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New Residential Wood Heaters: Potential Impacts from Delaying Federal Emission Standards

On March 7, 2018, the House passed H.R. 1917, which would, among other things, delay the effective date of federal emission standards for new residential wood heaters promulgated by the U.S. Environmental Protection Agency (EPA) in 2015. House and Senate hearings in late 2017 highlighted concerns about inadequate time to demonstrate compliance with emission standards by the 2020 deadline. Others have expressed concerns about the air quality impacts of delaying the 2020 deadline.

The legislation also raises questions about state- and local-level impacts. For example, one witness testified that a delay could negatively affect jurisdictions in which wood smoke emissions already make it difficult to meet federal air quality standards.

This In Focus explores how the legislation might interact with state- and local-level emission standards. For more information about the federal standards, their potential impacts, and stakeholder views, see CRS Report R43489, *EPA's Wood Stove / Wood Heater Regulations: Frequently Asked Questions*, by James E. McCarthy and Kate C. Shouse.

Background

EPA found that wood smoke—a mixture of fine particles, carbon monoxide, volatile organic compounds, and toxic air pollutants emissions—causes respiratory illness and premature death in some people at certain exposures. Nationally, EPA estimated that wood smoke emissions account for nearly 25% of all area source toxic cancer risks and 15% of non-cancer respiratory effects (EPA, “Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces,” 80 *Federal Register* 13673, March 16, 2015).

EPA first promulgated wood heater emission standards in 1988 under the Clean Air Act. The standards are called New Source Performance Standards (NSPS), and they apply only to new, residential wood heaters.

In 2015, EPA revised the standards for woodstoves and pellet stoves and established first-ever federal standards for other types of new residential wood heaters. The newly added heaters included indoor and outdoor boilers (also known as “hydronic heaters”), forced air furnaces, and single burn rate stoves. (See the text box for descriptions.)

The 2015 NSPS is implemented through a two-step process over a five-year period. Step 1 standards became effective in 2015, while the more stringent Step 2 standards are to become effective in 2020.

Types of Residential Wood Heaters

Wood stoves are appliances that burn wood to produce heat. Consumers may use them as a primary or secondary source of heat. Wood stoves are typically made out of cast iron, steel, or stone.

Pellet stoves are similar to wood stoves except that they burn fuel made of ground, dried wood and other biomass wastes compressed into pellets. They operate by pouring pellets into a hopper that feeds into the stove. Most require electricity.

Hydronic heaters (also called outdoor wood heaters or outdoor wood boilers) are typically located outside the buildings they heat and are often housed in small sheds with short smokestacks. They typically burn wood to heat liquid that is piped to provide heat and hot water to occupied buildings such as homes and barns.

Forced air furnaces (also called warm-air furnaces) are designed to burn cordwood, wood pellets, or wood chips to heat an entire residence. Typically located indoors, these furnaces distribute heat through ducts using a blower fan.

Source: EPA, “Burn Wise—Types of Appliances,” <https://www.epa.gov/burnwise/burn-wise-types-appliances>.

Are Wood Heaters Subject to State and Local Standards?

State and local jurisdictions have enacted measures to address wood smoke emissions. For example, Washington State promulgated woodstove emission standards in 1995 that were more stringent than federal standards. Other states promulgated regulations limiting emissions from residential hydronic heaters before these heaters were subject to federal emission standards. As a result, prior to 2015, wood heaters sold to consumers in certain jurisdictions were required to meet tighter emission standards than those at the federal level.

Stakeholders, including manufacturers and environmental groups, supported the 2015 NSPS rule in part because it provided uniformity of standards across the country. There had been broad concerns about the patchwork of state regulations and voluntary programs addressing wood smoke.

How Would a Delay Affect State and Local Programs?

It is unclear how delaying the 2020 Step 2 effective date in federal standards would affect state and local programs. State or local standards could potentially negate a delay to the effective date of the federal standards, but there is not enough information to determine the likelihood of this scenario. The status of state and local regulations for wood heaters is not systematically tracked, thereby making it

difficult to determine whether manufacturers would be subject to more stringent standards in some jurisdictions in the event of a delay to the federal standards effective date.

In short, the applicability of state regulations would need to be evaluated on a case-by-case basis.

What Do We Know About Wood Heater Emission Standards at the State and Local Level?

Various state and local jurisdictions have promulgated regulations or ordinances for wood heater emissions. Some state regulations incorporate the federal standards by reference (e.g., referencing 40 C.F.R. Part 60, subpart AAA). At least one state wrote the Step 2 deadline into state regulations (Colorado, 5 CCR 1001-6 No. 4).

Table 1 presents examples of states with regulations that reference the federal wood heater NSPS.

Table 1. Examples of State Wood Heater Regulations

State	Regulation
Colorado	5 CCR 1001-6 No. 4, Sale and installation of wood-burning appliances and use of certain wood-burning appliances during high pollution days
Georgia	Ga. Comp. R & Regs. r.391-3-1-.02 Section 8, “New Source Performance Standards”
Maine	Code of Maine Regulations 06-096-143, Chapter 143, “New Source Performance Standards (NSPS)”
Massachusetts	310 CMR 7.26(50)-(54), MassDEP Wood-Fired Boiler Regulation
Minnesota	Minnesota Administrative Rules, Section 7011.2950
Missouri	10 CSR 10-6.070, New Source Performance Standards
New Hampshire	Chapter 125-R: Outdoor Wood-Fired Hydronic Heaters
Oregon	Oregon Administrative Rules Chapter 340, Division 262, Heat Smart Program for Residential Woodstoves and Other Solid Fuel Heating Devices
South Carolina	S.C. Code Regs 61-62.20, South Carolina Designated Facility Plan and New Source Performance Standards, “Title 40 C.F.R. Part 60 Subparts Incorporated by Reference”
Vermont	Vermont Air Pollution Control Regulations 5-204, “Wood Stoves and Central Heaters”

State	Regulation
Wisconsin	Chapter NR 440, Standards of Performance for New Stationary Sources

Notes: List based on CRS research.

State and local jurisdictions may also incorporate emission standards for residential wood heaters into county-level ordinances or state air quality planning documents for attaining national air quality standards. For example, some local governments in Minnesota have adopted ordinances addressing outdoor hydronic heaters (see <https://www.pca.state.mn.us/air/wood-smoke>).

Another example is Alaska, which recently amended its State Implementation Plan for attaining air quality standards to address requirements for wood-fired heating devices located in a nonattainment area. In 2017, an Alaska nonattainment area—Fairbanks North Star Borough—was reclassified from moderate to serious nonattainment for fine particle pollution. According to EPA Region 10, “Fairbanks North Star Borough faces an especially difficult challenge of meeting existing pollution standards for a number of reasons including a high reliance on woodstoves and wood heaters to stay warm” (EPA, “EPA, Alaska to Work Together on Improving Fairbanks Air Quality,” press release, May 1, 2017, <https://www.epa.gov/newsreleases/epa-alaska-work-together-improving-fairbanks-air-quality>).

Potential Issues for Congress

The Senate may consider legislation similar to H.R. 1917 that would provide wood heater manufacturers more time to certify compliance with the Step 2 emission standards. Supporters of the legislation have stated that a delay would allow an industry dominated by small businesses to conduct more cost-effective product development. Those opposed to the legislation have raised concerns about the impact of a delay on air quality. The legislation also raises questions about the interaction of federal and state-level regulations.

Congress may consider potential unintended consequences of a delay given the variety of state and local measures addressing wood smoke emissions. For example, delaying the effective date of the federal standards could introduce regulatory uncertainty in jurisdictions that may have promulgated the 2020 deadline in state code or otherwise factored it into plans for meeting air quality standards. Some jurisdictions may have enacted standards that negate a delay to the federal effective date, while others may have incorporated federal regulations—and subsequent updates to those regulations—by reference. CRS cannot predict how a state might interpret its own regulations or respond to any change in federal rules.

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