

BUILDING A CELLULOSIC BIOFUELS INDUSTRY FROM THE GROUND UP: TENNESSEE BIOFUELS INITIATIVE

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Tennessee is leading an ambitious effort to develop a cellulosic biofuels industry. With more than \$300 million in state, federal, and private funding dedicated to the effort, Tennessee is poised to succeed. The Tennessee Biofuels Initiative is led by the University of Tennessee, Institute of Agriculture, with partners including the Oak Ridge National Laboratory and other third-party private sector technology partners. The centerpiece of the effort is construction and operation of a 10 percent scale (2 to 4 million gallons per year) cellulosic biorefinery, supplied by locally grown switchgrass and wood chips. While the research-oriented demonstration-scale biorefinery is the heart of the Initiative, key to the entire project is the focus on developing a supply chain for providing sufficient, reliable, and sustainable dedicated energy crop feedstocks. The Initiative is focused largely on working with local farmers (within a 50-mile radius of the biorefinery) to develop switchgrass as a feedstock supply chain, and provides more than \$12 million for research, extension, education, and direct incentive payments for participating farmers to plant up to 8,000 acres of switchgrass. The integrated project is designed to answer a variety of research questions, ranging from feedstock supply systems to pre-treatment and conversion technology approaches to industrial processing and scale-up to systems for product distribution and marketing. The University of Tennessee has contracted with local farmers to plant more than 700 acres of switchgrass in 2008, with significant related research under way in the areas of agronomics, production management, harvest systems, storage, and transportation. The biorefinery is scheduled to be operational by the second quarter of 2010. The integrated systems approach of the Biofuels Initiative is designed to foster development of a large-scale commercial biofuels industry in Tennessee and the region.

KEY WORDS: cellulosic biofuels, sustainable energy crop feedstock, switchgrass, farmer incentive program, biorefinery, conversion technology for marketing and distribution

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