

Poet Energy advances second-generation ethanol projects in Iowa and South Dakota

IOWA IS ALREADY A LEADING PRODUCER OF ETHANOL MADE FROM CORN KERNELS. NOW IT IS ASSISTING ONE COMPANY IN THE COMMERCIAL DEVELOPMENT OF ETHANOL MADE FROM AGRICULTURAL WASTE.

The race is on to produce the country's next generation of biofuels. To meet the federal government's Renewable Fuel Standard, which specifies that the U.S. must blend 36 billion gallons of biofuels into the national fuel supply by 2022, traditional ethanol, produced from grains of corn, must reach 15 billion gallons, double what it is today.

Additionally, the production of biofuels from waste products such as wood chips, corn cobs and straw, instead of corn kernels, a valuable food crop, will have to be even higher. Congress has mandated that these second-generation biofuels must make up the extra 21 billion gallons required by 2022.



One of these second-generation biofuels is cellulosic ethanol, made from agricultural waste. A few pilot plants across the country are already producing it, but ethanol producer Poet Energy hopes to be among the first to produce cellulosic ethanol on a

commercial scale at its existing plant in Emmetsburg, Iowa.

The project, named Project Liberty, is expected to add 25 million gallons of cellulosic ethanol per year to the plant's existing production capacity, increasing efficiencies and reducing environmental impact. By producing cellulosic ethanol from corn fiber and corn cobs, Poet says, it will be able to produce 27 percent more ethanol from an acre of corn, while reducing fossil fuel consumption and water use.

There are economic benefits for Iowa too. When up and running in 2011, Project Liberty will create 30 new jobs and produce \$5 million to \$10 million in extra revenue for local farmers. "Corn cobs, which are currently just lying in the field and are essentially a waste product, represent a whole new revenue stream for farmers," says Jim Sturdevant, Director of Project Liberty.

Sturdevant says that Poet searched the country before settling on its Emmetsburg plant for the project. The company has seven conventional

grain-based ethanol plants in the state already, but there were other reasons why it chose this spot. "I think that Iowa is a leader in the country in seeking out alternative energy technology and sources, and we're proud to have federal and state partners on this project," he says.

The Emmetsburg project, which will cost around \$200 million, will receive \$80 million of federal assistance and \$20 million from the state. That includes a \$14.75 million grant from the Iowa Power Fund Board to help get the project in production and ensure that the state is at the forefront of next-generation ethanol production.

PILOT IN SOUTH DAKOTA

Extra construction at Emmetsburg will start next year, but as an interim step, Poet opened a pilot facility last November in Scotland, South Dakota, where it intends to produce 20,000 gallons of cellulosic ethanol a year using corn cobs as feedstock. "We've been able to get the same results in our plant that we got in the laboratory, so we're very encouraged," says Sturdevant.

That's not the company's only commitment to South Dakota. Poet spent \$20 million last year doubling its research staff and tripling the size of its lab at the company's headquarters in Sioux Falls. This March, the company completed a 10-mile gas pipeline that will pump methane gas from the Sioux Falls Regional Sanitary Landfill to power Poet's 105-million-gallon ethanol plant at Chancellor, which, together with burning waste wood, has the potential to replace 90 percent of the plant's total energy needs.

Besides reducing greenhouse gases, the pipeline will provide additional revenue to Sioux Falls and lower energy costs at the plant. "Not only is this now allowing us to reuse the methane, but with Poet as our customer, we have added a revenue stream to the landfill which is going to keep rates low for the entire region," said Sioux Falls Mayor Dave Munson at the opening of the pipeline.

Poet's long-term plan is to expand cellulosic ethanol production across the country. "We want to make Liberty commercially viable and then replicate the technology at other Poet plants and even license the technology to other ethanol producers," says Sturdevant.

It will take a sustained effort to bring second-generation biofuels up to the scale demanded by the Renewable Fuel Standard, but Project Liberty is certainly a step in the right direction.

Want to learn more? Contact Jim Sturdevant, Director of Project Liberty, Poet, at 605-965-2200.