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Got wood? Boxes crank out the heat

By Richard Roth

HILLSDALE — Milder-than-usual weather has kept heating costs under control this winter, until now at least. But investing \$7,000 to \$12,000 in an outdoor furnace could reduce the heating bills to nothing at all, assuming you have a plentiful supply of wood. "The furnace is more expensive [than a conventional one], but you'll never buy fuel again," says Mark Meppen of Canaan Hardware and Stove Supply, who has sold several high-tech models since he first began stocking them last spring.

Mr. Meppen says the ideal customers are farmers, loggers, or people who own woodlots. "What it amounts to is the availability of the wood," he says. "For somebody who's going to buy wood, it's not really efficient."

The furnaces can be fueled with any type of wood, even soft woods such as pine or poplar that can lead to chimney fires through residue buildup when burned

in conventional wood stoves. The outdoor placement gives the furnace another advantage: there's no mess from dirt being tracked into the house.

The outdoor furnaces are designed to work with existing forced air, hot water baseboard, or radiant floor heating systems. With forced air systems, a water-to-air heat exchanger is installed, and an entire house is heated using the existing ductwork. For existing baseboard or radiant systems, a water-to-water heat exchanger can be installed; or the outdoor furnace can be connected directly to an existing boiler. Furnaces in stock at Canaan Hardware are capable of heating up to 5,000 square feet.

The furnace's firebox is surrounded by a water chamber. Some water chambers are made of carbon steel and others of stainless steel, which transfers heat more efficiently and also resists rusting and burnout. Ashes are collected in a pan underneath the grate, which

is emptied out twice a month.

Eric Kiablick, whose parents installed an outdoor furnace at their home in Austerlitz last February, said he or his father refuel the firebox once a day with 6 or 7 logs weighing 50 to 100 pounds each. "If they're real big, we split them into quarters," he said.

The furnaces Mr. Meppen sells in Canaan are able to handle logs up to 58 inches long and 24 inches around. "But you do have to be a big boy to load one of those," said Mr. Meppen. Most users settle for a more manageable size.

The furnaces can be located anywhere from 2 to 500 feet from the house, with 50 feet being the usual distance. Insulated pipe, installed either above or below ground level, carries heated water to the existing heating system. "You don't put anti-freeze into them because they're hooked into the conventional boiler," said Mr. Meppen. "That will back heat your outdoor boiler if necessary."

Some units, including those sold by Mr. Meppen, are equipped with a forced draft induction fan to increase efficiency and reduce smoke. Half of the air goes under the firebox, and the other half goes over the top. When the units are burning at peak efficiency, Mr. Meppen said, there will be no more than a "little wisp of smoke coming out." But to keep smoke away from nearby buildings, the furnaces he sells are delivered with extra lengths of pipe that extend the chimney seven feet above the roof line. "It comes down to dealer responsibility," said Mr. Meppen. "You don't want to sell something that will make the neighbors upset."

One thing that can upset the neighbors is seeing the furnaces operated during the summer when their windows are open, as one resident of the Town of Amenia has found. According to a January 18 article in the *Millerton News*, two neighbors complained to the Amenia Town Board that their homes were filled with large amounts of smoke. The Amenia Board recently formed a committee to determine how the furnaces should be regulated, David Quinn of Schodack, chief administrative officer at the Firemen's Association of the

State of New York, said he was not aware of any complaints about smoke or possible fire hazards from the furnaces.

Currently, there are no regulations on the furnaces in Columbia County, according to Mr. Meppen. But he said it was his understanding that both state and federal authorities were looking into the possibility of establishing codes, and he said boiler manufacturers are also "getting something together for the EPA [Environmental Protection Agency]."

An article accepted for publication in the journal *Human and Ecological Risk Assessment (HERA)* asserts that emissions from outdoor furnaces greatly increase the risk of cancer, and those findings have been widely reported in other publications including *The New York Times*. But an independent review by Gradient Corporation, an independent environmental health-consulting firm, found that both the methodology and conclusions of the study on which the article was based were erroneous.

The Gradient findings are outlined in a January 3 press release from Central Boiler, a Minnesota-based manufacturer of outdoor

wood furnaces. "When properly sited, installed and operated in accordance with manufacturer's best use practices-outdoor wood furnaces offer a safe, economical, environmentally responsible alternative to fossil fuels and foreign oil," Rodney Tollefson, Central Boiler vice president, said in the release.

Manufacturers say there is very little difference in emissions between the outdoor furnaces and conventional woods stoves.

Furnace manufacturers specifically warn against burning plastics, garbage, or other toxins in the furnaces, not only because of the environmental risks but also because they could damage the furnace interior.

While there's no law against installing an outdoor furnace on a small lot with close neighbors, or within a hamlet area, Mr. Meppen said it didn't think it was a good idea. "You don't want to cause problems," he said. "We sell other high efficiency heaters that are cheaper and may be a better option."

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