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EDITORIAL

This edition of the newsletter is being distributed to a greatly reduced number of 'hardcopy' recipients, thanks to those of you who have responded to our request to update our mailing list. If you would like to add names to the mailing list or change address details please send these, and any other comments or contributions to the Editor at the address given on the back page.

Due to the strong IEA Bioenergy presence at the 3rd European Motor Biofuels Forum taking place in October 1999, this edition has a focus on liquid biofuels, including information on the relevant IEA Bioenergy

Tasks. I am happy to say all the delegates attending this Forum will also receive a copy of this edition.

In keeping with the biofuel focus, I found the photograph below in the archives at the New Zealand Forest Research Institute. This was the pilot plant constructed in Rotorua in 1979 to produce ethanol from wood (30kg batch process). The system was based on dilute sulphuric acid hydrolysis to produce fermentable sugars, and included effluent treatment to produce methane. A colleague involved at that time recently commented to me "the chemistry has not changed

significantly, so if the plant was uneconomic with the high fossil fuel prices at that time, it is unlikely to be viable today". I questioned this logic, and discovered there are certainly different conditions today that would improve the viability of producing liquid fuels from wood. These include better construction materials, more advanced process controls, more efficient fermentation and greatly improved waste utilisation. I look forward to reporting such successes in these pages in the future.

Left: Ethanol pilot plant in Rotorua, New Zealand.



IEA Bioenergy News



Members of the Executive Committee receive a briefing in Svolvær, Norway.



From the Secretariat

43rd Meeting of the Executive Committee

The 43rd meeting of the Executive Committee was held at Svolvær, Norway on 26-28 May 1999, chaired by Josef Spitzer with John Tustin as Secretary. Some key points from the meeting were:

New Contracting Party

Australia signed the Implementing Agreement at the IEA Headquarters, Paris, on 16 March 1999 with Stephen Schuck and Associates Pty Ltd as the Contracting Party. Initial participation is in Task 17: Short Rotation Crops for Bioenergy. Dr Schuck is the Executive Committee Member.

IEA Bioenergy Strategic Plan

Following ExCo42 the IEA Bioenergy Strategic Plan for 1998-2002 was published and bulk copies were distributed to ExCo members in December, 1998. This document is available on the website or hard copies are available from the Secretary.

1998 Annual Report

The 1998 Annual Report was distributed in April 1999. It contains a special colour section on Greenhouse Gas Balances of Bioenergy Systems prepared by Task 25, Progress Reports by the Secretary and Task Leaders and other useful information including a reprint of the position paper The Role of Bioenergy in Greenhouse Gas Mitigation. The Annual Report is available on the website. The Secretary and Bernhard Schlamadinger (see Task 25 on the contact list) also have a limited supply of hard copies.

Prolongation of Tasks

Task XVI: Technology Assessment of Cellulosic Materials to Ethanol in Sweden and Task 22: Techno-economic Assessment of Bioenergy Applications were both prolonged to 31 December 2000.

3rd European Motor Biofuels Forum

A strong presence by IEA Bioenergy is planned for the 3rd European Motor Biofuels Forum to be held at the Palais des Congrès, Brussels, 10-13 October, 1999. There will be a discussion paper by the Chairman as well as presentations from a number of Tasks.



Below: Dr Josef Spitzer (left), Chairman of IEA Bioenergy congratulates Stephen Schuck of Australia. On the right is Ian Walker from IEA Headquarters.

Meeting between ExCo Members & Task Leaders

It was decided to arrange a meeting between ExCo members and Task Leaders at the 4th Biomass Conference of the Americas in Oakland, California, USA - 29 August - 2 September, 1999. The meeting will be held on 30 August at the Oakland Marriott City Centre.

New Annex Proposal

A new Annex Proposal: Socio-economic Aspects of Bioenergy Systems was proposed by Croatia. The aim of the new Task is to promote the use of biomass for energy over fossil-based competitive fuels by achieving a better understanding of the social and economic impacts of bioenergy systems at the local level. The ExCo agreed that this is an important aspect in the deployment of biofuels. Six countries indicated sufficient interest to be regarded as potential participants. A number of other countries wished to be kept informed. The next step is a workshop in Zagreb to finalise the Work Programme. Final decisions on Task participation will be taken at ExCo44 in Kyoto, Japan.

INTEGRATING ENERGY IN SUSTAINABLE FORESTRY

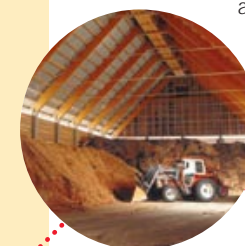
Guiding Principles and Best Management Practices

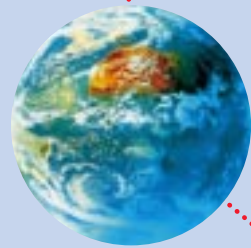
A primary output of Task 18 will be a publication that synthesises available ecological, physical, operational, social and economic information, and identifies gaps in knowledge related to biomass production and harvesting systems. The book will be organised around the criteria for sustainable forest management: productivity, environmental, social, economic, legal and institutional frameworks. The scale of resolution for the information will be primarily at the 'forest region' level. Site-specific data or case studies will be used to highlight important information or exceptions. An attempt will also be made to provide information or interpretations on general principles that span forest regions, such as effects of management on soil carbon. This Task output will also be useful for regional or global modelling applications.

Criteria for assessing forest management and harvesting systems for bioenergy and other forest products include:

- ▲ Productivity: ecosystem productivity and forest products, including biofuels
- ▲ Economic: system logistics and efficiency, biomass fuel cost, macro- and micro-economics, non-commodity values
- ▲ Environment: soil and water conservation, carbon balances, biodiversity, habitat
- ▲ Social: employment, culture, recreation, aesthetics
- ▲ Legal and institutional: taxation, energy and forest policy, environmental regulations

The publication will enable forest resource managers and planners to evaluate the ability of specific forest regions to sustainably meet bioenergy production demands. For some criteria, this process may require specifying scenarios and assumptions related to demands for bioenergy production capacity.





Task Reports

Task 18 Technical Notes

The first issue of this publication has been put together, including 3 technical notes on energy from the forest from Finland, Denmark and the Netherlands. It is available from the Editor: Barrie Hudson, Tel: +44 1467 651368, Fax +44 1467 651595, Email: barrie@fcauk.com.



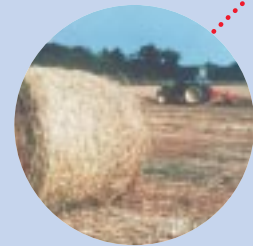
Task 19 Questionnaire

One of the activities in this Task has been the creation of a questionnaire to help develop an inventory of activities for modelling thermal biomass conversion processes. The aim is to get an overview of the ongoing activities and promote exchange of information and collaborations amongst different organisations. For more information contact the Task Leader (see back page).

Task 21 Progress

The activities of this pyrolysis Task are focussed on five subject groups:

- ▲ Analysis and Characterisation – this group held a workshop in April 1999. A state of the art review will be presented at the 4th Biomass Conference of the Americas.
- ▲ Health, Safety and Environmental – this group held a workshop in November 1998 which decided there is a need to define fast pyrolysis oils as a substance, and investigate how to notify this substance in terms of hazards and risks during manufacture, transport and use to meet regulations.
- ▲ Implementation – two workshops have been held to consider and overcome barriers to implementation. These have been developed into a prioritised list of barriers, together with recommendations for handling them.
- ▲ Science and fundamentals – a workshop in July 1998 was dominated by mathematical modelling and computer simulations. These papers are being peer reviewed and will be published by PyNe.
- ▲ Stabilisation and upgrading – this group held a workshop in April 1999. A review of physical and chemical methods for upgrading pyrolysis oils will be presented at the 4th Biomass Conference of the Americas.



Professor Jack Saddler (left) discusses the Task 26 website with John Tustin and Rina Siegenthaler.



Task 25 Special Issue

A special issue of Environmental Science and Policy (Vol 2 No 2) entitled Land Use, Land Use Change and Forestry in the Kyoto Protocol has recently been released. The Task 25 Leader, Bernhard Schlamadinger, is the Guest Editor of this issue, which includes several papers presented at a Task 25 Workshop plus other invited papers. It will be useful to negotiators trying to operationalise the Kyoto Protocol as well as Lead Authors of the IPCC Special Report on Land Use Change and Forestry.

Task 26 Newsletters

These are available from the IEA Bioenergy website or contact the Task Leader, Jack Saddler. The fourth issue of this Newsletter gives highlights of presentations and posters at the Ethanol From Cellulose conference held in November 1998. This Task is now discussing the potential of including further information on a Task website, associated with the IEA Bioenergy website.

Networking

CADDET Renewable Energy Centre

The CADDET Renewable Energy Centre has updated the Renewable Energy Register On-line. The 478 projects in the latest release include approximately 20 new projects, with many others updated. You can access the CADDET Register and Newsletter from the CADDET site at www.cadde-re.org

BIOBIB Biomass database

This database was installed at TU Vienna in the last few years. It is continuously updated and can be accessed at edv1.vt.tuwien.ac.at/biobib

GREENTIE

GREENTIE is part of the IEA Energy and Environmental Technologies Information Centre (EETIC) Implementing Agreement. The latest edition of its newsletter, GreenTimes, includes a profile on the Netherlands' plan to achieve its CO₂ emissions reduction target. This target includes a significant contribution from increasing the use of renewable energy, with 40% realised through the use of waste and biomass. GREENTIE can be found at www.greentie.org

US Office of Energy Research

The US Office of Energy Research website, www.er.doe.gov, contains information on Department of Energy laboratories and programmes, and also a useful science news section. One new item included is on Carbon Management and Sequestration, including a report "Carbon Management: Assessment of Fundamental Research Needs" which includes a section on biomass production and utilisation. The site also contains a draft working paper "Carbon Sequestration: State of the Science" and requests feedback.

Publications

A Guide to Fast Pyrolysis

A 6-page pullout guide to biomass fast pyrolysis is included with the March 1999 edition of the PyNe newsletter. For information contact: Nina Ahrendt, Aston University, Birmingham B4 7ET, UK.
Tel: +44 121 359 3611;
Fax: +44 121 359 6414/4904;
Email: ahrendtn@aston.ac.uk;
Website: www.pyne.co.uk/pyne.htm

Power Production from Biomass III – Gasification and Pyrolysis R&D&D for Industry

The proceedings of a seminar held in Espoo, Finland in September 1998, have just been published by VTT. It includes papers presented on current activities on power production from biomass and wastes in Europe and USA, as well as those detailing gasification demonstration projects in both countries. This publication is available from VTT Information Service, PO Box 2000, FIN-02044 VTT, Finland.
Tel: +358 9 456 4404; Fax: +358 9 456 4374.

VTT Research Notes

Two publications have been released in this series resulting from work conducted under the IEA Bioenergy 'Techno-economic Analysis' activity. For more information on either of these publications contact VTT (details above) or the current Leader of Task 22 (see back page):

Koljonen, T. et al. 1999. IGCC Power Plant integrated to a Finnish pulp and paper mill.

Solantausta, Y. et al. 1999. Feasibility studies on selected bioenergy concepts producing electricity, heat and liquid fuel.

Energy and Environment

LIOR has just released two new titles in its renewable energy series of CD-ROMs. These information resource tools, produced with the help of the European Commission, provide a wealth of information, complete with photos, drawings and animation. Technical and economic information

continued following page



Publications (cont.)

concerning Biomass Combustion and Gasification technologies can be found on the most recent release from the LIOR Collection. Examples of projects within Europe, supported by the European Commission, provide a detailed overview of how to set up and implement a biomass combustion plant. Version 2.0 of Biogas from Waste and Waste Water Treatment is also available now. For more information on these and other titles contact Bruce Douglas, LIOR, Panoramalaan 7, B-1560 Hoeilaart, Belgium. Tel: +32 2 305 1004; Fax: +32 2 657 7988; Email: info@lior.be; or visit the colourful website: www.lior.be

Review on Commercial Production of Biodiesel World-wide

This report was commissioned by the IEA and completed by BLT and ABI in Austria and published in 1998. It concentrates on the development of Biodiesel over a 15 year period in 28 countries. Motivational factors identified include security of supply, agricultural overproduction in Europe, and more recently environmental concerns and job creation. Rapeseed oil is still the most common raw material (over 80%), followed by sunflower oil (10%), and soybean oil (mostly USA). Over 85 production plants were identified, from pilot plants and small co-operatives, through to large industrial plants. Total production capacity rose from 75,000 tons in 1991 to over 1.2 million tons by 1996, but actual production was still less than 600,000 tons in 1996. Issues surrounding product quality, marketing and barriers are all identified.

For further information contact Werner Körbitz, Austrian Biofuels Institute – Professionals in Biodiesel, Graben 14-3, PO Box 97, A-1014 Vienna, Austria. Tel: +43 1 534 5633; Fax: +43 1 534 5638.

Finnish Energy Technology Programmes 1993-98

Tekes has just released a summary of eleven Energy Technology programmes, including several that are focussed on or related to bioenergy. For further information on this and other more detailed reports contact: Heikki Kotila, Tekes, PO Box 69, FIN-00101 Helsinki, Finland.

Tel: +358 105 2151; Fax: +358 9 694 9196; Email: heikki.kotila@tekes.fi, or visit the website: www.tekes.fi

Energy from Biomass – Research and Development in Austria

This brochure reports recent R&D activities on bioenergy carried out in Austria, and an extensive list of Austrian contacts. It provides an overview of current research issues and examples of technology implementation.

Contact: Michael.Paula@bmwf.gv.at or visit the website: www.bmwf.gv.at

New Renewable Energy – Norwegian Developments

Norway meets 50% of its energy demands with its hydropower resources. There is limited potential to increase this resource, so new renewable energy sources are under investigation. This booklet introduces these other renewables and presents national activities and developments.

Contact KanEnergi AS, Tel: +47 67 15 38 50, Fax: +47 67 15 02 50, Email: anenergi@kanenergi.no

Energy in Sweden 1998

This is the latest in the annual series of informative brochures from the Swedish National Energy Administration. It provides data and information on developments in the energy sector. Contact: stem@stem.se or visit the website: www.stem.se

IEA Bioenergy Task XIII Gasification reports

Two reports from a previous Task have recently been distributed:

The 'Gasification Feedstocks Database' was prepared by H Hofbauer et al at the Vienna University of Technology, Institute of Chemical Engineering, Getreidemarkt 9, A-1060 Vienna.

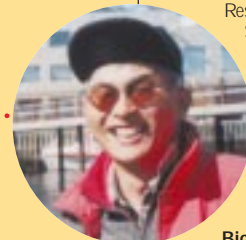
The second report 'Co-combustion of Natural Gas and Low Calorific Value Gas from Biomass' was prepared by M Fossum and R Beyer of SINTEF Energy Research, Trondheim, Norway, Tel: +47 73 59 72 00; Fax: +47 73 59 72 50; Website: www.energy.sintef.no

Calendar of Events

IEA Bioenergy Meetings

ExCo44 will be held in Kyoto, Japan, 10-12 November 1999. There will be a combined study tour on 10 November with Task 23. The last day for receipt of agenda material for posting by the Secretariat will be Tuesday 28 September 1999.

ExCo 44 will be hosted by Yoshitaka Tokushita (right) and Hiroshi Sano of NEDO.



ExCo45 will be hosted by NOVEM in Amsterdam, the Netherlands, 24-26 May, 2000.

Contact: John Tustin, IEA Bioenergy Secretariat

Task 17: The next meeting Alabama, USA, in the beginning of September 1999, will focus on lignocellulosic crops such as switchgrass, reed canary grass and others.

Task 18: Workshop and Study Tour: Integrating Production of Energy in Sustainable Forestry: Guiding Principles and Best Management Practices 19-25 September 1999, Charleston, South Carolina, USA.

Contact: Jim Richardson, IEA Bioenergy Task 18, 1876 Saunderson Drive, Ottawa, Ontario, Canada K1G 2C5. Tel: +1 613 521 1995, Fax: +1 613 521 1997; Email: jrichardson@on.aibn.com Web: http://www/forestresearch.co.nz/ieabioenergy/f_events.htm

Task 19: The next meeting will probably be organised in Oakland, CA, USA in September 1999.

Task 20 meetings:

▲ Mid October 1999, Quebec, Canada: Process Waste Treatment, Minimisation, and Disposal.

▲ End of March 2000, Netherlands: Biomass Gasification for the 21st century.

▲ Mid October 2000, UK: Biomass Gasification Fuel Gas Energy Conversion Systems.

Task 24 meetings:

▲ Barcelona, Spain, 13-14 June 1999, in conjunction with the International Symposium of Anaerobic Digestion of Solid Waste in Barcelona

▲ Switzerland, 29-30 November 1999.

Task 25 workshop: Bioenergy for mitigation of CO₂ emissions in the transportation and industrial sectors. Includes a session discussing the IPCC Special Report on Land Use, Land Use

Change and Forestry, 27-30 September 1999, Gatlinburg, Tennessee, USA.

Contact: Ms. Michaela Sixtl, Joanneum Research, Elisabethstrasse 5, A-8010 Graz, Austria. Tel: +43 316 876 1330, Fax: +43 316 876 1320; Email: michaela.sixtl@joanneum.ac.at

Task 26 workshop: Conversion of lignocellulosic material

22-26 August 1999, Itala Game Reserve, KwaZulu-Natal, South Africa.

Contact: IEA Workshop, PO Box 13073, Noordstad, Bloemfontein, 9305, South Africa.

Tel: +51 27 51 4307818; Fax: +51 27 51 4307837; Email: mariane@yebco.co.za

Biomass for Energy and Industry, 1st World Conference and Technology Exhibition

(A merger of the: European Biomass Conference and Technology Exhibition, 5th Biomass Conference of the Americas, Canadian Biomass Conference, being sponsored by IEA Bioenergy)

5-9 June 2000, Conference and Exhibition Centre, Sevilla, Spain.

Contact: Angela Grassi, EnergiaTA-Florence, Piazza Savonarola 10, I-50132 Firenze, Italy

Tel: +39 055 500 21 74; Fax +39 055 57 34 25; Email: eta.fi@etaflorence.it; Web: <http://www.etaflorence.it/sevilla.htm>

Other Meetings

Energy & Environment: Africa Development Conference

4-6 August 1999, Port Elizabeth, South Africa.

Contact: Ms. Michele du Preez, Faculty of Electrical Engineering, Port Elizabeth Technikon, Private Bag X6011, Port Elizabeth 6000, South Africa.

Tel: +27 41 504 3544; Fax: +27 21 531 864; Email: mdupreez@ml.petch.ac.za.

Alternative Fuel Vehicle Workshop

11-12 August 1999, Cocoa, Florida, USA.

Contact: Bill Young, Florida Solar Energy Center, 1679 Clearlake Road, Cocoa, FL 32922-5703. Tel: +1 407 638 1443; Fax: +1 407 638 1010; Web: <http://www.fsec.ucf.edu/~fscities/>.

4th Biomass Conference of the Americas:

Biomass: A Growth Opportunity in Green Energy and Value-Added Products 29 August - 2 September 1999, Oakland Marriott City Center, Oakland, California, USA.

Contact: Email: Webmaster@nrel.gov; Web: <http://www.nrel.gov/bioam/>

Energy from Waste

1-2 September 1999, London, UK.

Contact: ICM Conferences, 303 East Wacker Drive, 20th Floor, Chicago, IL 60601, USA. Tel: +1 312 540 3010;

Fax: +1 312 540 3015; Web: <http://www.icmconferences.com/>.

Renewable Energy – Advancing Technology for Industrialisation and Sustainable Development

4-10 September 1999, Brighton, UK.

Contact: Prof AAM Sayigh, WREN, World Renewable Energy Network, Reading, UK.

Tel: +44 1189 611 364; Fax: +44 1189 611 365; Email: asayigh@netcomuk.co.uk; Web: <http://www.wrenuk.co.uk>

4th International Congress on Energy, Environment and Technological Innovation

"Technological Innovation and Compatible Uses of Natural Resources"

20-24 September 1999, Rome, Italy.

Contact: EETI99, Università degli Studi di Roma "La Sapienza", Facoltà de Ingegneria, Via Eudossiana, 18-00184 Rome, Italy.

Tel: +39 6 44585764/44585524; Fax: +39 6 4883235;

E-mail: eeti99@minerva.ing.uniroma1.it; Web: <http://www.ing.ucv.ve/ceait/eeti.htm>

3rd Rebuild Conference – "The Cities of Tomorrow"

4-6 October 1999, Barcelona, Spain.

Contact: EnergiaTA-Florence, Alberto Douglas Scotti, Piazza Savonarola 10, I-50132 Firenze, Italy

Tel: +39 055 500 2174; Fax: +39 055 573 425; Email: eta.fi@etaflorence.it; Web: <http://www.etaflorence.it/barcelon.htm>

3rd European Motor Biofuels Forum

10-13 October 1999, Brussels, Belgium.

Contact: Mrs. B. Pullens-de Witt, Europoint BV, PO Box 822, 3700 AV ZEIST, The Netherlands.

Tel: +31 30 6933489; Fax: +31 30 6917394; Email: info@europoint-bv.com

Web: <http://www.europoint-bv.com/events/biofuel99/index.html>

14th International Symposium on Analytical and Applied Pyrolysis (Pyrolysis 2000)

2-6 April 2000, Seville, Spain.

Contact: F.J. Gonzalez-Vila, Vice Chairman, Instituto de Recursos Naturales y Agrobiología de Sevilla-CSIC, PO Box 1052, 41080-Seville, Spain.

Tel: +34 95 462 4711; Fax: +34 95 462 4002; Email: fjgon@irnase.csic.es; Web: <http://www.irnase.csic.es/py2000/index.html>

Progress in Thermochemical Biomass Conversion

21-26 May 2000, Innsbruck, Austria.

Contact: Tony Bridgwater or Nina Ahrendt, Aston University, Birmingham B4 7ET, UK.

Tel: +44 121 359 3611; Fax: +44 121 359 6414/4904; Email: a.v.bridgwater@aston.ac.uk or ahrendtn@aston.ac.uk; Web: <http://www.pyne.co.uk/PITBC2000/index.htm>

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Task 20: Thermal gasification of biomass
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Task 21: Pyrolysis of biomass
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Task 22: Techno-economic assessments
of bioenergy applications
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Task 23: Energy from thermal
conversion of MSW and RDF
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Task 24: Energy from biological
conversion of organic waste
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Task 25: Greenhouse gas balances
of bioenergy systems
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Task 26: Biotechnology for the conversion
of lignocellulosics to ethanol
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Task 27: Liquid biofuels
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Task 28: Solid biomass fuels
standardisation and classification
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