citations omitted).

<sup>26</sup> 35 P.S. § 4012.1a (2009).

<sup>27</sup> 25 Pa. Code § 123.14(i)(1)(vi)(as proposed, 39 Pa. Bull. at 6073).

The effect of Washington State's current regulation is to disallow OWBs. According to the Washington Department of Ecology:

OWBs cause dense smoke and have very short smoke stack, so the smoke is released at levels where people breathe it. This smoke endangers your health and that of your family and neighbors, as well as harming the environment.<sup>28</sup>

Washington regulations specify a performance standard for solid fuel burning devices of a maximum of four and one-half grams per hour of particulate air emissions.<sup>29</sup> According to the Washington Department of Ecology "even the cleanest outdoor wood-fired boilers are 3 to 5 times more polluting than a certified wood stove meeting Washington emission standards."<sup>30</sup> Washington will allow OWBs to be sold in Washington in the future if manufacturers can prove they meet Washington's strict standards, as proven by test methods acceptable to U.S. EPA and Washington.<sup>31</sup>

#### B. Maine

Maine has adopted detailed rules regarding OWBs, which:

- Prohibit the distribution, sale, lease, import, supply, or installations of OWBs not meeting Phase 2-equivalent emission rates after April 1, 2010;
- For newly installed boilers, requires setbacks of up to 270 feet depending on the emission level of the OWB (dirtier boilers require bigger setbacks);
- For newly installed boilers, stack height requirements depending on the emission level of the OWB (dirtier boilers require minimum stack heights at a distance of 500 feet from an abutting residence);
- For commercial and other large OWBs, requires an evaluation by a professional engineer;
- Requires U.S. EPA certification for all OWBs supplied distributed, sold, leased, offered for sale, or installed;
- Bans the sale of the dirtiest OWBs;
- Lists prohibited and approved fuels;
- Require a notice to buyers regarding fuels, stack heights, setbacks, and emissions rates, as well as an owner's manual with each OWB offered for sale; and
- Applies visible emission/opacity requirements;
- Prohibits OWB operation that violates opacity limits (determined under U.S. EPA Method 22) and that creates a nuisance.<sup>32</sup>

The Maine Department of Environmental Protection has elaborated on the issue of setbacks:

<sup>28</sup> State of Washington, Department of Ecology, Air Quality, Outdoor Wood-Fired Boilers (fact sheet), at 1, available at [http://www.ecy.wa.gov/programs/air/AOP\\_Permits/Boiler/Outdoor\\_Boilers\\_home.html](http://www.ecy.wa.gov/programs/air/AOP_Permits/Boiler/Outdoor_Boilers_home.html) (last visited Feb. 10, 2010) ("Washington OWB Fact Sheet").

<sup>29</sup> Wash. Admin. Code § 173-433-100(3) (2010). "Solid fuel burning device" includes devices that burn wood. *Id.* at § 173-433-030(9).

<sup>30</sup> Washington OWB Fact Sheet at 1.

<sup>31</sup> *Id.* at 1.

<sup>32</sup> Code of Maine Rules, Agency 06, Chapter 150.

If terrain conditions could complicate air flow patterns on a parcel of land (e.g. in a valley, hilly, or tall trees nearby), it may be necessary to install the OWB even farther away than the minimum setback distances to avoid costly changes that could be required later if a nuisance condition occurs when the boiler is operated.<sup>33</sup>

Given Pennsylvania's terrain, setbacks may also be inadequate to protect neighbors here.

#### C. Vermont

According to the Vermont Department of Environmental Conservation, smoke from OWBs is worse than other wood smoke because of poor combustion and the large amounts of smoke emitted, up to ten times as much as indoor woodstoves.<sup>34</sup> Vermont rules:

- Ban purchases of non-Phase 2 boilers after March 31, 2010;
- Require setbacks and, in some cases, minimum stack heights;
- Allow combustion of only wood or other specified fuels;
- Require compliance with all applicable laws and regulations, including local ordinances;
- Prohibit operation of OWBs that create public nuisances;
- Require notice to buyers of the provisions of the Vermont OWB rule; and
- Set testing and certification requirements for manufacturers, and notification requirements from manufacturers to distributors and sellers of OWBs.<sup>35</sup>

#### D. Indiana

The Indiana Department of Environmental Management (IDEM) has proposed a new rule for outdoor hydronic heaters, noting citizen complaints: "Larger capacity, low stack heights, design differences, operating conditions, and lower operating temperatures cause more intense smoking and smoldering conditions nearer to ground level than with other wood burning devices."<sup>36</sup> The IDEM proposal catalogs a many of citizen complaints, including smoke entering homes, smoke obscuring driver visibility, health impacts, and requests for a seasonal prohibition; commenters support for stack height and siting regulations.<sup>37</sup>

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<sup>33</sup> Maine Department of Environmental Protection, "Regulation of Outdoor Wood Boilers" (information sheet), rev. July 4, 2008, at 1, available at [http://www.maine.gov/dep/air/woodsmoke/documents/OWBinfoSheetF\\_Updated7\\_08b.pdf](http://www.maine.gov/dep/air/woodsmoke/documents/OWBinfoSheetF_Updated7_08b.pdf) (last visited Feb. 11, 2010).

<sup>34</sup> Vermont Department of Environmental Conservation, Division of Air Pollution Control, "Outdoor Wood-Fired Boilers: A Controversial Wood Heating Technology" (fact sheet), at 1-2, available at <http://www.vtwoodsmoke.org/about.html> (last visited Feb. 10, 2010).

<sup>35</sup> 12-031-001 Code of Vermont Rules § 5-204 (2010).

<sup>36</sup> Air Pollution Control Board, Second Notice of Comment Period: Development of New Rules Concerning Emissions from Outdoor Hydronic Heaters, Jan. 6, 2010, available at <http://www.in.gov/legislative/iac/20100106-IR-326050332SNA.xml.html> (last visited Feb. 10, 2010). The proposal notes that outdoor hydronic heaters are also referred to as outdoor wood boilers or outdoor wood burning furnaces.

<sup>37</sup> *Id.*, passim.

As proposed, the Indiana rule would:

- Prohibit the sale of non-Phase 2 outdoor hydronic heaters
- Require a minimum stack height of five feet higher than the peak of any roof located within 150 feet of the unit and not located on the same property on which the heater is installed
- Ban the operation of non-Phase 2 outdoor hydronic heaters between May 1 and September 30
- Prohibit the combustion of specified fuels in outdoor hydronic heaters
- Prohibit emissions exceeding a specified opacity
- Require notice to buyers of the Indiana outdoor hydronic heater rule and the address of the location where the heater will be installed.<sup>38</sup>

#### E. Connecticut

Regarding outdoor wood-burning furnaces installed after July 8, 2005, Connecticut law requires:

- a 200 foot setback from the nearest residence not serviced by the furnace;
- installation of the chimney of the furnace at a height more than the heights of the roof peaks of the residences that are located within five hundred feet of the furnace, which residences are not serviced by the furnace, provided the chimney height is not more than fifty-five feet;
- combustion of no other materials in the furnace besides wood that has not been chemically treated.<sup>39</sup>

Connecticut law specifically authorizes municipal enforcement of these rules.<sup>40</sup>

#### F. Other Jurisdictions

Other jurisdictions regulating OWBs include New Jersey,<sup>41</sup> Massachusetts,<sup>42</sup> New Hampshire,<sup>43</sup> and 63 municipalities in New York State that have banned or regulated OWBs<sup>44</sup>.

<sup>38</sup>Id. (pages not numbered, proposed rule at end of document).

<sup>39</sup> Conn. Gen. Stat. § 22a-174k (2008).

<sup>40</sup> Id. at § 22a-174k(c).

<sup>41</sup> See New Jersey Department of Environmental Protection, Bureau of Air Quality Planning, "Wood Burning in New Jersey", available at <http://www.nj.gov/dep/baqp/woodburning.html>, citing N.J.A.C. § 7:27, Subchapter 3 (last visited Feb. 10, 2010).

<sup>42</sup>Mass Regs. Code tit. 310, § 7.26(50) (2010); see also Massachusetts Department of Environmental Protection, "Outdoor Hydronic Heater Regulation" (fact sheet), available at <http://www.mass.gov/dep/service/regulations/ohhregfs.pdf> (last visited Feb. 12, 2010)("Outdoor hydronic heaters can produce heavy smoke and release it close to the ground, where it can linger and expose people in the area to health risks and nuisance conditions").

<sup>43</sup> N.H. Rev. Stat. Ann. § 125-R.

<sup>44</sup> New York Attorney General Report at 19-23.



EPA's Burn Wise website also describes rules, model ordinances, and other programs in Colorado, Idaho, Michigan, Montana, Utah, and Wisconsin.<sup>45</sup>

G. Summary

Other states have acted to address public health and nuisance concerns from OWBs. Pennsylvania must ensure that our regulations reflect, at a minimum, the best measures adopted in other states, and be prepared to enforce these rules.

IV. The proposed Pennsylvania OWB rule needs to be strengthened.

A. The OWB must address older units.

U.S. EPA has announced a "Phase 2" program for hydronic heaters, or outdoor wood boilers.<sup>46</sup> The program certifies as Phase 2-compliant those units that achieve an average air emission level of 0.32 pounds per million Btu heat output, where no individual test run that is used in the calculation of the average exceeds 18.0 grams of fine particles per hour.<sup>47</sup> This is a significant improvement over the now-terminated Phase I program of 0.60 pounds per million Btu heat output, and a 90% improvement over emissions from units that pre-date the U.S. EPA program.<sup>48</sup> We support the requirement in the proposed rule that, after the effective date of the rule, only Phase 2-compliant units may be sold, offered for sale, distributed, installed, purchased, leased or received in Pennsylvania.<sup>49</sup>

However, this requirement will do nothing to deal with the dirtier, existing fleet of OWBs. As noted above, Washington State has taken a comprehensive approach to this issue, with its ban on OWBs failing to meet an advanced emission limit. To address older units, we recommend that Pennsylvania initiate a buy-back program for pre-Phase I OWBs.<sup>50</sup> This program would use monies from the Clean Air Fund<sup>51</sup> to repurchase the dirtiest OWBs at a price reflecting depreciation. This program should include outreach to counties and municipalities to help identify the OWBs that have been the source of complaints.

B. The setback requirements in the proposed rule may not adequately protect neighbors against wood smoke dangers.

<sup>45</sup> U.S. EPA, "Burn Wise: Agencies—Ordinances and Regulations", available at <http://www.epa.gov/burnwise/ordinances.html> (last visited Feb. 10, 2010).

<sup>46</sup> See "EPA Hydronic Heater Program: Phase 2 Partnership Agreement", Oct. 15, 2008, available at <http://www.epa.gov/burnwise/pdfs/owhphase2agreement.pdf> (last visited Feb. 7, 2010).

<sup>47</sup> *Id.* at 2.

<sup>48</sup> U.S. EPA, "EPA's Phase 2 Voluntary Partnership Program Outdoor Wood-Fired Heaters" (fact sheet), at 1, available at <http://www.epa.gov/burnwise/pdfs/HH-flyer10-21-08.pdf> (last visited Feb. 5, 2010).

<sup>49</sup> 25 Pa. Code § 123.14(b)(1, 2)(as proposed, 39 Pa. Bull. at 6068).

<sup>50</sup> Maine has instituted such a program. See Code of Maine Rules Agency 06, Chapter 160. A bill (S. 236) recently introduced in the Vermont General Assembly would start such a program there. Candace Page, "Vermont Considers Boiler Buyback Program", Burlington Free Press, Feb. 1, 2010, at A5, available at <http://www.burlingtonfreepress.com/apps/pbcs.dll/article?AID=2010100131024> (site visited Feb. 10, 2010).

<sup>51</sup> 35 P.S. 4009.2 (2010) and 25 Pa. Code § 143.1 (2010).

The proposed rule states: “A person may not install a Phase 2 outdoor wood-fired boiler in this Commonwealth unless the boiler is installed a minimum of 150 feet from the nearest property line.”<sup>52</sup> The Board does not explain its basis for choosing 150 feet as an appropriate minimum setback distance. To the extent that the Board is relying on stack heights to protect neighbors, stack heights are not a complete remedy to dense pollution from obsolete boilers (see next section) and should be accompanied by aggressive setbacks to protect neighbors. At a minimum, the Board should adopt the 200 foot setback from the nearest residence not served by the OWB in effect in Connecticut<sup>53</sup> in addition to the 150 feet from the nearest property line proposed for Pennsylvania.

C. The Department should not rely solely on stack height requirements to protect neighbors.

The proposed rule would require permanently attached stacks that extend a minimum of 10 feet off the ground. For Phase 2 boilers, the stack must extend at least two feet above the highest peak of the highest residence located within 150 feet of the OWB. For existing boilers, this requirement applies as to residences within 500 feet.<sup>54</sup>

However, these stack heights may not be adequate to protect neighbors. Emissions may not have adequate velocity to rise and disperse:

Stack heights this short typically fail to disperse smoke adequately, resulting in excessive ground level smoke. Because OWBs rarely provide stovepipe fans to increase the upward velocity of the smoke, there is only limited vertical dispersion of OWB emissions. Certain weather conditions aggravate this situation, such as cold weather inversions when the smoke does not rise but stays close to the ground.<sup>55</sup>

As another study states, “OWB pollution is exacerbated because the low stack design does not disperse the smoke as well as conventional chimneys.” If emissions do not disperse, weather and topography can cause concentrated smoke to reach neighboring yards and homes.<sup>56</sup>

Although stack heights alone are not adequate to protect neighbors in all settings, we support minimum stack height requirements as part of an overall OWB pollution control strategy.

D. The Department must not assume that fuel restrictions will resolve the problem of pollution from wood-fired boilers.

<sup>52</sup> 25 Pa. Code § 123.14(c)(as proposed, 39 Pa. Bull. at 6072).

<sup>53</sup> Conn. Gen. Stat. § 22a-174k (2008).

<sup>54</sup> 25 Pa. Code § 123.14(d, e)(as proposed, 39 Pa. Bull. at 6072).

<sup>55</sup> NESCAUM Assessment at 2-1.

<sup>56</sup> See also New York Attorney General Report at 5 (“The short OWB chimney and reduced draft often fail to disperse the smoke, resulting in more concentrated pollution at lower heights reaching residents and neighbors.”) and U.S. EPA, “EPA Hydronic Heater Program, Phase 2 Partnership Agreement”, Oct. 15, 2008, available at <http://epa.gov/burnwise/pdfs/owhhphase2agreement.pdf> (last visited Feb. 7, 2010)(stack height and other factors “may not always be adequate to prevent nuisance conditions due to terrain or other factors”).

The Department proposes to prohibit all fuels in OWBs besides clean wood, wood pellets made from clean wood, some oil, gas or propane, and other fuels approved by the Department. The proposed rule bans the combustion of treated wood, garbage, plastic, and a host of other high-polluting materials sometimes burned in OWBs.<sup>57</sup>

We support this proposal. The proposal accords with recommendations by the U.S. EPA.<sup>58</sup> The Health, Patio and Barbeque Association also agrees, recommending burning only those fuel recommended by the manufacturer, and never trash, plastic, treated wood, or other listed items.<sup>59</sup>

However, limiting combustion to the listed materials does not, by itself, prevent air pollution that impacts neighbors. Wood smoke results in emissions of fine particles capable of causing nuisance to neighbors and fine particle level exceeding national health standards. For residential heating, wood combustion has the highest effective fine particle emissions per unit of heat.<sup>60</sup> Moreover, U.S. EPA estimates that residential wood combustion results in 62 percent of all emissions of seven polycyclic aromatic hydrocarbons, which are probable human carcinogens.<sup>61</sup> Therefore, the Board needs a combination of effective measures to protect the public from all harmful emissions from OWBs, including those emissions from wood smoke.

E. We support the notice and recordkeeping requirements of the proposed rule.

The proposed rule would require notice to an OWB buyer regarding fuel restrictions, the applicability of other Commonwealth regulations and statutes, the possible application of local regulations (including stack height and setback requirements), and the possibility that the operation of an OWB may still cause a nuisance or a public health hazard despite stack height and setback requirements.<sup>62</sup> The notice requirement will also collect information about the buyer and location where the OWB will be installed.<sup>63</sup> The recordkeeping provision requires the distributor, seller, or lessor to keep these records on site and provide them to the Department upon request.<sup>64</sup>

We support these aspects of the proposed rule. The notice to OWB buyers will help buyers operate units in a way that reduces impacts on their own families and on neighbors. The proposed information collection will allow the Department to track locations and concentrations

<sup>57</sup> 25 Pa. Code § 123.14(f, g)(as proposed, 39 Pa. Bull. at 6072).

<sup>58</sup> U.S. EPA, Strategies for Reducing Residential Wood Smoke, Oct. 29, 2009, at 8, available at <http://www.epa.gov/ttn/oarpg/t1/memoranda/strategies-doc-8-11-09.pdf> (last visited Feb. 7, 2010).

<sup>59</sup> Hearth, Patio and Barbecue Association, "Outdoor Wood Furnace Best Burn Practices" (fact sheet), available at [http://static.hpba.org/fileadmin/PDFs/Tier\\_IV\\_Outdoor\\_Wood\\_Furnace\\_Best\\_Burn\\_Practices\\_-\\_MH1.pdf](http://static.hpba.org/fileadmin/PDFs/Tier_IV_Outdoor_Wood_Furnace_Best_Burn_Practices_-_MH1.pdf) (last visited Feb. 7, 2010).

<sup>60</sup> Houck, James E. et al., "Air Emissions from Residential Heating: The Wood Heating Option Put into Environmental Perspective", Conference Proceedings: Emission Inventory: Living in a Global Environment, pp. 373-384, available at <http://www.woodheat.org/environment/hpawma.pdf> (last visited Feb. 12, 2010).

<sup>61</sup> U.S. EPA, Strategies for Reducing Residential Wood Smoke, Oct. 29, 2009, at 4, available at <http://www.epa.gov/ttn/oarpg/t1/memoranda/strategies-doc-8-11-09.pdf> (last visited Feb. 7, 2010).

<sup>62</sup> 25 Pa. Code § 123.14(i)(1)(as proposed, 39 Pa. Bull. at 6073).

<sup>63</sup> 25 Pa. Code § 123.14(i)(2)(as proposed, 39 Pa. Bull. at 6073).

<sup>64</sup> 25 Pa. Code § 123.14(j)(as proposed, 39 Pa. Bull. at 6073).

of OWBs and promote the effective implementation of the rule and facilitate the monitoring of ambient air impacts from OWBs. This information must be made available to the public through file reviews at the Department.

F. The Department must provide extra protection in spring and summer.

The Board has requested comments on whether a final rule should include a seasonal prohibition on operating OWBs between the dates of May 1 and September 30.<sup>65</sup> For neighbors who want to keep windows and doors open and spend time outdoors during the warmer months, this can be an especially hard time to live next to an operating OWB. It is also a time when heating a home via an OWB is less necessary. Therefore, we support a seasonal prohibition on operating OWBs between the dates of May 1 and September 30.

G. The Department must effectively enforce the OWB rule.

The Department must provide effective outreach and enforcement to prevent public health and nuisances from OWBs:

- The Department should provide information, including on its website, for consumers regarding the economic and health issues involved with OWBs,<sup>66</sup>
- The Department should train at least one specialist in each regional office in OWB issues, in OWB inspections, and in methods of evaluating OWB emissions;
- The Department should log all complaints regarding OWBs, and follow-up by recording Department actions taken in response; and
- The Department should bring all enforcement tools to bear on OWB violations, including but not limited to enforcement orders, penalty actions, and actions to respond to nuisances.

V. Conclusion

We support Board efforts to regulate OWB setbacks, stack heights, and fuel, and to establish notice and recordkeeping requirements. Some of these proposals must be strengthened as described above. However, to provide direct, immediate relief, the Board must adopt the seasonal prohibition. Also, the Board should authorize the use of the Clean Air Fund to buy back the highest-polluting, most dangerous OWBs. In accordance with the Pennsylvania Constitution and the Air Pollution Control Act, we urge the Board to adopt strong regulations that protect against nuisance and public health impacts.

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<sup>65</sup> The Monroe County Model Ordinance includes an optional seasonal prohibition (§ 12).

<sup>66</sup> Some of this information has been posted by the Department at [http://www.dep.state.pa.us/dep/deputate/airwaste/airwaste/airwaste/openburn/openburn.htm](http://www.dep.state.pa.us/dep/deputate/airwaste/airwaste/airwaste/airwaste/openburn/openburn.htm) (last visited Feb. 12, 2010).

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**Summary of Comments by Citizens for Pennsylvania's Future (PennFuture),  
Clean Air Council, PennEnvironment, Sierra Club--Pennsylvania Chapter, and  
American Lung Association in Pennsylvania  
on Outdoor Wood-Fired Boiler Proposed Rule**

Our groups support regulation of outdoor wood-fired boilers (OWBs) by the Department of Environmental Protection (Department). Pollution from OWBs poses significant risks due to high emissions of fine particles and other pollutants. A single OWB can cause fine particle levels exceeding national health standards at a distance of 50 to 150 feet. Fine particles are associated with heart disease, lung disease, and premature death. Part of all of twenty-two Pennsylvania counties already do not meet national health standards for fine particles.

OWBs also cause nuisance (quality of life) effects for neighbors. Across the state, neighbors find they cannot remain in their yards because of smoke and fumes, and even sometimes have watery eyes, sore throats, and burning lungs inside their homes. These neighbors of OWBs need immediate relief.

County and municipal governments are on the front lines of the OWB problem, and we hope they will play a strong role in responding to nuisance air pollution from OWBs. However, few have ordinances targeted at OWBs, enforcement is uneven, and the Department has special expertise in air pollution matters. We urge the Environmental Quality Board (Board) to adopt a statewide rule for enforcement by the Department. This rule should also preserve existing legal remedies for neighbors.

There is ample precedent for Pennsylvania to take action. Other states have responded to OWB pollution with regulations containing similar elements to those proposed here, including setbacks, stack heights, fuel restrictions, prohibitions on the sale of pre-Phase 2 boilers, and notices to OWB purchasers.

An effective rule in Pennsylvania must include a combination of these items, plus several additional elements. Neighbors want to be outside in their yards and have windows open in their homes during the summer, when heating needs from OWBs are also reduced. Therefore, we support the seasonal prohibition on OWB operation between May 1 and September 30. Also, we need an effective way to reduce emissions from older, dirtier OWBs already operating in Pennsylvania. A buyback program could help remove some of these units. Finally, the Department must respond effectively to citizen complaints regarding OWBs, including by enforcement action when appropriate.

We urge the Board to take aggressive action that will protect the public health and prevent nuisances.

2802

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**From:** Charles McPhedran [mcphedran@pennfuture.org]  
**Sent:** Friday, February 12, 2010 4:32 PM  
**To:** Schalles, Scott R.; IRRC  
**Subject:** EQB proposed regulation #7-444 (IRRC #2802) "Outdoor Wood-Fired Boilers"  
**Attachments:** OWB Comments As Submitted.pdf; OWB Comments One Page Summary.pdf

Comments by several groups on the Outdoor Wood-Fired Boiler proposal are attached for IRRC's consideration. Also attached is the one-page summary submitted to the Environmental Quality Board.

Regards,

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