



# 17th European Biomass Conference & Exhibition

## From Research to Industry and Markets

### Daily Bulletin: 1 July

*Bringing you all the news and highlights from the Conference!*

*Available Monday to Friday at the registration desk and in the exhibition hall*

#### Plenary Session

Kyriakos Maniatis and Arthur Wellinger chaired the Tuesday plenary session covering a wide range of interventions from pyrolysis, combustion, and gasification to hydrogen and methane and algae production. Hermann Hofbauer, TU Vienna, after an overview of the different full scale gasification systems, focused on the important demonstration at the BioSNG 1MW gas power plant in Austria, which started production in December 2008. He also focused on the importance of the H<sub>2</sub>/CO ratio and how it can be shifted towards H<sub>2</sub>.

Tony Bridgwater, Aston University spoke on the opportunities of the fast pyrolysis process. He highlighted that fast pyrolysis is a versatile process yielding versatile products by outlining the uniqueness of fast pyrolysis of which one aspect is the direct production of liquids in high yields that can be handled, stored and transported at lower costs than solid biomass. The challenges to the commercialisation lie in overcoming barriers, one being biomass ash. This ash acts as a cracking catalyst and may result in unsatisfactory bio-oil quality, therefore ash removal/management may be necessary with some feedstocks to commercialise fast pyrolysis. Ingwald Obernberger, BIOS, presented on the state of the art on combustion technologies and provided the delegates with a future outlook for this sector. Combustion of biomass is a proven technology for a variety of fuels in scales up to 100MW. The main conclusions were that a better definition of the feedstock composition aided by virtual modelling will allow higher efficiencies, improve ash behavior and reduce emissions in the future systems.

M. Ljunggren from Lund University gave a techno-economic evaluation as a useful tool to better understand processes in the development of hydrogen and methane. H<sub>2</sub> and CH<sub>4</sub> produced at ambient conditions by selected micro-organisms is a complex 4 steps process, including pre-treatment, fermentation, anaerobic digestion and gas upgrading. The last presentation by Frederik Vogel from the Paul-Scherrer Institute was on hydrothermal conversion of algae as a new method to produce biomethane. The concept has been proven at lab scale, however additional steps are needed to improve the net energy gain.

#### Bioenergy for Rural Development

The workshop on Bioenergy for Rural Development in Africa and Asia jointly organized by the Compete and the RE-Impact projects started this year's series of the Conference's side events. The workshop was a great opportunity to look at bioenergy from a different perspective, that of the developing countries, who see it as a primary driver for economic development, but are also concerned about the potentially

negative impacts that bioenergy and biofuels could cause if implementation is badly managed.

The theme of transition from traditional biomass use to modern bioenergy applications in rural China was discussed. Timm Tennigkeit, Centre for Mountain Ecosystem of China, highlighted the greatly different conditions of urban and rural China. Even though China largely depends on coal and at country level the share of biomass on the total energy supply is below 10%, rural provinces are still recurring to traditional use of biomass for more than 50%, for heating and cooking applications, therefore a transition to modern bioenergy systems can play an important role if China wants to develop renewable energy. One of the technologies most suitable to help rural population to use their biomass resource more efficiently would be the adoption of improved stoves for cooking.

The theme of Jatropha cultivation and use for rural electrification was also discussed in depth. Winrock international presented a successful example of power production by using straight jatropha oil in the village of Chhattisgarh, where diesel engines



are running since 2007. However, availability of feedstock is a concern as the yield of the plantations were under the expectations. This has implications for the economic sustainability of

Jatropha cultivation as well, as was explained by Graham von Maltz of CSIR, who showed the results of the comparison of different Jatropha production models in the world. He indicated that the cost competitiveness of the fuel is strongly influenced by the cost of labour.

The participants of the workshop concluded that there is a great potential and opportunity for bioenergy in Africa, but it must be produced sustainably. The most important need is the set-up of suitable national bioenergy policies which are currently missing in many African countries. Thereby, the difference between small scale, decentralized and large scale, centralized energy production models must be considered. Bioenergy development may not compromise, but even enhance food production through the increase of agricultural yields, efficiency improvements and investments in the agricultural sector.

## Options for High Percentage Biomass Cofiring in New Power Plants

The workshop of IEA Bioenergy Task 32, has analyzed some new concepts for coal fired power plants. The interest in biomass cofiring is growing rapidly and the challenge now is to include maximum cofiring abilities in the design as well as larger percentages of biomass cofiring.

The workshop has taken into account the latest innovations regarding biomass cofiring such as fluid bed combustion, pre-gasification, parallel combustion, and pulverized coal concepts. In addition, problems related to gasification, torrefaction and other processes have been discussed.

The Chairman Mr. Sjaak van Loo introduced the event emphasising to the importance of cofiring in PC boilers as one of the largest, most rapidly growing contributors to electricity production as countries recognize this as an option to rapidly introduce very large amounts of renewable electricity at low costs [even if the options to co-fire in existing power plants are limited].

Mrs. Tina Kristensen, from Vattenfall, showed the *Amager1* project, a multi fuel plant fuelled with wood, straw, pellets, coal and oil, giving an emphasis to the possibility to use the pellets in the plant either as a single fuel or combined with other fuels.

Mr. Ewout Maaskant, from Topell, has given a speech regarding the possibilities offered by the "torrefaction" process. The torrefaction makes biomass "coal like". The "torbed-technology" has been mentioned as a superior technology for heat transfer with the following advantages: High turbulence inside reactor which gives better contact between material and air; small bed volume; no moving parts inside the reactor; very fast reaction kinetics; reduction of 94% of CO<sub>2</sub> released per KWh electricity.

Mr. Edward Pfeiffer, from KEMA, presented the fluid bed combustion and gasification process utilized for large scale biomass plants. Compared to co-firing in coal fired power plants, this technology offers 2 main advantages: a high fuel flexibility (even with low quality biomass) and the possibility to use up to 100% biomass, this makes FBC the ideal solution for flexibility and in any case of difficult biomass supply. Mr. Bill Livingston, from Doosan Babcock Energy, remarked that large scale biomass cofiring is the most efficient and cost effective approach to generating electricity. In addition, direct injection co-firing projects are currently being implemented as a means of increasing the co-firing levels. Injection of the biomass into the pulverized coal pipework is the preferred direct firing solution for both retrofit and new build projects.

## International & European News

### Abu Dhabi secures IRENA headquarters with a French Director-General

Over the past two days, signatory States to IRENA, the International Renewable Energy Agency gathered in Sharm El Sheikh in Egypt and voted on an interim Headquarters and an interim Director-General of IRENA. Helene Pelosse was named Director-General of the new agency, beating off challengers from Denmark, Greece and Spain. The European Renewable Energy Industry had lend its support to Arthouros Zervos, the Greek nomination current President of the European Renewable Energy Council, as the DG of IRENA. Helene Pelosse, is a French

Official to Minister Jean-Marie Borloo and managed the French negotiations in 2008 on the European Climate and Energy Package.

Although the EU Member States Denmark, Germany and Spain were key movers behind the January start-up of IRENA, Bonn & Vienna withdrew their candidature for the seat of IRENA headquarters on Monday to support the HQ proposal of the United Arab Emirates. The new HQ will be located in Masdar, a 22 billion-dollar city near Abu Dhabi that will have zero emissions. Bonn will host IRENA's centre of technology and innovation and in Vienna the Agency's liaison office for cooperation with other organisations active in the field of renewables will be established.

Despite the criticism that surrounds the high carbon footprint of the United Arab Emirates, in January, the United Arab Emirates government announced a goal for Abu Dhabi to get 7% of its energy from renewable sources. With IRENA located in an oil rich country it is hoped a strong signal will be sent to other OPEC countries. In addition, the oil-rich Gulf state has vowed to offer loans worth 50 million dollars annually through the Abu Dhabi Fund for Development to promote the use of renewable energy in developing countries. There are now 136 signatory states to IRENA with further countries signing on at the preparatory meeting in Sharm El Sheikh - key among those the United States and the United Kingdom.



### NREAPs Template Published by European Commission

Fabrizio Barbaso spoke at the opening session on 29 June of the importance of national renewable action plans in the RES Directive. On Tuesday 30 June, the European Commission has published a template for national renewable energy action plans that member states must complete and submit by 30 June 2010 to the Commission under the RES Directive. This template will help Member States to work out their renewable energy strategies. For example, for transport, this implies providing information on the planned technology breakdown, and the shares of 1st and 2nd generation biofuels. For biomass availability it has to be indicated whether the Member States plan to rely on domestic resources or on imports.



### Conference Related News: Side Events

#### 1 July: 3rd Biomass Industry Day, Hall 6, 10:10-17:00

Join us in Hall 6 on the Ground Floor of the CCH Congress for EUBIA's third instalment of the "Biomass Industry Day" focusing on financing and investing in biomass projects, mobilising sustainable bioenergy use in the EU and innovations in selected areas.

#### 2 July: Biosynergy Workshop, Room C3/4, 14:00-17:15.

#### Conference Dinner 1 July – 7.30 Parliament Restaurant

Go to the registration to purchase your ticket for the main conference social event!

This issue is written and edited by Maurizio Cocchi and Eibhilin Manning. The digital editor is Valentina Davitti.  
Disclaimer: The opinions expressed in the Bulletin are those of the authors, and do not necessarily reflect the views of the Conference ExCo. The Bulletin Team at the 17<sup>th</sup> EBCE can be contacted by email at [maurizio.cocchi@etaflorence.it](mailto:maurizio.cocchi@etaflorence.it) and [eibhilin.manning@eubia.org](mailto:eibhilin.manning@eubia.org)