## Expert workshop on Combustion of Challenging Biomass Fuels

Jaap Koppejan

**Biomass Combustion and Cofiring** 

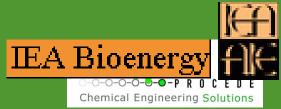


Procede Biomass BV PO Box 328, 7500 AH, Enschede The Netherlands <u>www.procede.nl</u>

#### Introduction to IEA Bioenergy (1)

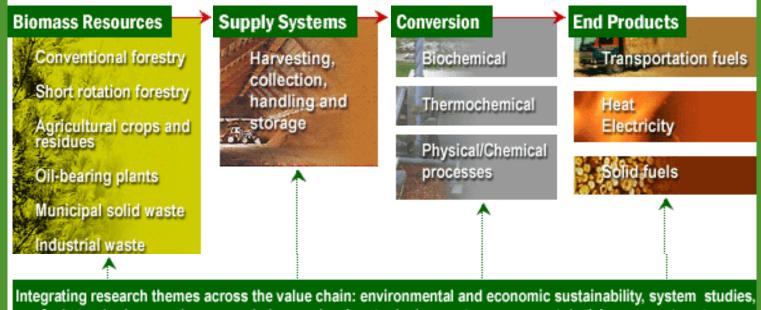
- The <u>IEA</u> was founded to implement an international energy programme in response to the oil shocks.
- Activities are directed towards collective energy policy objectives of <u>energy security</u>, economic and social development, and environmental protection.
- Activities are set up under Implementing Agreements. There are <u>40 active Implementing</u> <u>Agreements</u>.





### IEA Bioenergy (2)

 an umbrella organization where experts from research, government and industry work together



fuel standards, greenhouse gas balances, barriers to deployment, management decision support systems

**Biomass Combustion and Cofiring** 



#### www.ieabioenergy.com



## IEA Bioenergy Task 32: Biomass Combustion and Co-firing

- To stimulate further expansion of the production of energy from biomass combustion
- Generating and disseminating information on technical and non-technical barriers and anticipated solutions for:
  - dedicated biomass combustion systems, and;
  - biomass co-firing in existing coal fired power plants.





European Biomass Conference, 4 May 2010

# IEA Bioenergy Task 32: Biomass Combustion and Co-firing

• Experts from 13 countries:

Austria, Canada, Denmark, Finland, Germany, Ireland, Italy, Netherlands, Norway, Sweden, Switzerland, Turkey, United Kingdom

- Working together in:
  - Cooperative projects
  - Meetings, Workshops, Conferences, Excursions
  - Cooperation with other Networks
- Reports etc. can be found on our website: <u>www.ieabioenergytask32.com</u>

**Biomass Combustion and Cofiring** 







## Slagging, fouling & corrosion can lead to severe problems







#### Agenda

- The resource basis of alternative fuels for small scale and industrial combustion
- The consequences of using challenging fuels for furnace design, boiler operation and emissions
- Approaches for adaptations of technical design
- Outlook for new boiler materials and limits in steam temperature

Biomass Combustion and Cofiring **IEABioenergy Task 32** 





## Agenda

15:00	Introduction	Joon Konnoion
		Jaap Koppejan
15:10	The Fuel Handbook- How to introduce new	Birgitta Strömberg
	varieties of bio-fuel in a plant	Värmevorsk, Sweden
15:30	European standards for solid biofuels - case	Eija Alakangas
	pellets from agribiomass	VTT, Finland
15:50	Variations in biomass composition	David Baxter
		JRC, Netherlands
16:10	Combustion characteristics of Miscanthus based	Thomas Brunner
	on lab-scale and pilot plant combustion trials in	BIOS Bioenergiesysteme,
	Austria	Austria
16:30	Coffee break	
16:45	Operation experience from combustion of biomass	Markus Bolhàr-Nordenkampf
	at elevated steam temperatures with the focus on	AE&E, Austria
	challenging biomass fuels	
17:05	First experiences with chicken litter fired BFB	Ton Konings
	combustion plant at Moerdijk, Netherlands	KEMA, Netherlands
17:25	Plant experience with the firing and co-firing of	Bill Livingston,
	challenging biomass fuels	Doosan Babcock, UK
17:45	Discussion and closing	
18:00	End of workshop	
	Bioenardy Task 32	
		Chemical Engineering Solutions