

Gasoline and Diesel from Wood, Agricultural Waste, and Algae R&D

Gas Technology Institute (GTI) will conduct R&D on hydropyrolysis and hydroconversion processes to make gasoline and diesel.

The project will be located at GTI's Research Campus in Des Plaines, Illinois. The goal of this research and development (R&D) project is to develop the design basis for an integrated pilot-scale facility to process 1 ton per day of wood products, agricultural waste, or algae into gasoline and diesel products.

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Project Description

GTI will conduct R&D on a novel process—integrated hydropyrolysis and hydroconversion—for the economic conversion of wood, agricultural waste, and algae biomass into fungible gasoline and diesel.

The woody material for testing will be supplied by Johnson Timber and will be the residue from harvesting and manufacturing, including roundwood, chips, and sawdust. Corn stover will be provided by Cargill. Algae test samples will be provided by both PetroSun and Blue Marble.

The project objectives and the value proposition support the national goals of energy independence, greenhouse gas reduction, and green job creation and retention.



Gas Technology Institute's Energy and Environmental Technology Center (EETC) in Des Plaines, IL.

These goals include

- Research in optimal catalyst and test conditions for integrated hydropyrolysis and hydroconversion
- Demonstrate the effective use of wood and agricultural waste, including corn stover, and algae for gasoline and diesel production
- Analyze testing data for the three types of biomass material
- Gather metrics for the construction and scale up to a 1 ton per day integrated pilot facility and a commercial size facility.

Potential Impact

The U.S. Department of Energy (DOE) funding for the R&D efforts will begin immediately. Outside of the scope of the DOE funded R&D project, GTI may pursue plans to build

a 1 ton per day pilot facility, which is scheduled for startup in 2013.

Once the proposed thermochemical process has been demonstrated to work at 1 ton per day scale, it can be expanded to produce fungible gasoline and diesel in large amounts sufficient enough to allow the United States to reduce its dependence on imported oil.

Other Participants

Cargill, Criterion/CRI Catalysts Inc., Johnson Timber, PetroSun, Blue Marble Energy, Michigan Technical University and the National Renewable Energy Laboratory.

Prime	Gas Technology Institute
Location	Des Plaines, IL (Office and Project Site)
Feedstock (s)	Wood, agricultural byproducts, and algae
Size	R&D
Primary Products	Renewable gasoline and diesel
Capacity	Bench scale
Award Date	Early 2010
GHG Reduction	>80% reduction
Anticipated Job Creation	10 Jobs over the life of the project
Company Point of Contact	Michael Roberts, 847-768-0518