Biomass Program

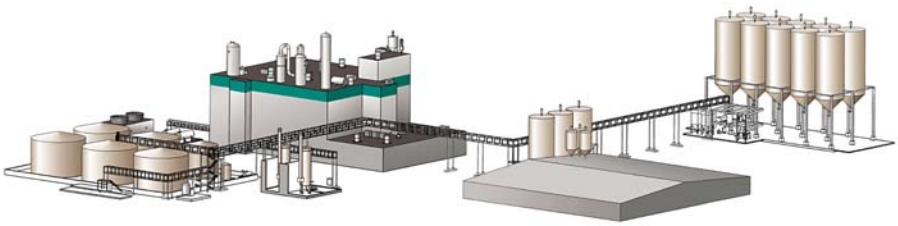
Making Industrial Biorefining Happen!

Biorefineries are facilities that process biomass to a combination of chemicals, fuels, and power. Cargill Dow, along with its partners, is working to develop process technology that is economically and technically ready for commercial implementation in a biorefinery. They are focusing on enabling the use of lignocellulosic biomass such as corn stover, converting the biomass sugars to lactic acid and ethanol, and using lignin-rich components as fuel for steam generation.

The project will involve development and pilot work to assemble each element of the biomass conversion process into an integrated and pilot-validated technology package ready for commercial implementation.

R&D Pathway

Researchers will: (1) develop metabolic engineering tools; (2) test the organisms in an alpha phase pilot-scale fermentation and complete the pilot plant engineering; (3) develop a fermentation organism for biomass sugar conversion; (4) start-up the pilot plant and validate the commercial-scale design; (5) select the final fermentation organism that meets performance targets; and (6) complete beta-phase pilot fermentation.



Biorefinery technology for agricultural residues will lower the cost of polylactide (PLA) and enable rapid expansion in the United States. Cargill Dow's Blair, Nebraska Plant currently makes PLA from corn grain (above and right).

Integrated Biorefineries R&D

Benefits

- **Improve rural economies**
- **Reduce dependency on crude oil**

Applications

This project will lower feedstock cost, improve the life cycle inventory profile of lactic acid and ethanol, and enable the utilization of a non-food biomass feedstock.

Project Partners

Cargill Dow LLC
Genencor International
IOGEN Corporation

Project Period

FY 2003 – FY 2006

For more information contact:

Gene Petersen
DOE Golden Field Office
Gene.Petersen@go.doe.gov

EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov

Visit the Web site for the Office of the Biomass Program (OBP) at www.eere.energy.gov/biomass

April 2006