

**Testimony before the Tennessee Senate  
Committee on Finance, Ways, and Means**

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Good morning, Chairman McNally and members of the Committee, and thank you for this opportunity to update you on the progress we are making with the Tennessee Biofuels Initiative.

We came before this body one year ago with a bold proposal: develop a new cellulosic biofuels industry in Tennessee, quite literally, *from the ground up*. I am pleased to say that eight months into this complex project, we have tremendous progress to report. We have done important research and preparatory work with East Tennessee farmers to roll out the first contracts for switchgrass production as an energy crop. As of last week, we have notified the first group of farmers selected to participate in the Switchgrass Farmer Incentive Program for spring 2008 planting. This initial round of contracts covering 725 acres is the first phase in building a supply chain designed to achieve annual production of 64,000 tons on 8,000 acres by 2012.

We were very fortunate to have procured—in a literal sense—all of the high quality Alamo switchgrass seed available in the US for planting in our Tennessee Initiative this year. Recognizing this opportunity to supply a growing switchgrass seed market, we are working with some of our West Tennessee farmers who have been growing switchgrass in research projects with us for several years now to develop a farmer-based switchgrass seed industry in Tennessee.

In addition to switchgrass seed R&D, we have more than 20 research projects underway in switchgrass breeding, planting, management, harvesting, storage, transportation, and pre-processing and are near completion of a master research agreement with a major farm equipment manufacturer.

We have completed the steps with the State Building Commission to grant the \$40.7 million State appropriation for construction of the demonstration biorefinery to the UT Research Foundation. We have an option on a site for the biorefinery in the Niles Ferry Industrial Park in Vonore. We have selected Mascoma Corporation as a strategic technology partner in our biorefinery design and development and are working to solidify additional partnerships that will ensure that we move from this demonstration phase to self-sustaining commercial operations in the state as quickly as possible.

UTRF has organized a Tennessee for-profit entity which will construct and operate the demonstration biorefinery. Our plans call for construction of the facility and commencing operations to coincide with the expansion of the annual switchgrass harvest and ramping up ethanol production capacity in parallel with switchgrass availability.

As you would expect in a project of this magnitude and complexity, we have challenges to face. The last six months have brought about significant shifts in capital markets. The total cost of constructing this research and demonstration facility and operating it for a 3 year demonstration period is projected to exceed \$100 million. While cellulosic ethanol in general and our project in particular, is an appealing value proposition, technologies and commercial scale up are not proven today.

This State's very substantial appropriations help mitigate the risk for our State's economy and citizens. However, we still have critical, detailed work to do with the executive management, boards, investors, and bankers of third-party strategic partners that we solicit to join us in putting together a research and demonstration package that satisfies our RD&D objectives, meets investment market requirements, achieves the maximum design flexibility we can afford, and provides a clear path to rapid commercialization.

We are committed to good stewardship and maximizing the value of your investment on behalf of the State and University. Recognizing that we have one opportunity to construct a facility that allows us to demonstrate an integrated biomass supply chain, prove that the conversion technology works 24/7, improve the economics of the system, and scale up the process and demonstrate the economic viability at a commercial scale, the Initiative will not commit any part of the State's \$40.7 million construction appropriation or set a construction timeline until we are convinced that we have all of the pieces in place for maximum likelihood of biorefinery success, based on definitive funding commitments, cost effective engineering and design, and technology that has been expertly vetted.

In addition to direct progress in the Initiative over the last year, the strong commitment Tennessee has made has already paid dividends beyond just the UT Biofuels Initiative. Your commitment has been leveraged to help Oak Ridge National Laboratory secure \$135 million from the US Department of Energy last year for one of three new Bioenergy Science Centers. ORNL's Bioenergy Science Center is up and running, housed in the new state-funded Joint Institute for Biological Sciences (JIBS) building, involving several UT faculty including the JIBS director. This funds important basic science to address technology barriers, particularly the issue of recalcitrance in plant cell walls, which can then be applied and tested in our demonstration scale biorefinery. The commitment has also made us competitive for a potential award from DOE for up to \$30 million toward the additional capital construction and operation costs for the project.

Today, we are two years ahead of other states in efforts to put together all of the necessary pieces to move a cellulosic biofuels industry to fruition. Largely thanks to your vision and commitment, we are fortunate to be the envy of other states recognizing the benefits and market potential of this emerging industry, and we are serving as a model for emulation. You have already appropriated last fiscal year more than two-thirds of our total 5-year funding needs for this Initiative. Continued resolve to fully fund this Initiative, including \$5.6 million this fiscal year, is important in maintaining our momentum and progress.

As the Governor has eloquently explained, this investment bears some risk, but it is a logical and comprehensive plan with excellent science and strong farm networks behind it that leverages our strengths as a biomass state. We are well on our way to delivering on our growing reputation as the Saudi Arabia of Cellulose. We thank you again for your vision and commitment to the Tennessee Biofuels Initiative.