U.S. unlikely to hit Renewable Fuel Standard for cellulosic biofuels: report

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The biofuel industry will not be able to meet the cellulosic production requirements of the Renewable Fuel Standard without significant advancements in technology or investment, according to a National Academy of Sciences study prepared for Congress.

Wally Tyner, the James and Lois Ackerman Professor of Agricultural Economics at Purdue University, co-chaired a committee tasked by the National Academy of Sciences to produce the study. The Committee on Economic and Environmental Impacts of Increasing Biofuels Production presented the report Tuesday (Oct. 4).

The Renewable Fuel Standard requires that 15 billion gallons of corn-based ethanol, 1 billion gallons of biodiesel and 16 billion gallons of cellulosic fuels be produced annually by 2022. According to the report, the corn ethanol numbers and biodiesel can be achieved, but the cellulosic goals probably cannot.

Tyner said that's because the corn ethanol industry has been working for more than 30 years, while the cellulosic industry is still very young. There are no commercially viable biorefineries for cellulosic ethanol today.

"We have more than 200 corn ethanol plants producing more than 14 billion gallons of ethanol today. It took 30 years to get there. We have 11 years to reach even higher numbers for cellulosic biofuels," Tyner said. "We would need a build rate three times that of corn ethanol. And with

corn, we had the technology; we had the feedstock, and prices for corn were relatively low. We don't have any of that with cellulosic."

Another problem, according to the report, is that the amount farmers would need to make a profit on raising cellulosic feedstocks is more than ethanol producers are willing to pay for those feedstocks. In most cases, the gap is larger than the federal subsidy that goes to federal producers, which may leave investors nervous about getting into the cellulosic ethanol industry.

The report also raises questions about the environmental impact of cellulosic biofuels. Tyner said it's uncertain whether some cellulosic fuels would lower greenhouse gases because of the emissions that would be released when new land is cultivated.

Tyner and co-chair Ingrid C. Burke, director of the Haub School and Ruckelshaus Institute of Environmental and Natural Resources at the University of Wyoming, presented their findings Monday (Oct. 3) to congressional staffers, agency representatives and the executive branch, and at the National Press Club in Washington, D.C., on Tuesday (Oct. 4).

"There are conditions in which you could see us meeting the Renewable Fuel Standard for cellulosic biofuels, but they require major leaps in technology, substantial increases in oil prices and/or very large subsidies," Tyner said.

The committee also included members from the Oak Ridge National Laboratory, Michigan Technological University, the University of Minnesota, the University of California Davis, ProTech Consultants, Iowa State University, Synthetic Genomics, the University of Iowa, Michigan State University, Kansas State University, Ohio State University and the University of Alaska Fairbanks.

The U.S. Department of the Treasury, Department of Agriculture, Department of Energy and the U.S. Environmental Protection Agency sponsored the study. The data was peer-reviewed before distribution.

Provided by Purdue University