

Switchgrass Used To Fuel Power Plant

LEXINGTON, KY.

Officials from East Kentucky Power Cooperative and the University of Kentucky recently demonstrated switchgrass' feasibility as an alternative energy form as it was combined with coal to generate electricity at East Kentucky Power's Spurlock Station in Maysville.

This was believed to be the first time switchgrass was used as fuel for a power plant in Kentucky.

The switchgrass was mixed with the coal feedstock, replacing 1 to 2 percent of the coal normally used. East Kentucky Power will continue to study switchgrass' energy potentials, and could possibly increase the percentage of switchgrass used to 3 to 10 percent.

"We want to find out if switchgrass can be a viable supplemental fuel for our power plants," said Bob Marshall, president and CEO of East Kentucky Power. "This test will provide valuable information about how burning switchgrass affects our plant's fuel-delivery systems, boilers and emissions."

The test is part of an innovative four-year pilot project conducted by UK's College of Agriculture to determine if switchgrass can be grown sustainably and economically in Kentucky. A grant to the Kentucky Forage and Grassland Council from the Kentucky Agricultural Development Board is funding the project.

"The switchgrass burn, which was made possible by an investment from the Kentucky Agricultural Development Fund, will provide valuable information that could enhance Kentucky's agricultural opportunities outlined in my recently released seven-point energy plan," said Gov. Steve Beshear. "Energy-related research and development through public and private partnerships should be expanded throughout the state."

"This is just another example of how the college is working to develop a variety of technologies for alternative energy uses," said Scott Smith, dean of the College of Agriculture. "We appreciate our partners, East Kentucky Power Cooperative and the Governor's Office of Agricultural Policy, working with us toward this goal."

UK researchers are working with 20 farmers

in northeast Kentucky to evaluate options for planting, growing, harvesting, transporting and processing the switchgrass. Each farmer manages a five-acre plot that UK forage specialists helped them establish.

"I think it's going to be a viable crop for all of us," said Greg Webb, a producer in Lewis County. "It won't replace tobacco, but it will help."

The forage specialists believe that if this project is successful, switchgrass could provide a great opportunity for producers in this area to diversify their agricultural operations as well as generate additional income.

"As people drive around northeastern Kentucky, they see a lot of land that lays fallow, and those are acres that have great potential for switchgrass production because it grows well even on marginal soils. We don't even have to take acres out of forages for cattle production," said Tom Keene, UK hay marketing specialist. "The opportunity is there."

"Kentucky farmers successfully producing switchgrass opens up tremendous opportunities for them in the emerging biomass market," said Ray Smith, UK forage extension specialist. "While further research is needed to determine the economic returns to producers, this project is allowing Kentucky farmers to be at the forefront of this movement."

Seven plots were established in 2007, and the remaining 13 were planted in 2008. The switchgrass was planted during the spring and matured until the first killing frost. After that frost, the plots were mowed, and the switchgrass was baled like hay. About 70 tons of switchgrass were harvested this fall. The bales were transported to Spurlock Station, where UK representatives used a tub grinder to further process the switchgrass for handling by the power plant's coal conveyer system.

One of Spurlock Station's generating units – the Gilbert # 3 unit – features circulating fluidized bed (CFB) technology that allows it to burn a wide range of fuels, including switchgrass. In April, EKPC plans to bring online a second unit at Spurlock Station featuring this technology. EKPC's proposed Smith CFB #1 unit at Smith Station in Clark County also is planned to feature this technology. Δ