



Brussels



## Workshop on Bioenergy: Land Use and Mitigating iLUC<sup>1</sup>

Guest Editorial by Arthur Wellinger, Technical Coordinator of IEA Bioenergy

IEA Bioenergy held its biannual workshop in Brussels on the 23rd October 2014 in conjunction with the Executive Committee meeting (ExCo74). The workshop on 'Bioenergy: land use and mitigating iLUC' was prepared in close collaboration with DG ENER of the European Commission. More than 100 participants, which included representatives from various European government ministries and NGO's, attended presentations by leading experts on this important topic. Eleven speakers and a discussion panel from nine different countries, including Europe, North America and South America, made high quality contributions which fully engaged the audience.

The workshop was opened by Marie Donnelly, Director of New and Renewable Sources of Energy, Energy Efficiency and Innovation at the European Commission. She set a high target for the workshop to deliver as an outcome: Provide a clear and scientifically robust message on iLUC mitigation in an easily accessible format that can be used to inform politicians. All of the scientific speakers accepted Marie's challenge and formulated the most important messages of their work in a few bullet points. It was interesting to note that most of the findings were consistent even though speakers came from different parts of the world where they were applying different approaches and models. The following is a compilation of the major conclusions drawn from the presentations:

- Food-versus-fuel reports that initiated the work on sustainability and iLUC in particular, which were not scientifically robust, should no longer be part of the general discourse.
- Even though research has come a long way, the current iLUC models still cover only part of the full picture: they do not include uncertainty (where weak assumptions are treated as though they are facts in a model) nor do they take into account improvement through evolving agricultural practice.
- Agricultural land for food and crop production has also to be taken into account. Creation of iLUC is independent of the use of the product of the land. If iLUC is to be mitigated, all agricultural production has to be included and it is important to remember that biofuel production accounts for only a small percentage of this.
- A holistic approach, which covers the whole biomass chain, including food wastage (according to FAO still one third of all food is wasted) and the ongoing global change in diet (less meat consumption means less iLUC), is mandatory.
- If the current trend of growth intensification in the industrialized world through improved crop yield and double cropping can be extended to developing countries, there is considerable scope for iLUC free bioenergy or other biomass production.
- The most important factors in mitigating iLUC are
  - Increasing value chain efficiency
  - Bringing under-utilized land into production

The central conclusion of the workshop was that iLUC could be prevented when food, feed and fibre production are married to good agricultural practice.

See page 2 of this Newsletter for more details.

<sup>1</sup> Indirect land use change

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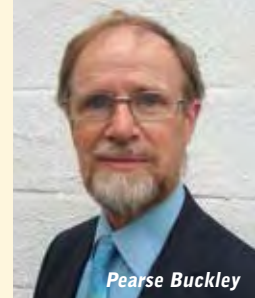
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Workshop speakers and discussion panel



## From the Secretariat



Pearse Buckley

### ExCo74, Brussels, Belgium

The 74th meeting of the Executive Committee was held at the Thon Hotel EU, Brussels, Belgium on 21st and 22nd October 2014, with Kees Kwant as Acting Chair (elected Chair during the meeting) and Pearse Buckley as Secretary. The meeting was hosted by the European Commission. The Acting-chair expressed the appreciation of the ExCo to Maniatis and his colleagues for the excellent meeting and study tour arrangements. Some of the outcomes of the meeting are detailed below.

### Changes to Exec Committee

A new Member for Japan is Mr Takahisa Yano; a new Alternate for Japan is Dr Nobuyuki Tahara; A new Member for New Zealand is Dr Paul Bennett; A new Member for Sweden is Ms Åsa Forsum.

### ExCo74 Workshop

A very successful workshop with the theme 'Bioenergy: Land use and mitigating iLUC' was held in conjunction with ExCo74. There were more than 100 attendees including IEA Bioenergy ExCo Members and Task Leaders, representatives from the European Commission, Industry and their representative bodies, representatives from various European Government Ministries and NGOs. The workshop presentations are listed below:

- Status of EU Legislation, Paula Marques, *DG ENER, Head of Unit C1*
- Production and protection: how to deploy 'beyond deforestation' public policies in Brazil – *Carlos Klink, Secretary of Climate Change at the Brazilian Ministry of Environment (MMA)*
- Possible solutions for worldwide land use change – *Jan Mizgajski, Universität Darmstadt*
- Preconditions for sustainable biomass sourcing, improved models, monitoring and governance – *André Faaij, University of Groningen, Energy Academy Europe*
- Landmark test of iLUC biofuels theory – *Tristan Brown, Bioeconomy Institute, State University of New York*
- Low indirect impact biofuel methodology – *Daan Peters, Ecofys*
- Integrating crops into agricultural landscape – *Göran Berndes, Chalmers University*
- iLUC mitigation illustrated for regional case studies – *Birka Wicke, Copernicus Institute, University of Utrecht*
- Pasture intensification and double cropping as mechanisms to mitigate iLUC – *André Nassar, Director, Agroicone*
- Modelled vs observed land use change – why the difference? – *Don O'Connor, (S&T) 2 Consultants*
- REDD+ – *Danae Maniatis, UNDP Consultant*

For more details please visit <http://www.ieabioenergy.com/publications/ws19-bioenergy-land-use-mitigating-iluc/>

### Progress with current Initiatives

#### Mobilising Sustainable Bioenergy Supply Chains

In the Strategic Project Mobilising Sustainable Bioenergy Supply Chains good progress is continuing. The final report will be published towards the end of 2015 and will consist of about 100 pages. In addition, there will be a considerable body of information on the Task 43 website, including supporting documents and summary reports.



Attendees at the IEA Bioenergy workshop on 'Bioenergy – land use and mitigating iLUC'



## Algae review

Following a detailed discussion of the topic, the ExCo approved a strategic project led by Task 39 to review algae. The study will use the Task 39 update report of 2010 as a point of reference. The techno-economic assessment will be reviewed, hydro-treating to green diesel will be incorporated, the programme will be extended to the state-of-the-art on photobioreactors, and heterotrophic production as well as macro-algae (seaweed) will be included. The project will look at the life cycle impacts, include both thermochemical processing and anaerobic digestion and also incorporate value added co-products. Draft conclusions will be available by ExCo75 in Dublin for consideration by the Executive Committee.

## National Strategies

The Technical Coordinator will review the data that is included in the IEA Medium Term Renewable Energy Market Report (MTRMR) with IEA Headquarters to determine how the data might be used to provide up to date information on IEA Bioenergy member countries. He will report to ExCo75 for further consideration by the Executive Committee.

## Communication Strategy

The Executive Committee discussed a number of actions under the Communication Strategy. Four electronic only newsletters will be issued each year in addition to the two that follow ExCo meetings. LinkedIn will be investigated to determine its utility in terms of getting the IEA Bioenergy message out to stakeholders. In the new triennium (2016-2018) Task Leaders will define the target groups for the outputs from their Tasks and proactively work to ensure delivery of outputs to these groups.

## End of Triennium Conference 2015

Work on the conference, which will take place on the 27-28 October 2015 in the Ramada Hotel Berlin-Alexanderplatz, is progressing well. The structure of the conference has been developed by the Scientific Committee and the website (<http://ieabioenergy2015.org/>) is active.

## ExCo74 Study Tour

Following the ExCo74 meeting a group of thirty-three IEA Bioenergy attendees participated in the study tour, taking in a boat tour of the Port of Ghent and a visit to the Bio Base Europe Pilot Plant.

The Port of Ghent is an inland port, which is connected to the North Sea by the 32 km Ghent – Terneuzen canal. It is a transshipment hub between seagoing and inland waterway transport and is characterised by its excellent location for the production and distribution of various goods and products. A large number of companies that produce and store biofuels are located in Ghent, making it one of the leaders in the area of biofuels in Europe and the world. A unique concept is the so-called 'biocluster': five companies next to one another on a few square kilometres, together producing biodiesel and bioethanol.

At the end of the boat tour the group landed at the Bio Base Europe Pilot Plant where they were given a presentation followed by a site tour. Bio Base Europe Pilot Plant is an independent, state-of-the-art pilot plant that operates from a laboratory level to a multi-tonne pilot scale. A wide and flexible spectrum of modular unit operations enables the facility, based on a confidentiality agreement with a developer, to translate the latter's bio-based lab protocol into a viable industrial process. Bio Base Europe Pilot Plant is a one-stop-shop, which performs the entire production chain in a single plant, from biomass feedstock to final refined product. The bio-based processes include biomass pre-treatment, fermentation, bio-catalysis, green chemistry, product recovery and purification. The bio-based products include fine chemicals, nutraceuticals, food ingredients, biopolymers, industrial enzymes and biofuels.



*ExCo74 Study Tour Group at Bio Base Europe Pilot Plant*

# Task Focus

## Task 32: Biomass Combustion and Co-firing

Biomass combustion technologies already make a dominant contribution to the global production of renewable energy. As biomass combustion technologies are already commercially available for many applications, it is increasingly recognised as an attractive and relevant renewable energy technology. In contrast to many other forms of renewable energy, these technologies can deliver high temperature heat, are dispatchable, and are commercially available at widely varying scale.

Biomass combustion plays a key role in the expansion of bioenergy capacity across the globe, on widely varying scales and for various types of biomass to produce heat and/or power. Some general trends for the different combustion applications are:

- Manually fired stoves and boilers using firewood logs are still widely deployed in both OECD countries and non-OECD countries. Health issues related to combustion aerosols are the main concern.
- Fully automated combustion technologies for wood pellets and wood chips are increasingly applied, as space heating represents one of the largest shares of final energy demand in society. These boilers are continuously improving in terms of reliability, costs and environmental performance. Significant development work is ongoing for enabling the use of locally available, low grade biomass residues.
- Biomass based combined heat and power (CHP) plants using grate combustion are widely deployed in Scandinavian countries, Austria, Switzerland, Italy, Germany and to a lesser extent the USA and France. These systems are generally of increasing scale and have increasing electrical efficiency due to better understanding of superheater corrosion mechanisms. New CHP concepts based on stirling engines, Thermoelectric Generation (TEG) and Organic Rankine Cycle (ORC) technologies are becoming available as well.
- Circulating fluid bed combustion plants are scaling up in size and becoming of increasing relevance for large scale power generation, as an alternative to pulverised coal. These systems offer significantly greater fuel flexibility.
- The co-firing of biomass with coal is widely deployed in a number of European countries and is gaining interest worldwide. There is also a trend, perhaps short term in nature, towards the conversion of existing coal-fired boilers to 100% biomass firing.

Due to economy-of-scale factors of both fuel handling and flue gas cleaning systems, high quality solid biomass fuels are predominantly used in small scale applications and low quality or contaminated fuels in large scale applications. High quality solid biomass fuels are however also popular in co-firing applications where there can be significant reductions in the costs of long distance bulk transport of biomass and in the investments and risks associated with power plant modifications. This also explains the recent market interest in biomass torrefaction technologies.

The biomass combustion manufacturing industry is a substantial industry in OECD countries, not only as a result of increasing demand in OECD countries but also due to growing export of this equipment to non-OECD countries (such as China and India) where biomass is still available in abundance as process residues and the demand for electricity is rising steeply. According to the IEA Roadmap on Biomass Heat and Power, biomass based power generation will increase by at least a factor of ten from today until 2050, accounting for 7.5% of world electricity generation. For the foreseeable future, this biomass based power generation will be almost entirely based on combustion and co-firing technologies.

## Task 32 objectives and activities

In order to further enhance competitiveness and expand its use, several issues need to be addressed. In the work programme of IEA Bioenergy Task 32 the key issues for further market implementation of biomass combustion technologies are addressed through expert workshops, studies, databases etc. At present, 12 countries are members of Task 32, namely Austria, Belgium, Denmark, Germany, Ireland, Japan, the Netherlands, Norway, South Africa, Sweden, Switzerland and the UK. Twice every year these task members meet to discuss the progress in ongoing task activities and share combustion relevant developments in the individual member countries. These task meetings are often combined with an expert workshop on a relevant topic. In the ongoing triennium 2013-2015, workshops include

- Opportunities for biomass combustion and co-firing in South Africa (Johannesburg, Nov 2014)
- High temperature corrosion in biomass combustion (Jönköping, June 2014)
- Development of torrefaction technologies and impacts on global bioenergy use and international bioenergy trade (Graz, Jan 2014)
- CFD for design of industrial biomass combustion systems (Copenhagen, May 2013)
- Biomass co-firing (timing and location to be decided)
- Improved woodstoves (Berlin, November 2015)



Task 32 participants at the November 2014 meeting in Sabie, South Africa

In addition, several publications are currently under preparation:

- Standardisation in particle emission measurement techniques
- Commercialisation of torrefaction technologies
- New fuel characterisation methods
- Health impact of combustion aerosols
- Biomass milling and combustion in pulverised fuel boilers
- Techno Economic Analysis of combustion for power generation, in comparison to pyrolysis and gasification based power cycles
- Optimal design of biomass fired district heating networks

The latter publication has just been finalised, and a short summary follows below.

## Biomass Combustion for District Heating – Relevance and Design Requirements

District heating offers interesting opportunities to use biomass for heat and to replace decentralised fossil fuels based heating. Compared to individual biomass boilers, a centralised boiler of typically more than 1 MW exhibits relatively high combustion efficiencies and low pollutant emissions. By enabling automatic combustion systems equipped with state-of-the-art particle removal technology, biomass can be used to supply heat while safely avoiding a negative effect on the local air quality.

Hence district heating and biomass combustion exhibit relevant synergies with a positive effect on climate and environment. However, as district heating also induces additional costs and energy losses, it is important to apply the most economic and efficient design of a district heating system to provide an optimal match with the characteristics of a biomass combustion system.

In collaboration with the IEA District Heating and Cooling Agreement, Task 32 recently performed a study of the effect of the design on the economy and efficiency, supplemented by an international survey of existing biomass fired district heating networks that assessed characteristic parameters such as the annual heat losses, the connection load, and linear heat density in MWh/year per meter.

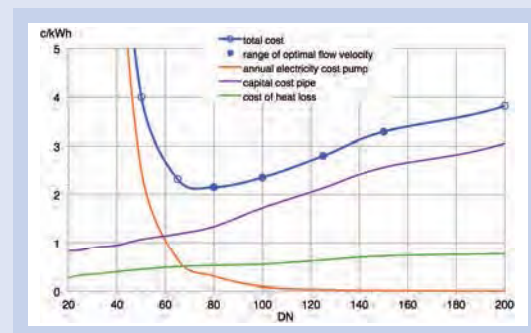
The investigation showed, that a typical district heating system with a linear heat density of 2 MWh/year per meter shows heat distribution costs of slightly more than 2 euro cent per kWh heat if optimal pipe diameters are used (Figure 1). The total costs are dominated by the capital costs, with fuel and electricity costs being of minor importance. Since decreasing linear heat density induces increasing capital costs, the linear heat density should exceed a minimum value to ensure economic district heating applications. In mid-European countries, a minimum heat density of 1.8 MWh/year per meter is proposed, which translates into maximum 10% heat distribution losses. The survey of existing district heating systems however reveals typical heat losses of 13% at the pre-described linear heat density thus indicating a potential for design improvement (Figure 2).

Although the linear heat density is confirmed to be an important parameter, the heat losses of existing district heating systems vary by more than a factor of three at the same linear heat density. Another important parameter that influences the heat distribution losses and costs is the pipe diameter. Application of pipes with significantly larger diameters than what is required to avoid cavitation pitting, leads to strongly increased capital costs and heat distribution losses. A design with the smallest allowable pipe diameter is therefore crucial to improve the economy and to reduce the heat losses of future district heating systems. This can be achieved by enabling high temperature differences between feed and return temperatures, thanks to optimised design and operation of heat exchangers at the end users.

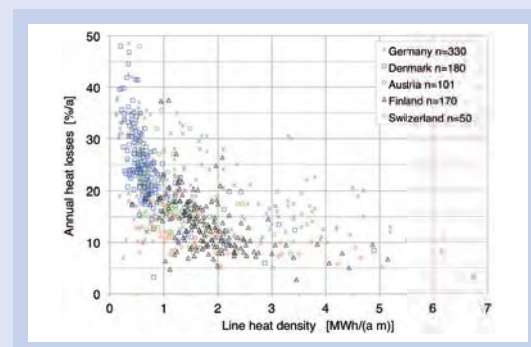
Other key parameters to minimise heat losses and costs are the temperature spread, the temperature level, the insulation class, and the ratio between the operation hours of the district heating system and the full-load hours of the heat consumers. Other key success factors are a network layout with optimal location of the heat production plant and the choice of the network type.

While heat production plants exhibit strong economies of scale, the heat distribution is related to diseconomies of scale. Consequently, large district heating systems are only economically feasible thanks to strong economies of scale in the heat production, which is typically the case for combined heat and power applications. Large district heating systems however also exhibit higher distribution losses when compared to smaller networks.

**Figure 1 Heat distribution losses indicated as total cost and divided in capital cost, heat loss costs, and electricity costs as function of the nominal diameter for the reference case. The allowed nominal diameters are designated by filled markers.**



**Figure 2 Heat distribution losses as function of the linear heat density for systems in Germany, Denmark, Austria, Finland and Switzerland.**



This article was prepared by Jaap Koppejan and Thomas Nussbaumer  
For more information please visit <http://www.ieabcc.nl/>



## Task 32 – Biomass Combustion and Co-firing

Task 32 had their progress meeting in June in Göteborg, Sweden. A field trip was arranged to the GOBIGAS plant, which will gasify wood pellets to produce synthetic natural gas for the Göteborg gas grid. The first phase of 20 MW is currently started up. The second phase concerns a commercial plant with a planned gas production of 80-100 MW and is planned for completion in 2016. After the field trip to GOBIGAS, a visit was made to the Chalmers pilot gasifier (which was used to a large extent to optimise the design of the gasification plant), followed by a tour of the Chalmers corrosion labs.

## Task 34 – Pyrolysis of Biomass

Task 34 recently held a meeting in Finland. The agenda included a site visit to the new commercial integrated fast pyrolysis plant of Fortum in Joensuu. The business meeting included a review of the ExCo meeting input on the progress report and summary proposal for prolongation of the task. The task members also participated in the BEST seminar, essentially a fast pyrolysis stakeholders meeting, in Helsinki, which included a presentation on Task 34 along with other industrial presentations. Kai Toven of the Paper and Fiber Research Institute in Norway was present as an observer.

## Task 37 – Energy from Biogas

Task 37 is participating in a Swedish methane emissions project on the initiative of the Swedish national representative, Tobias Persson. In September 2014 the Task took part in an expert workshop in Kiel, Germany, on methane emissions measurements along with members of the methane emissions project. Methane measurements have since been made on a biogas plant in Sweden and the results will be used in a Task 37 publication later in 2015. The workshop was organised by the Inter Baltic Biogas Arena (IBBA) and this link enables Task 37 to reach additional countries in northern Europe.

## Task 39 – Commercialising Conventional and Advanced Liquid Biofuels from Biomass

IEA Bioenergy Task 39 published their most recent Newsletter (#37) in September, featuring an article on "Biofuels in Brazil". The history and current status of both conventional and advanced biofuels in Brazil are discussed and challenges to biofuels expansion are highlighted. The newsletter also includes recent global developments in advancement of liquid biofuels from a policy, sustainability and industry perspective. The newsletter can be downloaded from the Task 39 website ([www.task39.org](http://www.task39.org)).

## Task 40 – Sustainable International Bioenergy Trade: Securing Supply and Demand

Task 40 recently published a report entitled "Ecological sustainability of wood bioenergy feedstock supply chains: Local, national and international policy perspectives". This report first provides a brief overview of development of policy and criteria related to sustainability of bioenergy in the EU and in key biomass importer Member States (United Kingdom, the Netherlands and Belgium). The following sections then provide a thorough review of policy, regulations and practices of Canada and the United States, with a special focus on key biomass producing provinces/states (British Columbia, Ontario and Quebec in Canada, Georgia, New York and Massachusetts and California in the US). This in-depth analysis of the Canadian and American contexts was made possible due to the abundance of information available for those countries, but was also found necessary due to the scarcity of syntheses on this information. The next section then provides an overview of the policy and practices for land and forest management in Russia, with a focus on the region of Northwest Russia, based on the information that was possible to gather from this area. The report concludes with a discussion and main conclusions stemming from the analysis of the case studies.

The report is available on the Task 40 website.  
(<http://bioenergytrade.org/publications.html#SustWood2014>)

## Workshop report

The international workshop "Towards Sustainable International Biomass Trade Strategies", co-organised by the BioTrade2020+ consortium and IEA Bioenergy Task 40, was held on 24 Oct 2014, at VLEVA, Brussels. This workshop provided opportunities for around 60 stakeholders from diverse backgrounds to come together and initiate discussions on how trade strategies can be framed. One of the objectives of the BioTrade2020+ project is to propose appropriate long-term strategies and support frameworks which can form a basis for a balanced approach between promoting the use of domestic biomass, while also keeping markets open for sustainable imports of biomass.

In the morning session, the participants were split into four groups for an interactive discussion on (1) how to define sustainable export potentials, (2) which opportunities and risks are connected with biomass trade and how these can be addressed, and (3) which are the key principles that sustainable biomass trade should fulfil

In the afternoon session, Task 40 leader, Martin Junginger led the panel debate joined by Patrick Lamers (INL), Maria Almeida Aranha (UNICA), Bah Saho, and Michael Deutmeyer (Green Resources) on the motion "Export or local use of biomass, is it a dilemma?". Deutmeyer presented the reforestation activities by Green Resources on degraded forest and bush land in East Africa, while Bah Saho elaborated the current legislation and investment in Africa. Aranha and Lamers also provided overviews of bioenergy development in Brazil and the US, respectively. The presentations are available and the summaries of the activities in both sessions will be available soon on the Task 40 website.

## Task 43 – Biomass Feedstocks for Energy Markets

IEA Bioenergy Task 43, together with UNEP, IINAS and Winrock International, organised the workshop 'Bioenergy and Water: Developing strategic priorities for sustainable outcomes from Feb 20-21, 2014 in Paris. The workshop was the 5th event concerning inter-linkages between bioenergy and water and ways to address related risks and harness opportunities since 2010 in collaboration with different organisations.

The aim of the 2014 Bioenergy and Water workshop was to develop a coordinated and common approach to addressing and communicating water-related issues for bioenergy. The common vision derived at the workshop was that "good management of resources – benefiting from complementarity of different systems – can provide food, bioenergy and biomaterials and improve the state of water". The workshop specifically explored how integration of bioenergy systems into forest and agricultural landscapes can deliver positive environmental and socio-economic outcomes, and concluded that opportunities to extend the discourse should be sought, e.g. together with the Global Bioenergy Partnership (GBEP).

GBEP has now approved the establishment of a new Activity Group, (AG), on Bioenergy and Water. The goal of this AG is to identify and disseminate ways of integrating bioenergy systems into agriculture and forestry landscapes to improve sustainable management of water resources, including wastewater. This includes sharing knowledge and experiences on best management practices as well as on policies and instruments supporting bioenergy implementation that contribute positively to the state of water. The AG will also serve as a vehicle for awareness raising on the GBEP sustainability indicators on water and spreading the use of them to other countries and regions.

## New publications

Best practices guidelines for managing water in bioenergy feedstock production (Author: Dan Neary, USDA-Forest Service, USA)

Assessing the environmental performance of biomass supply chains (Editor: Jörg Schweinle, Johann Heinrich von Thünen-Institut, Germany)

Both publications are available from the Task 43 website – (<http://www.ieabioenergytask43.org/>)

# Publications

## Enhanced emission performance and fuel efficiency of HD methane engines 2014 – Final report

This is the final report from the joint project between IEA Bioenergy Task 41 Bioenergy Systems Analysis and the Advanced Motor Fuels Implementing Agreement Annex 39 on *Enhanced emission performance and fuel efficiency of HD methane engines*. The goal of the project was to investigate how far the level of the development of methane fuelled engines for heavy duty vehicles had reached as well as to assess the potential to reach high energy efficiency, sustainability and emission performance. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2014/09/Enhanced-emission-performance-and-fuel-efficiency-of-HD-methane-engines-2014-Final-report.pdf>



## IEA Bioenergy Task42 Biorefining

This brochure has been prepared by IEA Bioenergy Task 42: Biorefining – Sustainable processing of biomass into a spectrum of marketable bio-based products and bioenergy. Its purpose is to provide an unbiased, authoritative statement on biorefining in general, and of the specific activities dealt with within IEA Bioenergy Task 42 on biorefining. It is aimed at stakeholders from the agro-sector, industry, SMEs, policy makers and NGOs. This publication can be downloaded from [http://www.ieabioenergy.com/wp-content/uploads/2014/09/IEA-Bioenergy-Task42-Biorefining-Brochure-SEP2014\\_LR.pdf](http://www.ieabioenergy.com/wp-content/uploads/2014/09/IEA-Bioenergy-Task42-Biorefining-Brochure-SEP2014_LR.pdf)



## Consequences of an increased extraction of forest biofuel in Sweden – summary of the synthesis report

This Task 43 report presents a summary of the conclusions reached in a research synthesis report (Swedish Energy Agency report number ER2012:08 in Swedish) on environmental effects of forest biofuel extraction in Sweden. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2014/06/Consequences-of-an-increased-extraction-of-forest-biofuel-in-Sweden-IEA-BIOENERGY-TR2014-1.pdf>



## ExCo71 – Waste to Energy – Summary and Conclusions

This publication provides the summary and conclusions from the workshop 'Waste to Energy' held in conjunction with the meeting of the Executive Committee of IEA Bioenergy in Cape Town, South Africa on 21 May 2013. The purpose of the workshop was to provide the Executive Committee with an overview of waste to energy both at a global level and in the context of an emerging economy. The aim was to stimulate discussion between the Executive Committee, Task Leaders, invited experts and various stakeholders and thereby enhance the policy-oriented work within IEA Bioenergy. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2014/03/ExCo71-Waste-to-Energy-Summary-and-Conclusions-28.03.14.pdf>



## Monitoring Sustainability Certification of Bioenergy – Short summary

To support sustainable bioenergy deployment and overcome some of the challenges associated with the current status of sustainability certification, this IEA Bioenergy strategic study examined what is actually known and what can be learned from the current development and implementation of voluntary certification systems, about the role of voluntary certification schemes in the governance of biomass/bioenergy/biofuels sustainability and how this has affected actors along the supply chains and trade. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2013/10/Monitoring-Sustainability-Certification-of-Bioenergy-Short-summary.pdf>



## 2013 IEA Bioenergy Annual Report

The IEA Bioenergy Annual Report 2013 includes a special feature article 'Integration of Thermal Energy Recovery into Solid Waste Management' prepared by Task 36.

The Annual Report also includes 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 publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2014/03/IEA-Bioenergy-Annual-Report-2013.pdf>



## On the Timing of Greenhouse Gas Mitigation Benefits of Forest-Based Bioenergy

This statement addresses a much debated issue – the timing of greenhouse gas (GHG) emissions and carbon sequestration when biomass from existing managed forests is used for energy to displace fossil fuels. The purpose of the statement, which is aimed at policy advisors and policy makers, is to explain the essence of the debate and propose a perspective that considers the broader context of forest management and the role of bioenergy in climate change mitigation. <http://www.ieabioenergy.com/publications/on-the-timing-of-greenhouse-gas-mitigation-benefits-of-forest-based-bioenergy/>



## Health and Safety Aspects of Solid Biomass Storage, Transportation and Feeding

This publication has been compiled as a joint effort by experts active in Tasks 32, 36, 37 and 40 of the IEA Bioenergy Agreement. It focuses on the health and safety issues of the supply chain of solid biofuels with the objective to highlight commonly used mitigation methodologies to promote a better working environment when dealing with solid biofuels. With the growth of the bioenergy sector, it is important not only that opportunities for bioenergy are implemented in an efficient and economic manner, but also safely. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2013/10/Health-and-Safety-Aspects-of-Solid-Biomass-Storage-Transportation-and-Feeding.pdf>



## The Science-Policy Interface on the Environmental Sustainability of Forest Bioenergy

This publication reports on the discussions and opinions expressed during and expert workshop on the environmental sustainability of forest bioenergy in Canada, held in Quebec on the 3-5 October 2012.

The workshop was organised by the International Energy Agency Bioenergy, Task 40 (International Sustainable Bioenergy Trade) and Task 43 (Biomass Feedstocks for Energy Markets), the IEA Bioenergy Executive Committee, the Faculty of Forestry, Geomatics and Geography of Laval University (Quebec, Canada) and Natural Resources Canada, with the collaboration from the Global Bioenergy Partnership and the Canadian Council of Forest Ministers. Participants engaged in dialogue critical for the formulation of rational policy to achieve sustainable forest bioenergy production systems. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2013/10/The-Science-Policy-Interface-on-the-Environmental-Sustainability-of-Forest-Bioenergy-a-Strategic-Discussion-Paper.pdf>



## ExCo68 – Environmental Sustainability of Biomass – Summary and Conclusions

This publication provides the summary and conclusions from the workshop 'Environmental Sustainability of Biomass' held in conjunction with the meeting of the Executive Committee of IEA Bioenergy in Twin Waters, Queensland, Australia on 24 November 2011. The purpose of the workshop was to provide the Executive Committee with perspectives on sustainability aspects such as GHG emissions, feedstock production, certification, soil conservation and governance. The aim was to stimulate discussion between the Executive Committee, Task Leaders and invited experts and thereby enhance the policy-oriented work within IEA Bioenergy. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2013/10/ExCo68-Workshop-Environmental-Sustainability-of-Biomass.pdf>



# IEA Bioenergy Events

## Executive Committee

- ExCo75** will be held in Dublin, Ireland on 19-21 May 2015.
- ExCo76** will be held in Berlin, Germany on 26 October 2015
- ExCo77** will be held in Italy in May 2016
- ExCo78** will be held in New Zealand in October/November 2016

## Task Events

- Task 34's** schedule of upcoming events is  
A Task 34 business meeting will be held in Hengelo, Netherlands. In addition to the usual business meeting items, such as country reports and newsletter input review, the meeting will include a visit to the new BTG-BTL biomass fast pyrolysis commercial plant, which should be in operation by that time.
- A Task 34 business meeting will be held to coincide with ExCo76 in Berlin, October 29-30, 2015.
- Task 37's** schedule of upcoming events is  
A Task 37 business meeting, hosted by the SGC, will be held in Uppsala on March 26-27 2015. One session of the preceding 2015 "Green Gas Research Outlook Sweden" conference will be dedicated to Task 37. The conference will be held in Örnsköldsvik from March 23-25 and will include a visit to the Domsjö biorefinery,
- A Task 37 business meeting will be held to coincide with ExCo76 in Berlin, October 29-30, 2015.

- Task 39's** schedule of upcoming events is  
A task 39 business meeting will be held in Gwangju, South Korea, March 10-14, 2015.
- A Task 39 meeting will be held in conjunction with the Symposium on Biotechnology for Fuels and Chemicals in San Diego on April 27-29, 2015
- A Task 39 business meeting will be held to coincide with ExCo76 in Berlin, October 2015
- Task 42's** schedule of upcoming events is  
A Task 42 progress meeting including an Italian Stakeholder Meeting and a Joint Workshop with Task 40 on "Biomass Trade and Supply System Opportunities for a Global Biobased Economy" will take place in Porto Torres, Sardinia, Italy on May 4-6, 2015.
- A Task 42 progress meeting will be held to coincide with ExCo76 in Berlin, October 27-29, 2015.
- Task 43's** schedule of upcoming events is  
A Task 43 business meeting and workshop will be held to coincide with ExCo75 in Dublin, May 21-22, 2015.
- A Task 43 business meeting and workshop will be held to coincide with ExCo76 in Berlin, October 29-30, 2015.

## Other Events

### ACI's Lignofuels 2015

January 21-22, 2015, Madrid, Spain  
Email: [dpavlyk@acieu.net](mailto:dpavlyk@acieu.net)  
Website: <http://www.wplgroup.com/aci/conferences/eu-eeef6.asp>

### 5th International Forest Biorefinery Symposium

February 2-5, 2015, Montreal, Canada  
Website: <http://www.paptac.ca/communiques/call4papers-symposium2015.html>

### 14th National Bioenergy Conference 2015

February 4, 2015, Dublin Ireland  
Website: <http://www.tcbb.ie/14th-national-bioenergy-conference-2015>

### The World Sustainable Energy Days 2015

February 25-27, 2015, Wels, Austria.  
Website: <http://www.wsed.at/en/world-sustainable-energy-days/>

### World Bio Markets

March 2-4, 2015, Amsterdam, Netherlands  
Website: <http://www.worldbiomarkets.com>

### 21st International Symposium on Alcohol Fuels (ISAF)

March 10-14, 2015, Gwangju, Korea  
Email: [ISAF2015@ksae.org](mailto:ISAF2015@ksae.org)  
Website: <http://www.2015isaf.org/>

### 11th South-East European Eco Forum & Exhibitions

March 11-13, 2015, Sofia, Bulgaria  
Email: [office@viaexpo.com](mailto:office@viaexpo.com)  
Website: [www.viaexpo.com](http://www.viaexpo.com)

### Solarexpo|The Innovation Cloud

April 8-10, 2015, Milan, Italy  
Website: <http://www.solarexpo.com/>

### 8th International Conference on Bio-based Materials

April 13-15th 2015, Maternushaus, Cologne, Germany  
Email: [dominik.vogt@nova-institut.de](mailto:dominik.vogt@nova-institut.de)  
Website: <http://www.biowerkstoff-kongress.de/>

### International Biomass Conference

April 20-22, 2015, Minneapolis MN, USA  
Email: [service@bbiinternational.com](mailto:service@bbiinternational.com)  
Website: <http://www.biomassconference.com/>

### 37th Symposium on Biotechnology for Fuels and Chemicals

April 27-29, 2015, San Diego, CA, USA  
Website: [www.simbhq.org/sbfc/](http://www.simbhq.org/sbfc/)

### 6th AEBIOM European Bioenergy Conference 2015

May 4-6, 2015, Brussels, Belgium  
Website: <http://www.aebiom.org/conference/>

### 2nd International Conference on Renewable Energy Gas Technology, REGATEC 2015

May 7-8, 2015, Barcelona, Spain  
Email: [jorgen.held@renewtec.se](mailto:jorgen.held@renewtec.se)  
Website: <http://www.regatec.org/>

### Solar 2015 Conference & Expo

May 7-8, 2015, Melbourne, Australia  
Website: <http://solarexhibition.com.au>

### 23rd EU Biomass Conference and Exhibition

June 1-4, 2015, Vienna, Austria  
Email: [biomass.conference@etaflorencia.it](mailto:biomass.conference@etaflorencia.it)  
Website: <http://www.conference-biomass.com/Home.404.0.html>

### Renewable Energy World Europe

June 9-11, 2015 Amsterdam, The Netherlands  
Website: <http://www.renewableenergyworld-europe.com/index.html>

### IEA Bioenergy Conference 2015

October 27-28, 2015, Berlin, Germany  
Website: <http://www.ieabioenergy2015.org>

### tcbiomass2015: The International Conference on Thermochemical Conversion Science

November 2-5, 2015, Chicago IL, USA  
Website: <http://www.gastechnology.org/tcbiomass/Pages/default.aspx>

## Objectives of IEA 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.



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### Task 34: Pyrolysis of Biomass

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