

## Briefing Note

### Session 4: Growing the bio-economy: solutions for the sustainable supply of biomass & biofuels

6 October 2020 • 5:00-8:00 pm CEST • Virtual

In partnership with:



#### Background

Bioenergy is the largest source of renewable energy in use today, globally accounting for 70% of the renewable energy supply and for 10% of the total primary energy supply in 2017. Modern use of bioenergy, together with renewable electrification, are the twin pillars of the essential transition from fossil fuels to clean fuels use in all end-use applications (industry, transport and buildings). Modern bioenergy technologies are developing rapidly and have significant potential to scale up by 2050. In IRENA's Paris compliant scenario<sup>1</sup>, the share of primary energy met with modern bioenergy could increase almost five times from 5% to 23% in 2050. This requires not only the expanded use of proven technologies but also the adoption of innovative technologies and innovative business models that can utilise untapped biomass resources on a larger scale.

There is significant potential for biomass to displace fossil fuels, but it is essential that it is produced in ways that are environmentally, socially and economically sustainable. There are an increasing range of innovative approaches and exemplar projects around the world that demonstrate the sustainable production of biomass for energy applications. For example, projects are producing biofuels from non-food and non-feed biomass, including waste materials. Furthermore, biomass plays an essential role in providing goods and services indispensable for human activities such as food, feed, fiber, fine chemicals, fertilizer, energy and fuels as well as jobs and incomes especially for rural economy and climate change mitigation options. When biomass conversion for energy purposes is well integrated with other biomass segments through the biorefinery concept or optimal horizontal supply chains, they would form the basis for the nature-based bioeconomy. However, many decision makers are uncertain about the role that biomass can sustainably play in their energy transitions and as a result their plans may be underutilising their potential biomass resources.

#### Objective of the session

This session focuses on how to sustainably scale up the supply of biomass as an enabler of decarbonisation in transport and industry sectors. The use of biomass in those sectors will be further explored in dedicated sessions the following day.

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<sup>1</sup> "Transforming Energy Scenario" outlined in IRENA's 2020 ["Global Renewables Outlook: Energy transformation 2050"](#).

Through an interactive debate, this session will first discuss opportunities and challenges to sustainably mobilize untapped biomass resources and harness them for the expanded uptake of bioenergy in transport and industry sectors. Then experts will showcase best practices and innovative approaches around the world to maximize the biomass value streams where co-processing and co-production at biorefinery provide multiple solutions for fossil-free economy. The underlying question is how these experiences can be replicated and further expanded at scale in a sustainable fashion to make the significant increase of modern bioenergy deployment reality.

## Programme

### Growing the bio-economy: solutions for the sustainable supply of biomass & biofuels

Tuesday, 6 October 2020

#### Opening and Scene-setting presentations

17:00 – 17:15

Points for discussion:

**Dr. Maria Michela Morese**, Executive Secretary, GBEP/FAO

Keynote address:

**Mr. Toshimasa Masuyama**, Bioenergy Analyst, IRENA

#### Panel 1 - Scaling-up biomass feedstock production for the transport and industry sectors

17:15 – 18:30

A diverse panel of experts will provide an overview of strategies for diversifying and scaling-up biomass feedstock production, challenges, experiences and innovative approaches from different regions

**Moderator: Dr. Gerard J. Ostheimer**, Chief Sustainability Officer, Global Biofuture Solutions

- **Dr. Rainer Janssen**, Managing Director, WIP Renewable Energies
- **Dr. Phosiso Sola**, Scientist, World Agroforestry Centre (ICRAF)
- **Dr. Carolina Grassi**, Business Development Lead Latin America and Sector Lead, Ground Transport, Roundtable on Sustainable Biomaterials, RSB
- **Mr. Keith Kline**, Distinguished Researcher in Environmental Sciences, the Oak Ridge National Laboratory, Department of Energy, USA

18:30 – 18:40

Digital Break

#### Panel 2 - Innovative solutions for maximizing biomass value streams

18:40 – 19:55

A diverse panel of experts will share experiences and innovative approaches from different regions for systemic biomass conversion to accelerate the transition from fossil-based economy to nature-based bioeconomy.

**Moderator: Mr. Bharadwaj Kummamuru**, Executive Director- World Bioenergy Association (WBA)

- **Mr. Henrik Brodin**, Strategic Business Development Manager, Sodra
- **Mr. Timothy Ong**, Senior Vice-President, Agensi Inovasi Malaysia (AIM)
- **Mr. Geoffrey Bell**, CEO, Microbiogen
- **Mr. James J. Spaeth**, Program Manager, U.S. Department of Energy- Bioenergy Technologies Office

#### Closing remarks

19:55 – 20:00

**Dr. Paul Durrant**, Head of End-Use Sectors and Bioenergy team, IRENA

## Speaker biographies

### Dr Paul Durrant, Head of End-use Sectors & Bioenergy, International Renewable Energy Agency (IRENA)



*Paul Durrant joined IRENA in 2018, and is now a head of End-use sectors and bioenergy team at the IRENA Innovation and Technology Centre in Bonn. Paul Durrant brings over 20 years of experience of shaping innovation policies and programmes, technology analysis for the UK government and internationally, including establishing the Mission Innovation initiative.*

### Mr. Toshimasa Masuyama, Bioenergy Analyst, International Renewable Energy Agency (IRENA)



*Toshimasa Masuyama is a bioenergy analyst at IRENA since 2018, works on the assessment of sustainable biomass potential and strategies to realize that potential.*

### Dr. Michela Morese, Executive Secretary, Global Bioenergy Partnership



*Dr. Maria Michela Morese is Natural Resources Officer at FAO (Food and Agriculture Organization of the United Nations) and Executive Secretary of the Global Bioenergy Partnership (GBEP), which is based at FAO Headquarters in Rome, Italy, since 2006. She has 20 years of experience working on climate change, environment and bioenergy. Before joining FAO in 2006 she worked for the Italian Ministry of Environment working as Italian focal point and negotiator for several international environmental processes. Dr Morese holds a degree in Political Science, International Relations, a post graduate certificate in "International protection of fundamental human rights" from "La Sapienza" University in Rome, a Master in "Environmental Governance" from "La Tuscia" University in Viterbo and a PhD in Forest Ecology at "La Tuscia" University in Viterbo.*

### Dr. Gerard J. Ostheimer, Chief Sustainability Officer and Advisory services lead Global Biofuture Solutions



*Dr. Gerard Ostheimer is the co-founder of Global Biofuture Solutions where he serves as the Chief Sustainability Officer and is advisory services lead. Dr. Ostheimer supports the work of diverse multilateral organizations, such as the Biofuture Platform and the Clean Energy Ministerial, to promote the deployment and use of sustainable bio-based solutions to accelerate the Energy Transition and foster the Circular Economy. Dr. Ostheimer is a regular contributor to the Biofuels Digest, wherein he describes how the bioeconomy can support Sustainable Development and the Energy Transition in both developed and developing regions of the world. In response to the Paris Agreement Dr. Ostheimer collaborated with the World Business Council for Sustainable Development to develop the below50 Campaign, which works to foster private sector demand for Low Carbon Fuels. He now manages the below50. Previously, Dr. Ostheimer served as the Global Lead for Sustainable Bioenergy for Sustainable Energy for All and as a Science Advisor for the U.S. Department of Agriculture. While at USDA, he contributed to finalizing the Global Bioenergy Partnership Indicators of Sustainable Bioenergy Production and Use.*

**Dr. Rainer Janssen, Managing Director Projects at WIP Renewable Energies**



*In his capacity as Managing Director at WIP Renewable Energies, Dr. Janssen engages in the development of innovative solutions for the transition to a sustainable energy system for the electricity, heating and cooling and transport sectors with special emphasis on technologies, research and innovation policies, market research, social impacts and public awareness as well as the development of supportive framework conditions and policy regulations in the EU and emerging and developing economies. He graduated in Physics (Dr. rer.nat.) at the Technical University of Munich, Walter Schottky Institute, Germany and performed studies at the University of Toronto, Canada.*

**Dr. Phosiso Sola, Scientist, World Agroforestry Centre (ICRAF)**



*Dr. Phosiso Sola is a Scientist at the World Agroforestry Centre (ICRAF) working on natural resources governance, bioenergy and development of sustainable agroforestry value chains. Her current work focuses on governance of woodfuel with aim of contributing to the development of sustainable charcoal value chains in African drylands. She has also worked extensively on environmental management and rehabilitation in conflict situations in Africa and Asia. She has over 25 years work experience, most of which has been in action research and development projects on natural resources management, forest and agroforestry products commercialization, agro market linkages and value chain development.*

**Dr. Carolina Grassi, Business Development Lead, Latin America and Sector Lead, Ground Transport, RSB**



*Dr. Carolina Grassi is a biologist with a PhD in genetics and an MBA in Business Management. She has spent much of her career working in research and innovation, with a focus on biomass, biofuels production and climate change. With over 10 years of experience in the field spent in private and public Brazilian institutions working on renewable energy and the bioeconomy, Carolina has been a researcher and executive manager and been involved in several of the largest projects of Brazilian bioeconomy. Carolina joined RSB in 2019 and she is the Business Development Lead for Latin America and Lead of the Ground Transport Sector. Using science, innovation and the engagement of multiple stakeholders, Carolina dedicates her professional career to helping to achieve a balance between environmental protection and economic growth by establishing a sustainable and low-carbon circular economy.*

**Mr. Keith Klein, Distinguished Researcher in Environmental Sciences, Oak Ridge National Laboratory**



*A Distinguished Researcher in Environmental Sciences, Oak Ridge National Laboratory, **Mr. Keith Kline** supports the U.S. Department of Energy to assess effects of renewable energy development and identify approaches to support beneficial land management. From 1980-2008, Keith lived and worked in developing nations supporting USAID programs to help communities conserve forests, biodiversity and ecosystem services. Since 2008, Keith has led research and authored more than 90 publications on bioenergy and more sustainable natural resource management. Keith is an advisor for programs including ISO Technical Committee 323 developing standards for a Circular Economy, and International Research Networks on the nexus of Food-Energy-Water.*

**Mr. Bharadwaj Kummamuru, Executive Director- WBA**



***Mr. Bharadwaj Kummamuru** is the Executive Director of World Bioenergy Association (WBA). WBA is the leading global association promoting the sustainable development of bioenergy and covers all sectors including liquid biofuels, solid biomass and biogas, while representing a member base of companies, associations, researchers from more than 65 countries. Bharadwaj has been leading the association for the past 3.5 years in executing activities including publications (factsheets, statistics and market reports), events (conferences, study trips), projects and collaboration with international partners. He initially joined WBA in 2014 to lead the project on bioenergy statistics after graduating with a Master of Science degree in Sustainable Energy Systems. Bharadwaj has a background in Chemical Engineering and interests include Life cycle assessment, data analysis and sustainability.*

**Mr. Henrik Brodin, Strategic Business Development Manager, Sodra**



**Mr. Henrik Brodin** is responsible for business development and public affairs of energy at the Swedish forest company Södra since 2016 and Program Director of A Fossil Free Södra. He is also a member of the Silva Green Fuel board. He holds a Master in Business Administration and had previously been commercial responsible of the Södra Groups energy business during several years. Södra is the largest forest owner co-operation in Sweden and produces sawn timber, pulp and bioenergy. Södra newly opened the world's first commercial Biomethanol plant from lignocellulosic biomass in Sweden, builds a demo plant together with Statkraft to produce advanced biofuels from biomass in Norway and is owner of tall oil diesel producer SunPine.

**Mr. Timothy Ong, Senior Vice-President, Agensi Inovasi Malaysia (AIM)**



**Mr. Timothy Ong** is the Senior Vice President, Strategic Impact Projects & Industry-Expert Collaboration of Malaysia's National Innovation Agency (AIM), under the Ministry of Science, Technology, and Innovation (MOSTI) Malaysia. AIM's Strategic Impact Projects Division works to transform strategic sectors in Malaysia creating sustainable new industries and high value jobs for Malaysians. One of its key initiatives is the National Biomass Strategy (NBS). Timothy heads the National Biomass Strategy Delivery Unit, an execution unit for NBS to accelerate progress and development of Malaysia's biomass industry. Key functions of the unit include the liaison and coordination on all biomass activities within Government; promote sustainable utilisation of biomass resources and facilitation of local and international industries to explore commercial biomass opportunities in Malaysia with intention to create a balanced portfolio of higher value added downstream industries such as Bioenergy, Advanced Fuels, and Biochemical to its end products. Timothy works very closely with Government and Industry stakeholders to objectively review the commercial viability of proposed projects by assessing the entire value chain ensuring project relevance and scalability in the long run.

**Mr. Geoffrey Bell, CEO, Microbiogen**



**Mr. Geoffrey Bell** has degrees in science and finance and after a career in investment banking and stockbroking, co-founded Microbiogen in 2001 and became CEO 2006. He has since led the company through the R+D phase to commercialisation with biocatalysts developed by the company now producing a large part of the world's biofuels.

**Mr. James Spaeth Program Manager, U.S. Department of Energy- Bioenergy Technologies Office**



*Mr. James Spaeth serves as the U.S. DOE's Bioenergy Technologies Office System Development and Integration Program Manager. His current portfolio includes the DOE investment in integrated biorefinery projects focused on the development of advanced biofuels and bioproducts including renewable hydrocarbons and cellulosic ethanol. Jim is also the current Chairperson of the Executive Committee of the Bioenergy Technology Collaboration Program under the International Energy Agency. Prior to his current position with DOE, since 1994 Jim has served in various roles including: Senior Advisor for the Pacific Region; Director for the Office of Commercialization & Project Management; and Biomass Program Team Manager. Mr. Spaeth also served as a Legislative Fellow for U.S. Senate Majority Leader Harry Reid. Prior to joining DOE, Mr. Spaeth worked for over 10 years in the aerospace industry in engineering and business development positions with McDonnell Douglas and Boeing.*