

Pellet boilers: not your grandfather's wood stove

A once-quaint technology transformed into sustainability's cutting edge

By ANNE WILLARD

NARROWSBURG, NY — Once upon a time, wood and pellet stoves were essentially quaint space heaters. Cozy and romantic, maybe, but not very practical, given their limited range and the need for constant care and feeding. But things have changed, as became apparent at a forum on pellet boilers on Sunday, November 17 at the Tusten Theatre, sponsored by Damascus Citizens for Sustainability and The Solution Project, attended by about 100 people.

According to the panel of experts who spoke at the forum and a subsequent open house at a pellet-boiler-heated home in Milanville, heating units that use biomass for fuel have not only been transformed in ways that make them as versatile and practical as conventional fossil fuel-based systems, but they also have significant economic and environmental benefits.

Gains in versatility and ease of use

Perhaps the most striking feature of the lead-off presentation by Mike Palko, biomass energy specialist of Pennsylvania's Bureau of Forestry, was the size of the biomass-based systems he discussed. We're not just talking about whole houses, but big buildings like hospitals and schools—or the Cooperage in Honesdale, PA, where a system was recently installed. That's possible because biomass boilers can be used just like conventional furnaces to heat the water for hot-water heating systems, or even to drive hot air systems.

And the savings in both cost and greenhouse gas emissions can be considerable. Palko showed a slide with savings experienced by school districts over the past few years burning biomass versus fossil fuels; numbers ranged up to \$300,000 in a single year. And one school district alone achieved a net reduction of one million pounds a year of CO2 emissions by switching from fossil fuels.

Nor does it take a crew of stokers to feed pellets into the boilers. The presentation by Patrick and Kyle Vincent of Vincent's Heating and Fuel Service discussed advancements that have been made in delivery, storage and feeding systems—some developed by the Vincents themselves—that make a pellet system as easy to maintain as one based on oil or gas. Their solution is threefold: providing storage bins large enough to provide a supply of fuel for weeks or even a whole season; delivering pellets in bulk directly to those

storage units, eliminating wasteful plastic bags; and providing automatic augur systems that deliver pellets as needed to the burners.

Beach Lake firm Buselli Plumbing Heating and Electric was also represented at the forum, sharing their experiences bringing pellet-burning technology to our area. They did the Cooperage installation, and also installed an integrated solar/pellet boiler system at the house of Jane Cyphers and Joe Levine where the open house was held. That system uses solar panels to provide hot water in summer, as well as to heat a water tank that stores summer heat and then emits it as summer transitions into winter. The tank is also connected to the pellet burner, which kicks in during the coldest months as the heat left over from summer fades.

The local angle

All the presenters emphasized the benefits of biomass heating in boosting the local economy. In fact, the Busellis and Vincents themselves are examples of the kind of small, local businesses that can expand by promoting this technology. And the source of biomass fuel, especially in a rural area like ours, can also be local. The wood for pellets comes from waste wood from lumber mills, chips from roadside work, old railroad ties and the like, or from fast-growing trees like a hybrid willow developed at Cornell University that, as discussed by Palko, is being grown, harvested and burned on the grounds of a wood chip-heated school.

But panelist Larry Hartpence, from Moscow, PA, probably created the most buzz among the crowd of any of the presenters with what may be the most sustainable option of all: grass. Hartpence is particularly enthusiastic about miscanthus, not as well known as switchgrass but with a btu yield five times as great per acre. It is also much easier to compress into briquettes, making it possible to develop portable compression equipment—a development Hartpence is actively pursuing that would make the whole life cycle of the fuel hyper local.

Hartpence stresses the opportunities miscanthus could present for our hard-pressed farmers, desperately in need of a cash crop. Planting is difficult, involving rhizomes rather than seeds, and four years are needed for it to mature; but Hartpence says he has seen statistics showing that a single acre of otherwise marginal land can produce enough fuel to heat a farm house for a winter.

A number of landowners at the open house following the forum were obviously intrigued, and asked Hartpence whether it might be possible for them to provide their land to farmers who could grow and harvest miscanthus from it, paying the landowners by giving them enough briquettes to heat their homes for a winter, and making a profit by selling the rest.

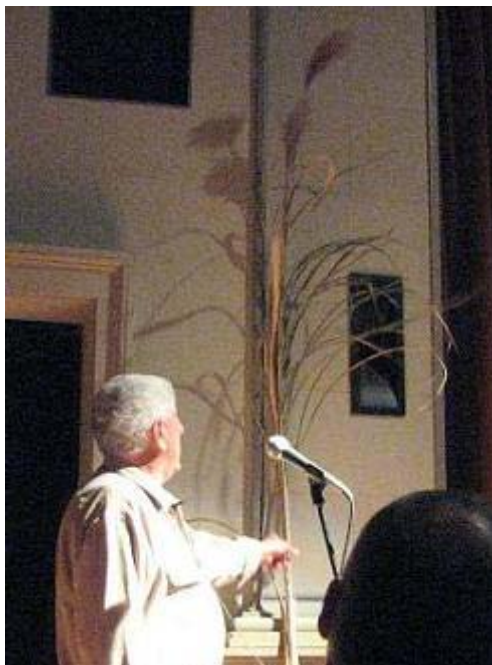
We're not there yet, said Hartpence. But it's the kind of innovative solution that we might see down the road, if people keep up the kind of forward thinking evidenced at the forum.

This Kedel pellet unit and pellet storage bin fit into a basement much as a conventional fossil-fuel system would, and connect to the house's hot-water heating system.



Contributed photo by Shirley Masuo

Larry Hartpence of Hartpence Farms stands at the dais next to a stalk of miscanthus grass—which is still three or four feet short of its full height at maturity. Hartpence believes miscanthus as a fuel source shows great promise as a cash crop for beleaguered local farmers.



SIDEBAR

Find out more:

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