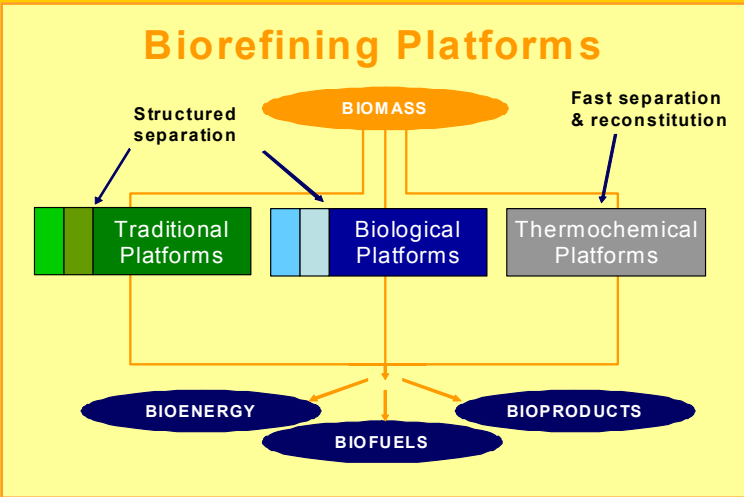


Comparing biofuel technology options

This report (available at www.task39.org) presents two transformative technologies that could be used to expand the production of 2nd-generation biofuels, and deliver additional energy products that can maximize economic and environmental benefits to the industry. These technologies include advanced thermochemical systems that reduce wood to its most basic gaseous components through pyrolysis or gasification, and bioconversion systems that can isolate the building-block chemicals of wood.

Using components of these platforms, forest biomass can provide a sustainable, renewable source of bioenergy. This report illustrates how evolutions in technology may be combined to create truly revolutionary processes that can transform the energy sector. It is also shown how each technological platform might be used to generate other, valuable chemical products or energy, thus creating a biorefinery.

An important conclusion is that the development of the biorefinery should take precedence over specific biofuel and bioenergy projects.



Biodiesel in Germany

The biodiesel subtask of Task 39 arranged a three-day workshop, including a study tour, in June 2006. This meeting brought together 50 international biofuel experts and offered an excellent opportunity for discussion among the community.

The first two days of the workshop were organized in sessions on all aspects of biofuel policy and production, while the study tour on the third day included visits to a Biogas plant and a biodiesel production facility near the Polish border. The presentations and posters from this meeting may be downloaded from the task website or ordered as CD from dina.bacovsky@abc-energy.at.

Session:	Chair:
Welcoming and Introduction	Axel Munack, FAL Braunschweig
Biofuels Policies Panel Discussion	Warren Mabee, UBC
Biofuels in Developing Countries	Uwe Fritsche, Öko-Institut
Stakeholder Discussion	John Neeft, Senter Novem
	Panelists: Hartmut Heinrich, VW Raffaello Garofalo, EBB Walter Böhme, OMV Dieter Bockey, UFOP
Research and Development	Birger Kerckow, FNR
Production Technologies	Werner Körbitz, ABI
Markets and Qualities	Jürgen Fischer, VDB
Biomass Potentials	Manfred Wörgetter, FJ-BLT
General Discussion:	The Future of Biodiesel in Europe, North America and Worldwide

HIGHLIGHTS

www.task39.org

IEA Bioenergy
Task 39

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

Biofuel Implementation Agendas

Task 39 has produced a report on the biofuel implementation agendas of 15 countries (Austria, Belgium, Brazil, Canada, China, Denmark, Finland, Germany, Greece, Lithuania, Netherlands, South Africa, Spain, United States, and United Kingdom). The first issue was published in 2007; yearly updates shall follow. The full report is available at the task website www.task39.org.

Biofuels for use in the transportation sector have been produced on a significant scale since the 1970's, using a variety of technologies. The biofuels widely available today are predominantly sugar- and starch-based bioethanol, and oilseed- and waste oil-based biodiesel, although new technologies under development may allow the use of lignocellulosic feedstocks.

Measures to promote the use of biofuels include renewable fuel mandates, tax incentives, and direct funding for capital projects or fleet upgrades. This paper provides a review of the policies behind the successful establishment of the biofuel industry in countries around the world. The impact of direct funding programs and excise tax exemptions are examined using the United States as a case study. It is found that the success of five major bioethanol producing states is closely related to the presence of funding designed to support the industry in its start-up phase.

The study concludes that successful policy interventions can take many forms, but that success is equally dependent upon external factors which include biomass availability, an active industry, and competitive energy prices.

2nd Generation Demo Facilities

Currently only a small number of demonstration facilities of 2nd generation biofuel technologies exist. Task 39 is elaborating a report "Status of 2nd Generation Biofuels Demonstration Facilities" that will contain a list of existing and planned demonstration facilities, focusing on ethanol from lignocellulosic raw materials and synthetic biofuels via biomass gasification. The table below displays the status and the technology applied for a number of 2nd generation biofuels facilities. The report shall be completed early 2009.

Location	Technology	Status
Existing Facilities		
Örnsköldsvik, Sweden	lignocellulosic ethanol	Since 2004
Güssing, Austria	Gasification + FT liquids	November 2001 + July 2005
Güssing, Austria	BioSNG	Start up June 2008
Clausthal-Zellerfeld, Germany	Gasification + FT liquids	Since 2006
Freiberg, Germany	Gasification + FT liquids	Start up
Delfzijl, Netherlands	BioMCN	March 2008
Planned Facilities		
Kansas, USA	lignocellulosic ethanol	awarded funding in 2007
California, USA	lignocellulosic ethanol	awarded funding in 2007
Iowa, USA	lignocellulosic ethanol	awarded funding in 2007
Georgia, USA	lignocellulosic ethanol	awarded funding in 2007
Florida, USA	lignocellulosic ethanol	under negotiation
Idaho, USA	lignocellulosic ethanol	under negotiation
Aakirkeby, Denmark	lignocellulosic ethanol	awarded funding in 2008
Kalundborg, Denmark	lignocellulosic ethanol	start up in Autumn 2009
Örnsköldsvik, Sweden	lignocellulosic ethanol	2007-2010
Örnsköldsvik, Sweden	lignocellulosic ethanol	2007-2012
Örnsköldsvik, Sweden	lignocellulosic ethanol	2009-2014
Piteå, Sweden	Black liquor gasification + DME	Since 2005 + planned
Varkaus, Finland	Gasification + FT liquids	2008
Schwedt, Germany	FT liquids	planned
Delfzijl, Netherlands	BioMCN	2009/Q1
Delfzijl, Netherlands	BioMCN	2010