

Demonstration of a Pilot, Fully Integrated Biorefinery for the Efficient Production of Clean, Synthetic Diesel Fuel from Biomass

The Renewable Energy Institute International (REII), in collaboration with Red Lion Bio-Energy (RLB) and Pacific Renewable Fuels (PRF), will demonstrate a pilot, pre-commercial integrated biorefinery (IBR) for the production of high-quality, synthetic diesel fuels from agriculture and forest residues using advanced thermochemical and catalytic conversion technologies.

REII will upgrade current, proven unit processes into a pilot, fully integrated biorefinery (IBR) plant in Toledo, Ohio, to demonstrate the efficient conversion of 25 dry tons per day (dtpd) of agriculture and forest biomass residues into synthetic diesel fuel.

Information generated from this pilot facility will be used for the design and deployment of commercial-scale plants.

Project Description

The key project objectives are to

- Upgrade the current individual unit processes into a fully integrated 25 dtpd IBR plant for the effective production of synthetic diesel fuel



This Project will Convert Agriculture and Forest Residues to Synthetic Diesel Fuel

- Operate the IBR plant for extended periods to collect sufficient technical, operational, and economic data for the design of commercial plants
- Demonstrate that the synthetic diesel fuel will be suitable as an environmentally friendly, energy efficient fuel for current and future diesel engines.

Potential Impact

The successful deployment of this IBR technology has the potential of dramatically reducing the United State's dependence on foreign oil, greenhouse gases, and other pollutants, and will create a new, domestic bio-industry that will

potentially create hundreds of thousands of high-value jobs. This IBR technology has the potential of displacing 74 percent of petroleum-derived diesel fuel in the United States with clean, efficient diesel fuels by 2025, while reducing greenhouse gas emissions by 89 percent.

Other Participants

In addition to RLB and PRF, the project team includes experts in biomass sourcing and handling, fuel production, syngas and fuel testing, plant construction and operation, project finance, and all necessary engineering disciplines to make the project a success.

Prime	Renewable Energy Institute International (REII)
IBR Location	Toledo, Ohio
Feedstocks	25 dtpd of Agriculture and Forest Residues
Primary Products	Synthetic Diesel Fuel
Award Date	TBD
GHG Reduction	89% compared to petroleum derived fuels
Anticipated Job Creation	110 jobs during peak construction with an average of 30–35 jobs over the 3-year project period.
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