

POET Project LIBERTY

Design, construct, build, and operate a commercial processing plant as part of an integrated biorefinery to produce lignocellulosic ethanol primarily from corn cobs.

POET Project LIBERTY will integrate production of cellulosic ethanol at a commercially viable scale into a dry grind corn mill process near Emmetsburg, IA.

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Project Description

This project will demonstrate the benefits of integrating an innovative lignocellulose-to-ethanol biochemical process into an existing dry-grind corn processing infrastructure on a commercial scale. 700 dry metric tonnes per day of lignocellulose, primarily from corn cobs, will be processed to produce 25 million gallons of lignocellulosic ethanol per year. Additionally, up to 80 percent of the corn dry mill's existing natural gas use will be displaced through renewable, alternative energy.

The goal of this project is to prove the commercial viability of the lignocellulose-to-ethanol process. Additionally, goals include accelerating commercially appropriate methods and equipment options with original equipment manufacturers for farmers to sustainably harvest, transport, and store corn cob feedstock.

Following shutdown operation at the maximum throughput possible, the facility will be operated for at least three years to acquire maintenance and operating data and demonstrate the robustness of facility equipment



POET Project LIBERTY Integrated Biorefinery Near Emmetsburg, IA

designs. POET will use the operational data from the plant to make a commercially-reasonable decision whether to replicate the core technology used in the project.

Potential Impacts

POET, a 23-year old Midwest-based company is the nation's largest ethanol producer, which currently operates 27 production facilities in the United States. The company produces and markets more than 1.7 billion gallons of ethanol and 10 million pounds of distillers grains annually. The technology has potential to be deployed at POET's other 27 facilities as well as other existing facilities in the United States.

If successful, the rollout of LIBERTY technologies to biorefineries will help

the nation rapidly advance toward its biofuels mandate, and reduce its dependency on foreign oil by producing billions of gallons of US produced ethanol fuel while creating thousands of jobs.

Other Participants

POET, LLC and various companies within the POET group are participating in the project, including POET Design and Construction, POET Research, and POET Biomass. POET is partnering with Novozymes to provide tailored commercial enzymes. The National Renewable Energy Laboratory is providing analytical expertise and training. Agriculture equipment manufacturers, including AGCO, Case IH, John Deere, and Vermeer, are participating.

Prime	POET Project LIBERTY
Location	Emmetsburg, IA
Feedstock (s)	Primarily Corn Cobs
Size	700 Dry Metric Tonnes Per Day
Primary Products	Lignocellulosic Ethanol and Renewable Heat (Replacing Natural Gas)
Capacity	25 Million Gallons Per Year of Lignocellulosic Ethanol
Award Date	9/30/2008
GHG Reduction	111% reduction versus fossil product
Anticipated Job Creation	35 sustained & 200 peak construction
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