17th European Biomass Conference & Exhibition
From Research to Industry and Markets

Daily Bulletin: 2 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

The Wednesday morning plenary began with F. Riegel from Bauhaus Lufthart who showed an updated methodology to assess the substitution potential of biofuels in aviation, which is potentially a very important market segment for biofuels. Despite the dramatic improvements in the fuel efficiency of aviation engines, air travel growth foreseen at a rate of 5% per year will drive the demand for fuels from this sector, and the aviation industry is interested in finding low carbon fuels to reduce the carbon footprint of jet planes.

The methodology takes into account sustainability criteria to estimate net areas that can be destined for energy crops, considering the need of land to ensure food security, and an estimation of different feedstock yields. The work on this global assessment is still ongoing and Riegel concluded that the effort to make such a global assessment for the substitution of biofuels in aviation is worthy, given the increasing importance of aviation sector in the contribution to GHG emissions.

Arne Grongroft, German Biomass Development Centre, spoke on improving energy and GHG balance of ethanol from cereals. The Centre has completed a study on this issue analyzing the energy and mass balances of modern bioethanol plants at each stage of the process and the potential technological solutions to improve the energy balance. Grongroft concluded that a series of energy recovery systems could be used in combination to achieve this goal, namely heat recovery by mechanical vapour recompression (MVR), dehydration by pervaporation and biogas production from stillage, the latter being the most effective one. According to the assessment, the higher capital costs for the advanced technologies can be compensated by the reduced costs for process energy.

Janet Witt, German Biomass Development Centre, introduced the issue of optimizing the wood pellet supply by involving sustainability requirements. She remarked that even though today the European wood pellet production faces minor sustainability problems compared to the liquid biofuesl sector, in the medium term, the increasing international trade of this commodity may increase the sustainability of wood pellet production. She concluded that standardization and certification on the whole supply chain could help to overcome this problem,

Prof. Nikolay Vedernikov, Latvian State Institute of Wood Chemistry spoke on the biorefinery platform, for the combined production of bioethanol and furfural, a base chemical, from hardwood. Indeed, wood can be a valuable feedstock for the production of three base chemicals, furfural, ethanol and phenol, with which it would be possible to produce 95% of the currently used synthetic material that today are obtained from the petro-chemical industry.

Finally, Kees Kwant, Senternovem Netherlands, presented an update of the activities and results of the ERANET Bioenergy project, whose mission is to enhance the quality and cost effectiveness of European bioenergy research programmes through coordination and cooperation between member states. Since 2006, 4 joint calls were successfully published on different topics (small scale combustion, gasification and gas cleaning, short rotation coppice, clean combustion), with an overall budget of around 11million euro derived by the national funds of the participating countries. The results of the project were encouraging so far, showing a high level of satisfaction from the participants, who indicated the ease of management (compared to other international programs) as one of the primary strength points of ERANET. Thanks to this success, ERANET is now committed to continue and increase its activities, by developing joint work programmes on the topics of biorefineries, biofuels, synthetic natural gas, and by cooperating in the European Strategic Energy Technology Plan.

3rd Biomass Industry Day

A highlight of the Wednesday programme was the 3rd Biomass Industry Day which brought an added dimension to the 17th EBCE with insightful and informative presentations on financing and investing in bioenergy a crucial issue in the current 'credit crunch' climate. Giuliano Grassi, EUBIA, introduced the morning session emphasizing that to meet the 2020 targets investment is needed not only for commercial activities, he indentified international cooperation as an important aspect on this. Irmgard Herold opened the session with a broad overview of what is happening globally on financing biomass and waste to energy plants. In 2008, 8 bn us dollars were invested in the biomass and waste to energy sector. In terms of GW generation from biomass in power plants, Europe is far ahead compared to the rest of the world. Venture capital/private equity from 2003-2008 are most important sectors for financing plants. On the pellet market, she added that the focus was on electricity, and that pellets are only used in a few countries worldwide the biggest market being Sweden, followed by Denmark, Belgium and the UK. The largest trade market is with Canada with 60% of their exports going to European countries.

Published by ETA-Florence Renewable Energies and WIP Renewable Energies in collaboration with the European Biomass Industry Association –Thursday 2 July 2009
Online at ***www.conference-biomass.com***

She concluded that, the wood pellet market has the potential to follow coal market and to mature into a large and liquid market with if risk managment tools are applied.

Financing in the current climate

Dirk Mous gave a key talk to the attendees on Financing Biomass/Biogas Projects from a lender's perspective. NIBC Bank are financing projects in the renewable sector, raising 5bn euro. Dirk Mous, like Irmgard Herold gave a positive outlook for financing renewable projects, but NIBC Bank have stringent lenders requirements ranging from due diligence to project developer requirements to scale size. Using two concrete projects he showed how NIBC bank financed the biogas sector by applying those lender criteria. He illustrated the debt financing scheme of the Moerdijk biomass plant and the Güstrow biogas plant and summarized that renewables are financially attractive, biomass and biogas in particular are taking off, but specifically for biogas requirements for financing are restrictive.

Ramana Reddy presented KfW Bank financing of renewable energy projects in developing countries. With a total financing volume of 70.6 billion dollars, KfW have representative offices in 60 locations worldwide and in 2008 they were the number one financing RE in developing countries. With the Indian Renewable Energy Development Agency, they have financed model investment projects (MIPs) that serve as a reference for future funding from commercial banks.

The last speaker Stefan Hinner from Greenstream gave a different perspective on financing via carbon credits as an additional income. He spoke on the Joint Implementation Mechanism and availing of JIs for methane emission reduction projects in Central and Eastern Europe. He illustrated the credit yield using JIs from an exemplary biogas project in Ukraine using 100,000 tonnes of pig slurry to produce 4000 MWh electricity and significant reduction in methane.

Roundtable Discussion

This was followed by an animated roundtable discussion with industry representatives moderated by Raphael Slade, Imperial College London, who posed insightful questions to the panellists and audience. Kicking off the debate, Arthur Wellinger, European Biogas Association reminded the attendees that bankers finance only very large scale projects in the biogas sector whilst the majority of biogas is small scale with companies and farmers facing tremendous difficulty to pre-finance plants. Dirk Mous, NIBC Bank however, added that from a debt financing perspective they can only finance economies of scale. Frederic Dalimier, Xylowatt remarked that a solution to this would be to put together cooperatives, different projects that together could discuss with a bank for lending. All the discussants concurred that biomass is a more complex renewable technology than wind to finance with varying technologies and sizes of scale. Adding a different perspective to the debate, Wim van der Wilden, Dyadic, emphasized that biomass can replace many oil components not just in the energy sector and there are many ways to create value on biomass. In the EU it is difficult to help translate technologies into products and processes and in that respect a number of key European players move to the US where there is he claimed more money available for pilot plants. Valri Lighter from the DOE in the audience indicated that the US's aim by funding pilot projects is with a view that this technology can be replicated. To bring this to commercial scale via private financing they try to enable companies through their funding programme to reach that point where they are equipped to receive debt financing.

Policy & Innovation

The afternoon session switched to policy related content with presentations from Sustainable Energy Europe Campaign as a communications tool to promote European sustainable energy projects to the wider public and media. EUBIA provided an analysis of the recently published national renewable energy action plan template. They outlined the crucial areas of the template that concern the bioenergy sector for example requesting sectoral targets for Member States and indications shares of the technologies MS will deploy across electricity heating and transport in reaching these sectoral targets and trajectories. Horst Fehrenbach, IFEU, gave a comprehensive analysis of the sustainability requirements contained in the RES Directive and provided the audience with an overview of the developments across the world on sustainability regimes.

Switching to innovations, Turboden presented its range of their ORC turbines, that represent one of the few viable and reliable options for small scale heat and power generation from solid biomass in the range 200-2,5 MWe. Organic Rankine Cycle is a proven technology, that is at commercial scale since 1998, with over 130 applications distributed in Europe, mainly Germany Switzerland and Austria, and now spreading to Mediterranean countries and Eastern Europe. Fredric Dalimier, Xylowatt presented a new small scale gasification system based on the NOTAR® technology that completely destroys tars and leaves no solids in the combustion zone, thus improving significantly the efficiency and applicability of gasification at small scale and greatly reduces the operating and maintenance costs. The system is already applied in two gasification plants in Gedinne and Tournai. Roberto Farina ENEA gave an overview of the AD market and showed a prototype of a mobile modular digester pilot plant for feasibility studies and the optimization of biogas production in new plants with multiple feedstocks. This prototype can be used to make a rapid test of the suitability of different substrates, providing with an evaluation of the technical as well as the economic variables of AD systems.

The day concluded with NOVAMONT presenting their concept of an integrated biorefinery system with bioproducts, chemicals and energy. Novamont is currently producing Mater bi, a plastic material with lots of applications industry, from corn starch and is developing a new product, namely Origo-Bi based on a range of polymers derived from starch as well. They are aiming at developing a self sufficient renewable system to produce bioplastics, renewable energy and other chemicals.

Side Events:

Biosynergy Workshop, Room C3/4, 14:00-17:15

Joint workshop Eubionet III project and IEA Bioenergy Task 40 – Barriers and Opportunities for Bioenergy Trade Room C1/2, 15:00-17:30

Don't forget Sign up for Friday's technical tours!

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 17th EBCE can be contacted by email at maurizio.cocchi@etaflorence.it and eibhilin.manning@eubia.org