Gasification of Biomass and Waste – Recent Activities and Results of IEA Bioenergy Task 33

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task33.ieabioenergy.com

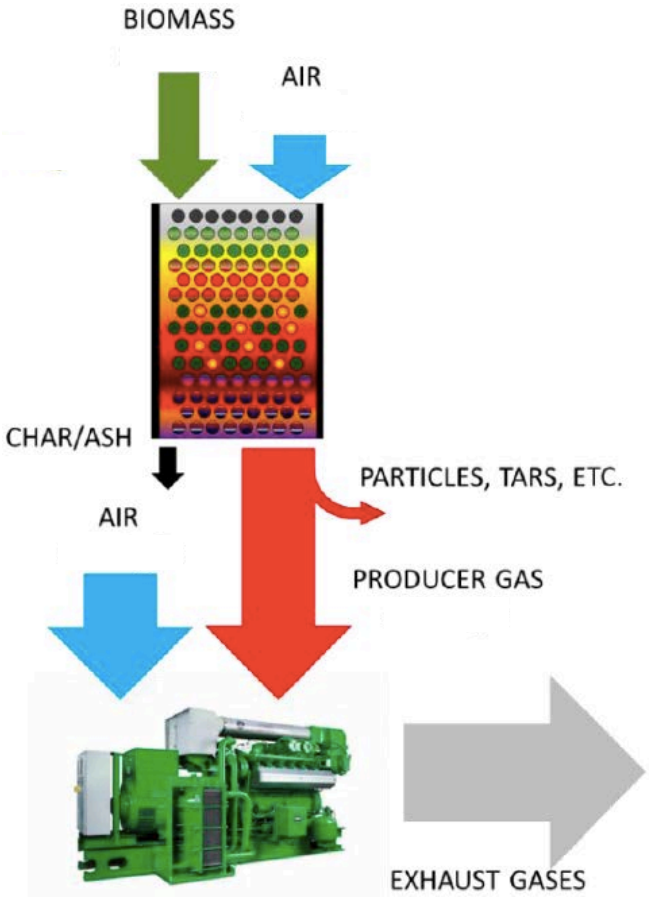
Task 33 Scope

Objectives

- Promote commercialization of biomass and waste gasification
- Monitor, review and exchange information on gasification research, development, and demonstration
- Encourage cooperation among member countries and industry

Audience

- Policymakers
- Technology providers
- End users
- Researchers
- General public



IEA Bioenergy Participants

IEA Member Countries

Australia	Estonia	Ireland	New Zealand	Sweden
Austria	Finland	Italy	Norway	Switzerland
Belgium	France	Japan	Poland	Turkey
Canada	Germany	Republic of Korea	Portugal	United Kingdom
Czech Republic	Greece	Luxembourg	Slovak Republic	United States
Denmark	Hungary	The Netherlands	Spain	

Other Member Countries

Brazil
Croatia
European Union
South Africa

Meetings and Workshops

Meetings

- Task 33 business meetings twice per year
- Reporting to IEA Bioenergy Executive Committee twice per year

Workshops

- Open to public
- Topics relating to biomass and waste gasification
  - Technical issues
  - Markets, policy, implementation
- Usually 1 day workshop plus a half-day excursion/tour

Special Projects

Recently completed

- Fact sheets on biomass gasification
- Performance test code white paper
- Status report on biomass gasification development

In progress

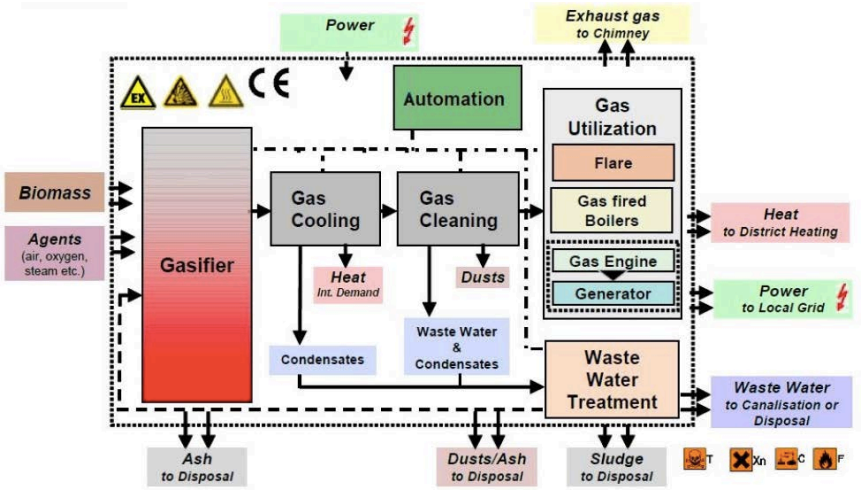
- History of biomass gasification and lessons learned
- Gasification of waste
- Biomass gasification for CCUS
- Gasification-based renewable energy hybrid systems
- Hydrogen generation through biomass gasification
- Fuel pretreatment for gasification applications
- Valorization of byproducts from small scale gasification

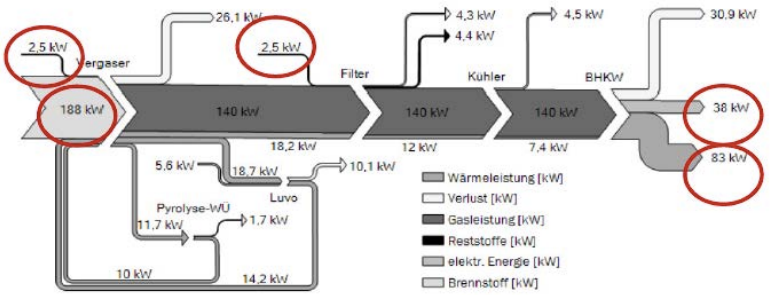
Fact Sheets

- 1-2 page targeting general public
- Eight topics
  - What is gasification?
  - Gasification in numbers
  - Biomass as gasification feedstock
  - Selection of gasification technology
  - Indirect co-firing
  - Producer gas as engine fuel
  - Syngas for biofuels
  - Contaminants in producer gas
- Available on task web site

Performance Test Code White Paper

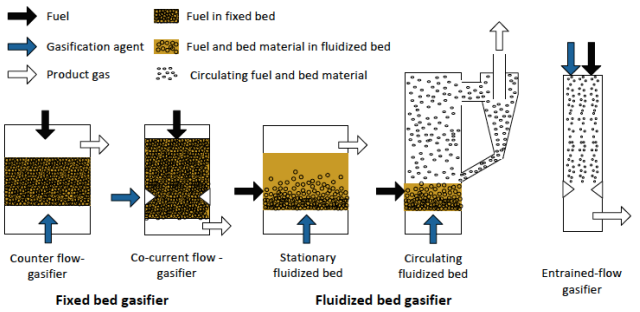
- Focus on small scale CHP plants
- Procedure for establishing performance metrics
- Considers both technical and management aspects
- Example contract and performance test report
- Available on Task website





Status Report on Biomass Gasification

- Comprehensive overview of status of biomass gasification
  - Background of gasification and state of the art
  - List and index of gasification facilities
  - Highlights of significant facilities
  - Considers industrial as well as smaller-scale systems
- Updated every triennium
- Report available on task website



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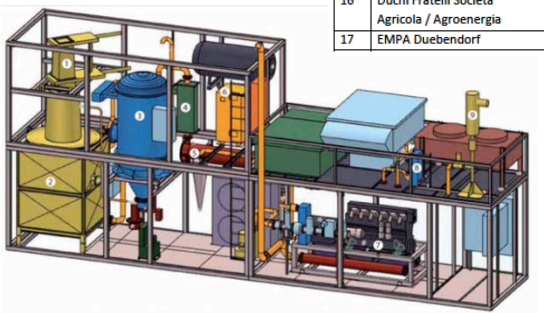


Fuel Pretreatment for Gasification Applications

- T33's contribution to inter-task project "Fuel pretreatment of biomass residues in the supply chain for thermal conversion"
- Proposed to consider case study of how fuel pretreatment could enable or improve feeding of waste to gasification system, relative to existing reference case
- Overall project results in several individual case studies of opportunities presented by fuel pretreatment for combustion, pyrolysis, gasification, etc.

Biomass gasification for CC(U)S

- Analysis of how biomass gasification can contribute to CCS and CCUS
- Consideration of implementation strategies and worldwide potential
- Collaboration with other IEA Bioenergy activities regarding BECCS
- Report due 2018

IEA Bioenergy

Applicable Bio-CCUS concepts for member states 2030 – 2050

Technological and financial aspects of Bio-CC(U)S

Time: 10 May 2016, 10.00 – 16.30
Venue: Miljøstiftelsen Bellona
Visiting address: Vulkan 11, 0178 Oslo, Norway

You are warmly invited to the first IEA Bioenergy Task 41 workshop on Bio-CCUS. The workshop will be the first in a series of four workshops and hosted by Miljøstiftelsen Bellona. The workshop includes a site visit to the CO_2 capture test facility at the Oslo Municipality Waste to Energy Plant at Klemetsrud.

The workshop aims to give an update on the status of national plans and roadmaps for Bio-CCUS in member states and to identify the national possibilities and potential first business cases on a technical and economic level. We will also discuss the role of Bio-CCUS in EU towards 2030 and 2050. The event will give an excellent opportunity to get an updated status update on Bio-CCS activities and possibilities, and to highlight and disseminate work on Bio-CCUS which could contribute to increased awareness of the topic among stakeholders.

To register for the event, please use the following link:

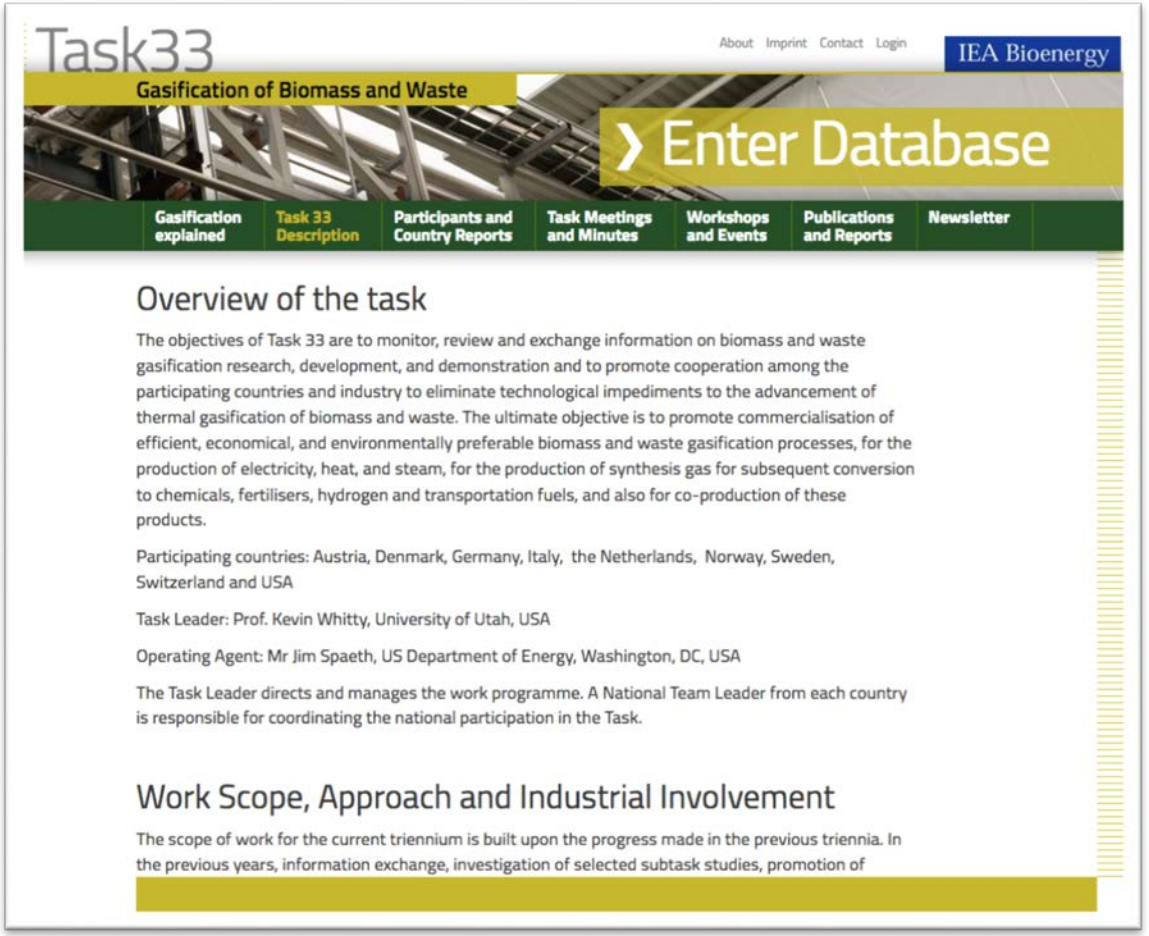
https://ssl.eventilla.com/event/je8lJ

Registration is open until 2 May 2016. For further inquiries, please do not hesitate to contact Antti Arasto (antti.arasto@vtt.fi) or Kristin Onarheim (kristin.onarheim@vtt.fi).

IEA Bioenergy

Web Site: task33.ieabioenergy.com

- Task info and scope
- Event information
- Workshop reports and presentations
- Publications and special project reports
- Contact information
- Facilities database



Outlook for 2019-2021

- Seeking collaboration with the Asian continent. Developments in China, India, Korea and Japan are heading in the right direction. Through IEA Task 33 we can all benefit from experiences regarding gasification gained in important gasification countries.
- Gasification will be used more and more for higher value applications such as biofuels and biochemicals. The Task will organize a workshop on these “other” applications of gasification.