

Raising The Bar

Area Co-ops Set Renewable Energy Goal

In coming months, Basin plans to bring online four recovered energy generation plants in North Dakota and South Dakota.

by Brenda Kleinjan

ELECTRIC COOPERATIVES IN THE REGION have set a goal: they will increase the amount of renewable energy used by 2010.

When Basin Electric Power Cooperative, headquartered in Bismarck, N.D., held its annual meeting in November, delegates approved a resolution setting a goal for the cooperative's renewable energy efforts.

The resolution noted that "Basin Electric has demonstrated its resolve to encourage renewable energy development by participating in several wind energy projects (small and large) in North and South Dakota."

The cooperative plans to obtain renewable or environmentally benign resources equal to 10 percent of the megawatt capacity needed to meet its member demand by 2010.

The resolution acknowledges a variety of types of renewable energy, among them: wind, waste heat and hydroelectricity produced by the Missouri River's mainstem dams.

Basin Electric is a consumer-owned, regional cooperative. It generates and transmits electricity to 120 member rural electric systems in nine states: Colorado, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, South Dakota and Wyoming. Those member systems distribute electricity to about 1.8 million consumers, including more than 300,000 people in South Dakota and western Minnesota.

Much of Basin Electric's generating resources are coal-based, and the cooperative has invested millions of dollars in meeting or exceeding standards for environmental controls on their facilities. (The hydroelectric resources that provide electricity to area cooperatives is purchased through Western Area Power Administration, which markets the electricity produced by the federally owned dams on the Missouri River.)

Basin Electric's renewable energy resources include four cooperatively owned wind turbines – two near Minot, N.D., and two near Chamberlain, S.D., with a combined generating capacity of 5.2 megawatts.



In addition, the cooperative purchases the entire output of three wind farms owned and operated by FPL Energy: one near Edgeley/Kulm and one near Wilton in North Dakota, and another near Highmore, S.D. The cooperative also purchases the output of two 750-kilowatt wind turbines: one near Pipestone, Minn., and the other near Rosebud, S.D.

In coming months, Basin Electric also plans to bring on line four recovered energy generation plants in North Dakota and South Dakota. These plants are “fueled” by hot exhaust and will have a total generating capacity of about 22 megawatts. The plants will be owned and operated by Ormat of Sparks, Nev., and the cooperative will purchase the electricity produced by the plants.

In a release about the project, Ron Rebenitsch, Basin Electric’s manager of member marketing, said the project involves using the hot exhaust gases from existing compressor stations located along the Northern Border Pipeline to generate electricity.

“The heat in the compressor exhaust is recovered using heat exchangers. The recovered heat is then used to vaporize a fluid to drive a turbine/generator set,” he said.

The generators are along the Northern Border Pipeline that travels in a southeasterly direction across North Dakota and South Dakota as it carries natural gas from Canada to the Chicago area. The South Dakota plants will be located near Wetonka, Clark and Estelline.

Because the generators will recover heat that is already used in the process of transporting the natural gas, the project is considered environmentally benign.

According to the National Rural Electric Cooperative Association, generation and transmission cooperatives like Basin Electric, East River Electric Power Cooperative in Madison, S.D., Rushmore Electric Power Cooperative in Rapid City, S.D., and L&O Power Cooperative in Rock Rapids, Iowa, serve 37 million people in 47 states, or 12 percent of the U.S. population.

These cooperatives generate 5 percent of the total electricity produced in the United States each year and deliver 10 percent of the kilowatt hours sold in the United States each year.

In 2003, America’s G&T cooperatives had renewable generation capacity of more than 60 MW and purchased more than 200 MW hours of energy from renewable resources operated by various developers that year. Those numbers have



Basin Electric purchased the entire output of three FPL Energy owned and operated wind farms: one near Wilton, N.D., (pictured) another near Edgeley/Kulm, N.D. and one near Highmore, S.D.

grown considerably in the past two years, with Basin Electric’s expansions contributing to that growth.

At the end of 2005, Basin Electric had 87 MW of renewable energy resources. By 2010, their 10 percent goal, based on their member’ peak demand of electricity, would be to have in excess of 200 MW of renewable energy.

What’s unique about Basin Electric’s resolution is that it is not mandated by federal or state government.