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FLATHEAD ELECTRIC COOPERATIVE AT FOREFRONT OF RENEWABLE ENERGY

By Myers Reece

First it was decaying garbage and now it's hot springs. Such is the future of renewable energy through the eyes of innovative officials at Flathead Electric Cooperative.

On June 26, a ribbon-cutting event was held at the Flathead County landfill to mark the activation of a biomass system that converts methane gas emitted from the landfill's trash into energy. The project, a joint effort between Flathead Electric and the county's solid waste district, is the first of its kind in Montana.

Now the cooperative has its sights on geothermal energy – power extracted from heat stored in the earth – in the Hot Springs area. That, too, would be a first for Montana. Flathead Electric General Manager Ken Sugden said in July Rep. Denny Rehberg secured \$491,000 for the cooperative to pursue geothermal exploration.

"We're hoping we can be drilling in 2010," Sugden said. "It's almost like looking for oil except you know they have hot water there because they have hot springs there."

For years, Flathead Electric Cooperative (FEC) has positioned itself to be at the forefront of the renewable energy movement in Montana. This most recent pursuit of geothermal energy is in part a continuation of those efforts, but also a response to the Bonneville Power Administration's announcement that it will start capping the amount of energy it provides to FEC in 2011.

Bonneville also announced it is raising rates by 7.5 percent on Oct. 1, which will put a significant dent in FEC's budget. Sugden said energy purchases make up 50 percent of the company's expenses, meaning the rate increase will cost FEC millions of dollars. To compensate, Sugden said the company will be forced to raise its rates to customers.

By capping its energy distribution, Bonneville is putting a predetermined limit on how much electricity it will sell to FEC and other Western Montana cooperatives at the rate of \$.03 per kilowatt-hour. If more energy is needed to supply its customers – or if there is any "load growth" – FEC has to purchase it at the market rate of roughly \$.06 per kilowatt-hour or find alternative sources.

So as population continues to grow and, perhaps, new industry emerges, Sugden predicts an annual load growth that will be increasingly greater than the amount of energy BPA provides.

"Every year you experience a little melding of the more expensive rates with the

cheaper rates,” Sugden said. “It’s going to put pressure on our rates.”

One option to help deal with the costs of BPA’s power cap is to join up with other utilities, Sugden said. Yet another option, of course, is to find renewable energy sources. When BPA conducts tests to see how much energy FEC uses and, thus, how much it should receive when the cap is set, renewable energy doesn’t count against that total, Sugden said.

Therefore, while renewable energy is a more expensive endeavor, it’s sort of a win-win situation for FEC so long as it can be produced in a cost-efficient manner. Wind isn’t a viable source in Western Montana, Sugden said, and efforts so far to turn waste wood into biomass energy have proven too expensive for the cooperative.

All of which brings FEC to geothermal energy. Sugden has been in discussions with officials from the Confederated Salish and Kootenai Tribes and Mission Valley Power, the energy provider for the Flathead Indian Reservation. Hot Springs is located on the reservation, but the land that FEC is looking at for geothermal exploration is private, surrounded by tribal territory.

In the early 1980s, Jackola Engineering Company of Kalispell initiated a study – at the same site FEC is considering – to develop an agricultural byproducts plant. The company hoped to use geothermal energy at the plant and drilled as deep as 235 feet, finding 135-degree water.

Though the plant was never built, Sugden said the exploration proved that the deeper one drills, the hotter the water gets. Sugden said 165 degrees would be optimal, but advancements in technology allow for geothermal electrical generation to occur at lower temperatures.

Drilling would take place on private land, though if it was deemed necessary to spread efforts onto reservation land, tribal chairman James Steele Jr. said he would be open to negotiations. Steele said the tribe has discussed geothermal energy for years, but has never reached the advanced planning steps that FEC has.

“We all know we need other means for electrical generation,” Steele said.

Steele said if geothermal becomes a reality, he could envision partnerships down the road between Mission Valley Power, the tribe and FEC. He said “there’s a number of spots on tribal land that we’re looking at.”

“I think there’s a wide gamut of possibilities there,” Steele said. “We’ve always had a good relationship with Flathead Electric and I think we’re just building on that relationship. They’ve always been willing to sit down and talk about these issues.”

While the geothermal project gets off the ground, FEC will continue to nurture its landfill project. Dave Prunty, Flathead County’s public works director, said the biomass system

has been working well since it started in June. The infrastructure to install the system was already there. Back in 2001, the county installed a flare system in which wells were drilled into the landfill and connected to pipes. The pipes lead to a header and flare chamber.

But before, the methane was simply burned off. Now it's directed to an engine that powers a generator, creating electricity that goes onto FEC's power grid. Calling it "fascinating technology," Prunty said generally these types of systems are installed at larger landfills that produce more methane gas. He's been impressed by the efficiency of the small-scale model at his landfill.

"It's pretty rare throughout the world," Prunty said. "It's a pretty big feather in our cap for the district and a really big feather in FEC's cap."

Sugden said the system produces enough electricity for 750 houses. He expects that total to double in coming years. Unlike wind, which is fickle, he said the landfill produces electricity consistently everyday.

"When you turn your light switch on, there's always energy," Sugden said.

As the largest cooperative in the state, FEC has an advantage in pursuing its own renewable energy endeavors, said Dave Wheelihan, CEO of the Montana Electric Cooperatives Association. He said other Montana cooperatives, including western ones facing similar caps from BPA, are looking into renewable options, but through providers such as BPA and Basin Electric Power Cooperative, rather than on their own.

"There is renewable energy in all of the portfolios that people have signed on to for their additional power," Wheelihan said. "I think that it's on everybody's radar."

Wheelihan commended FEC's progress in renewable energy, saying "they've done nice work in that arena." Now all eyes are on the cooperative's progress at Hot Springs.

"The geothermal option – I think a lot of people are watching that to see how it goes for them," Wheelihan said.