Economic Impact of the Biofuels Industry

Impact of Biofuels on the Iowa Economy
Iowa’s 41 corn ethanol plants consume nearly half the corn grown in Iowa, contribute more than $10 billion to Iowa’s economy, and support 58,000 jobs. The ethanol industry generates $528 million of additional corporate and personal income and sales tax revenue for Iowa.

Advanced cellulosic biofuels and biobased products have the potential to contribute an additional $18 billion to Iowa’s economy. Harvesting corn stover for biofuels and biobased products could add $3.5 billion to Iowa farm income.

Impact of the BioCentury Research Farm on Biorefinery Development in Iowa
Iowa State University’s BioCentury Research Farm seeks to help corn ethanol plants become more efficient and expand to advanced biorefineries producing fuels, industrial chemicals, biomaterials, food, and feed using sustainable agricultural practices.

DuPont Cellulosic Ethanol is working with the BioCentury Research Farm to develop a corn stover supply chain and learn how to best harvest, store, and transport the material. DuPont is constructing a 25 million gallon cellulosic ethanol plant in Nevada, Iowa. The investment is expected to be $276 million, create 40 jobs, and use over 300,000 tons of feedstock annually from local farms.

New business start-up Avello Bioenergy, located in the BioCentury Research Farm industry incubator, produces bio-oils that can replace petroleum-based products. Avello’s Bioasphalt is being demonstrated in a Waveland Park bike path in Des Moines. Avello will build a demonstration plant at the BioCentury Research Farm to produce petroleum replacement products for pre-commercial testing. The company was started by three Iowa State University students.

Recognition Received by the BioCentury Research Farm
» The BioCentury Research Farm was recognized as 2010 Institutional Research Facility of the Year by Biofuels Digest.

» The DuPont Stover Harvest Collection Project at the BioCentury Research Farm won the 2012 Sustainable Biofuels Award in the Sustainable Feedstock Innovation category. DuPont received the award at the World Biofuels Markets 2012 Congress, Europe’s largest conference and exhibition focused on biofuels.

» The past three years, the BioCentury Research Farm has hosted 4,673 visitors and 338 events.
POET partnered with the BioCentury Research Farm to research soil sustainability. The study concluded that 1.5 to 2 tons/acre of corn stover can be safely harvested. The ethanol plant will use approximately 300,000 tons of biomass to produce 25 million gallons annually in Emmetsburg, Iowa. The initial capital investment will be $250 million and create over 200 jobs.

The $25 million CenUSA Bioenergy project funded by the U.S. Department of Agriculture has the goal of developing a sustainable fuel production system for the Midwest based on growing perennial energy crops on marginal land and converting them to liquid fuels via pyrolysis. The project will use the BioCentury Research Farm pyrolysis unit. CenUSAs advisory board includes Archer Daniels Midland, the Iowa Farm Bureau Federation, Deere & Co., and Vermeer Corporation.

Deere and AGCO are working with Iowa State faculty at the BioCentury Research Farm to develop vastly more efficient single-pass harvesting machinery for corn stover.

ConocoPhillips and the U.S. Department of Energy are supporting development of the thermochemical processes Fast pyrolysis and gasification at the BioCentury Research Farm.

Fast pyrolysis converts biomass into bio-oil by rapidly heating the biomass to high temperatures in an oxygen free environment to get bio-oil and biochar, a soil amendment.

Gasification heats biomass to very high temperatures in an oxygen-limited environment, creating syngas. Syngas purification removes contaminants to produce a clean gas stream for biofuels production.

A $20 million National Science Foundation grant, matched by a $2 million Iowa Power Fund grant, will build Iowa's research capacity in renewable energy and energy efficiency. The core research will be conducted at Iowa State, the University of Iowa, and the University of Northern Iowa and partner with community colleges, private colleges, school districts, government agencies, and industry. Analytical equipment will be housed at the BioCentury Research Farm.

The BioCentury Research Farm has provided clean ground biomass for Cargill, ConocoPhillips, DHS Holdings, DuPont, Frontline BioEnergy, Jeld-Wen, and Virent for product development.