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Outdoor wood burning systems splitting neighbors They may be effective, but they're dirty

Their owners proudly proclaim that they reduce dependence on foreign oil — and save thousands of dollars on heating bills each year.

But neighbors say they create thick smoke that seeps into homes, leaving a foul stench and irritating eyes and throats.

They have spawned a rash of lawsuits and local ordinances across the country. A report last year by the New York attorney general's office found that they produce as much particle pollution in an hour as 45 cars or two heavy-duty diesel trucks.

They are outdoor wood boilers, machines originally invented to heat farmhouses and a fast-growing fad among the alternative energy set — or, depending on whom you ask, the latest suburban scourge. Scientists studying the environmental fallout from the boilers estimate their numbers have doubled in the past two years, to roughly 150,000 nationwide.

"These machines sound good when you buy them, but look at all the health problems you cause," said Edward J. Nowak, who is suing his former neighbor in Chicopee, Mass., for creating a "public nuisance" by installing a wood boiler in his backyard. Nowak, who is retired and disabled, said he had to move away because of the constant smoke: "We taped our windows up with plastic and we tried to be a nice neighbor, but it just got to the point where it was impossible."

Owners of the machines say the backlash against them is unfair. Peter Muller, a landscaper in Stony Point, N.Y., who bought his three years ago, calls them "the greatest thing since sliced bread."

"Every day you turn on the news they're saying lower your dependence on foreign oil," said Muller, who gets inexpensive wood through his business and estimates his savings at \$400 to \$600 a month in peak heating season. "Now I have a renewable energy source, and people are complaining."

Such complaints, along with a growing body of research about the toxins spewed by the boilers — namely carcinogens and lung-clogging particulate matter — have prompted local campaigns around the country to limit their use.

Since 2001, at least 50 towns or counties in New York state have instituted laws regulating the machines, including Suffolk County, which voted in November to prohibit them altogether.

Vermont, in the 1990s, and Connecticut, two years ago, enacted strict regulations on where boilers can be used. Washington state has banned them outright, and villages and local health boards in Maine, Wisconsin, Michigan and Massachusetts are dealing with hundreds of complaints from people who say their neighbors' wood boilers are making their homes feel like campgrounds.

The machines, which look like tool sheds topped by 12-foot smoke stacks, were originally designed for rural areas where open space — and wood — are plentiful. They generally cost about \$5,000, and they work by burning wood to heat water that is then pumped through underground pipes to a home's plumbing and heating systems.

Scientists and government officials say the boilers release levels of smoke and chemicals unlike anything they have ever seen. The problem is magnified in suburban areas, where homes are often next to one another and the heavy smoke has nowhere to disperse.

The boilers — also called burners — are creating fierce disputes virtually everywhere they turn up.

"People are calling up their state and federal officials in unprecedented numbers because they don't know what to do," said Philip R.S. Johnson, a senior scientist at the Northeast States for Coordinating Air Use Management, a nonprofit association of air quality agencies in New York, New Jersey and six New England states. "I am getting so many calls from people complaining about their children getting sick and the nuisance of the smell, and it's just brutal to listen to their stories."

Common complaints are of lung inflammation,, persistent coughing, trouble breathing, and foul odors. Because the boilers operate under low-oxygen conditions and smolder constantly, they produce far more smoke than traditional indoor stoves — about a dozen times the amount, several studies have found. They also produce four to 12 times the amount of fine particles, which are microscopic and can easily move into the lungs and be absorbed into the bloodstream, causing severe heart and respiratory problems, according to a growing body of research.

Joseph Tumidajewicz, another resident of Chicopee, has a name for the boiler that his neighbor installed 300 feet from his home: "the presence." (This is not the same boiler that bothered Nowak: Chicopee, a city of 55,000, has several.)

"You step outside of the house sometimes and you can feel your face getting instantly dirty," Tumidajewicz said. "It's unbearable."

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According to the report by the New York attorney general's office, issued last year, the burners produce particles that are 2.5 microns in diameter or less. A human hair, by comparison, is 30 to 50 microns.

But because regulations are scarce, towns that receive complaints from residents often have no recourse other than to politely ask owners of the devices to shut them off.

Rarely does that work.

Weary of responding to false alarms caused by a single outdoor boiler on Pinehurst Road in Holyoke, Mass., not far from Chicopee, the Fire Department sued the owners of the boiler in October, eventually winning a cease-and-desist order. Now the city is moving toward banning the machines completely.

"I'm against them," said John E. McHugh, a doctor and the chairman of Holyoke's Board of Health. "They are heavily polluting and putting out all kinds of stuff that can get right down to the furthestmost regions of your lung."

While wood boilers can save money for owners with access to cheap wood, they are far more expensive to operate in suburban areas like Long Island, where a cord of wood can cost \$170. A wood boiler can require more than a dozen cords of wood for a winter. Which leads many people to resort to burning garbage, old furniture, and, at this time of the year, even Christmas trees — all of which create larger, smellier and potentially more toxic smoke.

Jack Eddington, a Suffolk County legislator who introduced the law there banning the machines, said he knew of people who collected trash around their neighborhoods for the sole purpose of fueling their boilers.

"Sometimes that would make the smell worse than the smoke," he said. "It's not a cost-saving measure if you follow the manufacturer's instructions and use only seasoned wood — meaning no sap or anything that could give out a bad toxic emission. The only way you can save money with these things is if you burn anything and everything."

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After months of requests from several states, officials of the Environmental Protection Agency say that they are working to create model guidelines that states can follow to regulate the boilers, and that they expect to be finished by January. Among them will be setback requirements that determine how far boilers must be from homes or schools and height requirements for their stacks to release smoke above human ingestion levels.

John Millett, a spokesman for the agency, said it has also considered establishing emissions standards, but that states are unwilling to wait the year or more the federal regulatory process could take.

So the agency has been trying to encourage manufacturers to voluntarily produce boilers, by the spring, that create about 70 percent less particulate matter. "The manufacturers are working with EPA to come up with a set of codes and standards for these furnaces that make them burn more efficiently and completely," said Leslie Wheeler, a spokeswoman for the Hearth, Patio and Barbecue Association, an industry group in Virginia. "But that's a process that takes a while because you're talking about research and development and a bunch of other things."

Too late for Nowak, the Chicopee man who not only sued his neighbor but sold his house because of the boiler. The neighbor did not respond to requests for an interview.

Nowak said he first sold the house for \$222,000, but after the buyer learned there was constant smoke from the boiler nearby, he demanded his money back. He eventually found another buyer — after knocking \$30,000 off the price. He is hoping, through the lawsuit, to reclaim that money.

"They're a public nuisance," Nowak said of the boilers. "I mean, common sense has to come into play."
