

Hughesville Junior/Senior High School Biomass Using Short Rotation Woody Crops Project

Like most public school districts, the East Lycoming School District in Hughesville, Lycoming County, continually looks for ways to save money while providing a high quality educational experience for its students.

In 2009, the district received an \$800,000 grant from the Pennsylvania Energy Development Authority to help fund an innovative energy project to provide heat to its Hughesville Junior/Senior high school as well as the Lycoming Career & Technology Center, while saving the district approximately \$50,000 annually in heating costs.

The district's "Biomass Using Short Rotation Woody Crops" project is a green energy project focused on reducing long-term operating costs, the district's carbon footprint, reliance on traditional fossil fuels and promoting the resources of the local economy.

The \$2.3 million project combined the installation of a biomass heating system with the planting of hybrid willow to be harvested for wood chips and used as a fuel source.

The Messersmith biomass boiler and conveyor were installed in 2010. The boiler burns 600 to 700 tons of wood chips per year replacing fuel oil and natural gas saving the district approximately \$50,000 per year in fuel costs. The system is also considered carbon neutral and is extremely efficient, burning at temperatures nearing 2000 degrees Fahrenheit while producing only around five gallons of ash for every 20 tons of wood chips burned. The wood ash can also be used as a soil amendment instead of disposed in a landfill. Later that year, hybrid willow, a short rotation woody crop, was planted on 40 acres of district-owned property.

One-third of the willow was harvested each year, in 13-acre plots, from 2014-2018. Due to the cost of renting a harvester, and the availability of low-cost, clean wood chips from a local supplier, the district opted to discontinue harvesting the hybrid willow, and purchase all their wood chips.

The East Lycoming School District's biomass boiler utilizing wood chips as a fuel source began producing building heat and domestic hot water for the Hughesville Junior/Senior High School and Lycoming Career & Technology Center in November 2010, and continues to operate today.

Both students and the community are benefiting from the project. The high school conducts an alternative energy course. District officials have conducted presentations on the project to local government groups, universities and at energy symposiums.



Pennsylvania Energy Development Authority



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