



U.S. Department of Energy Energy Efficiency and Renewable Energy

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Biomass Program

Cost-Benefit Analysis of Fuel and Chemical Production at Pulp Mills

The pulp and paper industry is in a unique position to catalyze the development of a biorefining industry. The volume of wood residuals potentially available to mills on a sustainable basis is significant and expanding production at pulp mills to include fuels, chemicals, and power can generate energy savings, rural development, and environmental benefits while enhancing energy security.

This effort will assess the energy, economic, and environmental impacts of incorporating biomass or black liquor gasification processes and subsequent syngas conversion technologies into pulp mills.

R&D Pathway

Researchers will focus on pulp mill biorefinery systems, such as gasification of both black liquor and woody biomass in order to evaluate the total potential benefits when additional biomass is collected. Similar to the previous DOE-supported cost benefit analysis, *A Cost-Benefit Assessment of Biomass Gasification Power Generation in the Pulp and Paper Industry*,

this study will consider two different black liquor gasifier designs as well as two different biomass gasifier designs. The analysis will focus on transportation fuels as the biorefinery product.

Thermochemical R&D

Benefits

- Quantifies the energy, economic, and environmental benefits of integrating gasification and syngas conversion to products at pulp mills.

Applications

Gasification of black liquor and/or woody biomass at pulp mills and conversion of the syngas to fuels and chemicals offers the pulp and paper industry the opportunity to boost its economic competitiveness while benefiting rural communities and the environment.

Project Participants

American Forest & Paper Association
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Project Period

FY 2004 – FY 2006

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