

Mapping of 2nd generation biofuel demonstration plants

IEA Bioenergy Task 39 has commissioned an overview on pilot and demonstration facilities for the production of biofuels from lignocellulosic raw materials. The task community has listed projects in their countries, the project owners were then asked to provide detailed information, such as type of product, type of conversion technology, production capacity, current status of the project, project owner and location.

All information was inserted into a database and is displayed in an interactive map. The map can be viewed at www.abc-energy.at/biotreibstoffe/demoplants. It allows the user to quickly obtain an overview on ongoing lignocellulosic biofuel projects, and to find detailed information on specific projects. The map will be updated regularly throughout 2009. For more information please contact: dina.bacovsky@abc-energy.at.

Technology

- biochemical
- thermochemical
- bio- and thermochemical
- hydrotreatment

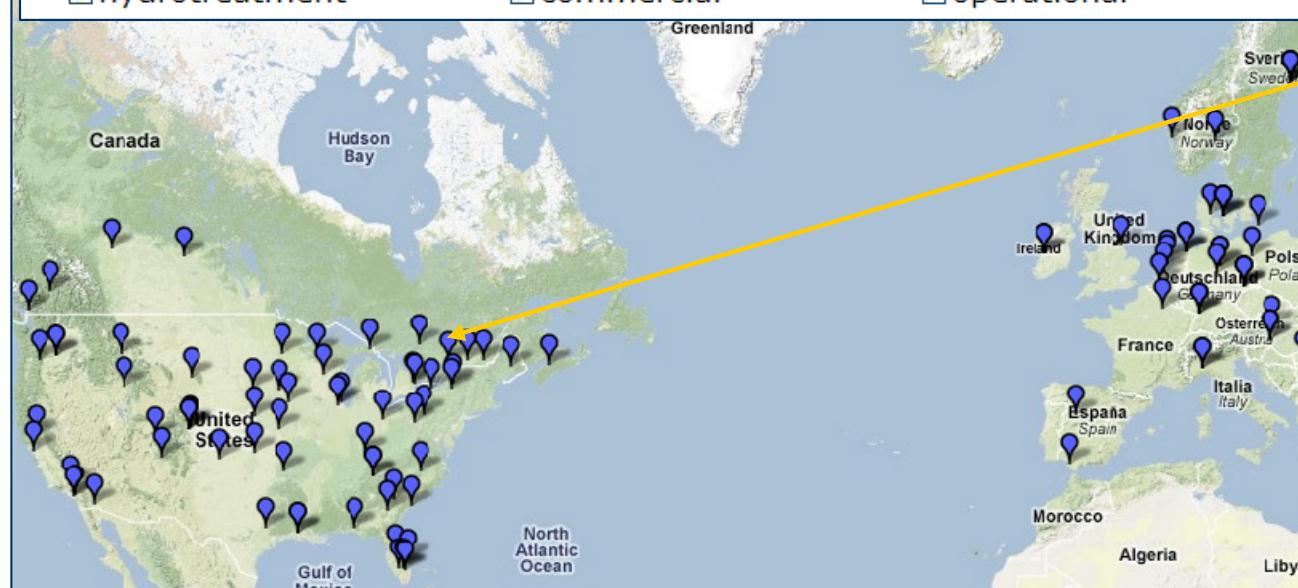
Type

- research
- pilot
- demo
- commercial

Status

- under consideration
- planned
- under construction
- operational

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3 steps

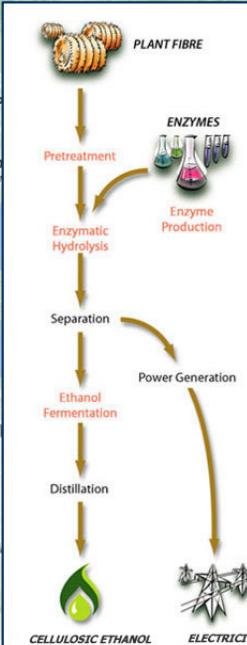
1. Select filter
2. Choose project
3. View details

Iogen Corporation

Ottawa, Ontario, Canada

biochemical conversion of lignocellulosics into ethanol demonstration facility, operational, start-up 2004
more information

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| Details | |
|------------------|--|
| Project Owner | Iogen Corporation |
| Location | Ottawa, Ontario, Canada |
| Technology | Biochemical conversion |
| Raw Material | lignocellulosics, wheat, barley and oat straw |
| Input | 30 t/d |
| Product | Ethanol |
| Output | 1600 t/a; 2 Mta |
| Facility Type | demo |
| Status | operational |
| Start-up | 2004 |
| Technology Brief | <p>Iogen technology makes it economically feasible to convert biomass into cellulosic ethanol using a combination of physical, chemical and biochemical techniques. The yield of cellulosic ethanol is more than 340 litres per tonne of fibre. The lignin in the plant fibre is used to drive the process by generating steam and electricity, thus eliminating the need for fossil CO₂ sources such as coal or oil or gas.</p> <p>Pretreatment: Iogen developed an efficient pretreatment method to increase the surface area and "accessibility" of the plant fibre to enzymes. We achieve this through our modified steam explosion process. This improves ethanol yields, increases pretreatment efficiency, and reduces overall cost.</p> <p>Enzyme Production: Iogen has new, highly potent and efficient cellulase/enzyme systems tailored to the specific pretreated feedstock. Iogen already has a worldwide business making enzymes for the pulp and paper, textiles and animal feed industries.</p> <p>Enzymatic Hydrolysis: Iogen developed reactor systems that feature high productivity and high conversion of cellulose to glucose. This is accomplished through separate hydrolysis and fermentation using a single enzyme system.</p> <p>Ethanol Fermentation: Iogen uses advanced microorganisms and fermentation systems that convert both C6 and C5 sugars into ethanol. The "beer" produced by fermentation is then distilled using conventional technology to produce cellulosic ethanol for fuel grade applications.</p> <p>Process Integration: Large-scale process designs include energy efficient pretreatment, enzyme production, and co-firing of biomass production that make the overall process efficient and economical. Iogen has successfully validated these improvements within its demonstration scale cellulosic ethanol facility.</p> |
| Contact Person | Mandy Chepka info@iogen.ca www.iogen.ca |

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IEA Bioenergy Task 39 'Commercializing 1st- and 2nd-Generation Liquid Biofuels from Biomass' is an international network dedicated to the development and deployment of biofuels for transportation fuel use. The Task is part of the International Energy Agency (IEA)'s Implementing Agreement on Bioenergy and currently comprises 15 countries. More information on the task is available at www.task39.org.

Task 39 has commissioned this overview on 2nd generation biofuel demonstration plants from the Austrian Bio Energy Centre, www.abc-energy.at. Austrian Bioenergy Centre GmbH is a non-university R&D institution founded through the K-plus programme of the Austrian government and is the scientific backbone of the Austrian biomass industry. The main focuses of the company are R&D and consultancy activities in the area of "energetic biomass use", which comprises biomass combustion, biomass gasification and liquid biofuels.



IEA Bioenergy

Task 39

Commercializing 1st- and 2nd- Generation Liquid Biofuels from Biomass