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

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
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
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.