

# NEW MEXICO BUSINESS WEEKLY

## EXCLUSIVE REPORTS

### **Getting off the gas: Santa Fe group aims to heat city with wood**

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Tesuque engineer Mark Sardella envisions Santa Fe's businesses and homes heated not by gas, not by coal, but by a source that went out of fashion, oh, about one and a half centuries ago -- wood.

Sound crazy? Well, the city, county and several state representatives don't think so. And the U.S. Departments of Energy and Agriculture have ponied up \$1.28 million for his nonprofit engineering company, Local Energy, to prove it can feasibly make use of dying piñon and other commercially worthless, small-diameter trees that crowd thousands of acres of forests in Northern New Mexico.

Local Energy, founded by Sardella and former Green Party gubernatorial candidate David Bacon, was one of

19 biomass research projects funded last year by the two departments.

Citing exponentially depleting fossil fuels and rising natural gas prices, Local Energy aims to design a district heating system -- similar to those found on college campuses -- that heats Santa Fe's downtown core through a network of underground water pipes connected to one or more efficient, biomass-fueled boilers. Not only would the system allow businesses and homes to save money by shutting off gas boilers, but it could become a customer to the U.S. Forest Service and other forest administrators faced with high costs of and little return for thinning the forests of wildfire-fueling tinder.

"The local community has a financial burden in dying trees and thinning," Sardella says of taxpayer-funded forest management. "Right now, they're just taking it to the landfill or burning it in slash piles. We have to pay to throw away fuel."

Such a system could save its users 10 to 30 percent in energy costs, while reducing fossil fuel dependency and localizing energy sources, Sardella says.

The firm will use the grant to complete feasibility studies and design a 30 megawatt system, modeled after the hundreds of waste wood and trash-burning district energy systems in Europe. There are a handful of similar systems operating in the United States, including St. Paul, Minnesota and Montpelier, Vermont.

Santa Fe City Councilor Patti Bushee, who introduced a resolution supporting the project last fall, describes it as a "win-win proposition."

"Santa Fe has lots of biomass fuels that need to be disposed of, usually at great cost, that could be turned into a source of heating for the downtown area," she says of the nearly 7,000 acres of watershed area slated for thinning. " We've spent hundreds of thousands on this, and the U.S. Forest Service has spent far more than that."

The city and county in late fall unanimously passed a joint resolution to support the feasibility study. Local Energy also has the support of Sen. Pete Domenici, R-N.M., Sen. Jeff Bingaman, D-N.M., and Congressman Tom Udall, D-N.M., several Santa Fe hotel owners and officials with the U.S. Forest Service, Sardella says.

Forest Service biomass utilization expert Jerry Payne, who monitors the grant locally for the USDA, says using wood for heating fuel is currently the most commercially-viable proposal for forest waste.

"It's the main cause of the intensity of the fires in the West," he says of overgrown forests. "It's a little-debated fact that we have too many trees. The question is how to reduce and reuse them."

He estimates about 2 million acres of Forest Service land in Arizona and New Mexico desperately need thinning. But the costs -- \$700 to \$1,000 an acre -- don't justify thinning forests when the waste wood has no commercial value.

Local Energy estimates that the project would require about 1,000 to 2,000 acres worth of waste annually to satisfy the needs of customers on its system.

Payne says such a system, if successful, could be repeated in other mountain communities like Red River, Ruidoso and Flagstaff, Arizona.

"The nice thing is it's not species specific," he says. "It can be any tree, like dead piñon, and the ponderosa pine, which, in particular, are threatening, hazardous fuels around communities."

Sardella says he began exploring the idea of using biomass to fire a district heating system several years ago as he studied the connections between fossil fuels and world economies. He says despite major oil and gas companies' assertions that the supply is not threatened, the quality of the world's fossil fuel reserves -- that is, the ease by which it can be extracted -- is decreasing, thereby causing exponentially

increasing prices. For instance, despite a twofold increase in the number of rigs exploring for natural gas in the last eight years, production fell 1 to 2 percent last year, he says. If natural gas exploration stopped, production from existing wells would fall off at a rate of 29 percent a year, he says.

Because of the increasing difficulty in finding it, fossil fuel costs will continue to rise, Sardella says.

"Energy is embedded in every consumer product," he says. "As energy prices go up, consumer goods prices go up. It's incredible how tied together the consumption of energy and economic activity are. They're in lock-step."

As it stands, Local Energy is designing a system that would provide heat to a downtown area encompassing about 13 hotels, 15 to 18 municipal buildings and several commercial structures. Local Energy is studying ownership strategies, including the possibility of running it as a community-owned coop.

"Once it's proven financially viable by these customers, there will be a small cost to tie in residences," Sardella says.

The company, which currently operates out of Sardella's Tesuque home, has an agreement with a veteran Austrian developer of biomass district heating systems to design one for Santa Fe.

Depending on the results of the study, the project could be ready to go to bid for construction by January 2005, Sardella says.

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