NewPage: Project Independence

Construction of an Integrated Biorefinery for Production of Renewable Biofuels at an Existing Pulp and Paper Mill

The project will construct and operate a thermal gasification and gas-to-liquids plant integrated into the Wisconsin Rapids Mill to replace natural gas use and produce liquid biofuels that will ultimately be converted into renewable diesel. www.newpagecorp.com

Project Description

The overall goal of Project Independence is to design, build, and operate a 15% scale thermal gasification and gas-to-liquids (GTL) plant at the NewPage Wisconsin System Inc. Wisconsin Rapids Mill to produce 555 barrels per day of clean, zero sulfur renewable biofuels and replace existing natural gas use from a variety of lignocellulosic feedstocks.

The biorefinery will gasify forest biomass to syngas. The syngas will be cleaned and converted to liquid fuels or products through a Fischer-Tropsch conversion process. Unconverted syngas will be burned for heat for use in the biorefinery and to offset some of the existing mill energy needs.

The project will use currently under- or non- utilized forest biomass to add revenue (sale of renewable fuel and co-products) and reduce energy costs for existing paper mill infrastructure. Project Independence consists of the process technologies and equipment for biomass handling, reforming and gasification system, liquid fuel storage and loading equipment, and energy and utilities integration with the existing mill.

NewPage Mill in Wisconsin Rapids, WI

The thermochemical technology provider, TRI, is currently conducting pilot plant operations. This pilot plant is providing the operational data to facilitate the final engineering design of two demonstration scale biorefinery projects both located in Wisconsin (NewPage Corporation in Wisconsin Rapids and Flambeau River Papers, LLC in Park Falls).

NewPage and Flambeau River have demonstrated successful collaboration on their respective DOE projects illustration how two historical pulp and paper industry companies can work for a common goal of creating domestically available renewable energy to reduce US dependence on oil and decreasing the carbon footprints of both sites.

Potential Impact

The technologies being demonstrated through this project are scaled to fit within the NewPage existing industrial infrastructure. The approach is cost-effective, scalable and transferable to hundreds of other locations in the U.S. The project technology estimate is that 357 million barrels of oil/year can be displaced from the pulp and paper sector alone if this technology is deployed at 130+ existing pulp and paper mills; if agricultural residues are included, then an estimated additional 375 million barrels/year can be displaced.

Other Participants

Thermo Recovery International is the gasification technology provider. EFT, Inc. is providing the Fischer-Tropsch conversion technology. CleanTech Partners is working closely on project coordination. AMEC is serving as the engineering firm for the project.

Prime	New Page Corporation
Location	Wisconsin Rapids, WI
Feedstock (s)	Mill residues and un-merchantable wood
Size	497 dry metric tonnes per day
Primary Products	Fischer-Tropsch liquids (renewable diesel) and heat (offset natural gas)
Capacity	8.2 million gallons per year of F-T liquids
Award Date	Award 1 reached on 9/30/2008, Award 2 TBD (est. 7/2011)
GHG Reduction	91% reduction versus fossil product for F-T liquids
Anticipated Job Creation	15 Permanent and up to 200-250 during peak construction (estimated to last 16 months during construction).
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