EUBCE 2024
32nd European Biomass Conference & Exhibition

Highlights of the Conference

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European Commission, Joint Research Centre
Directorate for Energy, Mobility and Climate

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EUBCE 2024

32nd European Biomass Conference & Exhibition

EUBCE 2024

Marseille

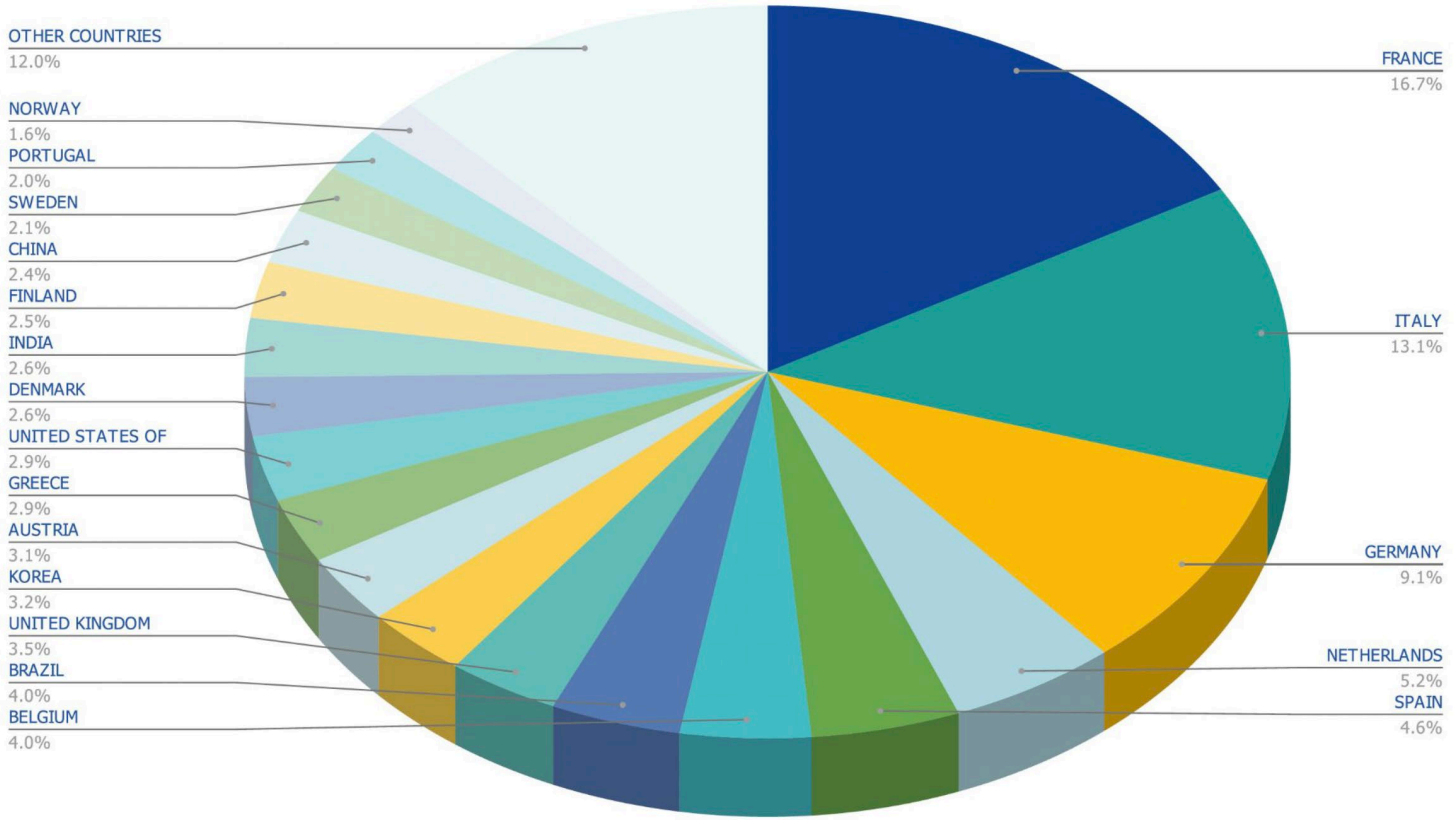
1,304

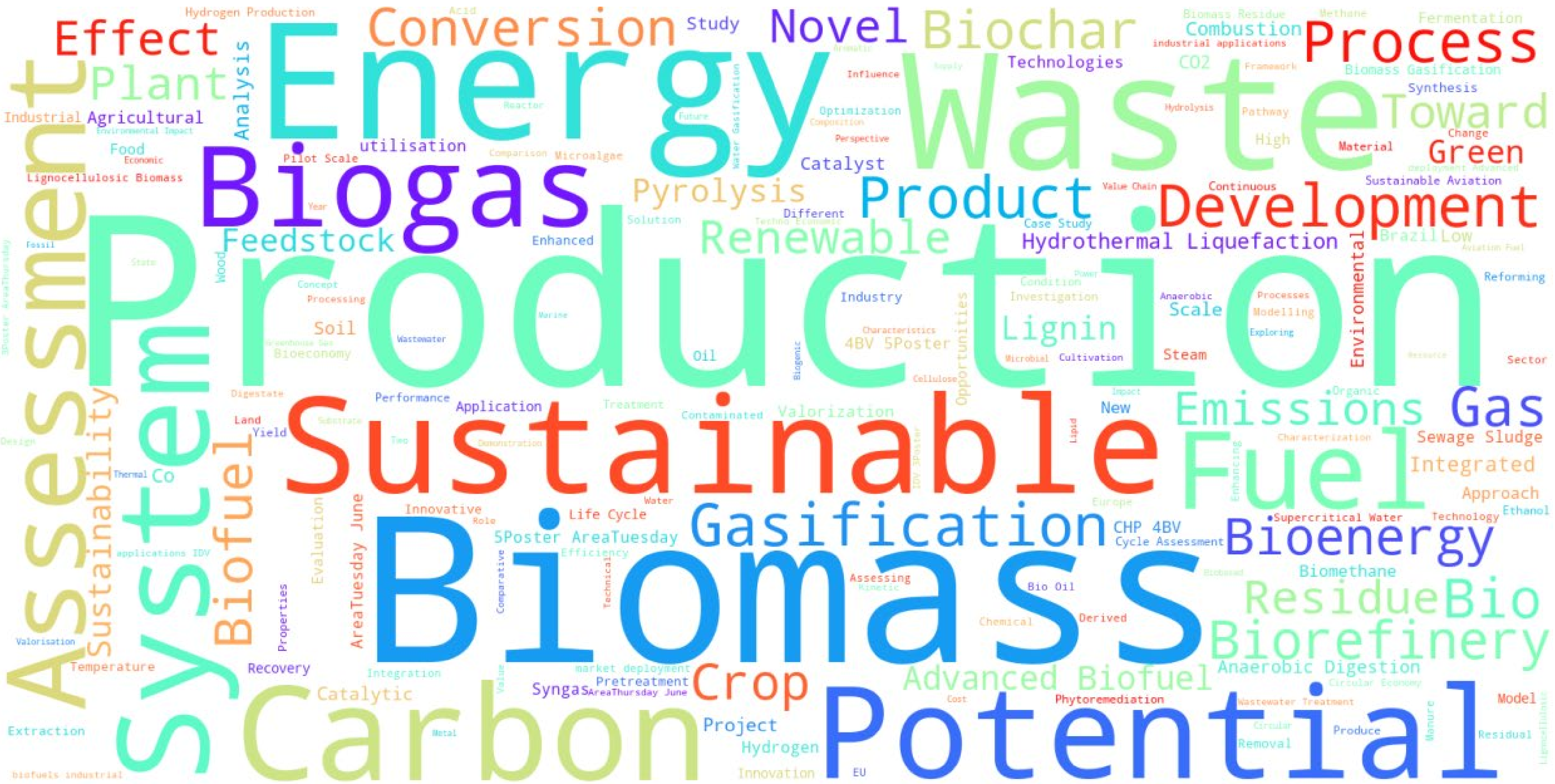
Registered Participants

54

Countries

Other countries:
JAPAN - CANADA - SWITZERLAND THAILAND
POLAND - TAIWAN - IRELAND - ROMANIA - SLOVAKIA
ESTONIA - MEXICO - COLOMBIA - LITHUANIA
LUXEMBOURG - TUNISIA - NAMIBIA - SINGAPORE
SOUTH AFRICA - SURINAME - TURKEY - ALGERIA
AUSTRALIA - BULGARIA - CAMEROON - CHILE
CONGO, DEMOCRATIC REPUBLIC - CZECH REPUBLIC
MOROCCO - PERU - SAUDI ARABIA - SERBIA
SLOVENIA - UGANDA - URUGUAY




Hydrogen Production
Acid
Biomass Residue
Methane
Fermentation
Effect
Conversion
Study
Novel
Biochar
Combustion
Process
Energy
Waste
industrial applications
Plant
Analysis
Technologies
CO2
Influence
Framework
Biomass Gasification
Synthesis
Toward
Reactor
Optimization
Hydrolysis
Pathway
Industrial
Agricultural
Future
Composition
Environmental Impact
Perspective
High
Change
Food
utilisation
Comparison
Microalgae
Material
Green
Economic
Pilot Scale
Catalyst
Lignocellulosic Biomass
Biogas
Value Chain
Continuous
Sustainable Aviation
Pyrolysis
Product
Development
Assessment
Year
Different
Case Study
Solution
Feedstock
Renewable
Enhanced
Hydrothermal Liquefaction
Brazil
Low
Fossil
Aviation Fuel
Production
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Wood
Concept
Condition
Reforming
Processing
Industry
Investigation
Anaerobic
Processes
Scale
Modelling
Marine
Lignin
Characteristics
Exploring
Soil
Wastewater
4BV 5Poster
Bioeconomy
Oil
Microbial
Cultivation
Steam
Environmental
Sector
Opportunities
Cellulose
Organic
Digestate
Performance
Treatment
Valorization
Impact
Application
Emissions
Gas
Land
Contaminated
New
Yield
System
Sustainable
Fuel
Sewage Sludge
Design
Demonstration
Characterization
Integrated
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Sustainability
Biofuel
Water
Approach
Innovative
Life Cycle
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Role
Gasification
Supercritical Water
Technology
Ethanol
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Evaluation
Cycle Assessment
applications IDV
Efficiency
Bioenergy
AreaTuesday June
Biomass
Comparative
Technical
Biomethane
Assessing
Kinetic
Bio Oil
ResidueBio
Properties
Chemical
Derived
Biorefinery
Valorisation
Temperature
Recovery
Integration
market deployment
Anaerobic Digestion
Advanced Biofuel
Syngas
AreaThursday June
Crop
Circular Economy
Catalytic
Phytoremediation
Cost
Wastewater Treatment
Model
Carbon
Potential
Extraction
Project
Metal
Circular
Produce
Residual
Hydrogen
Removal
Pretreatment
biofuels industrial
Innovation
EU

The role of renewable carbon in the circular economy

- renewable carbon is essential (for products or chemicals and long-distance transport) in a circular carbon economy to achieve a net zero carbon economy;
- carbon management is key to unlock climate neutrality: different sink solutions available for biomass in a circular bioeconomy: carbon farming, geological storage or carbon storage in long-lasting products
- limited biomass resources should be prioritised where it is mostly needed and bring maximum benefits and seen as complementary to other decarbonised resources
- synergies and trade-offs between the impacts of increased biomass demand were shown to differ per feedstock type but also per land-use type

Topic 1 Sustainable Resources for Decarbonising the Economy

- significant marginal lands areas (73 Mha and 32% of UAA) constrained by biophysical limitations – climate change have different impacts on their extent in N or S Europe
- large potential to scale-up biomethane production to 110 bcm by 2040 and 165 bcm in 2050 with AD and thermal gasification; higher potential unlocked by additional feedstocks and technologies
- different ways to increase biomass production: use of contaminated land, new crops and systems including intercropping and biomass production with phytoremediation potential
- new feedstock cultivated on unused, abandoned or severely degraded lands and with improved agricultural practices are good alternatives as low-ILUC risk feedstock for biofuels

Topic 2 Sustainability, Impacts and Policies

- increased competition for land from increased demand – biomass crops on marginal land bring benefits and site-specific impacts from (fertilisers, pesticides, soil, water & biodiversity)
- bio-based CDR options are key for removing CO2 from the atmosphere; solutions such as biochar offer a technico-economic viable option for storing carbon and reduce GHG impact
- new views on the certification schemes for biobased products assessing their effectiveness towards sustainability goals and ensuring sustainability
- social dimension of sustainability and stakeholders perspectives and the different perceptions, driving factors and key barriers for market uptake - social acceptance is key

Topic 3 Biomass, Bio-based Products and Bioenergy Integration

- biofuels are critical to 2030 targets: demand increases from 16 Mtoe in 2021 to 32-40 Mtoe in 2030 and to 45 Mtoe in 2050. There is still a gap between the demand foreseen and projected capacity by 2030
- review and techno-economic assessment showing promising results in terms of integrating biofuels and PtX with positive impacts on C conversion, energy efficiency, investments and production costs
- local biomass solutions in hybrid and stand-alone systems, responding the need for flexibility integrating bioenergy with PV and energy storage exploiting multiple possible synergies
- integration concepts for biorefineries to bio-ethanol, bio-oil, protein extraction and bio-based products including biomass from phytoremediation crops from contaminated land

Topic 4 Biomass Conversion for Bioenergy

- advances on gasification (SNG, H2, drop-in fuels), catalytic tar reforming and gas cleaning to upgrade syngas. Gasification options integrated with other processes, PtX and gasification to increase output and improve economics
- different biobased Carbon Dioxide Removals approaches have large potential for achieving negative emissions: BECCS, Biochar Carbon Removal and biogenic CO2 capture in demolished concrete aggregate
- relevant developments and technologies for BECCS outlined and evaluated. R&I still needed to identify the best solutions in terms of efficiency and costs
- new processes for anaerobic digestion, biomethanation, thermochemical/catalytic methanation and Combination of syngas fermentation and anaerobic digestion

Topic 5 Biomass Conversion to Intermediate Bioenergy Carriers & Sustainable Biofuels

- progress in advanced biofuels and SAF, but technical challenges to address. Promising advances delivering SAF and Marine Fuels from FPBO. Techno-economic evaluation with insights into cost drivers
- advances in pyrolysis though tar cracking, novel catalysts and novel concepts, TCR followed by hydrotreatment; practical applications of presenting pyrolysis as a key technology for upgrading side streams
- process development of supercritical water treatment, hydrothermal liquefaction and carbonisation, using a variety of biomass feedstocks; hydrothermal as pre-treatment
- hydrogen production from biomass feedstocks will play a significant role in the bio-hydrogen economy!

Topic 6 Biomass Conversion to Bio-based Products and Chemicals

- promising process to convert lignin in renewable materials and valorisation of lignocellulosic biomass, including the hemicellulose and lignin fractions
- emerging, novel biochemical approaches for the treatment of wastes and residues for the production of biomaterials and biofuels
- various methods for material production including magnetic catalyst recovery, VFA generation by AD and torrefaction to prevent inhibitors from hemicellulose
- production of succinic acid (SA) through enzymatic hydrolysis of MSW and sawdust employing the bacterial strain E-coli to enhance bio-based SA production
- biochar production and approaches for the use of biomass and waste derived biochar - in metallurgy and fertilizers - need for improvement wood biochar properties

Some key messages

- renewable carbon remain key in the circular economy to achieve a net zero carbon economy
- biomass combined with e-hydrogen is a concept explored to achieve higher biogenic carbon conversion
- different biobased carbon dioxide removals approaches have large potential for achieving negative emissions

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Thank you!

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Keep in touch

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