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## Growing electricity

With new biomass plant, Xcel Energy becomes electricity customer

**BY BOB GEIGER**

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When Koda Energy LLC fired up its biomass electricity generating plant in Shakopee in March, Minneapolis-based Xcel Energy Inc. turned from energy provider to energy customer.

The 22-megawatt biomass-fired plant, which represents a partnership of the Shakopee Mdewakanton Sioux Community and Rahr Malting Co., provides more than enough electricity for Rahr Malting and the Shakopee Mdewakanton Sioux, which owns and operates Mystic Lake Casino in Prior Lake

and adjacent commercial development.

Xcel Energy Inc. is buying nearly two-thirds of the electricity generated by Koda Energy LLC.

That's because electric utilities are searching for dependable sources of renewable energy to meet Minnesota's mandate for electric utilities to provide 25 percent of energy used from renewable resources by 2025.

For Xcel Energy Inc. the bar is set even higher – 30 percent by 2020 – making the energy produced by the plant a welcome addition to its search for renewable energy.

While much media attention is paid to wind and solar energy development, biomass – organic material such as hulls from oats used to make Cheerios, wood chips, forest products, grains and prairie grasses burned to generate energy – are gaining in popularity among energy developers and utilities.

In the case of Koda Energy, the sprawling 17-story biomass plant that looms over the bustling Minnesota River valley city of Shakopee cost \$60 million to build over two years.

Joe Johansen, general manager of Koda Energy who has worked at Wisconsin

# Biomass Xcel buys two-thirds of electricity produced by Shakopee plant



The biomass-fired Koda Energy LLC power plant in Shakopee (above) generates 22 megawatts of power. (Staff photo: Bill Klotz)

ethanol plants, said fuel for the biomass burner includes truckloads of oat hulls from General Mills, barley malt dust from Rahr Malting, wood chips and prairie grasses.

He declined to say how much it costs Koda Energy to purchase fuel for the biomass generator, which can burn as much as seven tons of dry wood an hour. Located next to the burner are six silos, two each for the oat hulls, barley waste and dry wood.

As an example of just how much burning the plant does, General Mills delivers 136 tons of oat hulls in eight trucks daily to Koda Energy. During the year, Koda Energy executives estimate that the plant will burn 170,000 tons of biomass fuel.

The six silos next to the burner hold enough fuel to fire the biomass generator for four days. The biomass plant is more than 70 percent efficient, Johansen said, more than twice the efficiency of conventional coal-fired plants, which are about 35 percent efficient.

Electricity is generated when steam from the biomass burner turns a 38-foot-long turbine at the development. Koda Energy executives would not say how much they charge Xcel Energy for the plant's energy.

Bill Rudnicki, tribal administrator for the Shakopee Mdewakanton Sioux, said that several years ago Rahr Malting started looking at ways to reduce the cost of producing its malt, which is sold to brewing companies.

"We thought at the time it was a chance to help the environment," Rudnicki said. The Shakopee Mdewakanton Sioux hold a 51 percent stake in the partnership, and Rahr Malting Co. has the remaining 49 percent stake.

Rudnicki said additional renewable energy is scheduled to be added this fall, when a 1.7-megawatt wind turbine is installed near Mystic Lake Casino. Electricity from that turbine will be piped into a sub-station, where it will be distributed to the Shakopee Mdewakanton Sioux.

Koda Energy's plant sounds good to Don

Arnosti, director of forestry programs for the Institute of Agriculture Trade Policy, which focuses on a variety of environmental topics, including sustainability.

Arnosti said the project is positive because, unlike such garbage incinerators as the Hennepin Energy Recovery Center (HERC) and Elk River Station, which generate 40 megawatts of power each, Koda Energy's plant burns organic materials and not a mixture of garbage that can include toxins.

Xcel Energy Inc. buys much of the power from HERC, while Maple Grove-based Great River Energy buys the electricity generated by Elk River Station.

In terms of gross production, St. Paul-based District Energy's 90-megawatt generating plant is the largest biomass energy plant in the Twin Cities area, if not the state.

However, most of District Energy's power is used to heat or cool most downtown St. Paul buildings and adjacent developments, including the State Capitol.