



# WOOD <sup>to</sup> ENERGY

Case Study

## Challenges of Obtaining a Wood Supply

Lindsey McConnell & Martha C. Monroe

Francis Marion National Forest, located near the coast in the southeast corner of South Carolina, is nearly 260,000 acres of mostly loblolly and long-leaf pines. In 1989, Hurricane Hugo's 135-mile-per-hour winds left many fallen trees in the forest. Santee Cooper, a state-owned utility company, removed the debris and later chipped and co-fired the waste wood with coal in their boilers.

Removal of the downed trees left an opening in the forest canopy that enabled an overabundance of seedlings to grow, creating a surplus of trees that increased the risk of wildfire and reduced the quality of wildlife habitat (Figure 1). Concerned about the dense overgrowth, the USDA Forest Service decided to thin the national forest in 2004. But without potential buyers for the wood waste, the cost of thinning could have been a barrier to effective management practices.

After successfully co-firing the temporary supply of wood chips in the months following Hurricane Hugo, Santee Cooper began to consider developing a long-term contract with the Forest Service to use the material from forest thinnings to generate power at the company's Jeffries Station. For thirty years, the station had produced up to 526 megawatts, but a new handling system would have to be installed to manage large amounts of wood. Santee Cooper also began researching stewardship contracts, the Forest Service's new approach to awarding wood supply contracts.

Stewardship contracts arrange for the cost of small-tree removal to be exchanged for the value of the excess wood



Figure 1. Thinning forests can help reduce wildfire and improve forest health and wildlife habitat. PHOTO BY LARRY KORHNAK.

that is removed. Similar contracts have been successful throughout the United States. The first large-scale contract was in Arizona's Apache-Sitgreaves National Forests and allowed small trees removed during thinning to be used by nearby manufacturers rather than burned openly in the forest. Santee Cooper's principal engineer, Elizabeth Kress, explains, "The stewardship contract was meant to foster new markets where none existed."

Once the large tracts in the Francis Marion National Forest were evaluated, contractors submitted bids for the wood that would be thinned. Santee Cooper offered a price that would allow them to recoup their investment in new equipment and the additional operation and maintenance costs. However, Santee Cooper was unable to compete with the low bids that existing industries could charge for their services, and the Jeffries Station biomass project was postponed. The winning contractor sold the wood to his existing customers in the paper and pulp industry for their on-site power production.

Santee Cooper does not consider this experience a failure. Kress thinks its work with stewardship contracts helped create a new market for debris from national forest management activities like thinning. As a result, wild-fire risk was reduced, forest health was improved, and those involved learned valuable lessons. Santee Cooper is now more familiar with the local economics of woody biomass fuel and continues to work with the South Carolina Biomass Council to determine ways to obtain wood resources for power generation.

Kress explains, “The stewardship contract language is daunting for foresters and forestry contractors. The return has to be higher than average to overcome that risk the first time anything like this is done, and you still need some partners who are willing to work through any glitches to make it happen.” To those considering biomass as a fuel source, Kress stresses the importance of doing

your homework on all aspects of the project. “Study all of the suppliers, end-users, etc. Do not put all of your eggs into one basket,” she cautions.

For more information regarding specific concerns about wood-to-energy facilities, refer to the other fact sheets, case studies, and community economic profiles available in this series at <http://www.interfacesouth.org/woodybiomass>. Additional information is available at <http://www.forestbioenergy.net>.

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