



Status of Biomass Gasification – Database developed by Austria for IEA Bioenergy Task 33

20th January 2017

Central European Biomass Conference

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Institute of Chemical Engineering



Background / Aim of the database

- Several biomass gasifiers were implemented during the last decade successfully
- Several databases are available:
 - US DOE Bioenergy Technologies Office
(http://www1.eere.energy.gov/biomass/integrated_biorefineries.html)
 - European Biofuels technology platform
(<http://www.biofuelstp.eu>)
 - IEA Bioenergy Task 39 liquid biofuels
(task39.ieabioenergy.com)
 - Gasification.org (focus on coal)
- Database on biomass gasifiers was missing
- It is a very efficient tool to follow the development of the technology

Task 33

Thermal Gasification of Biomass



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http://task33.ieabioenergy.com

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Task33
Gasification of Biomass and Waste

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Gasification explained Task 33 Description Participants and Country Reports Task Meetings and Minutes Workshops and Events Publications and Reports Newsletter

Welcome

Task 33 is a working group of international experts with the aim to promote the commercialization of efficient, economical and environmentally preferable thermal biomass gasification processes.

Latest Updates

2016-11-17 | Events
4th International Conference on Renewable Energy Gas Technology
22.-23. May 2017, Verona, Italy

>>> Read more

2016-05-04 | Events
5. Central European Biomass Conference
18.-20. January 2017, Graz, Austria

>>> Read more

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Thermal Gasification of Biomass



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Task33 Database

Gasification of Biomass and Waste

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Exit Database

Filter Projects

Projects

Map

Search Owner/Name/Input

Owner	Name	Country	
Aerni Pratteln	CHP Pratteln	Switzerland	<input type="button" value="Info"/>
AEW Energie AG	Pelletvergasser AEW Rheinfelden	Switzerland	<input type="button" value="Info"/>
Agnion Technologies GmbH	CHP Agnion Biomasse Heizkraftwerk Pfaffenhofen	Germany	<input type="button" value="Info"/>
ARBRE Energy Limited (AEL)	IGCC ARBRE Energy Eggborough	United Kingdom	<input type="button" value="Info"/>
Autogasnord	-	Italy	<input type="button" value="Info"/>
Azienda agricola Camardo	-	Italy	<input type="button" value="Info"/>
Azienda Agricola Isca di Calvello	Urbas Calvello	Italy	<input type="button" value="Info"/>
Azienda Agricola San Vittore	-	Italy	<input type="button" value="Info"/>
Azienda Tessile Parmense	GAS 1000	Italy	<input type="button" value="Info"/>
Babcock&Wilcox Volund	CHP B&W Harboere	Denmark	<input type="button" value="Info"/>
Babcock&Wilcox Volund	CHP Updraft gasifier Yamagata	Japan	<input type="button" value="Info"/>
Babcock&Wilcox Volund	CHP Updraft gasifier Daio	Japan	<input type="button" value="Info"/>
Bioenergie Schnellingen	Bioenergie Schnellingen	Germany	<input type="button" value="Info"/>
Biomasse Energie GmbH	FICFB Villach	Austria	<input type="button" value="Info"/>
Biomass Engineering Ltd.	CHP Mossborough Biomass Engineering	United Kingdom	<input type="button" value="Info"/>
Biomass Engineering Ltd.	CHP Biomass Engineering Preston	United Kingdom	<input type="button" value="Info"/>
Biomass Engineering Ltd.	CHP Biomass Engineering Cumbria	United Kingdom	<input type="button" value="Info"/>
Biomass Engineering Ltd.	CHP Biomass Engineering Culcheth	United Kingdom	<input type="button" value="Info"/>
BioMFCN	BioMFCN Farmsum	Netherlands	<input type="button" value="Info"/>



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Thermal Gasification of Biomass



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Task33 Database

Gasification of Biomass and Waste

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Filter Projects

Type

- TRL 8 First-of-a-kind commercial demo
- TRL 9 Commercial
- TRL 6-7 Demonstration
- TRL 4-5 Pilot
- TRL 1-3 Research

Technology

- Fuel Gas (Heat)
- Power / CHP
- Fuel Synthesis
- Other Gasification Technology

Status

- no status
- planned
- under construction
- - commissioning
- operational
- non operational
- - stopped while under construction
- - idle

Submit

Projects

Map

Search Owner/Name/Input

Submit

Owner	Name	Country	
Aerni Pratteln	CHP Pratteln	Switzerland	Info
AEW Energie AG	Pelletvergasser AEW Rheinfelden	Switzerland	Info
Agnion Technologies GmbH	CHP Agnion Biomasse Heizkraftwerk Pfaffenhofen	Germany	Info
ARBRE Energy Limited (AEL)	IGCC ARBRE Energy Eggborough	United Kingdom	Info
Autogasnord	-	Italy	Info



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Thermal Gasification of Biomass



Search Owner/Name/Input

Owner	Name
Bio SNG Guessing	Synthesis Demo Guessing
CHOREN Fuel Freiberg GmbH & Co. KG	Synthesis CHOREN beta
CHOREN Industries GmbH	Synthesis CHOREN alpha
CHOREN Industries GmbH	Synthesis CHOREN sigma
Cutec	Synthesis Cutec Clausthal
ECN	Synthesis HVC Alkmaar
Enerkem	Synthesis Demonstration
Enerkem	Synthesis Enerkem Shell
Enerkem	Synthesis Enerkem Alberta
E.ON Gasification Development AB	Bio2G
Fulcrum BioEnergy - Sierra Biofuels Plant	Synthesis Fulcrum BioEnergy
Goeteborg Energi	GoBiGas
GTI Gas Technology Institute	GTI gasifier Des Plaines
INEOS New Planet BioEnergy	Synthesis INEOS Plant V
Karlsruhe Institute of Technology (KIT)	Synthesis bioliq - process
LTU Green Fuels	DP1+DME pilot
Stora Enso	Gasifier at Varkaus paper
T-BITAK MRC - ENERGY INSTITUTE - TURKEY	Synthesis TRIGEN Gebze
T-BITAK MRC - ENERGY INSTITUTE - TURKEY	Synthesis T-BITAK MRC
Tembec Chemical Group	Synthesis Tembec Chemical
VermilandsMetanol AB	Vermilandsmetanol Hag
Vienna University of Technology / BIOENERGY 2020+	FT pilot Guessing
VTT Technical Research Centre of Finland Ltd	Dual fluidized-bed steam
VTT Technical Research Centre of Finland Ltd	Pressurized FB for synthesis
West Biofuels	LLC Thermal Reformer S

Project GoBiGas



Project Owner...	Goeteborg Energi
Project name	GoBiGas
Status	operational
Startup	2013

Geodata

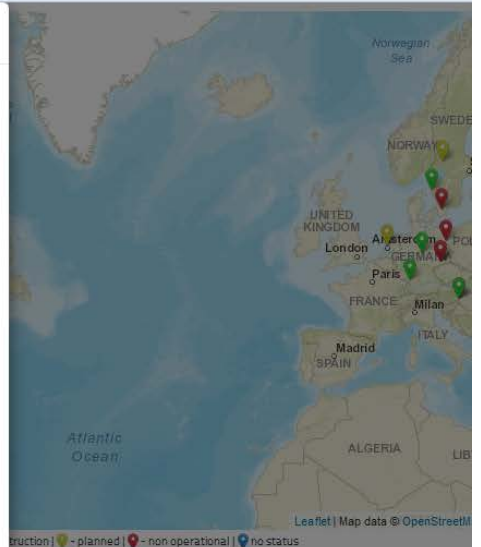
Country	Sweden
City	Goteborg

Production

Type	TRL 6-7 Demonstration
Technology	Fuel Synthesis
Raw Material	lignocellulosic crops
Input 1	Wood pellets (6,5 t/h)
Input 2	Forest residues (6,5 t/h)
Output 1	SNG (20 MW)
Output 2	heat (5 MWth)

Additional Information

Partners	Reoptec, Metso Power, Jacobs Process, Haldor Topsoe
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CHOREN Industries GmbH	Synthesis CHOREN sigma
Cutec	Synthesis Cutec Clausen
ECN	Synthesis HVC Alkmaar
Enerkem	Synthesis Demonstratie
Enerkem	Synthesis Enerkem Sherbrooke
Enerkem	Synthesis Enerkem Alberta
E.ON Gasification Development AB	Bio2G
Fulcrum BioEnergy	Sierra Biofuels Plant
Goeteborg Energi	GoBiGas
GTI Gas Technology Institute	GTI gasifier Des Plaines
INEOS New Planet BioEnergy	Synthesis INEOS Plant V
Karlsruhe Institute of Technology (KIT)	Synthesis bioliq - process
LTU Green Fuels	DP1+DME pilot
Stora Enso	Gasifier at Varkaus paper mill
T-BITAK MRC - ENERGY INSTITUTE - TURKEY	Synthesis TRIGEN Gebze
T-BITAK MRC - ENERGY INSTITUTE - TURKEY	Synthesis T-BITAK MRC
Tembec Chemical Group	Synthesis Tembec Chem
Vermont Methanol AB	Vermont Methanol Hag
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Additional Information

Partners	Repotec, Metso Power, Jacobs Process, Haldor Topsoe
Technology Brief	The gasification technology is based on the Repotec indirect gasification, which is supplemented by gas upgrading and SNG synthesis. The GoBiGas 1 project was planned as a demonstrator to be followed by a fully industrial plant of 80-100 MW bio-methane output on the same site. Göteborg Energi made a successful NER 300 application for support for this expansion. However, in late 2015 the City Council, being the owner of Göteborg Energi, took a decision to cancel the project.
Additional Information	http://gobigas.goteborgenergi.se/

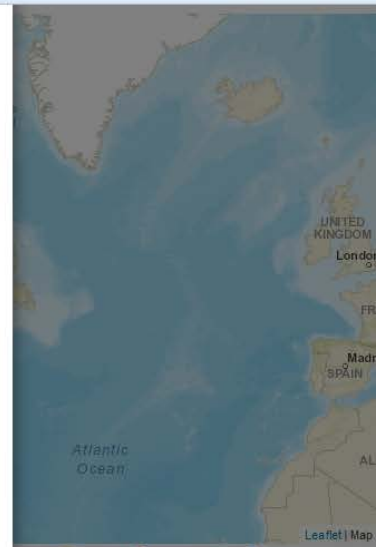
Contact Information

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Files

Flowsheet

Last Update: 2016-02-03 18:20:22



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Status Report

- Report is prepared at the end of each Triennium
- Includes technology description, highlights and detailed description of all the gasification plants.
- Very reliable data for the participating countries (Austria, Denmark, Finland, Germany, Italy, Sweden, Switzerland, The Netherlands, Norway, USA)
- Plants from other countries are based on literature data
- Data exchange with IEA Bioenergy Task 39 liquid biofuels is done



Status Report

- 86 thermal gasification facilities, there are 62 in operation, 5 under construction, 2 planned, 16 on hold and for 1 the status is not really clear
- Most of the facilities in this report (53) are combined heat and power (CHP). The second most common application of gasification is for synthesis purpose (18) and 15 facilities are mentioned as other gasification technology
- For the small scale CHP like Spanner Re² or Burkhardt not all plants are included, only some reference plants
- Biggest challenge is being up to date, as gasification projects are coming and going quite fast



Thanks for your attention and feedback

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