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Wood Boilers Cut Heating Bills. The Rub? Secondhand Smoke.

By ANAHAD O'CONNOR

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

Neighbors say that they create smoke so thick that children cannot play outside, and that it seeps into homes, irritating eyes and throats and leaving a foul stench.

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 2 heavy-duty diesel trucks.

The devices, outdoor wood-fired boilers, originally invented to heat farmhouses, are now a fast-growing alternative energy fad -- and, depending on whom you ask, the latest suburban scourge. Scientists studying the boilers' environmental fallout estimate their numbers have doubled in the last two years, to about 150,000 nationwide.

A growing body of research about the toxins spewed by the boilers -- namely carcinogens and lung-clogging particulate matter -- has prompted campaigns around the country to limit their use.

And next month, the Environmental Protection Agency expects to issue guidelines for states to follow in regulating the use of wood boilers. The industry, too, is working with the agency on new standards for boilers.

"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 boiler in his backyard.

"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," said Mr. Nowak, who is retired. He said he had to move because of the constant smoke.

"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 New England. "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."

Owners of the devices say the complaints are unfair. Peter Muller, a landscaper in Stony Point, N.Y., who bought his boiler 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 Mr. Muller, who gets inexpensive wood through his business and estimates his savings at \$400 to \$600 a month in the peak heating season. "Now I have a renewable energy source, and people are complaining."

Since 2001, at least 50 towns or counties in New York State have instituted laws regulating the boilers,

including Suffolk County, which in November effectively banned them by prohibiting their operation within 1,000 feet of a home or school.

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

The boilers, 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 work by burning wood to heat water that is pumped through underground pipes to a home's plumbing and heating systems.

The boilers are creating fierce disputes virtually everywhere they turn up.

Common complaints include lung inflammation, persistent coughing and trouble breathing, not to mention 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 more, several studies have found. They also produce 4 to 12 times the amount of fine particles, which can easily move into the lungs and be absorbed into the bloodstream, causing heart and respiratory problems, according to researchers.

Joseph Tumidajewicz, another Chicopee resident, has a name for the boiler that a neighbor -- not the same one as Mr. Nowak's -- installed 300 feet from his home: "the presence."

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

According to the New York attorney general, the burners produce particles that are 2.5 microns in diameter or less. A human hair measures 30 to 50 microns.

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

Rarely does that work. Wary of responding to false alarms caused by an outdoor boiler on Pinehurst Road in Holyoke, Mass., the Fire Department sued the boiler's owners in October, and won a cease-and-desist order. Now the city is moving toward banning boilers completely.

While 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 boiler can require more than a dozen cords for the winter. That cost, says Jack Eddington, a Suffolk County legislator who introduced the law restricting the boilers, leads people to resort to burning garbage, old furniture and even Christmas trees -- resulting in larger, smellier and potentially more toxic smoke.

Mr. Eddington said he knew of people who collected trash solely for 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."

Current federal clean air laws cover indoor wood-burning devices, but the Environmental Protection Agency said that after months of requests from several states, it is working on model guidelines that states can follow to regulate outdoor wood boilers, and that it expected to be done by January. Among the guidelines will be setback requirements on how far boilers must be from homes and schools and height requirements for stacks to release smoke above ingestion levels.

John Millett, an agency spokesman, said that 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 E.P.A. 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 Mr. Nowak, the Chicopee man who not only sued his neighbor but also sold his house because of the boiler. The neighbor did not respond to requests for an interview.

He 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.

Mr. Nowak eventually found another buyer -- after knocking \$30,000 off the price. He is hoping, through the lawsuit, to reclaim that money.