When a cooperative religious community in Farmington, Pennsylvania installed a wood-fired district heating system in 2008, the project turned a waste product into a useful fuel that benefits the whole community.

Spring Valley Bruderhof, which is home to as many as 400 adults and children in Farmington, sustains itself and engages many of its residents in a woodshop where the community manufactures wooden classroom furniture, equipment, and wheeled toys for schools under the brand name Community Playthings. (Spring Valley Bruderhof also produces a line of therapeutic equipment, such as chairs and standers, for people with disabilities.)

Bruderhof (in German, the word means brotherhood) is a Christian religious organization with communities in New York, Florida, Pennsylvania, the United Kingdom, Germany, and Australia. The organization recently changed its official name to Church Communities International.

One of the New York Bruderhof communities operates a US-built wood boiler. When Spring Valley became interested in using its wood waste in a similar heating system, members searched the Internet for more efficient woodchip boilers and found Fink Machine, Inc., a British Columbia vendor of the Austrian-built woodchip and pellet KÖB boilers.

“I took two of their guys to Austria, to see a district heating application,” says Burkhard Fink, owner of Fink Machine. “The KÖB boilers are very reliable, and that’s what the Bruderhof found out when talking to owners of such KÖB boilers. We installed the 2.45 MMBtu/hour boiler with the hydraulic push rod floor at Spring Valley in mid December 2008 and pushed the ‘start button’ on December 19, 2008. The boiler has been operating without interruption since then.”

Spring Valley’s KÖB boiler can produce up to 2.45 MMBtu/hour, running on a combination of dry wood waste from the woodworking shop, other waste wood from the community and its neighbors, and whole-tree chips sourced from nearby forestland.

“This is a farm country, with forest,” Fink says. “Spring Valley is using some of its own timber for chips, but most of the waste wood comes from its furniture plant and the surrounding area in the form of construction waste wood and tree trimmings.”

**Regular Maintenance is Key**

Austrian and other European biomass heating technology is often more advanced than that built in North America—and for good reason, says Fink: Europeans have had little choice but to innovate.

“The Europeans were forced into this because of the high population, their high energy costs, and their stringent air-quality standards,” he explained. “They had to come up with efficient equipment fast. In America, energy prices were down in the basement, and efficient equipment wasn’t required.”

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Now that North American energy prices have risen, so has interest in the type of equipment that Fink Machine sells. Inquiries often center, Fink says, on how much work biomass boilers require, and how reliable they are likely to be.

“People always ask me, ‘How much time do I have to spend on it?’ That’s a very good question. My answer is ‘you get what you pay for.’” Fink says its needs should be minimal and predictable.

For a KÖB boiler, “half an hour a week should be plenty. With the automatic ash removal system and the automatic tube-cleaning system, the monthly maintenance is between 30 minutes and two hours at the most. Automatic ignition and a large thermal buffer tank also reduce monthly maintenance and increase the efficiency.

“If you use decent fuel, you have no problems. If you use poor fuel, with a lot of dirt, rocks, metal, and oversize pieces, you can have the best machine and it can give you a headache. Spring Valley has its own chipping station with a metal separator and therefore also has control over its chip supply.”

In Farmington since 1990, Spring Valley Bruderhof is, like other Bruderhof communities around the world, devoted to peace and collaborative work. It’s a sister community to New Meadow Run Bruderhof, also in Farmington.

The Bruderhof movement was founded after World War I in Germany, then was persecuted and driven out of the country after the Nazis took power in the 1930s. Members relocated to England, then again to Paraguay before the outbreak of World War II. Bruderhof first came to the US in 1954, starting Woodcrest Bruderhof near Rifton, New York. Its first Pennsylvania community was founded in 1957.

“The Bruderhof is a peace church whose members do not serve in the armed forces of any kind,” says a Wikipedia article on the movement. “The goal of the Bruderhof is to create a society where self-interest is yielded for the sake of the common good.”

At Spring Valley Bruderhof, one small result of this approach is that the community welcomes waste wood from the surrounding community. Rather than being dumped, scrap wood and trees that have been removed are put to use as fuel.

The community previously heated with oil, and its oil burner is still in service, for backup only.

“But obviously, the oil burner is off,” Fink says. “The biomass boiler handles 100 percent of the load.”