



EUBCE 2018

COPENHAGEN - DENMARK
BELLA CENTER

26TH EUROPEAN BIOMASS CONFERENCE & EXHIBITION

14 - 17 MAY CONFERENCE & EXHIBITION | 18 MAY TECHNICAL TOUR

Highlights of the Conference

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OVERVIEW

EUBCE 2018 COPENHAGEN

1375 REGISTERED PARTICIPANTS

65 COUNTRIES

49 ASSOCIATIONS + INTERNATIONAL ORGANISATION

PARTICIPANTS BY COUNTRY

DENMARK	21%
GERMANY	11%
ITALY	10%
THE NETHERLANDS	6%
UNITED KINGDOM	6%
SWEDEN	4%
FINLAND	3%
SPAIN	3%
FRANCE	3%
BELGIUM	3%
USA	3%
P.R. CHINA	2%

24 EU countries represented, equivalent to 77% of all EUBCE registered participants

TOP 10 COUNTRIES by number of presenters

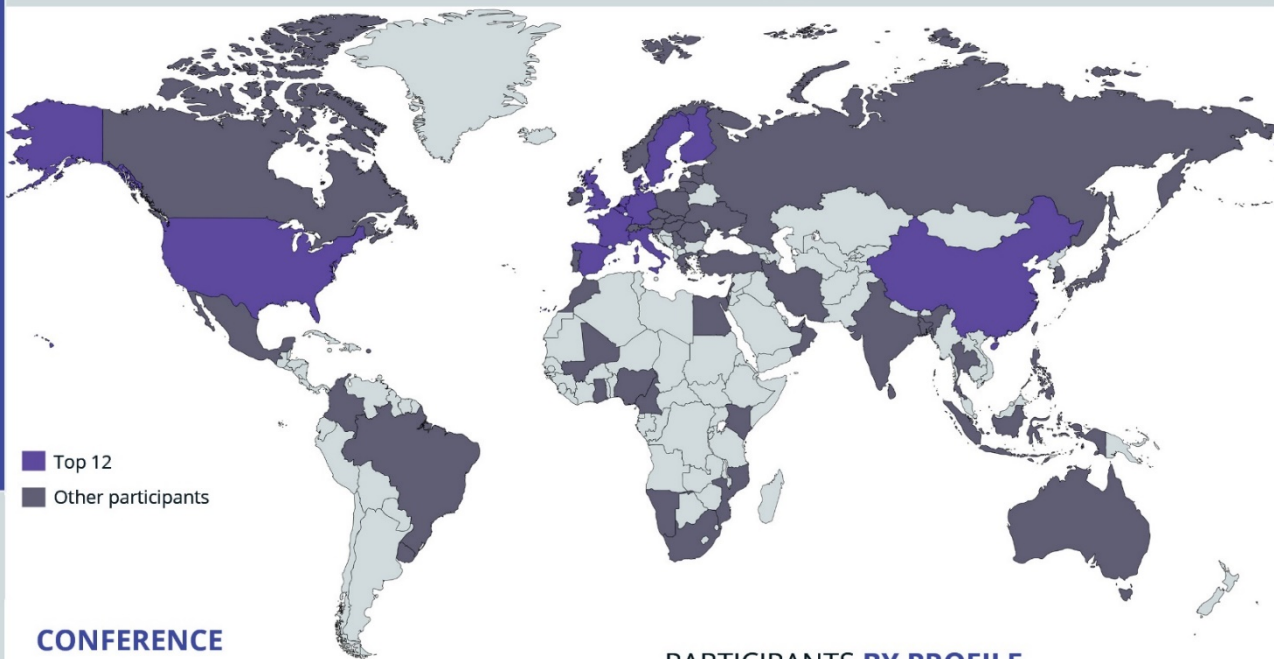
GERMANY	SPAIN
ITALY	FINLAND
DENMARK	FRANCE
UNITED KINGDOM	P.R. CHINA
THE NETHERLANDS	USA

PARTICIPANTS BY SECTOR

Biofuels	12%	Chemicals	4%
Biomass feedstock	9%	Heating and cooling	4%
Biomass production	8%	Bioliqids	3%
Biorefineries	8%	Biopower	3%
Biogas - biomethane	7%	Algae	3%
Waste management	5%	Bio-fertilizers	2%
Gasification	5%	Energy storage	2%
Energy crops	4%	Bio-plastics	2%
Solid Biofuel	4%	Bioenergy trade	2%
Integrated energy systems	4%	Short rotation forestry	2%
Power	4%	Others	1%

PARTICIPANTS BY ACTIVITIES

Educational Sector/University/Research Organisation/ Laboratory/ Research&Development	50%
Policy/Financial/Associations/Governmental Organizations/Chamber of Industry and Commerce	9%
Engineering/Energy consulting/Architectural Consulting/ Building/Urban Planning	7%
Equipment Manufacturer/Technology Provider	4%
Distributor/Supplier/Assembler/Supply chain	2%
Grid/Network/Electricity/Utility/Energy Companies	1%
Others	27%



CONFERENCE

811 Presentations and Further Activities
3169 Authors and Co-authors from **83** Countries
4 Parallel Events + **8** Workshops
156 B2B Matchmaking Meetings

PARTICIPANTS BY PROFILE

Technical	61%
Project management	11%
Executives / Managers	15%
Financial, Marketing & Sales	6%
Other	8%

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SCIENTIFIC OPENING: APPLICATIONS OF SCIENCE IN INDUSTRY

- **Recycling carbon for fuel, food, chemicals and jobs - an opportunity and not a liability**
- **Technology is ready, many plants are operational**
- **CO₂ emissions from transport in Europe are rising**
- **We need all sustainable solutions, there is no one solution to the problem**
- **Denmark - a world leader on biogas production and gas grid injection**
 - **35% green gas into natural gas grid by 2035 in Denmark**
- **500 biomethane plants in Europe in 2016**



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OPENING ADDRESSES AND PANEL DISCUSSION

**The vital role of biomass for climate protection and sustainable development.
How to make it happen.**

- **Energy system -a major change is going to take place by 2050. Bioenergy is central to a decarbonized energy system**
- **In addition to energy and climate, additional environmental and social benefits needs to be accounted for**
- **Biofuels crucial to decarbonize the transport sector (e.g. aviation, maritime, heavy duty transport)**
- **There is no competition but complementarity between bioenergy and other options (e.g. transport electrification)**
- **The level of ambition of decarbonisation in Europe is not large enough – other markets are developing fast**
- **We need a common communication**



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PLENARY SESSION BP.1 Climate and Sustainability

- **LCA and ILUC: large variation of results, system boundaries, reference systems, assumptions are determinant, models based on worst case scenarios**
- **More robust sustainability criteria needed, to address carbon stocks and indirect effects risks**
- **Many opportunities and benefits from bioenergy on C sequestration and climate change adaptation, but also risks**
- **Forest biomass can make an important contribution to bioenergy (“Cheap, Quick, Simple, Popular”)**
- **No black or white for bioenergy, no good or bad – good communication essential**



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PLENARY SESSION CP.1 Innovation and Integration

- **Mapping of the biomass yields for various energy crops confirming the > 1 bn tons biomass potential in the US**
- **Ultra-low emissions, fuel flexible residential biomass heating based on an extreme air staging technology**
- **Integrated thermo-chemical biomass conversion to syngas and hydrogen from renewable electricity**
- **Integrated process (intermediate pyrolysis, gas cleaning and catalytic reforming) ready for industrial applications**
- **Drop-in diesel by hydrofaction from residues, high efficiency, high fuel flexibility, ready for commercialization**



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TOPIC 1: BIOMASS RESOURCES

Biomass potentials and mobilisation

- GIS tools for spatially explicit assessments. Climate change impacts on spatial distribution & feedstock availability
- ILUC-free, sustainable biomass streams for energy - “unloved” wood in Quebec

Integrated biomass production

- Integrated food & non-food systems and bioeconomy oriented cropping systems

Waste valorization

- Bio-plastic (PHA) production from urban biowaste

Algae production system

- Investigations of growth conditions of microalgae
- Learning from algae-based nutraceuticals for setting up sustainable algae biorefineries

Energy Crops

- New energy crops, cold-tolerant sorghum, miscanthus, benefits of energy crops for remediating contaminated
- Cultivation of industrial crops on marginal lands



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TOPIC 2: BIOMASS CONVERSION TECHNOLOGIES FOR HEATING, COOLING & ELECTRICITY

Biomass combustion

- Investigations of combustion of a range of fuels (agri, woody biomass), corrosion, agglomeration, fouling
- Biomass combustion modelling and optimisation, fuel flexible and low-emission

Gasification

- Design, analysis and testing on gasifiers, instrumentation and control systems
- Hot gas cleaning using char or oxygen transport membranes

Biogas

- Evaluation of biogas feedstock composition and yield and economics of anaerobic digestion
- Biogas from biological methanation of syngas, microbial power-to-gas
- Technical-economic evaluation of bio-LNG production



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TOPIC 3: BIOMASS CONVERSION TECHNOLOGIES FOR FUELS, CHEMICALS & MATERIALS

Thermally treated solid biofuels

- Comprehensive study targeting a number of feedstocks and conversion technologies

Oil-based biofuels and bio-alcohols

- Supercritical methanolysis of waste cooking oil for biodiesel production
- Novel pretreatment and fermentation technology for lignocellulosic butanol production

Biorefineries

- Biorefinery concepts for chemicals , lignin biorefinery approach
- Sustainable biofuels from seaweed and processes for seaweed biorefinery
- Large potential of conversion routes for biochemicals and biopolymers

Renewable chemicals from biomass

- Improved BtL process with renewable H₂
- Developing pyrolysis for bio-oils, synthetic fuels and green H₂
- HTL studies of lignocellulosic biomass, microalgae and sewage sludge



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TOPIC 4: BIOMASS POLICIES, MARKETS AND SUSTAINABILITY

Biomass strategies and policies

- Prospects of biofuels in the transport sector and in aviation in particular
- Least cost options for transport: electrofuels needed for GHG mitigation targets but high costs
- Exploiting marginal land and contaminated land for bioenergy

Sustainability

- Bioenergy, socio-economic benefits and the UN Sustainable Development Goals
- Regional and landscape-based approaches to facilitate bioenergy development

Climate impacts

- Quantifying the climate impact of bioenergy using dynamic LCA

Environmental impacts

- Particulate and gas emissions from bioenergy (bio-oil, wood stoves)
- Analysing the spatial environmental impacts from sugarcane expansion in Sao Paulo State



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TOPIC 5: BIOENERGY INTEGRATION IN ENERGY SYSTEMS

- **Holistic approach for integrated bioenergy solutions in future energy systems**
- **Integration of biogas plants in electricity grids with high share of variable power and demand-orientated power generation**
- **Bioenergy integration, optimisation and intelligent control in DH systems with heat storage**
- **The role of biomass for small renewable district heating and cooling grids**



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INDUSTRY SESSIONS

Policies for biobased products and energy

- Supply potential of alternative aviation fuels in the EU
- Overview of the impact of bioenergy additional values of the whole bio value chain

Biomass mobilization

- The use of wood for energy and market prospects
- Remote sensing systems for estimating wood energy from forests

Biomass combustion

- Test methods for firewood stoves based on different standards not reflecting true/practical conditions
- Studies on PM and NO_x emissions from wood pellet stoves and large boilers

Thermochemical conversion

- Gasification and synthesis process for transport fuels
- Woody biomass to biochar via pyrolysis

Biorefineries

- Renewable diesel produced commercially at a UPM pulp and paper mill
- Lignocellulosic biomass fractionation to a value-added range of products and derivatives



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Parallel EVENTS

Danish bioenergy solutions and Denmark as testing ground

- key elements of Danish bioenergy policy: bioenergy and climate goals, support for RTD, regulation and incentives

EU policy and industry perspectives on biofuels in a global context

- global perspective of advanced biofuels deployment; opportunities and threats from the policy framework

Sustainability and governance of bioenergy supply chains

- IEA Bioenergy project on methods & tools to assess the sustainability of various biomass supply chains - the way forward.

SEEMLA - Sustainable exploitation of biomass for bioenergy from marginal lands in Europe

- suitable innovative land-use strategies for sustainable production of bioenergy on marginal lands while improving general ecosystem services



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Parallel EVENTS

Production and utilisation options for Solid Recovered Fuels

- the production and utilisation of SRF an important element in waste management practises, as part of the circular economy.

Increase in Reduction and Recovery of Expired Food - i-REXFO under EU LIFE

- handling food waste and using bio waste in the energy chain – current experience, barriers and bottlenecks

Sino-Europe Low-Carbon Integrated Waste Management Seminar

- Integrated Waste Management systems, replication of the demonstrated integrated solutions

Bioenergy towards 2030

- role of bioenergy in the Energy Union, SET-Plan, outlook and priorities for bioenergy in the research and innovation agenda

Getting (some) numbers right - derived economic indicators for the bioeconomy

- growth and job indicators for EU and MS and economic indicators of the emerging sector of bio-based chemicals

Bioeconomy trends in developing countries

- examples and views of bioeconomy in the Global South focusing on the value chains and different governance forms



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COMMUNICATION

SLIDO interactive system for communication within the Conference

89 active users, 62 questions

Twitter: 94,400 views

Good communication is essential – simple and understandable



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Thank you to all Presenters, Chairpersons, the Scientific Committee and Organisers