

Firm studies biomass heat for Santa Fe

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By JULIE ANN GRIMM *The New Mexican*

Conditions are prime for Santa Fe to have cleaner air, keep winter-heating costs stable and retain more money in the local economy. Advocates say all this and more can be accomplished by building a district heating system here.

According to recent research by some of the world's leading biomassenergy engineers, such a system would already be in place if Santa Fe were a European city and had the same fuel supply, economy and energy use.

"We would start today," said Klaus Supancic, project engineer for Bioenergiesysteme, an Austrian-based firm that has designed hundreds of systems in Europe that burn organic material to provide heat.

The firm recently completed six months of research on the feasibility of implementing such a system in the City Different. The study showed positive potential for a successful district energy system here that would cleanly and efficiently burn wood to power hydronic heaters already in place in many of the city's buildings.

Among their findings:

Surplus wood is available within 50 miles of the city in great enough supply to sustainably provide hot water for about 500 buildings in the downtown area.

Converting to the biomass-fueled heating system would reduce emissions from burning natural gas by about two-thirds.

Santa Fe engineer Mark Sardella used federal money awarded to his nonprofit group, called Local Energy, to hire the Austrian team. The group is midway through the process of creating detailed plans for a district energy system that would use an efficient boiler to heat water, then pipe it to various buildings downtown.

The engineers visited 106 buildings in the downtown area and performed a detailed analysis of the energy use and cost in each one. Using that data, they extrapolated how energy is used in the entire area inside the boundaries formed by Paseo de Peralta and Guadalupe Street.

A preliminary design of a system to serve downtown is already finished, and the team will return in November to complete engineering details. One possible location for the biomass boiler is the city's transfer station off West Alameda Street, Sardella said.

But before that system can pick up steam, Local Energy plans to complete several smaller demonstration projects to get the community behind the technology. Santa Fe Community College and the state's South Capital Complex are two of the most likely places to build small biomass district energy systems.

The smaller projects would ideally be owned by new community-owned or nonprofit entities, Sardella said. That would enable money spent on energy to stay in the local economy.

"We need to get people acquainted with the promise of biomass," he said.

Sardella believes the system is promising because its costs would remain steady and would not fluctuate as the price of natural gas does.

Even though the state recently reported that rising natural-gas prices are bringing more royalties from gas leases for New Mexico schools, Sardella said most of the increase is passed to the consumer, which costs New Mexicans in the long run.

While the estimated cost of putting in biomass-heating systems at either the college or the state complex is not final, Sardella plans to apply for more federal money that would encourage local investment in the projects.

Later this month, Local Energy will make a presentation to the school's board of directors, who together with President Jim McLaughlin seem to be in favor of converting the school's heat source to biomass.

McLaughlin's assistant, Sheila Ortego, said the college is trying to encourage alternative energy. Local Energy's research estimates the college could reduce its carbon-dioxide emissions by 91 percent of its present level.

The state's complex is also a good potential for a demonstration project because the buildings are already connected by tunnels that have room for the new pipeline that would be needed for the system.

Potential biomass fuel in the form of chipped wood and sawdust is available from at least 10 sources near the city, including the landfill and lumber operations that are willing to sell surplus for the system. The researchers also found that more fuel is available in the area around the city than would be needed to run the district heating system.

The figures don't include thousands of piñon trees that have died in recent years because of drought and federal forest-thinning projects that were initiated because of fire danger. Both circumstances are contributing biomass now that might not always be available, he said.

Sardella said Local Energy will compete for more grant money this spring and could have the demonstration projects under construction as soon as mid-2005.



Mark Sardella