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## Forests May Help Keep City Warm

**By Adam Rankin**

*Journal Staff Writer*

All those dead piñons around northern New Mexico might someday be heating businesses in Santa Fe instead of clogging area landfills.

Local Energy, a Tesuque-based nonprofit company, is hoping to put New Mexico's green waste to good use with a biomass-fired boiler— using mainly dead trees or slash from forest thinning projects as fuel.

Through a pipe system, the project would provide a source of heat for businesses like hotels and motels, reduce local pollution and generate jobs all while fostering a renewable energy source, its backers say.

### **Government aid**

Sound crazy? Out of touch with modernity? The U.S. Department of Agriculture and the Department of Energy don't think so.

Those two agencies awarded Local Energy \$1.28 million for a feasibility study on the engineering and economics of the system that would pipe hot water throughout a self-contained infrastructure designed to heat Santa Fe with the overgrown forests on its fringes.

The Tesuque company— founded by Mark Sardella and 2002 gubernatorial Green Party candidate David Bacon— had its project selected for funding as one of 19 projects out of nearly 400 proposals nationwide.

Sardella, a mechanical engineer who previously designed spaceflight instruments for NASA, and Bacon, who co-founded the conservation-oriented Southwest Energy Institute, both see the biomass heater as a way of stabilizing energy costs in the face of rising natural gas prices and generating a local energy economy while reducing pollution.

"Why would you throw (tree waste) in the landfill when it has an economic value for your community?" Sardella said. "I think the project is going to show tremendous economic benefits."

Bacon said he saw it as a way of bringing environmentalists and the energy industry together.

Such a biomass plant— about 90 percent efficient at converting biomass energy into heat— would emit a small fraction of pollution compared to

conventional energy sources, Sardella said. It would cut Santa Fe's carbon dioxide emissions— from such sources as natural gas use and burning forest slash— by about 75 percent.

On the global market, CO2 credits mean money. Countries bound by the Kyoto Protocol— which United States hasn't ratified— are required to keep CO2 emissions capped at certain levels, but can buy CO2 credits from countries or cities that make reductions, even if they aren't signatories of Kyoto.

So if Germany is approaching its CO2 limit, it can buy a credit for a ton or two of CO2 emissions from a city like Santa Fe without having to make any more of its own reductions.

Sardella said Canadian company ICLEI has partnered with Local Energy to certify that the biomass plant will result in a greenhouse gas reduction that Santa Fe can sell or bank for a later use.

Sardella and Bacon say the project can also help Santa Fe and other localities deal with overgrown forests.

Aside from the abundant beetle-killed piñon, the Santa Fe Municipal Watershed, which is in the midst of thinning 7,300 acres of its 17,400 acres, is one potential biomass source, Bacon said.

Also, northern New Mexico's forests, including the watershed, can also be sustainably harvested, jumpstarting local and rural economies, Sardella said.

"Every time I calculate the available biomass it is a number that astounds me," he said.

The energy that could be produced from the annual growth of New Mexico's forests is of the same magnitude as all the natural gas consumption in the state, he said.

"You eventually get it in a sustainable, renewable fashion by taking the annual forest growth."

Biomass facilities are not some pie-in-the-sky idea, said George Douglas, a spokesman for the National Renewable Energy Laboratory in Boulder, Colo.

"The feasibility is excellent," he said. "Biomass is gaining momentum."

As an example, he said Jefferson County, just west of Denver, is on the verge of approving a feasibility study for a biomass facility that would generate electricity for the region, while thinning neighboring forests.

"Any value you can get out the trees is value-added, because there is no value in burning them and you need to thin them," he said. "People don't recognize this, but biomass is the largest, nonhydro renewable resource."

To date, Douglas said biomass projects have been used mostly on small scales, such as at individual paper mills, "but getting municipalities involved is the next step."

In Europe, more than 500 cities use some form of biomass system.

Bacon said there is already strong support from Santa Fe's hotel and motel

industry, because any initial costs will be quickly recovered.

Sardella said most of the larger businesses and hotels already have the necessary piping in place, so the only infrastructure required is a boiler, possibly on Upper Canyon Road in the Santa Fe watershed, and a network of pipes connecting businesses.

"What we are creating is a thermal highway," Sardella said. "Just as a highway has on-ramps and exits, we allow people to not only take energy out, but to put it in. Suddenly you have a thermal highway that can be capable of using waste and excess heat anywhere in town and using it for good use."

Jim Bradbury, general manager of La Fonda, backs the idea. "Mark's a good engineer," he said. "He knows what he's doing."

Sardella pitched the idea over lunch a few months ago to City Councilor Rebecca Wurzburger who gave a thumbs-up to the plan. "I think it's definitely worth exploring," she said.

Like Sardella, Wurzburger sees the potential in all those dead piñons. "Maybe this is a case of taking lemons and making lemonade," she said.

Wurzburger, along with councilors Patti Bushee, David Coss and Miguel Chavez have signed off on a resolution backing the project that Bushee introduced at a recent City Council meeting.

How much the system to deliver biomass heat will cost to build is still undecided, but Coss is encouraging city departments to investigate the idea. Coss said the city now shells out more than \$1,000 for every acre of trees it cuts.

Bushee said the biomass project is one of the most promising she's seen in a long while. Now, the city can't get rid of the mulch and green waste it collects from dead trees.

"We can't give the wood away," she said.

A decade of watershed thinning could amount to quite a windfall, she said. "We have 25 years of fuel in that watershed," she said.

Getting the city's hands on it would require a new environmental impact statement, but the expense and legal headaches might be worth it, she said.

*Freelance writer Patrick Miller contributed to this story.*