

Bioenergy News

Contents

Bioenergy in the USA	1
From the Secretariat	2
Task Focus	4
Notice Board	5
Publications	6
IEA Bioenergy Events	7
Key IEA Bioenergy Contacts	8

Bioenergy in the USA



Editorial by Jim Spaeth,
Chair, ExCo Member for the USA



Bioenergy is a critical component of the U.S. Department of Energy's "all-of-the-above" energy strategy. Increased use of biomass resources improves energy security by reducing dependence on foreign oil and maximising the economic and environmental benefits to the United States. The "Bioeconomy" is the integration of abundant, sustainable, domestic biomass in the U.S. economy. Federal agencies, state and local governments, universities, industries, and the American public are working to realise the full potential of a sustainable bioeconomy and to support research and development (R&D) related to biofuels, biopower, and bioproducts.

The United States has the unique opportunity to utilise its abundant biomass resources in order to achieve a sustainable, domestic bioeconomy. Currently, the largest use of biomass is corn-grain-based ethanol from the Corn Belt, Northern Plains, and Southern Plains, with production reaching 15.8 billion gallons in 2017. The second-largest biomass use is production of electric and industrial power from wood wastes and residues, primarily consumed in the Lake States, Northeast, and Pacific, and in the Southeast.

As demonstrated in the U.S. Department of Energy's (DOE) 2016 Billion Ton Report, the United States has the capacity to produce more than one billion tons of sustainable biomass annually by 2030, without creating negative effects on food supplies or the environment. One billion tons of sustainable biomass could generate up to 50 billion gallons of biofuels to help displace imported oil, produce 50 billion pounds of biobased chemicals and bioproducts, and generate enough electricity to power 7 million households.

The Renewable Fuel Standard (RFS), authorized by the Energy Policy Act of 2005, was created by Congress to expand the nation's renewable fuels sector while reducing reliance on imported oil. Congress passed the Energy Independence and Security Act (EISA) in 2007, mandating that the United States consume 36 billion gallons of biofuels by 2022, with 21 billion of the 36 billion being advanced biofuels. However, Congress also recognised that under certain circumstances it would be appropriate for the U.S. Environmental Protection Agency (EPA) to set volume requirements at a lower level than reflected in the statutory volume targets. EPA administers the RFS and assigns renewable identification numbers (RINs) to track compliance with the RFS.

Currently, the primary biomass sources for liquid transportation fuels are predominantly corn grain for ethanol and soybean oil for biodiesel. Ethanol is consumed primarily as motor fuel in the form of E10 (10% ethanol, 90% petroleum). Flex-fuel vehicles can also use E85 (up to 85% ethanol), but more than 99% of ethanol sold in the United States is sold as E10. Recently the President called for enabling widespread use of E15 (15% ethanol) to be rolled out in 2019.

DOE focused primarily on second generation ethanol research through 2012, but is now focused on developing and enabling pathways to more complex and valuable drop-in biofuels, as well as valuable products that can be derived from biomass and waste feedstocks. DOE's Bioenergy Technologies Office within the Office of Energy Efficiency and Renewable Energy is accelerating R&D on renewable diesel and jet fuels, which can leverage existing infrastructure and meet challenges in markets where biofuels will be a viable option for years to come. The office is also conducting research to identify and develop bio-advantaged products as novel chemicals and materials sourced from biomass have the potential to outperform petroleum-derived products by playing to the natural strengths of biomass feedstocks, which when produced alongside biofuels, drive down the cost per gallon of biofuel.

IEA Bioenergy





From the Secretariat

PEARSE BUCKLEY



The 82nd meeting of the Executive Committee was held at The Hotel Nikko, San Francisco, USA on 5-6 November 2018, with Jim Spaeth as Chair, Paul Bennett as Vice-chair and Pearse Buckley as Secretary. The meeting was hosted by the US Department of Energy Bioenergy Technologies Office (BETO). The Vice-chair expressed the appreciation of the ExCo to the Chair and his colleagues for the excellent meeting arrangements. Some of the outcomes of the meeting are detailed below.

Changes to Executive Committee

While there were no formal changes to the Executive Committee, it was noted that Tuula Savola had stepped down as Member for Finland and that there were upcoming changes to the representatives from Austria and Norway.

Progress with current Initiatives

Inter-Task Project: Measuring, governing and gaining support for sustainable bioenergy supply chains

This project (<http://itp-sustainable.ieabioenergy.com/>) was nearing completion. To date 25 papers had been published and uploaded to the website. Three of the papers would be completed in March 2019. A four-page executive summary would also be prepared. The project would be completed by the end of March 2019.

Inter-Task Project: Fuel pretreatment of biomass residues in the supply chain for thermal conversion

In this project (<http://itp-fuel-treatment.ieabioenergy.com/>) all of the case studies had been finalised. The policy report was in draft form. Among the general lessons it was noted that pre-treatment could effectively increase resource flexibility and a reduction in logistical costs could unlock remote biomass resources. The project would be completed by the end of March 2019.

Task 41 Project 9: Potential Cost reduction for novel and advanced renewable and low carbon fuels

An aim of the project was to answer the question – was it likely that advanced biofuels would become affordable or would they always need policy support? The work built on a European Commission project and expanded the geographic scope of that project. It was based on information from companies involved in the area. Of the companies contacted, 50 had agreed to provide data and 40 had agreed to provide cost information. The project team was currently analysing the data. The project was behind schedule and it was expected to be completed in March 2019 with a workshop in Brussels.

Communication Strategy

Following the execution of a call for tender for a communication strategy that had been approved at ExCo81, BCS LLC undertook the work and prepared a detailed strategy. This was presented to ExCo82 for consideration and was adopted following a detailed discussion. Furthermore, the Communication Team was charged with the development of a proposal to implement the strategy. Since ExCo81 three IEA Bioenergy webinars have been presented, the most recent being 'Decision Support Tools for Bioeconomy Transformation Strategies: Introduction of Natural Resources Canada I-BIOREF Software Platform' in October. All of the IEA Bioenergy webinars can be viewed at <https://www.ieabioenergy.com/iea-publications/webinars/>.

Visit the **FAQ** section of the IEA Bioenergy website: <http://www.ieabioenergy.com/iea-publications/faq/>.

Collaboration with other International Organisations

At ExCo82 Kees Kwant presented a document on collaboration with other International Organisations. There was a detailed discussion on the proposal with a consensus on the need for efficient and effective collaboration between all the organisations concerned to ensure consistency and clarity of the messages informing the global development of bioenergy. It was agreed that this be developed further.

Request for Extension (RfE) of TCP Term

At ExCo82 the draft RfE documents were presented. The draft Strategic Plan in particular was discussed in detail and a number of points were clarified. The three documents (Strategic Plan, End of Term Report and RfE Questionnaire) will be submitted for approval at ExCo83 in Utrecht in May 2019.



▲ IEA Bioenergy Chair Jim Spaeth with Paolo Frankl, Head of the Renewable Energy Division of the IEA



▲ Participants in ExCo82



End of Triennium Conference 2018

The IEA Bioenergy Conference 2018 was held on the first day of the three-day "ABLC Global 2018" Conference, which took place in San Francisco on the 7-9 November 2018 and was attended by almost 600 participants. The "ABLC Global 2018" Conference was a collaboration involving IEA Bioenergy, US Department of Energy Bioenergy Technologies Office (BETO) and The Digest. It included 180+ speakers and 17 distinct workshops, forums, and summits covering: Clean Fuels & Energy, Renewable Chemicals and Biomaterials, Feedstocks & Supply Chain Development, The New Nutrition, Advanced Agriculture, International Partnerships, Policy & Finance and many more.

The IEA Bioenergy Conference 2018 commenced with a plenary session to introduce the day. This was followed by nine parallel sessions covering all aspects of the bioenergy value chain. A concluding plenary brought together a panel of senior representatives from the International Energy Agency (IEA), the Global Bioenergy Partnership (GBEP), Bioenergy Accelerator SEforALL/below 50, the International Renewable Energy Agency (IRENA) and IEA Bioenergy. The panel highlighted the main points of the day and drew out some key messages. These included the principal actions to be undertaken by IEA Bioenergy to advance this renewable energy source. The panel identified options for

collaboration of all the international organisations involved in bioenergy, as well as specific cooperative actions between IEA Bioenergy and individual international organisations. It was important that the different international organisations move forward together and build on each other to increase impact.

The summary and presentations from the IEA Bioenergy Conference 2018 are available at <https://www.ieabioenergy.com/publications/iea-bioenergy-conference-2018/>.



▲ IEA Bioenergy Conference 2018 day at ABLC Global 2018

Task Focus:

IEA Bioenergy Task 32 – Biomass Combustion and Co-firing

Background

Compared to other bioenergy technologies, combustion technologies are most widely spread in society, varying from domestic woodstoves to domestic and industrial biomass boilers for heat supply, biomass fired CHP plants and utility scale power generation, either in dedicated biomass power plants or in plants that were converted from coal. In 2017 modern bio-energy provided half of all renewable energy consumed globally and four times as much as solar and wind combined. Biomass combustion based technologies can help decarbonise sectors for which other options may be scarce, by generating high temperature for industries or low temperature heat for space heating. Nevertheless, there is still room for improvement, particularly in terms of emissions, costs and fuel flexibility.

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 and represent 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. For densely populated areas, district heating offers an opportunity to concentrate combustion capacity in a single facility, thereby allowing better combustion systems and more enhanced flue gas cleaning technologies because of economy of scale benefits.
- Biomass based CHP plants based on grate combustion are already widely deployed in industry and for district heating. New CHP concepts based on stirling engines, screw expansion turbines, TEG and ORC technologies are entering the market.
- Circulating fluid bed combustion plants are scaling up in size and becoming of increasing relevance for utility scale power generation, as a real alternative to pulverised coal. These systems offer significantly larger fuel flexibility.
- Replacing coal with biomass in utility scale plant has evolved from typically 10-30% of feed in 2010 to a complete conversion to biomass today.

Economy-of-scale effects in the specific investment make it attractive to use highly standardised but relatively expensive wood pellets in relatively small boilers that are operated only for a limited number of full load hours, while locally available and inexpensive, low quality fuels are better suited for larger boilers. High quality solid biomass fuels (particularly wood pellets or thermally treated) are also becoming very popular in the replacement of coal with biomass, as it can lead to significant cost savings in the fuel supply chain and plant modifications. This also explains the recent market interest in biomass torrefaction and steam explosion technologies.

Task 32 work plan

For more than two decades, IEA Bioenergy Task 32 (Biomass Combustion and Cofiring) has aimed to accelerate market introduction of clean, appropriate and cost efficient combustion

technologies for biomass. The proven approach is to collate and exchange key information that helps to address such challenges using targeted studies or workshops, and then to formulate practical solutions in targeted reports, handbooks and databases. The work of the Task is done in close interaction with combustion researchers, technology providers, end users and policy makers. As the wealth of practical reports, handbooks and databases generated previously has already made a significant market impact, we will continue to do so in the next triennium. Because of this close interaction, the topics of the IEA Bioenergy Task 32 work programme respond to changing market conditions and challenges for biomass combustion technologies in the IEA Bioenergy member countries.

In the past triennium (2016-2018), Task 32 paid attention to the following combustion related topics:

Good cases for biomass heat

In many urbanised and industrial regions, space heating and industrial heat represent up to 2/3 of the final energy demand. Here, biomass based heating already provides a significant contribution to renewable energy generation. For policy makers it is important to know how the market for bioheat can be further expanded and which other renewable energy options could be interesting. For example, biomass boilers are increasingly used in combination with solar collectors or heat pumps. Here the biomass boiler provides heat in the winter time, but can be switched off in summer time when the solar collector and/or heat pump takes over. Optimal equipment sizing and operation strategies in combination with buffer systems are essential in this regard. Task 32 is currently finalising a report that contains 13 very illustrative actual cases for modern bioheat applications.

Emission related health effects from small-scale biomass combustion

There is a significant difference in emissions and health impact between the flue gases that originate from a poorly operated old woodstove and that of a modern state of the art biomass boiler with advanced flue gas cleaning. Amongst others, Task 32 published a study in the past triennium that provides a clear understanding of the typical differences in formation pathways, emission levels and health impacts between various appliances. The study shows that not only the amount of particles is substantially lower for a properly operated boiler when compared to a poorly operated stove, but also the particle toxicity is much lower due to the different chemical composition. As a result, the discussion on health impacts of biomass combustion originated particles is focused on older woodstoves which are inappropriately operated. Two other recent Task 32 studies showed how particle emissions from wood stoves should be optimally measured, and to what extent the emissions under practical conditions are different from those measured during type testing approval.

In the new triennium, Task 32 will further strengthen its work on emissions from small scale combustion, by providing technical design guidelines for boilers and stoves and identifying effective policy measures aimed at reducing emissions from small scale combustion.

Biomass CHP systems

Biomass based CHP systems that are operated in heat-following mode can be an interesting alternative to a conventional biomass boiler,

since next to covering the captive heat demand, it can also deliver electricity for captive use or export to the public grid. In Europe alone there were over 1000 CHP plants in operation in 2016. Recent studies on the actual performance of biomass fired CHP projects however indicate that there is still significant room for improved operational performance.

A recently published Task 32 report provided insight into the critical design and operation factors that determine the success of biomass fired CHP projects and showed a few good examples. It also assessed two innovative concepts for small-scale co-generation power plants that are now commercially available, based on twin screw expansion turbines and ORC technologies.

Biomass pre-treatment

By changing the chemical or physical characteristics using a pre-treatment process, the handling, storability and ease of use of certain biomass fuels can be significantly improved. A joint project was carried out by a number of Tasks in IEA Bioenergy to assess how (a combination of) certain pre-treatment technologies can be instrumental in improving a number of carefully selected biomass supply chains.

Ash utilisation

With the growing market application there is also a need for better use of the increasing ash fractions from biomass combustion plants. For example, when substituting coal with biomass, the resulting fly ash is often no longer suitable for the production of cement.

Based on the experiences of the current Task 32 countries a report was written to identify the various utilisation options for different types of biomass ash, and provide suggestions for improvement of the current situation.

Dissemination

The use of biomass combustion technologies for utility scale power generation and industrial scale process heat generation is growing rapidly in the Pacific Rim. Therefore Task 32 and Task 40 recently took the initiative to organise a workshop in Tokyo on opportunities for interaction of countries in this region with the experts of IEA Bioenergy. This was attended by policy makers and industry representatives from the region.

New triennium

The new triennium will start under the coordination of a new Task leader: Morten Tony Hansen from EA Energy Analyses A/S in Denmark. Jaap Koppejan will step back as Task leader.

Several of the projects that have been formulated for this new triennium are related to further reducing emissions from small-scale combustion. In addition there will also be specific actions (workshops and reports) related to biomass CHP projects, as well as an inter-Task project on high temperature heat in industry.

This article was prepared by Jaap Koppejan, Task 32 Task Leader

For more information please visit <http://task32.ieabioenergy.com/>



▲ Participants in Task 32

Notice Board

International Workshop: Future perspectives of bioenergy development in Asia

On September 5-7 2018 IEA Bioenergy, led by Tasks 32 and Task 40, organised a workshop in cooperation with NEDO/METI with support from the REI in Japan on potential technical and organisational improvements to biomass supply chains, including pre-treatment technologies, bio-refineries, logistics/trade, final conversion/end-use and overarching topics such as sustainability assurance frameworks and policy support options. During six sessions, this workshop on the one hand provided such technical information to Asian member countries, and on the other hand information on the activities of IEA Bioenergy to support the decision making process for membership.

A short summary of the main workshop can be found at <https://www.ieabioenergy.com/wp-content/uploads/2018/09/Workshop-summary-Tokyo.pdf>

Task 37 Energy from Biogas

IEA Bioenergy Task 37 held a workshop and symposium in Cork, Ireland on the 6th September 2018 entitled 'Anaerobic Digestion in the Circular Economy'. This drew 135 attendees from 15 countries. Fourteen presentations were delivered which are downloadable at: <http://task37.ieabioenergy.com/workshops.html>. A behind the scenes video brings to life the experience of participating in this important event and is available on YouTube <http://bit.ly/20WjPcY>. As an added feature of the workshop and symposium the question "How do you see the optimal role of biogas in the circular economy?" was posed and a series of thoughtful and informative responses can be viewed on YouTube <http://bit.ly/2ycvLhp>.



▲ Task 37 Symposium Group

Task 39 Commercialising Conventional and Advanced Liquid Biofuels from Biomass

IEA Bioenergy Task 39 recently completed a report entitled, "A Survey of Advanced Fuels for Advanced Engines" that has been distributed among the Task 39 network membership and that will become publicly available for download (<http://task39.ieabioenergy.com/publications/>) in late January 2019. The report is co-authored by Norbert Grope, Olaf Schröder and Jürgen Krahl of the Technologietransferzentrum Automotive Coburg (TAC-Coburg) and Franziska Müller-Langer (Germany's national team leader for Task 39), Jörg Schröder and Eric Mattheß of Germany's DBFZ (German Biomass Research Centre). The study contains up-to-date information on current and prospective advanced biofuels – especially biomass-based liquid fuels – for road vehicles, particularly emphasising their performance attributes (fuel properties and exhaust emission characteristics) in compression or spark ignition type engines (depending upon the specific advanced biofuel). Although funded by Task 39, the report was also sponsored by IEA's Advanced Motor Fuels (AMF) TCP, Annex 52 which focuses on "Fuels for Efficiency." It is hoped that this report will provide a springboard for further extended collaboration between IEA Bioenergy and AMF (and perhaps other TCPs as well). It is likely that the area of co-optimising fuel-engine systems to maximise transport performance efficiencies and associated greenhouse gas reduction potentials using advanced biofuels will continue to be an

important area of joint interest. In addition to providing a useful reference for Task 39 stakeholders. This report also serves as an updated and complementary resource to AMF's online fuel information portal (<http://www.iea-amf.org>).

Task 43 Biomass Feedstocks for Energy Markets

IEA Bioenergy Task 43 has launched an initiative to identify attractive examples of landscape management and design for bioenergy and the bioeconomy. The goal of this initiative is to compile world-wide innovative examples as a means of showcasing how the production of biomass for bioenergy can generate positive impacts in agriculture and forestry landscapes. These examples are also meant to serve as sources of inspiration that other biomass producers can use to enhance the sustainability of their own activities. The aim of a joint workshop held with FAO in October 2018 titled 'Sustainable Landscape Management for Bioenergy and the Bioeconomy' was to provide a platform for a dialogue between stakeholders along biomass supply chains where invited representatives from important organisations would share their perspectives on the showcase examples and landscape management and design for bioenergy and the bioeconomy. The presentations can be viewed at <http://task43.ieabioenergy.com/publications/sustainable-landscape-management-for-bioenergy-and-the-bioeconomy/>.

Publications



Biological Methanation Demonstration Plant in Allendorf, GERMANY: An Upgrading Facility for Biogas

This IEA Bioenergy Task 37 case study concerns upgrading biogas to biomethane using hydrogen in Germany. In theory this system can store surplus electricity that would have been curtailed (producing H₂), captures CO₂ that would have been emitted (from biogas) and replaces traditional biogas upgrading. https://www.ieabioenergy.com/wp-content/uploads/2018/11/Germany-P2G_Case-Story_LAY2.pdf



Advanced Test Methods for Firewood Stoves – Consequences of real-life operation on stove performance

The IEA Bioenergy Task 32 report presents a comparison of official type test results with field tests. These confirmed that typical real-life heating operation results in significantly higher emissions and lower efficiencies. Real-life oriented test concepts are capable to better reflect real-life performance of the appliances compared to existing EN standards. https://www.ieabioenergy.com/wp-content/uploads/2018/11/IEA_Bioenergy_Task32_Test-Methods.pdf



Value of batch tests for biogas potential analysis – Method comparison and challenges of substrate and efficiency evaluation of biogas plants

The batch test is one method which helps to assess biogas or methane potential of a given substrate. This IEA Bioenergy Task 37 report gives an overview on information to be gained from the test, the relation to other test methods and the limitations of the test. https://www.ieabioenergy.com/wp-content/uploads/2018/11/Batch_tests_web_END.pdf



Biomass pre-treatment for bioenergy – Case study 1: Biomass Torrefaction

This report describes one of six separate case studies from the Inter-Task project on Pretreatment. Specifically, it analyses the effects of pretreatment on supply chain efficiency by comparing the energy consumption along the supply chain of White Wood Pellets (WWP) supply with Torrefied Wood Pellets (TWP) supply. Other case studies can be viewed at <http://itp-fuel-treatment.ieabioenergy.com/>. <https://www.ieabioenergy.com/wp-content/uploads/2018/10/CS1-Torrefaction.pdf>



Thermal gasification based hybrid systems: IEA Bioenergy Task 33 special project

In this special IEA Bioenergy Task 33 report production of renewable gaseous and liquid biofuels in combination with renewable hydrogen is described. It shows how the excess electricity, which could not be fed into the grid immediately in order to avoid overloaded, can be stored in the form of hydrogen and how this renewable hydrogen can boost the production of renewable biofuels. https://www.ieabioenergy.com/wp-content/uploads/2018/10/Thermal_gasif_based_hybrids.pdf



Standards and Labels related to Biobased Products: Developments in the 2016-2018 triennium

The aim of this IEA Bioenergy Task 42 report is to gather relevant information about existing standardisation approaches for biobased products, and to monitor relevant activities before and during the triennium period (2016-2018). This activity's focus is on products; national and/or company reporting is beyond the scope of this report. <https://www.ieabioenergy.com/wp-content/uploads/2018/10/Standards-and-Labels-related-to-Biobased-Products-2016-to-2018.pdf>



IEA Bioenergy Countries' Report – Update 2018

This summary report, together with the separate country reports, was prepared from IEA statistical data, combined with data and information provided by the IEA Bioenergy Executive Committee and its Tasks. All individual country reports were reviewed by the national delegates to the IEA Bioenergy Executive Committee, who have approved the content. Individual country reports are available at <https://www.ieabioenergy.com/iea-publications/country-reports/2018-country-reports/>. <https://www.ieabioenergy.com/wp-content/uploads/2018/10/IEA-Bioenergy-Countries-Report-Update-2018-Bioenergy-policies-and-status-of-implementation.pdf>



Gas analysis in gasification of biomass and waste

This report, commissioned by IEA Bioenergy Task 33, compiles a representative part of the extensive work developed in recent years by relevant actors in the field of gas analysis applied to (biomass and waste) gasification. <https://www.ieabioenergy.com/wp-content/uploads/2018/09/IEA-Bioenergy-Task-33-gas-analysis-report-Documents-1-1.pdf>



How to analyse ecosystem services in landscapes

This summary report presents a review of methods for analysing and mapping of ecosystem services in terrestrial landscapes, and attempts to clarify the associated terminology. <https://www.ieabioenergy.com/wp-content/uploads/2018/09/ExCo2018-03-1.pdf>



IEA Bioenergy Annual Report 2017

The IEA Bioenergy Annual Report 2017 includes a special feature article 'BIO-CCS and Bio-CCUS in climate change mitigation and extended use of biomass raw material' prepared by Task 41, Project 5. 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 Technology Collaboration Programme. <http://www.ieabioenergy.com/wp-content/uploads/2018/04/IEA-Bioenergy-Annual-Report-2017-R1.pdf>



Status of PM emission measurement methods and new developments

This report, prepared by IEA Bioenergy Task 32, aims to stimulate an international approach towards one (or few) method(s) for determining particle emissions from biomass based combustion. https://www.ieabioenergy.com/wp-content/uploads/2018/09/IEA-Paper_PM_determination.pdf



The Role of Anaerobic Digestion and Biogas in the Circular Economy

This Task 37 technical report has been written to highlight the diversity of benefits from anaerobic digestion and biogas systems. Sustainable biogas systems include processes for the treatment of waste, for protection of the environment, for conversion of low value material to higher value material, and for the production of electricity, heat and advanced gaseous biofuel. Biogas and anaerobic digestion systems are dispatchable and as such can facilitate intermittent renewable electricity. https://www.ieabioenergy.com/wp-content/uploads/2018/08/anaerobic-digestion_web_END.pdf

To view all IEA Bioenergy publications, which are available for free download visit <http://www.ieabioenergy.com/iea-publications/>. Please visit the FAQ section of the IEA Bioenergy website at <http://www.ieabioenergy.com/iea-publications/faq/>.

IEA Bioenergy Events

Executive Committee

ExCo83 will be held in Utrecht, The Netherlands, 21-23 May 2019

ExCo84 will be held in Tallinn, Estonia, 22-24 October 2019

ExCo85 TBA

Task Events

Task 32's schedule of upcoming events is
Task meetings TBC

Task 33's schedule of upcoming events is
Task meetings TBC

Task 34's schedule of upcoming events is
Task meetings TBC

Task 36's schedule of upcoming events is
Task meetings TBC

Task 37's schedule of upcoming events is
Task meetings TBC

Task 39's schedule of upcoming events is
Task meetings TBC

Task 40's schedule of upcoming events is
Task meetings TBC

Task 42's schedule of upcoming events is
Task meetings TBC

Task 43's schedule of upcoming events is
Task meetings TBC

Task 44's schedule of upcoming events is
Task meetings TBC

Task 45's schedule of upcoming events is
Task meetings TBC

Other Items

Biomass Trade Summit Europe 2019

Date 16th January, 2019 – 17th January, 2019
Location Rotterdam, The Netherlands
Website <https://www.wplgroup.com/aci/event/biomass-trade/>

16th International Conference on Renewable Mobility “Fuels of the Future 2019”

Date 21st January, 2019 – 22nd January, 2019
Location Berlin, Germany
Website https://www.fuels-of-the-future.com/press/news/?tx_ttnews%5Byear%5D=2018&tx_ttnews%5Bmonth%5D=04&tx_ttnews%5Bday%5D=26&tx_ttnews%5Btt_news%5D=121&cHash=a8a4c6ba36613a1f09f56de4b389b528

Lignofuels 2019

Date 13th February, 2019 – 14th February 2019
Location Oslo, Norway
Website <https://www.wplgroup.com/aci/event/lignocellulosic-fuel-conference-europe/>

4th Biomass Trade Summit Europe 2019

Date 20th February, 2019 – 21st February 2019
Location Rotterdam, The Netherlands
Website <https://www.wplgroup.com/aci/event/biomass-trade/>

International Conference on Biofuels and Bioenergy 2019

Date 4th March, 2019 – 5th March, 2019
Location Barcelona, Spain
Website <https://www.eventbrite.com/e/10th-edition-of-international-conference-on-biofuels-and-bioenergy-tickets-37266722771>

Gasification 2019 – 8th Gasification conference

Date 13th March, 2019 – 14th March, 2019
Location Brussels, Belgium
Website <https://www.wplgroup.com/aci/event/gasification/>

7th Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers

Date 20th March, 2019 – 21st March, 2019
Location Cologne, Germany
Website <http://co2-chemistry.eu/>

2nd International Conference On Biofuel & Bioenergy

Date 27th March, 2019 – 28th March, 2019
Location Paris, France
Website <http://www.eubia.org/cms/event/2nd-international-conference-on-biofuel-and-bioenergy/>

9th European Algae Industry Summit

Date 10th April, 201 – 11th April, 201
Location Lisbon, Portugal
Website <https://www.wplgroup.com/aci/event/european-algae-industry-summit/>

6th International Conference on Renewable Energy Gas Technology, REGATEC 2019

Date 20th May, 2019 – 21st May, 2019
Location Malmö, SWEDEN
Website <http://regatec.org/>

EUBCE 2019 – 27th European Biomass Conference and Exhibition

Date 27th May, 2019 – 30th May, 2019
Location Lisbon, Portugal
Website <http://www.eubce.com/>

Oleofuels 2019

Date 5th June, 2019 – 6th June, 2019
Location VENICE, ITALY
Website <https://www.wplgroup.com/aci/event/oleofuels/>

International Conference on Biofuels & Bioenergy: Fuels of the future

Date 23rd September, 2019 – 25th September, 2019
Location Barcelona, Spain
Website <http://www.phronesisonline.com/biofuels-conference/>

Key IEA Bioenergy Contacts

Postal Address: P.O. Box 12249, Dublin 9, IRELAND Website: www.ieabioenergy.com

Secretary

Pearse Buckley
Tel: +353 87 737 3652
Email: pbuckley@odtbioenergy.com

Technical Coordinator

Luc Pelkmans
Tel: +32 492 97 79 30
Email: luc.pelkmans@caprea.be

Newsletter Editor

Paul Derham
Tel: +353 87 9936635
Email: pderham@odtbioenergy.com

Executive Committee

AUSTRALIA

Dr Mark Brown
Forest Ind. Research Group (ML16)
Locked Bag 4
University of the Sunshine Coast
MAROOCHYDORE DC, QLD 4558
Tel: +61 (0) 488 123 155
Email: mbrown2@usc.edu.au

AUSTRIA

Dr Theodor Zillner
Federal Ministry for Transport,
Innovation and Technology
Radetzkystrasse 2
1030 WIEN
Tel: +43 1 71162 652925
Email: theodor.zillner@bmvit.gv.at

BELGIUM

Dr Yves Schenkel
CRAW
Rue de Lioux, 8
GEMBLoux, B-5030
Tel: +32 0 8162 6771
Email: y.schenkel@cra.wallonie.be

BRAZIL

Dr. Miguel Ivan Lacerda de Oliveira
Ministry of Mines and Energy
Esplanada dos Ministérios, Bloco U, 9º Andar
70 065-900 – BRASÍLIA – DF
Tel: +55 61 2032 5509
Email: miguel.oliveira@mme.gov.br

CANADA

Dr Alex MacLeod
Office of Energy Research & Development
Natural Resources Canada
580 Booth Street, 14th floor
OTTAWA, Ontario K1A 0E4
Tel: +1-613-286-1459
Email: alex.macleod@canada.ca

CROATIA

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

DENMARK

Dr Ane Katharina Paarup Meyer
Danish Energy Agency –
Centre for Energy Administration
Niels Bohrs Vej 8D
6700 Esbjerg
Tel: +45 33 927 917
Email: akpm@ens.dk

ESTONIA

Ms Liisa Ruuder
Ministry of Economic Affairs
& Communications
Energy Department
Harju Street 11
15072 Tallinn
Tel: +372 625 6321
Email: liisa.ruuder@mkm.ee

FINLAND

Dr. Antti Arasto
VTT Technical Research Centre of Finland
Biologinkuja 5, Espoo
P.O. Box 1000
FI-02044 VTT
Tel: +358 20 722 4016
Email: antti.arasto@vtt.fi

FRANCE

Mde Emilie Machefaux
Service Forêt, Alimentation et Bioéconomie
20 avenue du Grésillé – BP 90406
F-49004 ANGERS Cedex 01
Tel: +33 2 41 20 43 27
Email: emilie.machefaux@ademe.fr

GERMANY

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

IRELAND

Mr Matthew Clancy
Sustainable Energy Authority of Ireland
Wilton Park House
Wilton Place
DUBLIN 2
Tel: +353 1 808 2152
Fax: +353 1 808 2002
Email: matthew.clancy@seai.ie

ITALY

Mr Luca Benedetti
Gestore dei Servizi Energetici – GSE S.p.A.
Viale Maresciallo Pilsudski, 92
00197 ROME
Tel: +39 06 8011 4572
Fax: +39 06 8011 2040
Email: luca.benedetti@gse.it

JAPAN

Mr Seiji Morishima
NEDO
Muza Kawasaki Central Tower 18F
1310 Ohmiyacho, Saiwai-ku, Kawasaki,
KANAGAWA 212-8554
Tel: +81 44 520 5271
Email: morishimasij@nedo.go.jp

REPUBLIC OF KOREA

Dr Seungchan CHANG
DSM Policy Division
Korea Energy Agency (KEA)
388, Poeundaero, Suji-gu, Yongin-si
Gyeonggi-do 16842
Tel: +82 31 260-4191
Email: schang@energy.or.kr

THE NETHERLANDS

Ir Kees Kwant
NL Enterprise Agency
P.O. Box 8242
3503 RE UTRECHT
Tel: +31 88 602 2458
Email: kees.kwant@rvo.nl

NEW ZEALAND

Dr Paul Bennett
Scion
Private Bag 3020
Rotorua
Tel: +64 7 343 5601
Email: paul.bennett@scionresearch.com

NORWAY

Mr Trond Vaernes
The Research Council of Norway
Department for Energy Research
Postboks 564,
1327 Lysaker
Tel: +47 22 03 70 00
Email: trv@forskningsradet.no

SOUTH AFRICA

Dr Thembakazi Mali
SANEDI (South African National
Development Institute)
Senior Manager: Clean Energy
Block E, Upper Grayston Office Park
150 Linden Street, Strathavon
SANDTON, 2146
Tel: +27 11 038 4346
Email: thembakazim@santedi.org.za

SWEDEN

Dr Åsa Forsum
Swedish Energy Agency
P.O. Box 310
ESKILSTUNA, SE-631 04
Tel: +46 16 544 2255
Email: asa.forsum@energimyndigheten.se

SWITZERLAND

Dr Sandra Hermle
Swiss Federal Office of Energy (SFOE)
Mühlestrasse 4
3063 Ittigen
Tel: +41 58 465 8922
Email: sandra.hermle@bfe.admin.ch

UNITED KINGDOM

Mr Peter Coleman
Department of Business,
Energy & Industrial Strategy
1 Victoria Street
LONDON, SW1H 0ET
Tel: +44 300 068 8270
Email: peter.coleman@beis.gov.uk

UNITED STATES OF AMERICA

Mr. Jim Spaeth
Bioenergy Technologies Office
Demonstration & Market Transformation
Program Manager, Energy Efficiency
and Renewable Energy
U.S. Department of Energy
15013 Denver West Parkway
Golden, CO 80401
Tel: +1 720 356 1784
Email: jim.spaeth@ee.doe.gov

EUROPEAN COMMISSION

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

Tasks

Task 32: Biomass Combustion and Co-firing
Jaap Koppejan
Procede Group BV
THE NETHERLANDS
Tel: +31 53 7112 519
Email: jaapkoppejan@procede.nl
Web: www.task32.ieabioenergy.com/

Task 33: Gasification of Biomass and Waste
Kevin Whitty
Department of Chemical Engineering
The University of Utah
USA
Tel: +1 801 585 9388
Email: kevin.whitty@utah.edu
Web: www.task33.ieabioenergy.com/

Task 34: Direct Thermochemical Liquefaction
Alan Zacher
Chemical and Biological Processing
Pacific Northwest National Laboratory
USA
Tel: +1 509-372-4545
Email: Alan.Zacher@pnnl.gov
Web: www.task34.ieabioenergy.com/

Task 36: Integrating Energy Recovery into Solid Waste Management Systems
Inge Johansson
RISE Research Institutes of Sweden
SWEDEN
Tel: +46 (0)10 516 58 64
Email: Inge.Johansson@ri.se
Web: www.task36.ieabioenergy.com/

Task 37: Energy from Biogas
Jerry Murphy
Bioenergy and Biofuels Research
Environmental Research Institute
School of Engineering, University College Cork
Ireland
Tel: +353-86-0554493
Email: jerry.murphy@ucc.ie
Web: www.task37.ieabioenergy.com/

Task 38: Climate Change Effects of Biomass and Bioenergy Systems
Annette Cowie
School of Environmental and Rural Science,
NSW Department of Primary Industries
AUSTRALIA
Tel: +61 2 6770 1842
Email: annette.cowie@dpi.nsw.gov.au
Web: www.task38.ieabioenergy.com/

Task 39: Commercialising Conventional and Advanced Liquid Biofuels from Biomass
Jim McMillan
NREL
USA
Tel: +1 303 384 6861
Email: jim.mcmillan@nrel.gov
Web: www.task39.ieabioenergy.com/

Task 40: Sustainable Biomass Markets and International Trade to support the biobased economy
Martin Junginger
Copernicus Institute, Energy & Resources
THE NETHERLANDS
Tel: +31 30 253 7613
Email: h.m.junginger@uu.nl
Web: www.task40.ieabioenergy.com/

Task 42: Biorefining in a future BioEconomy
Rene van Ree
Wageningen University and Research (WUR)
Agrotechnology and Food Sciences Group/
Wageningen International
THE NETHERLANDS
Tel: +31 317 480 710
Email: rene.vanree@wur.nl
Web: www.task42.ieabioenergy.com/

Task 43: Biomass Feedstocks for Energy Markets
Ioannis Dimitriou
Swedish University of Agricultural Sciences
Department of Crop Production Ecology
Sweden
Tel: +46 18 672553
Email: Jannis.Dimitriou@slu.se
Web: www.task43.ieabioenergy.com/

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

IEA Bioenergy, also known as the Technology Collaboration Programme (TCP) for a Programme of Research, Development and Demonstration on Bioenergy, functions within a Framework created by the International Energy Agency (IEA). Views, findings and publications of IEA Bioenergy do not necessarily represent the views or policies of the IEA Secretariat or of its individual Member countries.