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USDA FOREST SERVICE • FOREST PRODUCTS LABORATORY

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FOR IMMEDIATE RELEASE

NR # 20030116-1

January 16, 2003

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National Wood Energy Demo Project Announces Site Locations

Madison, Wis.— Seven enterprises from across the nation will soon be firing up a modular biopower system that efficiently and effectively burns forest thinnings to produce electricity and heat.

“When this biopower technology is fully developed, it will help improve forest health, increase sustainable domestic energy production, and help form new businesses along with its accompanying jobs,” said Susan LeVan, USDA Forest Service, Forest Products Laboratory (FPL).

Recent forest fires in the West have again raised the issue that forests need to be thinned to reduce hazardous fuel loadings. Removing this material is costly but developing value-added uses for this small-diameter, thinned material can help offset these costs.

One value-added use is burning forest thinnings to provide energy services to rural communities and enterprises. To demonstrate this use, seven specific sites were competitively chosen from numerous highly competitive applications across the country to install and evaluate a modular biopower system called BioMax 15.

BioMax 15 is a state-of-the-art, transportable, fully automated, and environmentally friendly biopower system that uses forest residues to produce electricity and heat suitable for small enterprises, rural homes, and schools. The system uses advanced downdraft gasification technology to convert the energy in wood residues to a clean, gaseous fuel suitable for use by a variety of generators, including automotive and industrial engines. Current prototypes of the BioMax line can produce from 5 to 15 kW of electricity and up to 50 kW of useful heat.

Last year, the FPL, the U.S. Department of Energy (DOE), through the National Renewable Energy Laboratory (NREL), and one of their subcontractors, Community Power Corporation (CPC), entered into a cooperative agreement aimed at demonstrating the use of small-scale biopower units to produce electricity using wood chips. These agencies formed a team, which included Tim Maker from Biomass Energy Resource Center, Montpelier, Vermont. Working together, they hope to develop this technology more quickly through field demonstrations.

The following seven sites have been selected for the biopower field demonstrations:

White Spruce Enterprises, Salcha, Alaska

Indigenous Community Enterprises, Flagstaff, Arizona

The Shasta Energy Group, Mt. Shasta, California (contingent on securing cost-sharing funds)

North Park School District, Walden, Colorado

Mount Wachusett Community College, Gardner, Massachusetts

SBS Wood Shavings, Glencoe, New Mexico
American Medal Products, Cuba, New Mexico

Federal and private forests need to be thinned to reduce the levels of fuel now posing risks to communities and adjacent lands, explained LeVan. As part of the USDA Forest Service National Fire Plan, their office in Madison, Wisconsin, has been providing assistance to rural communities and businesses to diversify and expand their economies by developing value-added uses for this thinned material.

According to Richard Bain of NREL's National Bioenergy Center, "CPC and NREL have been working for the past 3 years on new biomass technologies that produce electrical power—on or off the power grid. These technologies include the use of small, modular biopower systems that produce from 5 to 100 kW of electricity."

Bain explained that the biopower units hold tremendous opportunities but this technology is still in the pre-commercial phase. To bring down the cost and gain a better understanding of the operation, further evaluation is necessary. There also needs to be assessment of the potential market size for this technology.

Through a competitive bidding process, CPC was awarded a DOE grant to develop the technology. Installation of the first system is expected by October 2002. CPC President Robb Walt is pleased that the selection process has been completed. "For the next 2 years, these demo sites will help us to evaluate the BioMax, letting us know the potential of using wood chips as the fuel source, the cost of operation, and providing suggestions on how to modify and improve the system."

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