Nara Hotel, Japan
Image Courtesy: Koji Kobayashi

Bioenergy in Japan

Guest Editorial by Tadashi Kohno and Koji Kobayashi, ExCo Member and Alternate Member for Japan

Surrounded by the sea, Japan is an island nation, two-thirds of which are blanketed by beautiful forests, rivers and other natural features. Given their abundance, biomass and bioenergy have been important sources of energy throughout Japan's long history.

In contrast, modern, industrialised Japan is heavily dependent upon imported energy resources, including oil. Japan's energy self-sufficiency ratio was approximately 18% in 2008 and only about 7% excluding nuclear power. For this reason, addressing energy issues remains a national priority and raising energy self-sufficiency is an important medium- to long-term objective. To move Japan towards these objectives, the percentage of energy Japan derives from renewable sources is targeted to increase from approximately 6% in 2008 to 10% by 2020. Bioenergy is expected to contribute to the attainment of this target. Consistent with IEA Bioenergy's perspective, Japan believes the use of biomass is an effective way to reduce greenhouse gas emissions, mitigate climate change, improve energy security and stimulate rural economies.

Bioenergy, excluding black liquor and wood waste generated during the papermaking process, comprises more than 10% of the renewable energy produced in Japan. Biomass power generation, including waste power generation, accounts for more than half of Japan's bioenergy; the remainder is made up of thermal biomass conversion, including biofuel. In terms of biomass power generation, a little less than 60% is comprised of municipal waste power generation, approximately 20% from power generation within the papermaking industry (excluding the use of black liquor), and a small volume is made up of power generated from other biomass resources. Since the Special Measures Law Concerning the Use of New Energy by Electric Utilities (Renewable Portfolio Standard Law) came into force in 2003, the number of power plants using biomass, such as woody biomass, or co-combusting coal and biomass has been growing rapidly.

Approximately 30% of thermal biomass conversion is from municipal waste, with a little less than 20%, respectively, from scrap lumber and papermaking (excluding the use of black liquor).

Currently, Japan's transportation sector is nearly 100% dependent upon oil. Biofuel will play a prominent role in helping Japan attain its target of reducing dependency to 80% by 2030. Because expanding the use of biofuel is also important in terms of addressing climate change, a target to use 500 mega litres (oil equivalent) of biofuel in 2010 was set under Japan's Kyoto Protocol Target Achievement Plan.

To date, biofuel has not been widely used in Japan. However, studies and discussions on technical and policy matters have been conducted, and regulatory preparations including addressing quality standards and a taxation system have been carried out to bolster biofuel use on a broader scale. As a result of these efforts, biofuel use in Japan is set to expand. Japan's aim is to increase the use of biofuel to a level equivalent to 3% of gasoline consumption by 2020 and to the maximum extent possible by 2030. Although Japan is almost totally dependent on imported biofuel today, it is hoped that this will change as domestic biofuel production and develop-and-import schemes are promoted.

While promoting the production and use of biofuel, possible social and environmental impacts such as the reduction in GHG emissions throughout the lifecycle of biofuel, the effect on biodiversity, and competition with food production, must be considered. Biofuel sustainability standards are currently being developed in Japan. With sustainability in mind, developing technology to produce biofuel from cellulosic biomass resources that do not compete with food supplies is critical to advance biofuel use. Research and development is being carried out in Japan to commercialise such technologies between 2015 and 2020.

As the world population continues to expand, solving energy problems is a common global challenge. Japan will continue to promote bioenergy and contribute to global efforts to develop advanced technologies for the production and utilisation of bioenergy.

For more information, contact Tadashi Kohno at kohnotds@nedo.go.jp or Koji Kobayashi at kobayashikoj@nedo.go.jp

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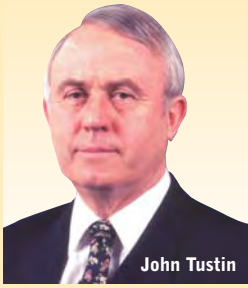
IEA Bioenergy News

IEA Bioenergy

Volume 22 • Number 1 June 2010

From the Secretariat


John Tustin

ExCo65, Nara City, Japan

The 65th meeting of the Executive Committee was held in Nara City, Japan on 12-14 May with Josef Spitzer as Chairman and John Tustin as Secretary. The meeting was hosted by the New Energy and Industrial Technology Development Organization (NEDO). The Chairman expressed the appreciation of the ExCo to Tadashi Kohno and Koji Kobayashi for the excellent meeting and study tour arrangements. Some of the outcomes of the meeting are detailed below.

New Contracting Parties

Turkey formally joined the agreement on 4 March 2010. The Contracting Party is the Tubitak Marmara Research Center Energy Institute. Turkey will participate in Tasks 32, 33, 37 and 42. Korea formally joined the Agreement on 7 May 2010. The Contracting Party is the Ministry of Knowledge Economy. Korea will participate in Task 39.

Changes in the Executive Committee

New Members are: Mr Soosung Hwang, Korea, Dr Asa Karlsson, Sweden; and Mr Ufuk Kayahan, Turkey. New Alternate Members are: Dr. Soon-Chul Park, Korea; Dr Thembakazi Mali, South Africa; Dr Bjorn Telenius, Sweden, Professor Fehmi Akgun, Turkey; Dr Don Stevens, USA and Dr David Baxter, European Commission.

Technical Coordinator

Adam Brown, the Technical Coordinator (TC) for more than three years, has resigned to take up a position in the Renewable Energy Division at IEA Headquarters. Part of his new role will be to lead and coordinate IEA's activities on bioenergy and to ensure good liaison with the Implementing Agreements. At ExCo65 the Chairman made a presentation and thanked Adam for his energy and professionalism in developing the TC role.

Given the success of the TC position within IEA Bioenergy it was decided to replace Brown immediately. A call for applications and an evaluation process led to Dr Arthur Wellinger being appointed the new TC from 1 May 2010. Both Adam and Arthur are working to achieve a smooth transition.

Art Wellinger the new Technical Coordinator (left) with Adam Brown.

ExCo65 Workshop

A very successful workshop on 'Developing Sustainable Trade in Bioenergy' was well attended by ExCo Members, Task Leaders, and Observers from Japan. The workshop presentations are listed below:

- Overview of World Bioenergy Trade: IEA Bioenergy Task 40 – Ir Kees Kwant, Operating Agent for Task 40, NL Agency, the Netherlands
- Overview of Market Development in Asia – Mr Shigeru Kimura, The Institute of Energy Economics, Japan
- Australian Pellet Export Outlook – Mr David Smith, Willmott Forests, Australia
- Wood Pellet Production – Dr Ken'ichiro Kojima, Executive Director, Pellet Club Japan, Japan
- Ethanol Trading Flow in East and South-East Asia – Mr Shigeru Takemura, Ginga Petroleum (S) Pte Ltd, Singapore
- Palm Oil as Feedstock for Biodiesel: Production and Exports from Malaysia – Dr Puah Chiew Wei, Malaysian Palm Oil Board, Malaysia
- Sustainable Biomass Utilisation in East Asia – Dr Tomoko Konishi, National Institute of Advanced Industrial Science and Technology, Japan
- Scientific Needs and Market Impacts of Securing Sustainability of Bioenergy – Dr Andre Faaij, Leader of Task 40, Copernicus Institute, Utrecht University, the Netherlands.

For more detail please visit http://www.ieabioenergy.com/DocSet.aspx?id=6568

ExCo66 Workshop

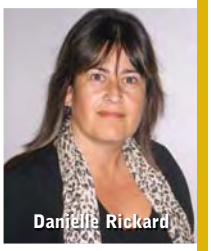
The theme for the next workshop will be 'thermal pre-treatment of biomass for large-scale applications'. It will include pyrolysis and gasification, torrefaction, transportation, biomass logistics, increase in energy density and system analysis. The workshop committee is Art Wellinger (Convenor), Don Stevens, Pat Howes, Andre Faaij, Kieran Power and Birger Kerckow.

Progress with Current Initiatives

- *New Strategic Plan.* The Strategic Plan 2010-2016 has been printed and distributed.
- *'Bioenergy – a Sustainable and Reliable Energy Source. A review of status and prospects – Main Report'* has been printed and distributed.
- *Algae – The Future for Bioenergy? (ExCo64 Workshop):* The presentations are available on the website and the 'summary and conclusions' publication has been printed and distributed.
- *Handbook of Pellet Production and Utilisation.* Production is on schedule with printing of the handbook planned for July 2010. See pages 4 and 6 for more information.
- *Report on Bioenergy and Land Use Change.* Two reports are being prepared by Goran Berndes – one for policy makers and another for the scientific community. Good progress was reported at ExCo65.
- *LCA strategic paper.* A final draft has been produced for review by the ExCo subgroup prior to seeking ExCo approval.
- *Collaboration with RETD.* The joint project on 'Better Use of Biomass for Energy' produced a position paper for a side event at COP15. A more detailed background report is being finalised.
- *Collaboration with GBEP:* An exchange of letters setting up a formal relationship with GBEP is now in place. This will facilitate collaboration on a wide front from linking websites and exchanging newsletter material to specific cooperation in support of the GBEP's taskforces.

For more information on the publications listed above please see page 6.

Newsletter Editor


Danielle Rickard

Niki Carling, the Editor since June 2001, has decided to 'move on' after eight years in this role. Her friendly but professional approach and ability to meet deadlines was certainly appreciated by all of those who worked with her in this capacity. The ExCo expressed its appreciation of her long and loyal service.

Danielle Rickard is the new Editor. Her contact details can be found on the back page.

New Annex Documents

The Annex documents for the 2010-2012 triennium have been finalised and approved. These now form part of the formal Implementing Agreement text. The full list and their titles are:

- Annex 29: Socio-economic Drivers in Implementing Bioenergy Projects
- Annex 32: Biomass Combustion and Co-firing
- Annex 33: Thermal Gasification of Biomass
- Annex 34: Pyrolysis of Biomass
- Annex 36: Integrating Energy Recovery into Solid Waste Management
- Annex 37: Energy from Biogas
- Annex 38: Greenhouse Gas Balances of Biomass and Bioenergy Systems
- Annex 39: Commercialising Liquid Biofuels from Biomass
- Annex 40: Sustainable International Bioenergy Trade: Securing Supply and Demand
- Annex 41: Bioenergy Systems Analysis
- Annex 42: Biorefineries: Co-production of Fuels, Chemicals, Power and Materials from Biomass
- Annex 43: Biomass Feedstocks for Energy Markets

Format of ExCo Meetings

A survey of Members on the format for ExCo meetings produced an excellent response (91%). The conclusions were that 'Day 1' should be a full day workshop; 'Day 2' should be the business meeting and if necessary continued on the first half of 'Day 3'. 'Day 3' should include a study tour which, depending on the plan for the business meeting, would be either a half day or a full day. The Chairman and the host ExCo Member should work together to decide the strategy for each ExCo meeting at an early stage.

ExCo65 Study Tour


The Kyoto City No.1 Plant

In conjunction with ExCo65, a total of 33 attendees participated in the study tour to the South Clean Centre in Kyoto. The theme was 'waste management and the processing of waste biomass'. The tour comprised three technical stops:

South Clean Centre, Kyoto City No. 1 Plant: The group was welcomed by Mr Takada, Head of Nan-bu Clean Centre and his managers who made a series of presentations. Kyoto City No. 1 Plant is a large, continuous, waste combustion plant built in 1986 and recently upgraded. The incineration capacity is 600 tons per 24 hours to produce 8,800 kW of electricity. The plant has a number of pollution prevention features with respect to air pollution, odours, waste-water treatment, and control of dioxins and precious metals. Bottom ash is mixed with flue ash and taken to landfill. The plant also demonstrates effective use of waste heat and advanced operational control and monitoring from a central control room.

Kyoto Pilot Plant for Anaerobic Digestion: The plant was built as part of the Kyoto Biocycle Project to demonstrate anaerobic digestion via the Kompogas process based on hotel garbage, yard waste, vegetable market waste, and waste paper. The plant was commissioned in 1999 to produce 50 kW of electricity and compost.

Kyoto Municipal Waste Edible Oil Fuel Production Facility: This plant has been operating since June 2004 and produces 5,000 litres of biodiesel fuel per day. The waste edible oil feedstock (1.5 million litres per year) comes from households, cafeterias, restaurants, and hotels. It is collected monthly by placing polyethylene tanks at recovery points with the cooperation of the Regional Waste Reduction Promotion Committees established in each district. The waste oil is refined to produce environmentally friendly biodiesel fuel which is currently used by 170 waste collecting vehicles and 95 municipal buses. The project reduces carbon dioxide emissions by approximately 4,000 tons per year.

The last stop was at Hōryū-ji Temple, a UNESCO World Heritage site. The temple's pagoda, built with lumber dating back to 594, is thought to be one of the oldest wooden structures in the world. In total, the 187,000 m^2 complex contains over 2300 important cultural and historical structures and articles, many of which have been designated as National Treasures or Important Cultural Properties. In December 1993, Hōryū-ji, as a unique store house of world Buddhist culture since the 7th century, became the first Treasure in Japan to be selected as part of the World Heritage. This stop was a most interesting finale to the study tour.


The Study Tour Group at Hōryū-ji Temple

Task Focus

Task 32 leader Jaap Koppejan

Task 32: Biomass Combustion and Co-firing

Biomass combustion is the most widely applied bioenergy technology worldwide. Nevertheless, there is a continuous drive to further increase efficiency and fuel flexibility while at the same time reducing emissions and costs. In the past triennium, 2007-2009, Task 32 has implemented a number of specific actions targeting these challenges. Some of the key outcomes are highlighted below.

Aerosols from Biomass Combustion

Probably the most important issue in small-scale biomass combustion relates to the formation of aerosols, so two workshops and a specific study were focussed on this issue. Aerosols originating from biomass combustion devices are a major contributor to ambient aerosol concentrations in some countries. This is largely due to inefficient, small-scale combustion devices. More efficient, high quality stoves emit fewer aerosols and also have less impact on health.

As a basis for setting priorities and as a guideline for future regulations, the Task undertook a survey of emission factors from residential wood combustion devices within the participating countries. This yielded huge differences – from less than 20 mg/MJ under ideal conditions up to more than 5,000 mg/MJ under poor conditions. Important causes of high emissions were:

- inappropriate operation by the user to establish part load operation, such as smouldering at reduced load and at throttled air supply; and
- inappropriate ignition methods. Ignition from the top enables a reduction of 50% to 80% of the PM emissions, in comparison to ignition of the whole batch from the bottom.

Significant reductions in aerosol emissions can therefore be achieved by user education, and also by introducing new technologies such as downdraft combustion and electronic combustion control devices. The total PM emissions of automatic furnaces is far lower than for manual wood stoves and boilers, and mainly limited by inorganic fuel constituents and the presence of flue gas cleaning devices. A number of companies have recently started to develop small-scale electrostatic precipitators. It is expected that these will become commercially available within the next few years. In order to realise the associated social benefits, it is also important that users are encouraged to make the additional investment, either by setting more stringent emission limits and/or financial incentives. In the next triennium, the Task will pay particular attention to this development.

Finally, different PM measurement standards give different results. For example, the hot filter measurement standard excludes most of the organic condensables which are highly toxic. It is therefore recommended to use emission data including condensable PM in test standards.

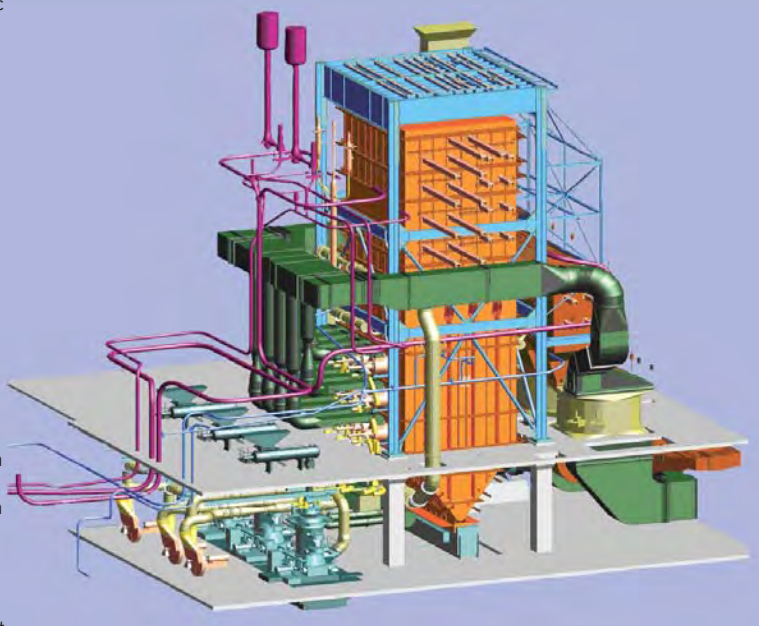
Biomass Co-firing

Co-firing biomass residues with coal in traditional coal-fired boilers for electricity production often represents a very cost-effective and efficient renewable energy and climate change technology. It has increased over the past decade from roughly 1-10% of energy input, to well over 20%. In general, it is believed that firing 40-50% of relatively clean biomass by direct injection should be possible in typical pulverised fuel-fired units on a continuous basis. In some specific pulverised coal-fired installations, even 100% conversion from coal-to-wood pellets has been demonstrated.

Worldwide, about two-thirds of coal consumption is for power generation, and the demand for coal is rapidly increasing – particularly in developing Asian countries. The implementation of biomass co-firing schemes is therefore spreading across the globe. According to an update of the Task co-firing database, at least 234 coal-fired power plants now have experience with co-firing biomass with coal. Two position papers from the Task describe the current state-of- the-art, as well as the outlook for co-firing.

Much is expected from upcoming pre-treatment technologies such as torrefaction, since it greatly simplifies biomass fuel handling, storage and grinding. In 2010, the first commercial torrefaction plants with capacities of 50-75 ktons/year will start delivering torrefied fuel to coal-fired power plants. This may significantly accelerate the pace at which biomass co-firing is developing.

If not properly done, biomass co-firing may lead to several operational problems in the coal-fired power plant, such as milling problems, slagging, fouling and corrosion, SCR deactivation, ESP performance degradation, and ash utilisation issues. In 2007 to 2009, the Task implemented specific workshops, position papers, and studies on slagging, fouling and corrosion, and SCR deactivation in biomass co-firing. In 2010 to 2012, this will be expanded with new studies on ash utilisation issues, health and safety aspects, and torrefaction. Interaction with industry will be further enhanced through collaboration with the biomass group of VGB Powertech.



The Amager Unit 1 in Copenhagen is a good example of a new pulverised coal-power unit where biomass co-firing is maximised (Courtesy Vattenfall, Denmark)

International Pellet Handbook

Another key outcome was production of a book titled 'The Pellet Handbook: The Production and Thermal Utilization of Biomass Pellets'. It is the first comprehensive guide in English which covers all aspects of pellets including the following topics:

- International overview of standards for pellets.
- Evaluation of raw materials and raw material potentials.
- Quality and properties of pellets.
- Technical evaluation of the pellet production process and logistic aspects of pellet supply.
- Safety and health aspects for pellets during storage, handling and transportation.
- Technological evaluation of pellet furnace technologies and future developments.
- Economic and ecological evaluation of the pellet production process.
- Economic and ecological evaluation of pellet use in small-scale furnaces in the residential sector.
- Overview of international pellet markets and market developments.
- International case studies for the use of pellets for energy generation in small, medium, and large-scale applications.
- The latest research and development trends in the pellets sector.

The book is extensively illustrated and contains comprehensive practical information. It addresses all of the major stakeholders in the pellet market, ranging from raw material producers and suppliers, pellet producers and traders, manufacturers of pellet furnaces and pelletisation systems, installers, engineering companies, energy consultants, and end users.

The handbook was written by experts within the Task, and with significant input from Tasks 29, 31 and 40; and external experts. Financial support was received from the IEA Bioenergy strategic fund, and the Austrian organisations Landesenergieverein Steiermark and BIOS Bioenergysysteme GmbH. It was edited by Ingwald Obernberger and Gerold Thek of BIOS Bioenergysysteme GmbH and can be ordered from Earthscan, see http://www.earthscan.co.uk/?tabid=102497.

For more information on Task 32 please visit their website: www.ieabioenergytask32.com

Notice Board

Obituary – Mr Lawrence Russo, Jr.

We are saddened to report the sudden passing of Lawrence (Larry) Russo. Born in Somerville and raised in Peapack-Gladstone, New Jersey, Larry received his bachelors degree in chemical engineering from the University of Dayton and his masters degree from Indiana University. For nearly 30 years, he was involved in biomass conversion and bioenergy and had a number of patents, awards, and publications relating to biofuels – especially ethanol.

In the late 80s and early 90s, Larry was director of research at New Energy Corporation, one of the pioneer corn-to-ethanol companies. Their research focused on corn fibre-to-ethanol at the pilot scale. Larry left New Energy and joined Masada Resources Group, one of the most significant cellulosic ethanol companies of its time. There he led demonstration engineering efforts at the Tennessee Valley Authority's concentrated acid hydrolysis pilot plant in Muscle Shoals. After leaving Masada, Larry formed an independent consulting company supporting the ethanol industry. His consulting activities included everything from feasibility studies to stewarding new operations through the start-up phase.

Larry joined DOE's Biomass Program in January 2004. He was closely interested in deployment and organised workshops that pulled together the financial community, fuel developers, other stakeholders, and DOE to learn what might have been done differently to make some of the early commercial ventures more successful. Larry was extremely well known within the ethanol community and was routinely contacted by key stakeholders for valued advice. In his latter years he was a respected member of the Integrated Biorefinery Team and helped manage some of the Biomass Program's largest investments.

Larry served as the USA Executive Committee Member from 2005 to 2007. He provided valuable leadership and experience in this capacity serving on various ExCo committees. He organised an enlightening ExCo59 meeting in Golden, Colorado which included a study tour of NREL's biomass conversion and biorefinery programmes.

Larry died from a heart attack on 20 March 2010 at the age of 54. He will be sorely missed by a large community of friends and colleagues, but he leaves behind a lasting legacy in the bioenergy industry he helped build.

Maniatis awarded Johannes Linneborn Prize

Kyriakos Maniatis was awarded the Johannes Linneborn Prize for achievements in biomass development at the 18th European Biomass Conference held in Lyon recently. The award was recognition of his leadership in promoting biomass as a sustainable energy source within the European Union and worldwide.

Kyriakos is currently Principal Administrator, Directorate General for Energy, at the European Commission. He manages the bioenergy demonstration part of the European Commission Framework Programmes and is responsible for all technical issues related to 1st and 2nd generation biofuels. He has also been responsible for the demonstration component of the sectors of biofuels and poly-generation in the Commission's 7th Framework Programme. He initiated the CEN standardisation work for solid biomass fuels, solid recovered fuels, bioethanol, biodiesel, and biomethane and led the EU team to the tripartite work on International Compatible Biofuels Standards with USA and Brazil.

Kyriakos has represented the European Commission as the Member on the IEA Bioenergy Executive Committee for the last 15 years and has served as Chairman in 2002 and from 2005-2007. We all congratulate Kyriakos on this prestigious award.

Berndes awarded the Nordic Bioenergy Prize

Göran Berndes, Leader of Task 43, was awarded the Nordic Council of Ministers' Bioenergy prize by the Swedish Minister of the Environment, at the recent Swedish Energy Convention in Stockholm. The prize is for an outstanding contribution to the promotion, use, or production of bioenergy. It recognised Goran's research into large-scale bioenergy development and land use, and his focus on how biomass can be used to reduce the energy system's carbon footprint.

The adjudication committee said 'Berndes has shown an extensive international commitment, both as a researcher and an adviser. In all contexts he has worked to show how the Nordic model of large-scale cost-effective bioenergy can be reconciled with the highest aspirations of both environmental and socio-economic objectives'.

We all congratulate Goran on this well-earned prize.

Task 37

Task 37 completed its 2007-2009 programme with a final meeting at IFA Tulln, Austria, in October. The meeting was held in conjunction with a workshop 'Biogas Upgrading to Biomethane', which focussed on the latest technology developments. At the meeting a major brochure 'Biogas from Energy Crop Digestion' was launched (www.iea-biogas.net). Final discussions were also held on another brochure 'Utilisation of Digestate from Biogas Plants as Biofertiliser' which will be published in 2010.

The 2010-2012 work programme will include a major focus on sustainability issues, both from environmental and economic perspectives. Studies in two participating countries have highlighted the main emissions challenges to be addressed – methane losses at various stages of biogas production and the cleaning process chain. The Task will independently assess the findings in the studies, as well as available methods for emissions measurement to provide guidance to both operators and authorities on emissions management procedures. Work will also be extended on digestate processing and will continue to assess different feedstocks and their pre-treatments. With the growing trend towards upgrading of biogas to biomethane and its use as a fuel, developments in upgrading technologies will be followed as well as the challenges facing biomethane producers when injecting into natural gas pipelines. Process optimisation is seen as a significant component enabling reductions in both investment and operating costs.

Task 33

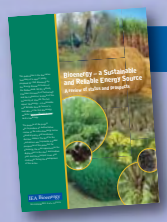
The May Task 33 meeting, including a Task 39 representative, was held in Helsinki and hosted by VTT. It was organised in three parts: a Task meeting where updates on biomass gasification activities in Member Countries were presented; a workshop on 'Advanced Biofuels Technologies via Biomass Gasification'; and a study tour at VTT.

At the meeting detailed presentations on gasification activities were given by Finland, Germany, Turkey, New Zealand, and Switzerland; and brief updates were given by Austria, the Netherlands, Japan, and the USA. It was agreed to improve the quality of the Task website by including a biomass gasification overview and a GIS database of ongoing projects in participating countries. The workshop presentations covered projects in Finland (Stora Enso and Carbona Andritz); liquid transportation fuels in Finland; SNG development in Switzerland; biosyngas and bioenergy carbon capture and storage in the Netherlands; hydrogen/SNG development in Austria; BTL simulation studies in Turkey; and a detailed analysis of mixed alcohols via entrained gasification. The VTT facility tour highlights included their gasification and pyrolysis facilities, and SOFC fuel cell testing.

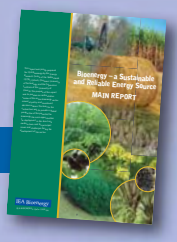
Copies of the presentations made at the meeting will be available on the Task website (www.gastechnology.org/iea)

Task 33 Study Tour Group

Publications



Bioenergy - a Sustainable and Reliable Energy Source. A review of status and prospects



These publications are the Main Report and the Executive Summary jointly prepared by the Energy Research Centre of The Netherlands, E4tech, Chalmers University of Technology and the Copernicus Institute of the University of Utrecht. They provide an overview of the potential for bioenergy and the challenges associated with its increased deployment. Opportunities and risks in relation to resources, technologies, practices, markets and policy are all discussed. The aim is to provide insights into the opportunities and required actions for the development of a sustainable bioenergy industry. Both publications can be downloaded at: //www.ieabioenergy.com/Library.aspx

2009 IEA Bioenergy Annual Report

The 2009 Annual Report contains a report from the Executive Committee and a detailed progress report on each of the Tasks. Also included is key information such as Task participation, Contracting Parties, budget tables and substantial contact information plus lists of reports and papers produced by the Implementing Agreement. The Annual Report is available on the IEA Bioenergy website at: //www.ieabioenergy.com/DocSet.aspx?id=6506&ret=lib

Algae - the Future for Bioenergy?

The summary and conclusions from the workshop held in conjunction with ExCo64 in Liege, Belgium in October 2009 have been published and are available to download at: //www.ieabioenergy.com/DocSet.aspx?id=6436

IEA Bioenergy Strategic Plan 2010-2016

This is the fourth IEA Bioenergy Strategic Plan. The drivers of this new plan include security of energy supply, greenhouse gas mitigation, sustainable non-food biomass resources, large-scale deployment, and the strategic role of IEA Bioenergy. The plan includes background material on the Implementing Agreement, the Vision, Mission and Strategy statements and detailed objectives and actions. It also includes a section on 'requirements for success'. Download a copy of the plan at:: //www.ieabioenergy.com/Library.aspx

Bioenergy - the impact of indirect land use change

The summary and conclusions from the workshop held in conjunction with ExCo63 in Rotterdam, the Netherlands in May 2009 have been published and are available to download at: //www.ieabioenergy.com/DocSet.aspx?id=6214

Biorefineries: adding value to the sustainable utilisation of biomass

This publication provides an overview of the work of Task 42. It illustrates the developments in sustainable production for commercial, and close to commercialisation, energy carriers and co-products developed from biomass using biorefineries. Download a copy at: //www.ieabioenergy.com/Library.aspx

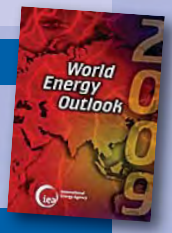
The Pellet Handbook: The Production and Thermal Utilization of Pellets

This handbook produced by Task 32, is the first comprehensive guide in English which covers all aspects of pellets. The book is extensively illustrated and contains comprehensive practical information. It addresses all of the major stakeholders in the pellet market, ranging from raw material producers and suppliers, pellet producers and traders, manufacturers of pellet furnaces and pelletisation systems, installers, engineering companies, energy consultants, and end users. The handbook was written by experts within Task 32, and with significant input from Tasks 29, 31 and 40; and external experts. Financial support was received from IEA Bioenergy and the Austrian organisations Landesenergieverein Steiermark and BIOS Bioenergysysteme GmbH. It was edited by Ingwald Obernberger and Gerold Thek of BIOS Bioenergysysteme GmbH and can be ordered from Earthscan, see //www.earthscan.co.uk/?tabid=102497.

Energy Technology Initiatives: Implementation through Multilateral Co-operation

This new IEA publication highlights the most significant recent achievements of the 42 IEA Implementing Agreements. Through its broad range of multilateral technology initiatives (Implementing Agreements), the IEA helps support member and non-member countries, businesses, industries, international organisations and non-government organisations to share research on breakthrough technologies, to fill existing research gaps, to build pilot plants and to carry out deployment or demonstration programmes. Download this publication at: //www.iea.org/papers/2010/technology_initiatives.pdf

World Energy Outlook 2009



The 2009 edition of the Energy Outlook provides updated projections that take into account the implications of the global credit crisis, the economic slowdown and the recent slump in the prices of oil and other forms of energy. It also presents in-depth analysis of three special topics: financing energy investment under a post-2012 climate framework; prospects for global natural gas markets and energy trends in Southeast Asia. Order a copy from the IEA Online Bookshop at: //www.iea.org/w/bookshop/b.aspx?new=10

CO_2 Emissions from Fuel Combustion

In recognition of fundamental changes in the way governments approach energy-related environmental issues, the IEA has prepared this publication on CO_2 emissions from fuel combustion. The data in the book are designed to assist in understanding the evolution of the emissions of CO_2 from 1971 to 2007 for more than 140 countries and regions by sector and by fuel. Emissions were calculated using IEA energy databases and the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories. Order a copy from the IEA Online Bookshop at: //www.iea.org/w/bookshop/b.aspx?new=10

Renewables Information 2009

This reference document brings together statistics on renewable and waste energy sources into a foundation for policy and market analysis. It includes an overview of the development of renewables and waste in the world in the period 1990 to 2007; a corresponding statistical overview of developments in the world and OECD renewables and waste market; and a detailed picture of developments for renewable and waste energy sources for each of the 30 OECD member countries. Download this publication at: //www.iea.org/publications/free_new_Desc.asp?PUBS_ID=2037

IEA Bioenergy Events

Executive Committee

ExCo66 will be held in York, UK from 12-14 October 2010. The first day of the meeting will be a workshop with the theme 'thermal pre-treatment of biomass for large-scale applications', followed by the business session and a half-day study tour.

ExCo67 will be held in Finland in May 2011.

ExCo68 will be held in Australia in October 2011.

ExCo69 will be held in Turkey in May 2012.

Task Events

Task 29 will hold an expert meeting and workshop in Germany in October to examine technology diffusion methods and interlinking social dimensions. Dates to be advised.

Task 32's schedule of upcoming meetings is:
- 7-8 October 2010, Copenhagen, Denmark: Task meeting and a joint expert workshop with Task 33 'gasification and combustion-based power generation'. Date to be confirmed.
- 27 January 2011, Graz, Austria: A workshop on 'Fine particulate emissions from small-scale biomass furnaces'. In conjunction with the Central European Biomass Conference.
- 28 January 2011, Graz, Austria: A workshop on 'Biomass torrefaction' in conjunction with Task 40 at the Central European Biomass Conference.
- September/October 2011, Ireland: A workshop on 'RDF processing options' in conjunction with Task 36. Dates and location to be confirmed.

Task 33 will hold a meeting on 5-7 October in Copenhagen, Denmark. It will also include a joint workshop with Task 32 on small-scale CHP, and a possible tour of the Skive CHP plant.

Task 34's schedule of upcoming meetings is:
- 21-23 September 2010, Ames, Iowa, USA: Partial Task meeting in conjunction with the TC Conversion Science Symposium.
- October 2010, Hamburg, Germany: Task meeting and a technical visit to vTI, plus a review of round robin progress. Dates to be confirmed.
- April 2011, Birmingham, UK: Task meeting and a technical visit to Aston University. Dates to be confirmed.
- September 2011, Richland, Washington, USA: Task meeting and a technical visit to PNNL. Dates to be confirmed.
- May 2012, Ottawa, Canada: Task meeting and a technical visit to CanMet (NRCan). Dates to be confirmed.
- October 2012: Task meeting and final reports. Dates and location to be confirmed.

Task 36 is planning a Task meeting and workshop in Rome, Italy on 17-19 November 2010.

Task 37's schedule of upcoming meetings is:
- 3-5 November 2010, Den Bosch, the Netherlands: Task business meeting, including a one-day technical workshop focussed on factors to be taken into account for the introduction of biogas into a local economy (provincial level), addressing the inter-related factors of new sources of renewable energy, connections to grids (electricity and gas), local economy and emissions.
- April 2011, Istanbul/Gebze, Turkey. Task meeting and workshop. Dates and location to be confirmed.
- September 2011, Cork, Ireland: Task meeting and workshop. Dates and location to be confirmed.

Task 38's schedule of upcoming meetings is:
- October 2010: Task expert meeting in conjunction with the 'Graz Group'. Dates and location to be confirmed.
- March/April 2011: Task expert meeting in conjunction with the 'Graz Group'. Dates and location to be confirmed.
- October 2011, Campinas, Brazil. Task meeting followed by a joint workshop with Tasks 40 and 43 on 'Bioenergy and land use change'. Dates to be confirmed.

Task 39's schedule of upcoming meetings is:
- 9-10 December 2010, Sydney, Australia: Task meeting in conjunction with the 'Bioenergy Australia' Conference.
- 2-5 May 2011, Seattle, USA: Planning – a special session at the 33rd Symposium on Biotechnology for Fuels and Chemicals.
- June 2011, Campinas, Brazil: A Task technical workshop at the Brazil Ethanol Summit. Dates to be confirmed.
- September 2011, Graz, Austria: A policy and implementation workshop. Dates to be confirmed.
- May 2012, Copenhagen, Denmark: A Technical workshop. Dates to be confirmed.
- August 2012 Vancouver, Canada: A planning meeting and technical conference. Dates to be confirmed.

Task 40's schedule of upcoming meetings is:
- 19-20 October 2010. Task meeting followed by a joint workshop with EUBIONETIII on 21 October 2010. Location to be confirmed.
- 25-26 January 2011, Graz, Austria. Task meeting followed by a joint workshop with Task 32 at the Central European Biomass Conference.
- October 2011, Campinas, Brazil. Task meeting followed by a joint workshop with Tasks 38 and 43 on 'Bioenergy and land use change'. Dates to be confirmed.

Task 42's schedule of upcoming meetings is:
- October/November 2010: Chicago, USA: Task meeting to be organised by DOE; including a USA stakeholder meeting and site visits. Dates to be confirmed.
- 1st half of 2011, Italy: Task meeting to be organised by ENEA; including an Italian stakeholder meeting and site visits. Dates and location to be confirmed.
- 2nd half of 2011, Australia: Task meeting to be organised by APPI; including an Australian stakeholder meeting and site visits. Dates and location to be confirmed.
- 1st half of 2012, Denmark: Task meeting to be organised by the University of Copenhagen; including a Danish stakeholder meeting and site visits. The meeting may also include a joint event with Task 39. Dates and location to be confirmed.
- 2nd half of 2012, Canada or the Netherlands: Task meeting to be organised by Canmet/Alberta or WUR; including a stakeholder meeting and site visits. Dates and location to be confirmed.

Task 43's schedule of upcoming meetings is:
- 5-6 July 2010, Paris, France: A joint workshop 'Spotlight on water and bioenergy' with UNEP and the Oeko Institute.
- October/November 2010, Graz, Austria: A joint expert workshop with Task 38 on 'Bioenergy and land use change' focussing on methodology in relation to timing of emissions. Dates to be confirmed.
- October 2011, Campinas, Brazil: A joint workshop with Tasks 38 and 40 on 'Bioenergy and land use change'. Dates to be confirmed.

OTHER EVENTS

ABIC 2010: Bridging Biology and Business
12-15 September 2010, Saskatoon, Canada
Email: abic2010@agwest.sk.ca
Web: //www.abic.ca/abic2010/

21st World Energy Congress
12-16 September 2010, Montreal, Canada
Tel: +44 20 7734 5996
Fax: +44 20 7734 5926
Email: info@worldenergy.org

FAME 2010
Summit and Exhibition - Defining the Future Biofuel Market
13-14 September 2010, Berlin, Germany
Contact: Derek Michalski
Email: dm@greenworldconferences.com
Web: //greenworldconferences.com/fame.html

Bioten Conference
21 - 23 September 2010, Birmingham, UK
Contact: Catherine Manhood
Tel: +44 121 204 3420
Email: c.a.manhood@aston.ac.uk
Web: //www.bioten.co.uk

World Renewable Energy Congress XI and Exhibition 2010
25-30 September 2010, Abu Dhabi, United Arab Emirates
Web: //www.wrenuk.co.uk/wrecxi.html

RENEXPO 2010
07-10 October 2010, Augsburg, Germany
Web: //www.renexpo.com

Renewable Energy World Asia
2-4 November 2010, Singapore
Contact: Amy Nash
Tel: +44 1992 656 621
Fax: +44 1992 656 735
Email: amyn@pennwell.com
Web: //www.renexpo.com

Energy Now Expo 2010
17-18 February 2010, Malvern, UK
Contact: David Jacobmeyer
Tel: +44 1905 429018
Email: david@energy-now.co.uk
Web: //www.renewableenergyworld-asia.com/index.html

RenewableUK 2010 Annual Conference
02-04 November 2010, Glasgow, UK
Web: //www.renewable-uk.com/events/annual-conference/index.html

Venice 2010 - Third International Symposium on Energy from Biomass and Waste
08- 11 November 2010, Venice, Italy
Web: //www.venicesymposium.it

Bioenergy Australia 2010
8 – 10 December 2010, Sydney, Australia
Email: sschuck@bigpond.net.au
Web: //www.bioenergyaustralia.org

Central European Biomass Conference 2011
26-29 January 2011, Graz, Austria
Tel: +43 1 533 09790
Email: office@biomasseverband.at
Web: //www.biomasseverband.at

33rd Symposium on Biotechnology for Fuels and Chemicals
2-5 May 2011, Seattle, USA
Web: //www.simhq.org/meetings/meetings.aspx

Nordic Wood Biorefinery Conference 2011
22-24 March, 2011, Stockholm, Sweden
Contact: Birgit Backlund
Tel: +46 8 676 7226
Email: birgit.backlund@innventia.com

IEA Bioenergy News

Objective of Bioenergy

IEA Bioenergy is an international collaborative agreement set up in 1978 by the International Energy Agency (IEA) to improve international cooperation and information exchange between national bioenergy RD&D programmes. IEA Bioenergy aims to achieve a substantial bioenergy contribution to future global energy demands by accelerating the production and use of environmentally sound, socially accepted and cost-competitive bioenergy on a sustainable basis, thus providing increased security of supply whilst reducing greenhouse gas emissions from energy use.

Key IEA Bioenergy Contacts

Postal Address: PO Box 6256, Whakarewarewa, Rotorua, NEW ZEALAND. **Website:** www.ieabioenergy.com

Secretary
John Tustin
Tel: +64 7 348 2563
Fax: +64 7 348 7503
Email: jrtustin@xtra.co.nz

Technical Coordinator
Arthur Wellinger
Tel: +41 52 365 4310
Fax: +41 52 365 4320
Email: arthur.wellinger@novaenergie.ch

Newsletter Editor
Danielle Rickard
Tel: +64 7 349 0375
Email: drickard@xtra.co.nz

Webmaster
Heather McKenzie
Tel: +64 4 902 1000
Email: webmaster@ieabioenergy.com

Executive Committee

AUSTRALIA
Dr Stephen Schuck
Stephen Schuck and Associates Pty Ltd
7 Grassmere Road, Killara, SYDNEY
New South Wales 2071
Tel: +61 2 9416 9246
Email: sschuck@bigpond.net.au

AUSTRIA
Dr Josef Spitzer
Wastlergasse 2
A-8010 GRAZ
Tel: +43 699 18148673
Email: josef.spitzer@live.at

BELGIUM
Dr Yves Schenkel
CRAW
Rue de Liroux, 9
GEMBLOUX, B-5030
Tel: +32 8 162 7148
Email: schenkel@cra.wallonie.be

BRAZIL
Mr Ricardo de Gusmão Dornelles
Ministry of Mines and Energy
Esplanada dos Ministérios, Bloco U, 9° Andar
70 065-900 - BRASILIA - DF
Tel: +55 61 3319 5509
Email: Rdornelles@mme.gov.br

CANADA
Mr Ed Hogan
Natural Resources Canada
580 Booth Street
OTTAWA, Ontario K1A 0E4
Tel: +1 613 996 6226
Email: ehogan@nrcan.gc.ca

CROATIA
Dr Branka Jelavic
Energy Institute 'Hrvoje Pozar'
Savska 163, P.B. 141
10001 ZAGREB
Tel: +385 1 632 6117
Email: bjelavic@eihp.hr

DENMARK
Mr Jan Bünger
Energy R&D and Joint Implementation
Danish Energy Authority
Amaliegade 44
DK-1256 COPENHAGEN K
Tel: +45 33 927 589
Email: jbu@ens.dk

FINLAND
Professor Kai Sipilä
VTT
PO Box 1000
ESPOO, FIN 02044 VTT
Tel: +358 20 722 5440
Email: kai.sipila@vtt.fi

FRANCE
Mr Jean-Christophe Pouet
ADEME
2, Square Lafayette BP 90406
49004 ANGERS Cedex 04
Tel: +33 02 41 20 43 28
Email: jean-christophe.pouet@ademe.fr

GERMANY
Mr Birger Kerckow
Fachagentur Nachwachsende
Rohstoffe e.V. (FNR)
Hofplatz 1
18276 GÜLZOW
Tel: +49 3843 6930 125
Email: B.Kerckow@fnr.de

IRELAND
Mr Pearse Buckley
Sustainable Energy Authority of Ireland
Wilton Park House, Wilton Place
DUBLIN 2
Tel: +353 1 808 2012
Email: pearse.buckley@sei.ie

ITALY
Mr Gerardo Montanino
Gestore dei Servizi Energetici
Viale Maresciallo Pilsudski 92
00197 ROME
Tel: +39 06 8011 4469
Email: gerardo.montanino@gse.it

JAPAN
Dr Tadashi Kohno
NEDO
New Energy Technology Development Dept
Muza Kawasaki Central Tower 18F
1310 Ohmiyacho, Saiwai-ku, Kawasaki
KANAGAWA 212-8554
Tel: +81 44 520 5271
Email: kohnotds@nedo.go.jp

REPUBLIC OF KOREA
Mr Soosung Hwang
Ministry of Knowledge Economy
88 Gwanmoonro GWACHEON-SI
Gyeonggi-do
Tel: +82 2 2110 5401
Email: sshwang@mke.go.kr

NETHERLANDS
Ir Kees Kwant
NL Agency
PO Box 8242
3503 RE UTRECHT
Tel: +31 30 239 3458
Email: k.kwant@SenterNovem.nl

NEW ZEALAND
Dr Elspeth MacRae
SCION
Private Bag 3020
ROTORUA
Tel: +64 7 343 5899
Email: elspeth.macrae@scionresearch.com

NORWAY
Dr Petter Nilsen
The Research Council of Norway
Division for Innovation
PO Box 2700, St Hanshaugen
OSLO, N-0131
Tel: +47 98 09 48 60
Email: pn@rcn.no

SOUTH AFRICA
Ms Nomawethu Qase
Department of Energy
70 Meintjies Street
Sunnyside, PRETORIA
Tel: +27 12 444 4222/105
Email: noma.qase@dme.gov.za

SWEDEN
Dr Åsa Karlsson
Swedish Energy Agency
P.O. Box 310
ESKILSTUNA, SE-631 04
Tel: +46 16 544 2342
Email: asa.karlsson@energimyndigheten.se

SWITZERLAND
Dr Sandra Hermle
Swiss Federal Office of Energy (SFOE)
Energy Research, Biomass and Combustion
BERN, CH-3003
Tel: +41 31 325 8922
Email: sandra.hermle@bfe.admin.ch

TURKEY
Mr Ufuk Kayahan
TUBITAK MAM Enerji Enstitüsü
P.K. 21
41470 Gebze, KOCAELI
Tel: +90 262 677 2732
Email: Ufuk.Kayahan@mam.gov.tr

UNITED KINGDOM
Mr Kieran Power
Department of Energy and Climate Change
Zone 3D, Ergon House
Horseferry Road
LONDON SW1P 2AL
Tel: +44 (0)20 7238 6697
Email: kieran.power@decc.gsi.gov.uk

UNITED STATES OF AMERICA
Mr Paul Grabowski
US Department of Energy
Energy Efficiency and Renewable Energy
Office of the Biomass Program, EE-2E
1000 Independence Ave., SW
WASHINGTON, DC 20585-0121
Tel: +1 202 586 0478
Email: paul.grabowski@ee.doe.gov

EUROPEAN COMMISSION
Dr Kyriakos Maniatis
DG Energy & Transport
European Commission
Rue de la Loi/Wetstraat 200
B-1049 BRUSSELS
Tel: +32 2 299 0293
Email: Kyriakos.Maniatis@ec.europa.eu

Tasks

Task 29: Socio-economic drivers in implementing bioenergy projects
Keith Richards
TV Energy Ltd
UNITED KINGDOM
Tel: +44 1635 817420
Email: keith.richards@tvenergy.org
Web: www.Task29.net

Task 32: Biomass combustion and co-firing
Jaap Koppejan
Procede Group BV
THE NETHERLANDS
Tel: +31 53 489 4355 / 4636
Email: sjaap.vanloo@procede.nl
Web: www.ieabcc.nl

Task 33: Thermal gasification of biomass
Richard Bain
NREL
Tel: +1 303 384 7765
Email: richard.bain@nrel.gov
Web: www.gastechnology.org/iea

Task 34: Pyrolysis of biomass
Doug Elliott
Battelle PNNL
USA
Tel: +1 509 375 2248
Email: douge.elliott@pnl.gov

Task 36: Integrating Energy Recovery into Solid Waste Management
Pat Howes
AEA Technology
UNITED KINGDOM
Tel: +44 870 190 6151
Email: Pat_Howes@uk.aeat.com
Web: www.ieabioenergytask36.org/

Task 37: Energy from biogas
David Baxter
European Commission – JRC Petten
THE NETHERLANDS
Tel: +31 22 456 5227
Email: david.baxter@jrc.nl
Web: www.iea-biogas.net

Task 38: Greenhouse Gas Balances of Biomass and Bioenergy Systems
Neil Bird
Joanneum Research
AUSTRIA
Tel: +43 316 876 1423
Email: neil.bird@joanneum.at
Web: www.ieabioenergy-task38.org

Task 39: Commercialising Liquid Biofuels from Biomass
Jack Saddler
University of British Columbia
CANADA
Tel: +1 604 822 9741
Email: saddler@ubc.ca
Web: www.task39.org

Task 40: Sustainable International Bioenergy Trade – Securing Supply and Demand
Peter-Paul Schouwenberg - Admin
Nidera Handelscompagnie B.V.
THE NETHERLANDS
Tel: +31 10 430 1911
Email: pschouwenberg@nidera.nl
Web: www.bioenergytrade.org

Andre Faaij - Technical
Copernicus Institute for Sustainable Development
THE NETHERLANDS
Tel: +31 30 253 7643
Email: a.p.c.faaij@uu.nl
Web: www.bioenergytrade.org

Task 41(3): Joint project with AMF
Professor Kai Sipilä
VTT
FINLAND
Tel: +358 20 722 5440
Email: kai.sipila@vtt.fi

Task 42: Biorefineries: Co-production of Fuels, Chemicals, Power and Materials from Biomass
Rene van Ree
Wageningen University and Research Centre
THE NETHERLANDS
Tel: +31 317 480 710
Email: rene.vanree@wur.nl
Web: www.iea-bioenergy.task42-biorefineries.com

Task 43: Biomass Feedstocks for Energy Markets
Göran Berndes
Chalmers University of Technology
SWEDEN
Tel: +46 31 722 3148
Email: goran.berndes@chalmers.se
Web: www.ieabioenergytask33.org

For full Task contact details please visit www.ieabioenergy.com

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