



Auckland, New Zealand



Bioenergy in New Zealand

Overview by Paul Bennett, ExCo Member for New Zealand

The current New Zealand Government takes a non-interventionist approach to energy and largely allows the market to dictate energy use.

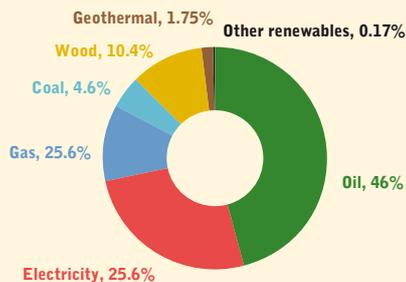
The New Zealand Energy Efficiency and Conservation Strategy 2011-2016 (NZEES) is a companion to the Government's primary statement of energy policy set out in the New Zealand Energy Strategy 2011-2021. Within this there are no bioenergy specific targets. There was a target to achieve 80% renewables in power generation by 2016, which has been met.

The IEA visited New Zealand in April 2016 to conduct an In-Depth Review of New Zealand's energy policy. It is due for public release in February 2017. The New Zealand Government has also reviewed its Energy Efficiency and Conservation strategy and 5 year targets, and will release its findings for public consultation in December 2016.

There is little financial support for bioenergy or biofuels in New Zealand at the moment. Purchase prices for electricity make export of power from local bioenergy plants economically unattractive. There is no incentive for biodiesel, but there is a fuel duty exemption for ethanol in petrol.

Although, there is limited uptake of bioenergy other than in the wood processing and the pulp and paper sectors, there is an abundant resource and abundant under-utilised land. There is also a growing recognition that the Paris agreement will have a significant impact on the New Zealand energy sector going forward.

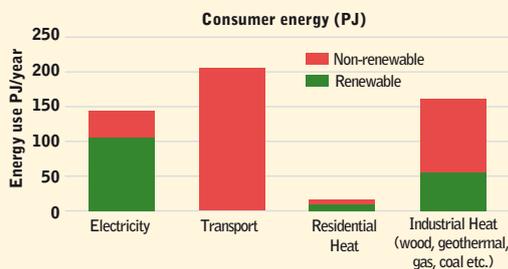
Currently bioenergy contributes to a little over 10% of New Zealand's consumer energy, whilst fossil fuels contribute 62%. The biomass is mostly wood derived residues, such as bark, sawdust and black liquor, and is combusted to provide process heat in the wood processing and pulp and paper industries.



New Zealand also has a fairly unique greenhouse gas emissions profile with nearly half of the emissions (49%) coming from agriculture, and 40% from energy use. The Nationally Determined Contribution (NDC) towards GHG emissions reductions, agreed in Paris as part of the COP21 meeting, was 30%.

Given that the agricultural sector is a key driver of the New Zealand economy, that the carbon intensity of NZ milk and meat production is very competitive compared to production in other countries and regions, and that agricultural emissions are difficult to mitigate (without reducing herd sizes) then the most likely target for GHG emission reduction is the energy sector. The primary energy consumed in New Zealand is shown below by sector and with the proportion of renewable energy also shown.

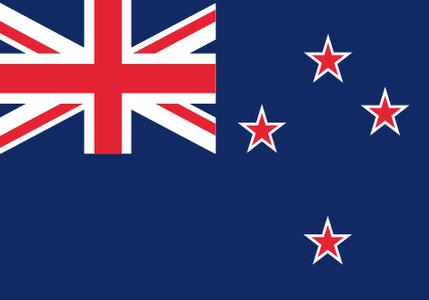
The renewable proportion of electricity is largely delivered through hydro and geothermal electricity, whilst the renewable portion of industrial heat is from wood residues as discussed above. The non-renewable portion of industrial heat is provided by the combustion of fossil fuels, with natural gas coal and oil contributing 34%, 26% and 8% respectively.



The contribution of liquid biofuels (total 6.5 million litres) to the transport fuel market is very small, at less than 0.1%. Currently, this is largely derived from small opportunistic ventures using used cooking oil, or whey from dairies, as feedstocks for FAME biodiesel and bioethanol respectively. Towards the end of 2016, Z energy will commission a 20 million litre capacity plant to convert tallow to biodiesel.

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From the Secretariat



Pearse Buckley

ExCo78, Rotorua, New Zealand

The 78th meeting of the Executive Committee was held at the Novotel Lakeside Hotel, Rotorua, New Zealand on 9-11 November 2016, with Kees Kwant as Chair and Pearse Buckley as Secretary. The meeting was hosted by Scion. The Chair expressed the appreciation of the ExCo to Bennett and his colleagues for the excellent meeting arrangements. Some of the outcomes of the meeting are detailed below.

Changes to Executive Committee

The positions of both Member and Alternate for Brazil were vacant, as were the Alternate positions for both the European Commission and the United Kingdom.

ExCo78 Workshop

A successful and well attended workshop was held on the topic of 'Drop-in biofuels for international marine and aviation markets'. The workshop, with approximately 60 attendees, included IEA Bioenergy ExCo Members and Task Leaders and observers from New Zealand. The workshop presentations are listed below:

- ARENA's Investment Priorities in Biofuels – *Amy Philbrook, Australian Renewable Energy Agency (ARENA), Australia*
- Possible pathways to drop-in biofuels for marine and aviation applications – *Jack Saddler, University British Columbia, Canada*
- Production of bio-crude oil as a platform for biochemicals, marine and aviation biofuels – *Steve Rogers, Licella, Australia*
- A roadmap for the adoption of renewable jet fuels (RJF) in Europe – *Sierk de Jong, SkyNRG, Netherlands – (videoconference)*
- Introducing marine biofuels – *Sjors Geraedts, GoodFuels Marine, Netherlands – (videoconference)*
- Biofuel supply to Interislander – *Peter Wells, Interislander, New Zealand*
- A Port's perspective on marine fuel quality – *Rosie Mercer, Port of Auckland, New Zealand*
- Potential and challenges of drop-in marine biofuels – *Claus Felby, University of Copenhagen, Denmark*
- Prospects of pyrolysis of lignocellulosic biomass to produce marine biofuels – *Alan Zacher, Pacific Northwest National Laboratory, USA*
- Aviation and Environment – *Michael Lakeman, Boeing, USA*
- Sustainable Aviation Fuel – *David White, Whitejet, Australia*
- Aviation Biofuels – *Enhancing Technical and Economic competitiveness – Corinne Drennan, Pacific Northwest National Laboratory, USA*
- Economic and environmental performance perspectives of alternative aviation fuels – *Robert Malina, Massachusetts Institute of Technology, United States/University of Hasselt, Belgium*
- Perspectives for biojet supply to airlines – *Chris Field, Air New Zealand*
- Policies for promoting the production and consumption of biojet fuels – *Susan van Dyk, University of British Columbia, Canada*

The workshop presentations are available at <http://www.ieabioenergy.com/publications/ws21-drop-in-biofuels-for-international-marine-and-aviation-markets/>.



Workshop on 'Drop-in biofuels for international marine and aviation markets'

Progress with current Initiatives

Algae review

The report is going through final peer review which will be completed by year end with publication expected early in 2017. Some of the key messages include the high photosynthetic efficiency of algae, the growth in the algae-based products industry and the potential to use algae in an integrated biorefinery context, while acknowledging the challenge posed by current low oil and natural gas prices and the absence of consistent policies on carbon pricing.

Task 41 Project 5: Bio-CCS/CCUS

This two-year project (<http://task41project5.ieabioenergy.com/>) is continuing with two workshops on concepts and sustainability having been completed and two further workshops to follow in 2017.

Task 41 Project 6: Bioenergy and Grid Storage

This project (<http://task41project6.ieabioenergy.com/>) is nearing completion with the final report expected to be published late in 2016 or early in 2017. The report concludes that bioenergy can play a role in balancing the grid and the role of bioenergy can increase as the time interval of balancing increases. The potential role and technologies for balancing the power grid varies significantly from region to region.

Task 41 Project 7: Bioenergy RES Hybrids

The project (<http://task41project7.ieabioenergy.com/>) is almost complete with a final workshop on the 23rd November 2016. It includes three country reports on the status of bioenergy RES hybrids – for Austria, Finland and Germany. The project has developed a series of key findings for domestic applications, utility scale and district heating and cooling networks, industry and farm scale applications.



Renewed acquaintance with John Tustin

Inter-Task Project: Bioenergy Success Stories

The project template for success stories is being reviewed by the Task Leaders and should be finalised by the end of 2016. The project will be complete in March 2017. Both ExCo Members and Task Leaders will submit success stories for inclusion.

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

The project has three objectives: (i) an overview of calculation methods; (ii) approaches on how to govern; and (iii) to understand the positions and motivations of stakeholders. The case studies will cover (a) biogas production in Germany, (b) forestry in the USA, (c) agriculture in the USA and (d) forestry in Canada. A final workshop will be held in conjunction with the IEA Bioenergy Conference 2018.

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

The goal of the project is to expand the resource base. It seeks to demonstrate this with examples. Seven case studies will demonstrate how new pre-treatment technologies can be instrumental in improving the efficiency and cost effectiveness of using various low grade biomass resources for thermal conversion. The project will be completed in the second quarter of 2018.

Communication Strategy

The Executive Committee continues to lay emphasis on effective communication of IEA Bioenergy outputs. There will be a focus on increasing the number of Twitter followers, and the production of webinars to disseminate key outputs will continue. Two page summaries of important reports will be uploaded to the website and a public version of the TCP work programme will be made available to increase awareness of the work of IEA Bioenergy.

Cooperation with International Organizations

FAO

Ongoing communication with FAO has identified a number of areas where further cooperation can take place. Among other initiatives, the potential to hold a joint workshop on the theme of biorefineries in the bioeconomy is being examined.

GBEP

The collaboration in the framework of GBEP Activity Group 6 has proved to be very successful and there will be further discussions to see how this can be continued.

IRENA

Following the ExCo77 workshop in Rome there was a related workshop in Berlin in September, which looked at the assumptions underlying estimates of biomass resources and sought to develop resource estimates that were well founded. IEA Bioenergy and IRENA are continuing to work to ensure that consistent messages supported by evidence are put in the public domain.

SE4ALL

A number of opportunities for collaboration with SE4ALL have been identified including the Biofuels Below 50 Initiative, Embedding Bioenergy in the Renewable Community and the African Biomass Resource. These will be considered in ongoing communications with SE4ALL.

Meeting an old friend

It was a great pleasure to have John and Anne Tustin join us at the ExCo78 dinner in Rotorua. Kees Kwant took the opportunity to thank John on behalf of the ExCo for his outstanding service as Secretary of IEA Bioenergy. John expressed his gratitude and noted the great spirit that was evident in the TCP.

ExCo78 Study Tour

Following the ExCo78 meeting a group of IEA Bioenergy attendees participated in the study tour to Scion and Red Stag Timber Limited. The group was given a presentation on Red Stag in the Scion facility prior to the visit to the sawmill.

Red Stag Timber Limited, which is the largest in New Zealand, was originally state owned and built in 1939. It was sold to corporate in 1996 and went into private ownership in 2003. The plant produces certified sustainable structural timber mostly for the domestic market and has an annual turnover that exceeds NZ\$200 million. It has a full time staff of 293 with about 50 full time contractors.

The sawmill takes in 900,000 tonnes of logs per year from a catchment within 50-100 km. From this it produces 450,000 m³ of timber product. There is a goal to increase this to 650,000 m³. The wood chip residues, which account for about 33% of the intake, are exported to pulp & paper production. The sawdust residues, amounting to about 10% of the intake logs, is used on site for energy.

The major energy use on site is in drying kilns, which dry 80% of the product from a moisture content of 60% down to a finished value of 13%. These kilns are supplied by two 20 MW boilers which produce 54 tonnes of steam per hour at 42 bar. Part of the steam is used to generate 3.5 MW_e, all of which is used on site for process equipment and site utilities. Red Stag Timber Limited is mostly energy self-sufficient and almost carbon neutral.

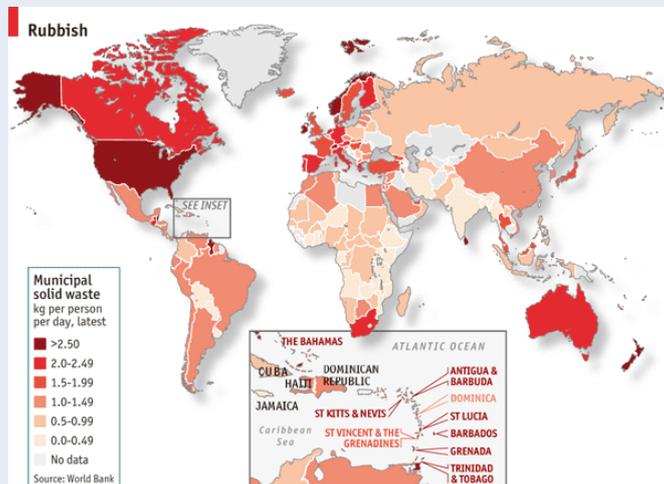
Task Focus

IEA Bioenergy Task 36 – Integrating Energy Recovery into Solid Waste Management Systems

In 2012 the World Bank estimated that there was 1.3 billion tonnes of waste produced per annum globally. However, it also estimated that this would grow to 2.2 billion tonnes/year by 2025 and attributed this rise to increased urbanisation in developing and emerging economies along with the associated increase in per capita production of waste.

Figure 1 shows World Bank figures for waste arising per person worldwide and shows how waste production is currently highest in OECD countries.

Figure 1: Production of MSW worldwide (Source: the Economist based on the World Bank, 2012)



The increase in waste arising poses a huge challenge for the waste management system. A sustainable waste management system is one of the foundations of the circular economy. The management systems need to be in place in advance of the waste becoming waste. Waste prevention is, naturally, the preferred option, but in a sustainable waste management system one would also need a combination of re-use, recycling, energy recovery, and landfill.

The waste challenge is not an isolated issue as around the world nations are looking for more sustainable energy generation – moving away from the dependence on fossil fuels. The combination of these challenges is the background to IEA Bioenergy Task 36. The Tasks' objectives are

“To collect, analyse, share, and disseminate best practice technical and strategic non-technical information on integration of energy recovery into solid waste management, leading to improved availability of information to decision makers and to increased acceptance and performance in terms of environment, costs, and reliability.”

Our work

A lot of our work is focused around meetings, workshops, and field trips. The function of the meetings is to exchange results from R&D projects and other relevant information (such as policy, legislation, and best practice) from the participating countries. The field trips provide the opportunity to visit state of the art facilities. These could be energy recovery facilities or other facilities related to the work of the Task. Finally the workshops are opportunities to discuss in-depth specific subjects such as the role of energy recovery in the circular economy, gasification and pyrolysis of waste, transboundary shipments of waste. The workshops are normally held in conjunction with the Task meetings. The presentations given during the workshops are made available on the Task webpage (www.task36.ieabioenergy.com) along with a summary of the workshop.

Since waste is a broad concept it is also partially included in other IEA bioenergy Tasks and cooperation between the different Tasks is essential. Co-operation with other organisations like the International Solid Waste Association (ISWA) and the European Recovered Fuels Organisation (ERFO) are also initiated/discussed.

Priorities for the current triennium

In the preparation of the work program for the current triennium a number of subjects were identified as areas into which the Task will put extra effort. These subjects are

- **The circular economy and smart waste management:** The development towards a more circular economy affects both waste management and energy systems. The impact of these changes on energy recovery and the role energy recovery can play in the circular economy are topics that will be addressed. Work in this area was introduced into the Task at the end of the last triennium and is now one of the most important facets. This will also be a topic for one of the workshops.
- **Production of waste derived fuels:** The production of refuse derived fuels and solid recovered fuel (SRF) has increased in Europe in line with developments in waste management and in carbon accounting. Waste fuels are currently classified as partly renewable for the purpose of the EU Emissions Trading Scheme, which means that many energy intensive industries (such as cement and lime manufacture) are interested in the substitution of fossil energy with specifically developed solid recovered fuels. There are also standards being developed within ISO in this area which might affect the market and legislation. The Task has worked with the subject of waste derived fuels during the last two triennia and that work will be ongoing through this triennium as well. This will be a topic for a joint workshop with Task 32 and Task 33 where the production of SRF/RDF as well as the use of SRF/RDF for co firing and gasification is discussed.

- **Advanced thermal conversion of waste (gasification and pyrolysis):** This is an area that has gained interest in recent years. In some countries incentives supporting these technologies, over the traditional waste to energy plants based on combustion technology, have been introduced. When many of these projects were scaled up to industrial scale, they faced serious problems and there are not that many plants in continuous operation to provide adequate references and data. However, the area is of interest since the technologies have the potential to produce a more flexible output that could be used as liquid fuels or as platform chemicals. During the last triennium the Task arranged a workshop on the subject, involving a number of the market suppliers. The workshop was appreciated and there was interest in repeating it. This will be the subject for a workshop during this triennium and also the subject of a Task 33 report on gasification of waste, where Task 36 will assist with contacts and information.
- **Transboundary shipments of waste.** The increased production of waste derived fuels of different sorts has also been accompanied by a trend to ship these fuel fractions across borders in Europe. The driving forces for this could be the wish to replace fossil fuels in cement kilns but also the need for a cost efficient fuel to provide heat to district heating networks in the Nordic countries. We will look at different aspects of this during the triennium together with Task 40. This will be done through a master's thesis and potentially also in a workshop.
- **International policy, legislative and fiscal drivers impacting energy recovery in solid waste management.** This is a subject routinely discussed during meetings where experiences from the different countries are brought forward. This work will continue and possibly expand into a summary report of trends affecting energy recovery.

These priorities have been determined by the members and their interests, which are currently focused on Europe. However additions will be made if new countries join the Task reflecting their priorities. Thus new members have a strong possibility to influence the Task work.

Current and planned activities

In 2016 a workshop on the subject “Towards a sustainable waste management in Italy” was held at the Malagrotta plant in Rome. The documentation and summary are published on the Task homepage. The Task has also been represented at the Bioenergy Australia 2016 conference presenting work from the previous triennium.

On 9-11 January 2017 the next Task meeting and workshop will be held in Paris. The subject of the workshop will be the role of WtE in the circular economy. It will include speakers from different countries as well as from different types of related organizations. It will include presentations from Task 37 on the role of biogas and Task 42 on the role of biorefineries.

In June 2017 a joint workshop with Task 32 and Task 33 will be arranged. The topic for the workshop will be the production and use of RDF for co incineration and gasification. In conjunction with that meeting there will also be a Task meeting and a field excursion.



Figure 1 Malagrotta plant



Figure 2 Task 36 at the first Task meeting in 2016

This article was prepared by Mr. Inge Johansson.

For more information about Task 36 please visit (www.task36.ieabioenergy.com)

Task 38 – Climate Change Effects of Biomass and Bioenergy Systems

Tasks 38 and 43 collaboration

Associates from Tasks 38 and 43 contributed to a report, “*Forest biomass, carbon neutrality and climate change mitigation*”, that was published by the European Forest Institute (EFI) in November 2016 and has been disseminated widely, including – so far – four invitations to present the report in Brussels.

This is an issue on which members of both Tasks have contributed significant work in recent years, providing a solid basis for the EFI report. This included a statement document published in 2013 – available at <http://www.ieabioenergy.com/wp-content/uploads/2013/10/On-the-Timing-of-Greenhouse-Gas-Mitigation-Benefits-of-Forest-Based-Bioenergy.pdf>

The EFI report discusses how European forests and the associated industries can contribute to climate change mitigation while serving many other functions, looking to focus on the net climate change effects of bioenergy, assessed in the specific context where bioenergy policies are developed and bioenergy is produced.

The full report is available at: http://www.efi.int/files/attachments/publications/efi_fstp_3_2016.pdf

Task 39 – Commercialising Conventional and Advanced Liquid Biofuels from Biomass

Business Meeting, November 2016

IEA Bioenergy Task 39 held a business meeting at Scion in Rotorua, New Zealand on 7/8/9 November 2016. We would like to thank Ian Suckling and his colleagues at Scion for their excellent arrangements and logistics for the multiple meetings held over the week.



As well as assessing past, current and future Task 39 activities the recently completed report on “*The Potential for Biofuels in China*”, was discussed in detail.

Other progress reports that were presented on the status of ongoing deliverables included: the German led Advanced Fuels in Advanced Engines study; an update on the soon to be released Algal report; the Brazilian led LCA model comparison (with Task 38); Update to the demonstration database; and an update on the drop-in fuels for marine applications. The China report is summarized below.

Task 39 Report – The Potential for Biofuels in China

“The potential of biofuels in China” report describes the historical development of biofuels production in China against the backdrop of energy security and climate change “motivators”. The report also assessed the potential for future biofuels development in China. China is now the largest economy in the world and has an ever-increasing energy demand which has contributed to increasing energy security concerns. At the same time as China’s economy has grown, it has also become the world’s largest CO₂ emitter and there are growing concerns about air pollution, particularly in large urban centres such as Beijing. Thus, climate change mitigation and pollution abatement have also become important policy drivers for the country. Past and current biofuels production in China has been mainly focussed on conventional biofuels. The country annually produces about 3 billion litres of ethanol and about 1.14 billion litres of biodiesel. Ethanol production was initially established using “expired” corn grain feedstocks. However, with a very large population and on-going food security concerns, further expansion on this basis has been restricted. Although this motivated the assessment of so-called, 1.5 generation crops (such as cassava or sorghum), this approach has had limited success in substantially increasing ethanol production. However, there is significant potential for expansion of cellulosic ethanol production based on agricultural residues and several international and national companies have proposed projects

based in China. Although the Chinese government has set ambitious targets to increase annual biofuels production to 12.7 billion litres of ethanol and 2.3 billion litres of biodiesel by 2020, it is unlikely that these targets will be met. Thus, biofuels will likely play a minor role in China’s attempts to decarbonise its transport sector. While there is a significant emphasis on expanding renewable energy in China, the focus is primarily on stationary applications. It is likely that decarbonisation of road transportation will be preferentially addressed through alternatives such as electric and natural gas vehicles.

Task 43 – Biomass Feedstocks for Energy Markets

Workshops

On September 21-22, IEA Bioenergy Task 43 organized two workshops at the University of British Columbia in Vancouver (Canada) in collaboration with BioFuelNet Canada, a pan-Canadian research network of academic researchers, industry partners and government representatives who engage in collaborative initiatives to accelerate the development of sustainable advanced biofuels.

The first workshop highlighted research and other activities relating to Landscape management and design for bioenergy and the bioeconomy. With increasing demand for land, often with competing interests, there is a need for improved understanding – and promotion – of biomass production in landscapes that generate multiple ecosystem services and support biodiversity. Governance of land use and other activities shaping our landscapes requires methods to assess impacts on biodiversity and ecosystem services. Workshop participants had the opportunity to share views and experiences and provided a basis for identifying challenges and opportunities related to landscape management and design.

The second workshop brought together stakeholders from different countries to identify and discuss opportunities, challenges, best practices and knowledge gaps in the area of forest biomass mobilization for the sustainable production of bioenergy (including liquid fuels) and bioproducts. The workshop was built around presentations of real case studies concerning the deployment and the development of forest biomass supply chains, covering a range of geographic regions, feedstocks, end-products and the maturity of project development.

Presentations are available to read at <http://www.ieabioenergytask43.org/>

Upcoming Joint IEA Bioenergy Task 43 & GREBE project seminar, “From resource to sustainable business”

Feb 9th 2017 Joensuu, Finland: The goal of this seminar is to discuss the topics and aims of the GREBE project (Generating Renewable Energy Business Enterprise) and the topics of “IEA Bioenergy Task 43”.

Key aspects from GREBE and IEA Bioenergy Task 43 will be presented and the opportunities from the resource to a sustainable business for sustainable energy will be elaborated.

The seminar includes discussions around the topics:

1. Biomass Feedstocks for Energy Markets
2. Generating Renewable Energy business
3. Mentoring & support for Renewable Energy business
4. Global energy markets & opportunities for sustainable business

The event is combined with the IEA Bioenergy Task 43 business meeting and the joint seminar followed by a short excursion in the surroundings of Joensuu in Eastern Finland.

Background:

The overarching aim GREBE (Generating Renewable Energy Business Enterprise) project is to develop and share support for renewable energy as a viable business sector for SMEs /microbusiness as a response to the unique natural environment of the northern periphery regions of Europe. GREBE is one of several programmes funded by the Northern Periphery & Arctic Programme (NPA). The NPA 2014-2020 is part of the European Territorial Cooperation Objective, supported by the European Regional Development Fund (ERDF) and ERDF equivalent funding from non EU partner countries.

www.grebeproject.eu

Publications

Proteins for Food, Feed and Biobased Applications



The aim of this IEA Bioenergy Task 42 report is to provide an overview of protein containing crops, types of proteins and side products and their applications, and market potentials for food, feed and biobased applications. This information can be used by all stakeholders active in the BioEconomy to jointly develop integral sustainable biomass valorisation strategies. Specifically for the energy sector, this report shows that upstream protein extraction prior to conversion of biomass into energy and or co-valorisation of protein-rich agro or process residues will add economic value to the overall valorisation of available biomass resources, thereby improving their overall commercial deployment potential. This publication can be downloaded from http://www.iea-bioenergy.task42-biorefineries.com/upload_mm/ff/4/863c7f47-9ad9-4f8d-831b-c3ad867575ff/Proteins%20for%20Food%20Feed%20and%20Biobased%20Applications%20IEA%20Bioenergy%20Task42%20September%202016.pdf

IEA Bioenergy Countries' Report 23.09.2016



This IEA Bioenergy publication presents a summary of the total primary energy supply (TPES) by resources and the contribution of bioenergy in the member countries of the IEA Bioenergy Technology Collaboration Programme (TCP). The information presented is based on International Energy Agency (IEA) statistical data, supported by input from the Executive Committee of the IEA Bioenergy TCP, the IEA Bioenergy Tasks' countries reports and the International Renewable Energy Agency (IRENA). The data refers to the year 2014, except where specific information was not available for that year, in which case data from 2013 was used. The report also includes information on research focus related to bioenergy, relevant funding programmes, major research institutes and recent important bioenergy developments in the member countries. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2016/09/IEA-Bioenergy-Countries-Report-23.09.2016-1.pdf>

State of the art in sustainable biomass recovery technology/supply chain in forest operations



This IEA Bioenergy Task 43 report provides an overview of most efficient biomass harvesting technologies and supply chains applied in North America, Europe and Oceania. The productivity and cost of selected efficient technologies have been presented for each country with a brief description of source of the biomass and working method. Experts' opinions on the most successful biomass operations have also been stated briefly for each country. The main conclusions from various international studies have been provided at the end of the report in addition to future requirements for research and development in biomass harvesting operations. The information provided in this report can be a useful guide to industry and academic users. This publication can be downloaded from <http://www.ieabioenergytask43.org/wp-content/uploads/2016/05/IEA-Bioenergy-Task-43-TR2016-02i.pdf>

May we have some more land use change, please? Editorial by Göran Berndes and Uwe Fritsche



Possible connections between land use change and the emerging bioeconomy are the subject of current research efforts and public debate. At the European Biomass Conference & Exhibition (EUBCE 2016) in Amsterdam in June, the workshop 'The world needs more land use change' highlighted bioenergy as an opportunity to promote more sustainable land use, where participants were invited to share experiences and views on how biomass production could be localized, designed, and managed to support both provisioning and regulating ecosystem services to meet future demand for food, energy, and materials, as well as nature conservation needs. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2016/05/May-we-have-some-more-land-use-change-please.pdf>

Possible effects of torrefaction on biomass trade



Low-cost preconditioning technologies that can convert and modify different sources of solid biomass into a specification-driven bioenergy feedstock with similar or even better characteristics compared to coal could greatly enhance trade and usage of biomass in the existing transportation and conversion infrastructure. A mild pyrolysis process called torrefaction is on the verge of commercialisation, as the technology seems to have left the 'valley of death' behind. Current development leaves little doubt that this technology will find its way into the biomass-to-energy value chain in the next few years. This IEA Bioenergy Task 40 study focuses on the possible effects torrefaction may have on future international biomass trade. This publication can be downloaded from http://www.ieabioenergy.com/wp-content/uploads/2016/09/Two-page_Summary_Torrefaction-biomass-trade.pdf

IEA Bioenergy Annual Report 2015



The IEA Bioenergy Annual Report 2015 includes a special feature article 'Energy, Fuels and Fertiliser from Biogas' prepared by Task 37. 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. This publication can be downloaded from <http://www.ieabioenergy.com/wp-content/uploads/2016/03/IEA-Bioenergy-Annual-Report-2015.pdf>

The contribution of Danish forestry to increase wood production and offset climate change 2010-2100



This IEA Bioenergy Task 43 technical report shows that it is possible to increase the productivity of the Danish forests considerably and provide a significant contribution to Danish energy targets of achieving a 100% supply of energy from sustainable sources in 2050 as well as to the reduction of Danish CO2 emissions. The potential for provision of these services from Danish forests is probably bigger than generally acknowledged given the fact that Denmark is a low forest cover country. This publication can be downloaded from <http://www.ieabioenergytask43.org/wp-content/uploads/2016/03/IEA-Bioenergy-Task-43-TR2016-011.pdf>

The status of large scale biomass firing



This IEA Bioenergy Task 32 report provides an overview of the current status of biomass cofiring. The report shows that the firing and co-firing of biomass as a replacement for coal in large pulverised coal boilers can be a very attractive option for the utilisation of biomass materials for power production, and for the delivery of renewable energy. This publication can be downloaded from http://www.ieabcc.nl/publications/IEA_Bioenergy_T32_cofiring_2016.pdf

Examples of Positive Bioenergy and Water Relationships



This report, which is the product of the GBEP/IEA Bioenergy collaboration includes examples that illustrate an encouraging variety both in terms of bioenergy systems and geographical distribution, and shows how solutions can be found that produce bioenergy while contributing positively to the state of water. These experiences are also meant to serve as sources of inspiration that other bioenergy producers can use to enhance the sustainability of their own activities. This publication can be downloaded from http://www.globalbioenergy.org/fileadmin/user_upload/gbep/docs/2015_events/AG6_workshop_25-26_August_2015/AG6_Examples_of_Positive_Bioenergy_and_Water_Relationships_Final.pdf

Status overview of torrefaction technologies



This IEA Bioenergy Task 32 publication provides an update of the status of commercialisation of biomass torrefaction. It contains both a review of recent research efforts and an overview of the progress made in commercialisation of the technology. This publication can be downloaded from <http://www.ieabioenergy.com/publications/status-overview-of-torrefaction-technologies-a-review-of-the-commercialisation-status-of-biomass-torrefaction/>

IEA Bioenergy Events

Executive Committee

ExCo79 will be held in Göteborg, Sweden in May 2017

Task Events

Task 32's schedule of upcoming events is

Task 32 Workshop to present an overview of existing emission measurement standards, and evaluate the new method that was proposed in the framework of the BEREAL project. 18-20 January 2017; Central European Biomass Conference; Graz, Austria

Task 32 meeting; 15 June 2017; Stockholm, Sweden

Task 32 meeting; 18-22 September 2017; Ottawa, Canada

Task 33's schedule of upcoming events is

Task 33 meeting; 2017, date to be confirmed; Innsbruck, Austria

Task 33 meeting; 2017, date to be confirmed; Denmark

Task 34's schedule of upcoming events is

Task 34 meeting; 2017, date to be confirmed; Sweden

Task 36's schedule of upcoming events is

Task 36 meeting including Workshop on circular economy and the role of energy from waste; 9-11 January 2017; Paris France

Task 37's schedule of upcoming events is

Task 37 meeting; 2017, date to be confirmed; Aarhus, Denmark

Task 37 meeting 2017, date to be confirmed; Netherlands

Task 38's schedule of upcoming events is

Task 38 meeting; 9-11 January 2017; Växjö, Sweden

Task 39's schedule of upcoming events is

Task 39 meeting; May 2017; Gothenburg, Sweden

Task 40's schedule of upcoming events is

Task 40 meeting; 14-15 May 2017; Copenhagen, Denmark

Task 40 meeting; October 2017; Selby, UK

Task 42's schedule of upcoming events is

Task 42 meeting and workshop in cooperation with IEA-IETS on industrial biorefineries; 16 May 2017; Gothenburg, Sweden

Task 43's schedule of upcoming events is

Task 43 meeting; 8 February 2017; Joensuu, Finland

Other Events

5th Central European Biomass Conference

Date: 18th Jan, 2017 - 20th Jan, 2017
Location: Graz, Austria
Website: <http://www.cebc.at/en/home/>

6th International Conference on Biorefinery (ICB2017)

Date: 18th Jan, 2017 - 20th Jan, 2017
Location: The Chateau on the Park, Christchurch, New Zealand
Contact: ICB2017 Organizing Committee
Email: ICB2017@canterbury.ac.nz
Website: <http://www.icb2017.org/>

Fuels of the Future Conference 2017

Date: 23rd Jan, 2017 - 24th Jan, 2017
Location: CityCube Berlin, Germany
Email: hartmann@bioenergie.de
Website: <http://www.fuels-of-the-future.com/>

Lignofuels 2017

Date: 1st Feb, 2017 - 2nd Feb, 2017
Location: Helsinki, Finland
Contact: Dimitri Pavlyk
Email: dpavlyk@acieu.net
Website: <http://app.streamsend.com/private/9r48q4a7zf/Dnk/EkGr9lm/browse/27343507>

World Renewable Energy Congress 2017

Date: 5th Feb, 2017 - 9th Feb, 2017
Location: Murdoch University, Western Australia
Contact: David Goodfield
Email: d.goodfield@murdoch.edu.au
Website: <http://www.wrec2017.com/index.php>

BiobasedWorld

Date: 15th Feb, 2017 - 16th Feb, 2017
Location: Cologne, Germany
Contact: Bianca Bukatschek
Email: bukatschek@decherna.de
Website: <http://www.biobasedworld.de/en/home.html>

Clean Energy Finance Europe 2017

Date: Mar, 2017 - 9th Mar, 2017
Location: Frankfurt - Germany
Website: <http://www.wplgroup.com/aci/event/clean-energy-finance/>

Gasification 2017

Date: 15th Mar, 2017 - 16th Mar, 2017
Location: Helsinki, Finland
Contact: Stergios Zacharakis
Email: production@acieu.co.uk
Website: <http://www.wplgroup.com/aci/event/gasification/>

InEnergy® RES + Energy Efficiency

Date: 11th Apr, 2017 - 12th Apr, 2017
Location: Municipal Stadium in Wrocław, Poland
Contact: Małgorzata Bartkowska
Email: bartkowska@reeco.eu
Website: <http://www.inenerg.com/informacje.html?&L=1>

RENEXPO® WATER & ENERGY

Date: 25th Apr, 2017 - 27th Apr, 2017
Location: BELEXPOCENTAR D.O.O. BEOGRAD, Serbia
Contact: Igor Ivanoski
Email: Ivanoski@reeco.rs
Website: <http://www.renexpo-belgrade.com/trade-fair-topics.html?&L=1>

7th Annual European Algae Industry Summit

Date: 26th Apr, 2017 - 27th Apr, 2017
Location: Nice, France
Contact: Jasmine Okure
Email: jokure@acieu.net
Website: <http://www.wplgroup.com/aci/event/european-algae-industry-summit/>

REGATEC 2017

Date: 22nd May, 2017 - 23rd May, 2017
Location: Parchi del Garda, Pacengo (Verona), Italy
Contact: Dr. Jörgen Held
Email: jorgen.held@renewtec.se
Website: <http://regatec.org/>

25th European Biomass Conference and Exhibition

Date: 12th Jun, 2017 - 15th Jun, 2017
Location: Stockholm mässan, Stockholm, Sweden
Contact: Anna Salimbeni
Email: anna.salimbeni+at+etaflorence.it
Website: <http://www.eubce.com/home.html>

2nd World Bioenergy Congress and Expo

Date: 29th Jun, 2017 - 30th Jun, 2017
Location: Madrid, Spain
Contact: Megan Scott
Email: bioenergy@insightconferences.com
Website: <http://bioenergy.conferenceseries.com/>

RENEXPO® Poland – 7th International Trade Fair and Conferences for Renewable Energy and Energy Efficiency

Date: 25th Oct, 2017 - 27th Oct, 2017
Location: Warsaw, Poland
Contact: Małgorzata Bartkowska
Email: info@reeco-poland.pl
Website: <http://www.renexpo-warsaw.com/index.php?id=7&L=1>

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 33: Gasification of Biomass and Waste

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Task 36: Integrating Energy Recovery into Solid Waste Management Systems

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Task 37: Energy from Biogas

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Task 38: Climate Change Effects of Biomass and Bioenergy Systems

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Task 39: Commercialising Conventional and Advanced Liquid Biofuels from Biomass

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Task 40: Sustainable Biomass Markets and International Trade to support the biobased economy

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Task 42: Biorefining in a future BioEconomy

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Task 43: Biomass Feedstocks for Energy Markets

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