

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.

Project LIBERTY will integrate production of cellulosic ethanol at a commercially viable scale into a dry-grind corn mill process near Emmetsburg, Iowa. It is the first project of the POET-DSM Advanced Biofuels Joint Venture. For more information visit the [Project LIBERTY website](#).

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 20 million gallons of lignocellulosic ethanol per year. The co-product from the cellulosic ethanol process will be energy, enough to power LIBERTY and send excess to the adjacent corn grain-based plant.

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

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



Project LIBERTY Integrated Biorefinery Near Emmetsburg, Iowa

Potential Impacts

POET-DSM Advanced Biofuels is a cooperative effort between POET, one of the largest ethanol producers in the world, and Royal DSM, a global science-based company leading the way in yeast and enzyme technology. POET-DSM Advanced Biofuels plans to expand cellulosic ethanol production within the POET network and license the technology to other ethanol producers in America and around the world.

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 millions of gallons of U.S. 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, POET Biomass, and POET Biorefining – Emmetsburg.

LIBERTY is partnering with Novozymes to optimize 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 also participating.

Prime	POET Project LIBERTY
Location	Emmetsburg, Iowa
Feedstock (s)	Primarily Corn Stover
Size	700 Dry Metric Tonnes Per Day
Primary Products	Lignocellulosic Ethanol and Renewable Heat (Replacing Natural Gas)
Capacity	20 Million Gallons Per Year of Lignocellulosic Ethanol
Award Date	9/30/2008
Anticipated Job Creation	35 sustained and 200 peak construction
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