

Turning Dust Into Green

A Pennsylvania log company uses its waste sawdust to power its log-drying kilns and has saved more than a million gallons of fuel.

For many log providers, one of the largest operating costs comes from purchasing fuel oil to run the log-drying kilns. Kurt Propst, owner of Estemerwalt Log Homes based in Honesdale, Pennsylvania, needed a new lumber-drying system in the mid-1990s and realized that an oil-fueled system would be both environmentally detrimental as well as prohibitively expensive, even before the skyrocketing oil prices of recent years.

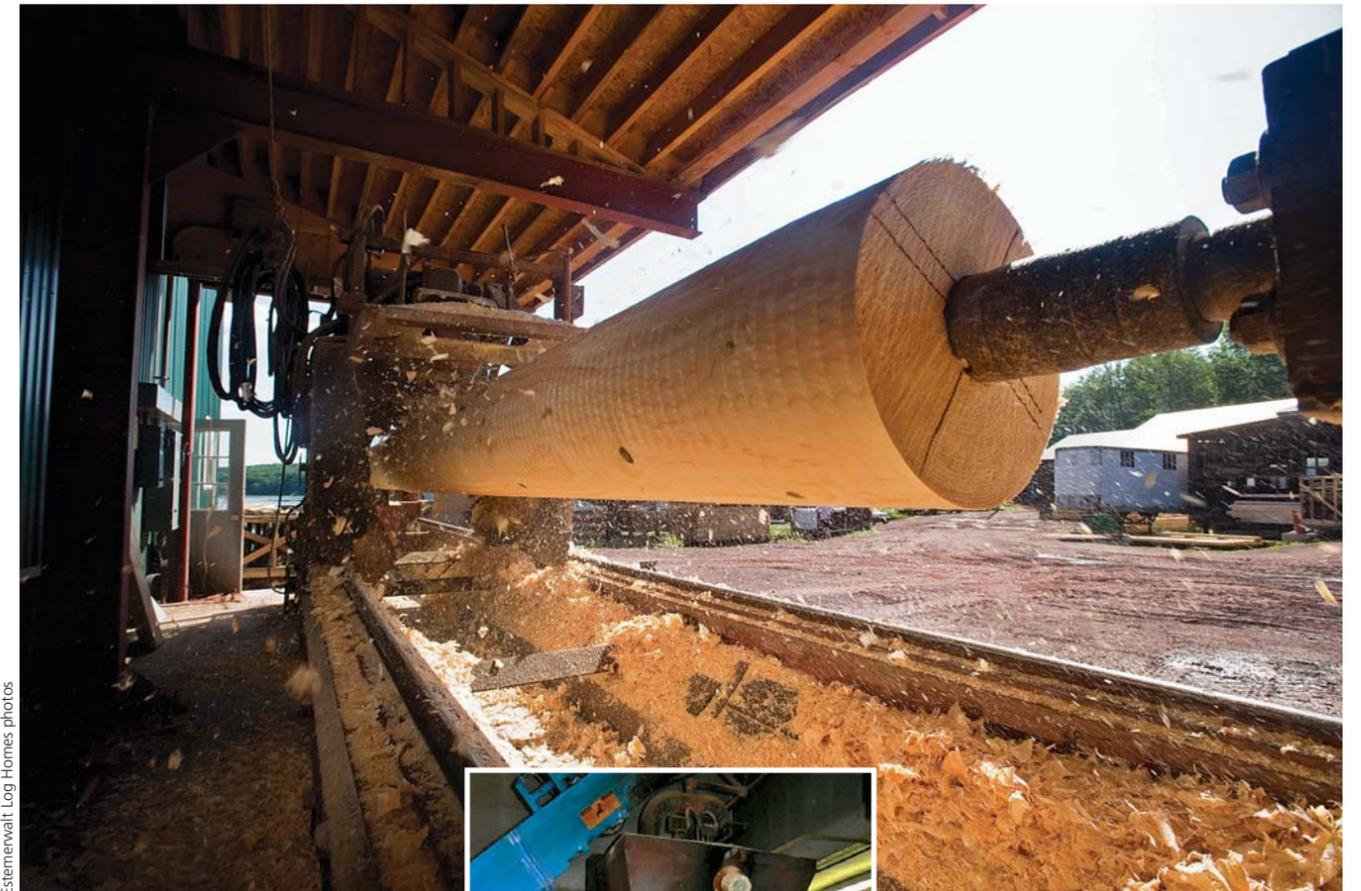
Estemerwalt is also a retail lumber company and manufactures more than just milled logs for residential construction; a drying system fueled by oil would burn through up to 240 gallons of fuel a day. Propst realized he would have to find an alternative or seriously risk the finances of the business his family had founded and run since 1883.

“Estemerwalt is a family company, and we make decisions from that family perspective,” says Propst, the fourth generation of his family to own and operate the business. “Being self-sustaining is an important necessity.” Aside from the financial impact of the company’s dependence on oil, the system would also contribute to harmful environmental effects created by burning fossil fuels, such as ozone, acid rain and global warming, none of which Propst was comfortable with.

“As a log-home company, we care about effectively managing our renewable resources so that future generations can enjoy them,” he says.

Propst found an article in a trade journal that described how one entrepreneur processed and sold kiln-dried firewood to high-end resorts using a sawdust-powered machine. One plentiful byproduct of a lumber mill is sawdust, so Propst knew he had caught on to something that could revolutionize his company. After a few hours online, he tracked down Chequamogon Boiler & Furnace as well as the Burnham line of boilers by U.S. Boiler Company. By combining a Chequamogon firing system with a Burnham steam one, Propst was able to create a custom gasification system that converts burned sawdust into ignitable gas, which powers Estemerwalt’s two log-drying kilns.

Sawdust is never in short supply at Estemerwalt Log Homes. By burning 2 tons per day, the company has eliminated the need for fuel oil in its kiln operations.



Estemerwalt Log Homes photos



“It’s my favorite piece of equipment,” Propst laughs. “It saves so much money.”

The dual-chambered system burns green sawdust in the first compartment and starves it of oxygen, which converts the sawdust into a gas. The wood gas then passes to a second chamber, where it ignites and fuels the kilns’ operations. Overall, the system produces an extraordinarily efficient and environmentally friendly source of heat.

Estemerwalt produces an average of 10 tons of waste sawdust a day as a result of its milling operations, and it uses about 2 tons each day to fuel the kilns. The other 8 tons are sold to farmers for animal bedding at \$7 per ton. Alternately, the company would be burning through up to 240 gallons of fuel oil a day; given the equipment’s 24/7 operation, that would translate to 87,600 gallons used each year. Fortunately, the company’s eco-friendly system has completely eliminated the need for any fuel oil, and the only “loss” is the \$14 per day it could have received from selling the sawdust used.

ABOVE: Estemerwalt’s massive lathe, nicknamed “Amber Lynn,” both fuels the company’s kilns with its leftover sawdust and prepares the logs before they’re dried.

LEFT: Industrial-looking but highly efficient, this customized fuel system saves Estemerwalt hundreds of thousands of dollars each year.

“I figure it paid itself off in three months,” estimates Propst, who calculates a savings of more than a million gallons of fuel since the system was installed in 1996. “I can’t imagine having to use 240 gallons of fuel oil at today’s prices.” Estemerwalt produces 30 to 50 log homes per year, as well as a variety of other milled lumber products such as timber beams, wall panels, wainscoting, etc.

“By using what is essentially a waste product as fuel, we are able to pass along those savings to our customers,” says Propst. “It’s a great feeling.”

For more information, visit estemerwalt.com or call 800-515-2060. **CBC**