

A renewed source of renewable energy

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Monday, Jun. 29, 2009

PLEASANT HILL — The soggy June morning is gray and heavy, with the potential for more rain in Mercer County. But David Brown Kinloch grins as a few scattered drops pelt his noggin.

"They're like pennies dropping from heaven for us," he says. "During the summer I'll take every drop I can."

Rain is a precious commodity to Kinloch and his business partners, Bob Fairchild and David Coyte. They co-own and operate a small hydroelectric plant on Lock and Dam No. 7 near High Bridge on the Kentucky River. The plant generates enough power for nearly 2,000 homes.



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Greg Kocher | Staff - The third and final generator was restarted in on Dec. 30, 2008, three years to the day that a partnership bought the plant.

Water pouring over the dam is important to the trio because that's what turns the turbines that generate electricity. But it's also important to consumers and to anyone else interested in non-polluting, renewable energy.

"Every year we do this, we're saving about 9 million pounds of coal from being burned and 18 million pounds of carbon dioxide from going up in the air," Kinloch said.

"That seems worthwhile to me. Plus, the whole country, the whole world is going to have to move to renewable resources, and somebody has to start the way."

The plant was built in 1928. It's remarkable that it produces electricity at all because the structure's three generators had not produced anything for six years when

Kentucky Utilities sold it in late 2005 to Lock 7 Hydro Partners LLC. Hydro Partners is a partnership between Shaker Landing Hydro Associates Inc. — the company owned by Kinloch and Coyte, both of Louisville, and Fairchild, of Berea — and Salt River Electric, a cooperative based in Bardstown.

The plant is named the Mother Ann Lee Hydroelectric Station, after the founder of the Shakers, the religious sect known for its ingenuity in the 1800s. The station is connected to the Kentucky Utilities grid near Shaker Village of Pleasant Hill.

The electricity generated by Mother Ann Lee is sold to Salt River Electric. Although the plant generates perhaps only about half of 1 percent of the electricity that the cooperative

provides, Salt River Electric chief executive and president Larry Hicks said the project is worthwhile.

"We're always interested in getting environmentally friendly power, and also, it's economical," Hicks said. "So it's a no-brainer."

Although the amount produced is small, Hicks said, "I find ... that most of our sustainable improvements come in very small steps."

The Mother Ann Lee plant also makes money through the sale of renewable-energy credits. For every megawatt hour of electricity it generates, it can sell one renewable-energy credit. Each credit has a value — between \$5 and \$10 per megawatt hour — and is sold to E.ON U.S., the parent company of KU and LG&E.

Customers who voluntarily participate in KU or LG&E's "Green Energy" program help to expand the growth of renewable energy serving Kentucky. Because renewable energy is more expensive to generate than burning coal, customers can voluntarily help supplement the cost difference by paying a little more on their bills.

KU residential and small-business customers can participate in increments of \$5 and \$13 a



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month for "blocks" of green energy. A portion of that goes to the Mother Ann Lee station to help it remain competitive. It's also a way for customers to shrink the amount of greenhouse gases produced in their day-to-day lives through the burning of coal for electricity. At the end of May, KU had 530 participants and LG&E had 867, said Cliff Feltham, a KU spokesman.



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Companies are signing up for such programs, too. In May, Timberland Co., the New Hampshire-based outdoor-apparel firm, which has a Danville distribution center, became an official "KU Green Business" by offsetting 100 percent of the carbon emissions produced by the electricity used by the distribution center .

And last fall, Centre College's Board of Trustees in Danville unanimously accepted a student-initiated proposal for the Danville

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college to buy renewable-energy credits from the Mother Ann Lee station.

Starting this fall, the plan will increase the cost of tuition for all students by \$20 a year. (Centre's faculty and staff also have a voluntary program in which they can donate a portion of their pay to support green energy production.)

"It gives me hope for future generations, that they would care so much," Kinloch said.

Turning the old into something useable

Kinloch, 53, himself has had a turnaround from his days as a student at Rensselaer Polytechnic Institute in New York. He had planned to go into nuclear engineering but later turned against nukes and protested the construction of the Marble Hill nuclear plant in southern Indiana, which was scrapped in 1984 because of its high cost.

Over the past 20 years, Kinloch and his business partners have made a living turning the old into something usable. They developed Kentucky's first small hydro project at Weisenberger Mill near Midway in 1989.

In 2002, they got the turbines running again at Stockport Mill Inn on the Muskingum River in southeastern Ohio. The turbines supply electricity to that bed-and-breakfast, and the surplus power is sold to a utility.

"We do it because it's what we do," said Fairchild, who took a break from removing debris from the spillway 40 feet below the Mother Ann Lee station's concrete structure. "We believe in alternative energy, and we do what we have to do to keep this place running."

When Kinloch, Fairchild and Coyte bought the plant in late 2005, one generator had not run since 1992, another not since 1994 and the third since 1999.

They got the first generator running in March 2007, the second in October 2007 and the third on Dec. 30, 2008 — exactly three years to the day since they'd owned the plant. Kinloch wouldn't say how much the renovation cost, but when E.On announced that it had sold the plant, the estimate in a press release was \$2.75 million.

Today, Kinloch can monitor the plant's operation — its output of electricity and any problems that crop up — from his home computer in Louisville. And he said the plant is making enough money to repay loans that financed the renovation.

Warner Caines, a member of the Kentucky River Authority, the state agency that owns and maintains the dams on the river, was skeptical that power would ever come from the plant again.



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The hydroelectric plant at Lock and Dam No. 7 had not produced power since 1999. Three partners bought it from Kentucky Utilities in 2005 and got it working.



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Mother Ann Lee Hydroelectric Station at Lock and Dam No. 7 on the Kentucky River near High Bridge generates enough electricity for about 2,000 homes. A partnership that owns the station is sold the Salt River Electric, a cooperative based in Bardstown.

"When you have something like that that sits idle for such a long time, it's like restoring an old automobile. You wonder, will it ever run again?" Caines said. "Evidently the people that purchased it knew what they were doing and did a good job."

For the moment, the Mother Ann Lee plant is the only one in Kentucky certified as "low-impact," meaning it adequately protects river flows, water quality, aquatic life and other factors as certified by the Low Impact Hydropower Institute, an independent non-profit in Maine. There are only 38 certified projects in the country, according to the institute's Web site.

Kinloch said Shaker Landing Hydro Associates would like to build similar plants elsewhere on the Kentucky River, including

Lock and Dam No. 12 at Ravenna, and Lock and Dam No. 14 near Beattyville. Unlike the Mother Ann Lee station, which had existing equipment, those two sites would require installing equipment.

Those plans are feasible, based on Kinloch's explanation of them, said Stephen Reeder, director of the Kentucky River Authority. A "drop-in unit" could be installed in the lock chamber at each site.

Kentucky has more than 30 other potential sites for hydro plants, according to a survey that Kinloch conducted. American Municipal Power-Ohio will begin construction later this summer on the Kentucky side of the Ohio River near Cannellton, Ind. The utility is awaiting permits on two others at Smithland, Ky., and Felicity, Ohio. Other companies have proposed similar projects on reservoirs including Cave Run Lake near Morehead, Fishtrap Lake in Pike County, and Buckhorn Lake in Leslie and Perry counties.

"The message of Mother Ann Lee is that renewable energy in Kentucky is not only possible but we're doing it," Kinloch said. "You hear about all this renewable energy on the West Coast and the East Coast, but it can be done right here in Kentucky."

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From <http://www.kentucky.com/news/state/story/845634.html>