

Partners Turn Woody Biomass Waste Into Renewable Heat Source



Snapshot: Feasibility of Woody Biomass for Heating Project

Over 200,000 tons of slash are left on the ground each year in the Black Hills of South Dakota – the result of non-commercial thinning projects and a weak market for medium-size trees. Wood-processing activities create another 200,000 tons of wood chips. This woody biomass rots on the ground, becomes fuel for wildfire, or is burned in place. The Resource Conservation and Forestry Division of the South Dakota Department of Agriculture obtained federal grants to fund feasibility studies for heating school buildings and other public facilities with this under-utilized resource.

Program Highlights

At a public meeting in November 2005, representatives from schools and public facilities were encouraged to apply for feasibility studies. A US Department of Energy National Biomass Partnership grant and a USDA Forest Service Economic Action Program grant supported these studies.

Approved projects included feasibility studies in six schools, feasibility assessments in five district energy systems, and one preliminary

engineering study. The facilities ranged from 77,000 square feet to over 900,000 square feet in size and relied on natural gas, propane, fuel oil, or a combination of these fuels for heating.

The studies found that in eight of the facilities, converting to a boiler system fueled by woody biomass could pay for itself in fuel cost savings over 30 years without significant changes to existing facilities. Another would find this positive gain if an additional building was added according to future expansion plans. A tenth facility would experience these gains if it modified its existing heat distribution system.

Idea to Solution Involves Partnerships

As a result of these studies, the State Veterans Home in Hot Springs, and Evergreen Star Academy in Custer, South Dakota, decided to convert to woody biomass boiler systems, which should be in operation by the 2008 heating season. This partnership showed how under-utilized woody biomass could help public facilities save on heating costs while addressing potential fire hazards and pollution problems.

State: South Dakota
Forest: Black Hills National Forest
Partners: Black Hills National Forest, Resource Conservation and Forestry Division of South Dakota Department of Agriculture, Biomass Energy Resource Center, schools, and public facilities
FS Funds Used: \$89,000
Partner Funds: \$75,094
Other Funds: \$42,614



Biomass treatment in forest