



**WORLD BIOENERGY
ASSOCIATION**

Annual report 2020



www.worldbioenergy.org

ANNUAL REPORT FOR THE FINANCIAL YEAR 2020

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Introduction by the President

Dear members of the World Bioenergy association, supporters, collaborators and friends,

As highlighted by the global bioenergy statistics we published recently bioenergy contributes 12% of world primary energy supply. This is by far the largest contribution of all forms of renewable energy. According the International energy agency bioenergy will be the most important source of energy globally by 2050. Currently, this is not reflected by the size and role of WBA.

How can we develop WBA to an organisation reflecting the role of bioenergy and making a relevant contribution to climate protection and the achievement of the sustainable development goals?

This question is linked to the question: how can we increase the value of our activities? I see three areas where WBA can make a meaningful contribution: we can address relevant policy issues and engage with qualified input. We did so recently addressing the current debate in Brussels on how to regulate the use of bioenergy from forestry in the context of a webinar. EU bioenergy policies will continue to be a hot topic in the year to come.

Another service WBA can offer is support for international cooperation and learning. There is so much experience with using bioenergy in a clean and efficient way that needs to be shared! We started a series of webinars addressing the use of agricultural residues as source of energy starting with an excellent overview of state of the art technology. We will continue with this activity in 2021.

WBA is fully committed to the sustainable use of bioenergy and we are aware that not all forms of bioenergy use are sustainable at the moment. Our mission is to promote the transition, particularly of traditional bioenergy use to modern, clean and efficient technologies. We have made a first step in this direction with the publication of the pellets. africa website and more will need to follow.

A fundamental precondition to increase the value of our contributions in these fields is to become more effective in communication. Developing a closer collaboration within our network is one way of achieving this. Smart collaborations and hopefully also staff managing WBA communication are a target for 2021.

The most important resource for developing WBA to an organisation that reflects the role of bioenergy in our future global energy system are its members. There is so much great work out there you all are doing. Lets make this more visible and lets pay attention to what we have in common in our quest to tackle climate change and achieve the SDGs!



Christian Rakos
President
World Bioenergy Association

CHRISTIAN RAKOS
PRESIDENT
WORLD BIOENERGY ASSOCIATION

Summary of Activities 2020

The COVID19 pandemic had a significant impact on the energy sector worldwide. Bioenergy sector was no exception, and the WBA survey showed a majority of respondents indicating a moderate to severe impact of the pandemic on their business including drop in production, revenues etc. During the difficult times, World Bioenergy Association has been able to effectively execute our work plan during 2020. Following is a summary of activities in 2020:

PUBLICATIONS

- The first publication of the year 2020 was the Annual Report published in early April.
- Based on the survey on COVID 19 among industry stakeholders, WBA published our position paper on COVID19 – Impacts and outlook for the bioenergy sector
- A new factsheet on the status of liquid biofuels for transport sector was published
- WBA flagship publication – Global Bioenergy Statistics 2020 – was published as well

EVENTS

- IRENA GA 2020 was organized in January in Abu Dhabi. As an observer to IRENA and a member of the Coalition for Action, WBA participated in various meetings and held discussions with policy makers, businesses and civil society at the session.
- In preparation of the G20 summit a workshop took place in March in Riyadh, Saudi Arabia on Circular Carbon Economy. WBA represented by Christian Rakos gave a presentation of the role of Bioenergy in this context.
- Our event together with the World Biogas Association to be held in Rabat, Morocco in March was cancelled due to the pandemic situation.
- The WBA Annual Meetings – the annual gathering of WBA members – was supposed to be organized in Vienna, Austria. Due to the worsening of the pandemic situation and travel restrictions, it was instead organized as a virtual event. A new board was elected and Christian Rakos replaced Remigijus Lapinskas as President of the WBA.
- A webinar was organized in November to present a special report on “The risks of regulatory intervention in bioenergy feedstock markets” that is related to the current discussion on the framework conditions for bioenergy use in the EU.
- To explore the latest developments in the agricultural residues sector, WBA initiated a webinar series with the first webinar focussing on technology for conversion.

PROJECTS

- To understand the impact of the pandemic and subsequent response required from policy makers, WBA initiated a survey on COVID19 impacts and outlook for bioenergy.
- A new e video series featuring presentations from WBA board members was initiated and the videos are featured on the website and the YouTube channel.

COLLABORATIONS

- WBA continued our cooperation with IRENA with our participation at the Coalition for Action. Together with other members, a Call to Action in Response to COVID 19 was published
- As part of REN Alliance, WBA along with ISES, WWEA, IHA and IGA, organized a webinar on impact of the pandemic on the renewable sector with external speakers from REN21, IRENA and IEA.
- In the year, WBA also joined the Carbon Pricing Leadership Coalition as a partner.
- Australia Renewable Energy Agency published a call for consultations on developing a National Bioenergy Roadmap for which WBA submitted our response.

Membership

WBA is a member-based organization and is proud of the strong member base of companies, associations, researchers and individuals from around the world. The strong network of experts enables WBA to undertake various activities including publishing expert reports, organizing events and continue collaboration in joint working groups and projects.

Our special appreciation to our silver supporter members who provide increased support to WBA activities and benefit from high visibility via our communication channels. In 2020, we are pleased to report 3 silver supporter members. Both Agrana (Austria) and Lantmännen (Sweden) have continued their support while we are grateful for Fröling (Austria) who has joined in as a new silver supporter.

WBA membership in 2019				
	Full members	Associated members	Individual members	Total
Africa	7	3	22	32
America	5	4	27	36
Asia	6	8	38	51
Europe	18	68	60	146
Oceania	1	1	4	6

An overview of the various membership schemes and benefits is presented below. We have members from a wide variety of organizations: companies, associations, research institutes, individuals etc. The membership table below sets a guideline on the annual membership fee.

Membership types and characterization		
Type	Category of members	Membership Fees
Full	National and Regional Bioenergy and related associations	300 - 5 000 Euros/year
Associated	Companies, consultancies, energy agencies, research institutions etc.	300 - 5 000 Euros/year
Individual	Individual persons	50 Euros/year

Communication activities

Secretariat

WBA is registered in Stockholm, Sweden where the Secretariat (Seat) of the organization is located. The Secretariat is tasked with executing the activities of WBA under the guidance of the President and the Board. Appointed by the President, the Executive Director leads the Secretariat in daily activities. The Director is ably supported by other employees, interns and consultants from around the world. The report of the activities of the Secretariat are presented to the board regularly for review and approval.

The current location of the Secretariat is:

World Bioenergy Association
Kammakargatan 22
111 40, Stockholm
Sweden
+46 8 441 70 84

Office hours are usually from 08.00 – 17.00 and the Secretariat welcomes all members and non-members to the office to interact and exchange information related to bioenergy development around the world.

Website

The main mode of communication for WBA is our website: <https://worldbioenergy.org>. Information related to new publications, events, project collaborations etc. are posted regularly in the news and events section. All our published material including factsheets, statistics reports etc. are available in the Resources section. Information about WBA, organization, statutes, board members list etc. are posted in the About Us section. Finally, members have an opportunity to login through their own personal email ID and password to access member exclusive information

including country reports, newsletters etc. A complete list of all our members and their respective links is constantly updated on a dedicated Our Members page.

Mailing list and GDPR

WBA uses Mailchimp as our marketing platform where we host lists of members, board members and subscribers who sign up on our website. Our subscribers on our mailing lists are regularly informed about WBA activities and invited to contribute to our publications and events. Moreover, WBA takes data privacy seriously and as required by EU GDPR – a new data privacy policy was developed and being implemented. A copy of the privacy policy is available on our homepage: <https://worldbioenergy.org/data-privacy-policy>

Social media

The use of social media channels is important for timely and regular exchange of information about WBA and bioenergy development around the world. WBA maintains social media accounts on Facebook, LinkedIn, Twitter and a YouTube channel.

- Facebook (2 809 followers): <https://www.facebook.com/WorldBioenergyAssociation/>
- Twitter (1 651 followers): https://twitter.com/world_bioenergy
- LinkedIn Company page (461 followers): <https://www.linkedin.com/company/10866210>
- LinkedIn Group (1 514 members): <https://www.linkedin.com/groups/4154386/>
- YouTube (19 subscribers): <https://www.youtube.com/channel/UCLiobHKWzRYFnV77YPYKdDQ>

Member letters

WBA publishes 6 bimonthly newsletters to our members, which included recent developments in bioenergy, membership details, WBA activities and a list of conferences on bioenergy supported by WBA. The member letters can be accessed via logging into the member section. For members, if you do not remember your login, please drop in a mail to info@worldbioenergy.org

Press release

WBA issues press releases regularly on interesting developments in the bioenergy sector including activities of WBA. These are issued on the website and sent via our e – communication channels:

- **14th January:** WBA continues cooperation with IRENA (IRENA GA 2020)
- **15th April:** WBA Annual Report 2019
- **28th April:** COVID19 survey on impact on bioenergy sector

- **30th April:** IRENA Call to action in response to COVID 19
- **05th May:** Christian Rakos appointed as WBA President (WBA AM 2020)
- **27th May:** WBA joins Carbon Pricing Leadership Coalition
- **10th June:** Submission to Australia bioenergy road-map consultation
- **15th June:** Request for data collection for WBA GBS 2020
- **25th June:** FADEEAC Seminar on Argentina transport sector (webinar)
- **30th June:** REN Alliance webinar on renewables working together (webinar)
- **01st July:** COVID 19 and bioenergy: Impacts and future outlook (position paper)
- **07th July:** Liquid biofuels – a sustainable solution for transport (factsheet)
- **09th July:** Joint REN Alliance statement on renewables working together
- **26th August:** COVID19 – Impacts and future outlook for the bioenergy sector (survey)
- **30th September:** Bioenergy – an opportunity for local sustainable development (videos)
- **06th October:** IRENA Innovation week on growing the bioeconomy
- **02nd November:** Sustainable bioenergy white paper
- **12th November:** Sustainable biomass feedstock webinar (recording)
- **10th December:** WBA Global Bioenergy Statistics 2020
- **11th December:** Fröling joins WBA as a silver supporter
- **14th December:** WBA Webinar 1 – Agricultural residues to energy (recording)



global energy-related carbon dioxide emissions, so finding a solution is critical and discovering a path to decarbonizing transportation will be central to meeting the climate targets agreed upon by the international community. Fossil-based liquid fuels are commonly being replaced by biomass-based alternatives, also known as biofuels. Biofuels offer a low-carbon transport fuel alternative while also reducing global oil dependence, improving national energy security, and promoting economic development. Biofuels can be produced from a range of different feedstocks, from crops like maize and sugarcane to agricultural residues and even the bio-fraction of municipal waste. This production is done via many different technological processes, resulting in different fuels suited to different parts of the transport sector. Ethanol and biodiesel account for the majority of biofuels being produced today, although there are several other biofuels produced on a commercial scale. The production of biofuels is heavily dependent on national policy, so different countries have adopted a range of different strategies for promoting biofuels. These range from fiscal incentives to blending and volumetric mandates to greenhouse gas reduction targets. These policies will be especially important for shaping the role of biofuels in their respective markets in the coming years. These markets are predominantly transport sectors that will be difficult to electrify, including heavy-duty vehicles, marine transport, and aviation. Biofuels will continue to be important for conventional road transport as well. This factsheet also addresses some of the major questions and challenges surrounding biofuels, including the impact of biofuel production on food prices, land usage, emissions, and the impact of electrification on biofuels.

Global Bioenergy Statistics 2019

The Global Bioenergy Statistics (GBS) report is the main annual publication of WBA. The report focusses on the global development of biomass to energy – supply, production and consumption. The data is presented on different geographical levels – global, continental and regional levels covering all sectors of bioenergy – liquid biofuels, biogas, pellets, forestry, agriculture, waste etc.

Summary

Fossil fuels dominate the global energy supply. 81% of the total primary energy supply which includes production,

Publications

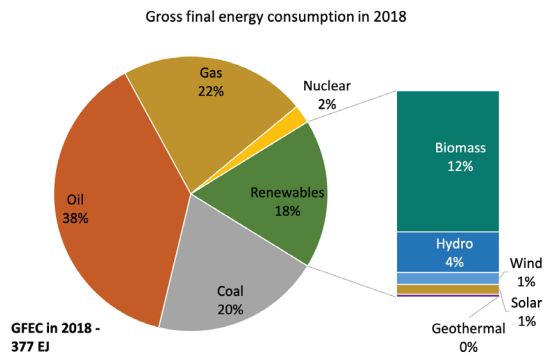
Factsheets

Factsheets are concise overview of natural science-based facts of various bioenergy technologies and processes. These are drafted by an expert individual or organization in that particular sector and are then reviewed by a team of experts. Once designed, the factsheet is published on the website and then sent out through our online communication channels. They form an important part of the WBA knowledge base.

In 2020, WBA published an update to our liquid biofuels factsheet: “Liquid Biofuels – Sustainable solutions for transportation”.

Summary

The transportation sector accounts for nearly a quarter of



imports, exports, and bunkers is supplied by coal, crude oil and natural gas. Renewable energy technologies of solar, wind, hydro, biomass, geothermal etc. had a share of 13.8% in the primary energy supply in 2018.

Coal is a significant contributor to the global electricity mix. In 2018, 38% of electricity produced globally was from coal-based sources with a total of more than 10 000 TWh. In recent years, natural gas is emerging as a major electricity producing energy source. In 2018, 26 730 TWh of electricity was generated globally with renewables having a share of 25.8%, mainly driven by the increasing use of solar and wind as well as significant contribution from hydropower and biomass. In 2018, 6 890 TWh of renewable electricity was produced globally. Hydropower was the largest renewable electricity generating source with a share of 62% followed by wind at 19%. Bioenergy was the third largest renewable electricity generating source with 637 TWh of production.

In 2018, 15 EJ of heat was produced globally via heat only and combined heat and power plants. The heat production has been increasing at an annual growth rate of just over 1%. Coal and natural gas have a combined share of more than 85% in the global heat production. Renewable energy technologies including biomass, geothermal and solar thermal have doubled their share in the global heat production over the past 18 years. 96% of all renewable heat produced was from biomass with minor contribution from geothermal and solar thermal technologies.

Direct heat includes the use of fuel directly for both heating and cooking purposes in residential, commercial, agriculture, fishing sectors etc. In energy terms, use of fuel for direct heat is more than twice the fuel used for electricity production. However, it is concerning to note that during 2000 – 2018, share of renewables in direct heat reduced from 24% to 20% globally. Direct heat production around the world was 35 times higher than derived heat produced in power plants. As is the case with derived heat, bioenergy is the single largest renewable heat source globally with a share of more than 95% followed by solar thermal at 3% and geothermal at 2%.

Transport sector accounts for about 27% of all energy consumed globally. Crude oil and oil products contribute 92% of the energy needs for the transport sector. Liquid biofuels and biogas are the most sustainable and ideal option for the

sector right now. Biofuels have a share of more than 3% and have experienced a growth of 13% - almost 6 times as much as the overall energy needs in the transport sector.

Gross final energy consumption includes the total final consumption of all energy sources including the electricity and heat consumption at all end use sectors. In 2018, gross final energy consumption of all energy sources was 471 EJ. The share of renewables has remained constant at 17% since the start of the century.

In 2018, domestic supply of biomass was 55.6 EJ globally. 85% of the domestic supply was from solid biomass sources including wood chips, wood pellets and traditional biomass sources. Liquid biofuels accounted for 7%, municipal and industrial waste sectors accounted for 5% followed by biogas at 3%. In 2019, 1.9 billion m³ of wood fuel was produced globally. Africa and Americas had the highest share of wood fuel production with a contribution of 36% and 37% respectively. Wood pellets are one of the fastest growing bioenergy sectors worldwide. In 2019, 38.9 million tonnes of pellets were estimated to be produced globally. Wood charcoal is another key bioenergy sector with significant volumes being produced globally. In 2019, 53.1 million tonnes of wood charcoal were produced globally with Africa accounting for 65% of the global production. Agriculture is a key sector for increased potential for bioenergy utilization in the future. In terms of yields of major crops, there is significant potential to increase the yields in various regions to the global average. This will enable increased production of both food and fuel with the agriculture sector playing a key enabler for increased bioenergy use around the world. Energy generation from municipal and industrial waste represents the 3rd feedstock sector after forestry and agriculture. In 2018, domestic supply of energy from municipal and industrial waste was 2.59 EJ with 56% from municipal waste and remaining from industrial waste.

In 2018, 637 TWh of electricity was generated from biomass globally. 66% of all biopower generated was from solid biomass sources followed by 19% from municipal and industrial waste. Biogas share was 14%. Asia accounted for 38% of all biopower generated globally with 243 TWh of production in 2018 followed by Europe at 35%. Electricity only plants are designed to produce electricity only. In 2018, 474 TWh of biopower was produced in electricity only plants, accounting for approx. 75% of all biopower produced globally. CHP or Combined Heat and Power plants refer to those plants that are designed to produce both heat and electricity. In 2018, 226 TWh of biopower was generated globally from biomass-based sources in CHP facilities accounting for a quarter of all biopower produced.

In 2018, 1.12 EJ of heat was produced from biomass-based sources – 53% from solid biomass sources and 26% from municipal solid waste. Europe is the world leader in producing heat from biomass in power plants with a share of 87% globally followed by Asia at 8%. In 2018, 0.21 EJ of bioheat was produced in heat only plants while 0.81 EJ of bioheat was

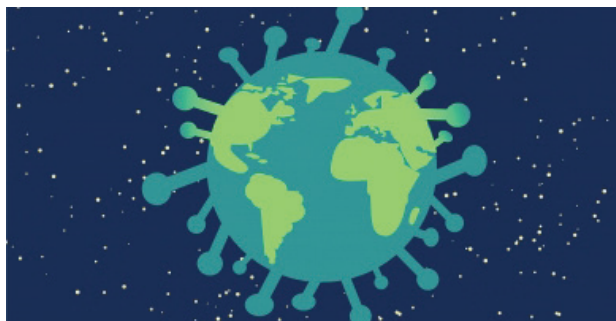
produced globally in CHP facilities which accounts for more than 75% of all bioheat produced globally

In 2018, 160 billion litres of biofuels were produced globally. Bioethanol is the largest biofuel globally with a share of 62% followed by FAME biodiesel at 26%. Rest of the biofuels including HVO (Hydrogenated vegetable oil), renewable diesel, cellulosic ethanol etc. had a share of 12%. Americas dominate the biofuel production globally. North and South America together produce 75% of all biofuels globally with Europe having a share of 14%. In 2018, 59.3 billion m3 of biogas was produced globally with an equivalent energy content of 1.36 EJ. During 2000 – 2018, the sector experienced an annual growth rate of 9%.

Renewable energy technologies create millions of jobs along the entire value chain. In 2019, an estimated 11.5 million people were employed in the renewable energy sector with bioenergy being the 2nd largest employer with an estimated 3.58 million people.

Position paper: COVID19

The spread of COVID19 virus and subsequent measures taken to control the spread had a significant impact on the bioenergy sector worldwide. Measures such as national/local lockdowns, social distancing guidelines and restrictions on movement of people and goods has led to a significant challenge to the bioenergy community.



WBA initiated the survey 'COVID 19 and impact on global bioenergy sector'. The survey was open for responses from bioenergy stakeholders for the duration of 3 weeks (05 – 26 May 2020). The aim of the survey was to understand the impacts of the COVID19 pandemic and the resulting lockdown on the bioenergy industry.

In terms of impact, 52% of the respondents indicated a moderate to significant effect of COVID19 pandemic on bioenergy businesses. Moreover, the impact on biofuel production and equipment manufacturing, cash flows/revenues, employment and investments was 40%, 44%, 22% and 38% respectively.

Based on the results, WBA issues the following key messages for policy makers:

1. Bioenergy as essential service. Bioenergy (including solid biomass, liquid biofuels and biogas) has provided clean, on demand energy and its role in

meeting end use of electricity, heating and transport fuels should be recognized as essential product and service in times of crisis.

2. A bioenergy future. Policy makers should assure investors and the wider bioenergy community of their support to bioenergy and its crucial role in reducing fossil fuel use, generating jobs, local economic development and combating climate change.
3. Dis-incentivize fossil fuels. Low oil prices, low cost of renewable energy sources and the momentum towards a clean energy future provide the opportunity for policy makers to dis-incentivize fossil fuels development by eliminating subsidies, implementing carbon pricing policies and developing fossil fuel exit strategies.
4. Build back better with Bioenergy. Recognizing the crucial role of bioenergy in the global energy mix, governments should include support to sustainable bioenergy technologies and pathways as key themes at the centre of economic recovery packages. No more fossil fuel support.
5. Time for ambition and action. Recognizing that we face a climate urgency, national governments must increase their climate ambition by setting long term, ambitious and stable targets for bioenergy and renewable energy.

REN Alliance statement

The renewable industries will work together to deliver 100% renewable energy. This can only be achieved through renewable energy integration. Together, the renewable energy technologies are greater than the sum of their parts. A significant increase of investment in renewables will fuel economic growth, create employment and contribute to a climate-safe future. To ensure this, we call for the following:



RENALLIANCE
renewables working together

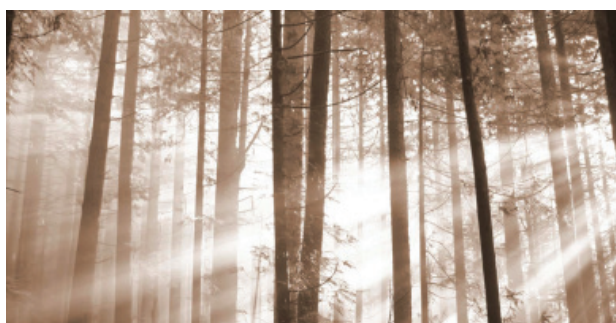


- **Accelerated deployment across all sectors, especially in heating, cooling and transport sectors, also by connecting the sectors.** The uptake of renewables in heating, cooling and transport remains slow, even though these sectors account for over three fourths of total final energy demand. Policy attention in this area is still lacking.
- **Substantial financial incentives for renewables**

to create competitive advantage for end-users and encourage self-supply. The deployment of renewables in the energy sector still faces multiple barriers. Further policy support is needed to advance the achievement of a 100% renewable energy future. Policies ranging from pricing instruments to financial and fiscal incentives, quotas, and obligations, are needed to support clean, efficient and renewable energy projects.

- **Consider additional benefits and services of renewables when designing market mechanisms, not just lowest price.** The socio-economic benefits of the transition to a 100% renewable energy future is of vital importance. Mitigating climate change through the deployment of price competitive renewable energy need to be considered to future-proof our economy and society.
- **Broader policy frameworks devoted to a just and inclusive energy transition.** Renewable energy technologies lie at the heart of the energy transformation. This transition should focus on deployment, enabling and integrating policies that attract the full variety of investors, from individuals, communities, SMEs up to larger companies to participate and invest.
- **Development of green skills and renewable jobs offered to communities.** Incentives for education and training are needed to match the future skills demand for the energy transition. These incentives should address social and gender equity.
- **Mapping and promotion of health benefits of a green energy-based economy.** Replacing fossil fuels with renewable energy technologies is a positive force for climate, health and society.

White paper – Sustainable bioenergy



WBA released a special report titled ‘The risks of regulatory intervention in bioenergy feedstock markets’, describing the unintended and problematic consequences of banning “whole trees” from being used for bioenergy.

Bioenergy is the EU’s largest single source of renewable energy, accounting for almost 60 percent of all renewables consumed in the EU. Amid widespread support for the in-

creased use of sustainable biomass to help reach more ambitious 2030 climate goals, there are also calls to arbitrarily limit certain feedstock due to perceived environmental and biodiversity concerns.

The new white paper shows why banning “whole trees” from bioenergy use can have consequences that are detrimental to sustainable forest management and biodiversity in forests. The report examines wood fiber flows that have evolved over decades – in some cases over a century – into highly efficient market-based systems that allocate resources to the most appropriate end use. Use of wood as material such as timber, plywood or fiberboard is always valued higher than its use as a source of energy.

Despite the small, yet essential, role of bioenergy in the forest value chain, there have been calls for measures to “minimize the use of whole trees” in sustainable biomass feedstock. This is especially problematic as the term has no meaning in forestry and can be used just as accurately to describe a tiny seedling as a mature tree. As noted in the report, it’s a common misconception that trees of a certain size are automatically considered high value. From this misconception comes the suggestion that to ensure only low value wood is used for bioenergy, the use of whole trees should be prohibited.

Submission – Australia bioenergy roadmap consultation

WBA submitted inputs to the Australian Renewable Energy Agency (ARENA) call for submissions to the Bioenergy Roadmap. The roadmap aims to identify the role that the bioenergy sector can play in Australia’s energy transition and help further reduce emissions from the energy sector. The roadmap will also help to inform the next series of investment and policy decisions in the bioenergy sector in Australia.



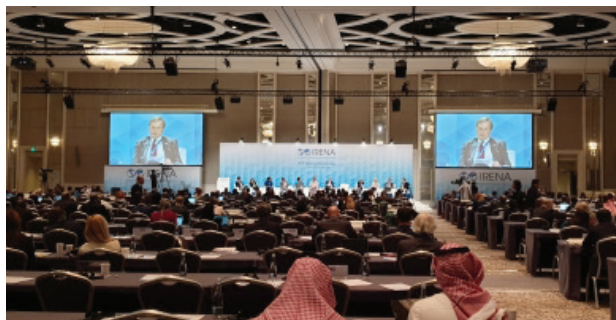
WBA submission addressed various topics including markets and technologies, resources, public policy and social license related to bioenergy. International developments related to drivers and impediments to bioenergy development, supply chain gaps, competitive advantage of bioenergy, international policy trends and success stories, feedstock, environmental impacts, current policy situation, role of stakeholders and public acceptance of bioenergy were

also addressed in the submission.

We commend the federal government and ARENA for the initiative to develop the roadmap and informed them about our assistance in developing and implementation of the roadmap.

Events

IRENA GA 2020



As an observer organization to International Renewable Energy Agency (IRENA), WBA participated at the 10th General Assembly during January 10 – 12, 2020 in Abu Dhabi, UAE. The tenth session of the Assembly brought together Heads of State and Government, Ministers, Member delegations as well as heads of international and regional organisations, public and private entities and civil society representatives to contribute to the energy transformation dialogue.

World Bioenergy Association participated at the Public Private Dialogue organized on 10th January 2020 providing inputs on adapting market design to integrate high share of variable renewable energy and scaling up private sector investment in Africa. After the General Assembly, as a member of the IRENA Coalition for Action, WBA participated at the Annual Strategy Meeting. Thirty-eight representatives from thirty Coalition member organizations gathered at the IRENA Headquarters in Abu Dhabi for a full day meeting to discuss past, current and future activities of the Coalition for Action, and to agree on the Steering Group for 2020. As part of the Working Group on 100% Renewable Energy, WBA is pleased to have contributed to a white paper Towards 100% Renewable Energy: Utilities in Transition, which was launched at the Tenth Session of the IRENA Assembly. WBA along with the members of the WG agreed to continue working on a third white paper with a potential focus on end use sectors beyond electricity.

G20 workshop in Riyadh

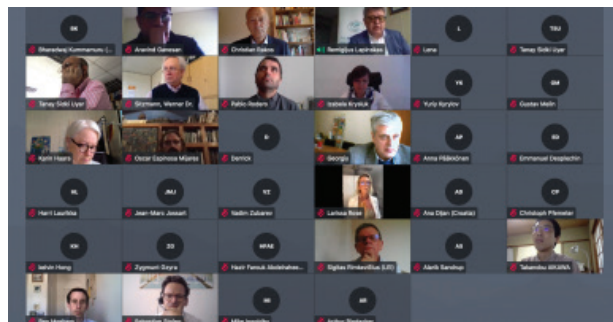
In 2020, the summit of the G20, the 20 largest industrialized countries, took place under the chairmanship of Saudi Arabia. The summit was prepared through dozens of conferences, ministerial level meetings and expert workshops that drag on throughout the year. Christian Rakos attended the

workshop in Riyadh on behalf of WBA.



Annual Meetings 2020

The Steering Committee of the World Bioenergy Association (WBA) appointed Christian Rakos as president of the association at the WBA Annual Meetings 2020. The meetings were initially scheduled to be held in Vienna. However, due to the current COVID 19 situation, a conference call was held to convene WBA members for the meetings.



Rakos follows Remigijus Lapinskas from Lithuania, who steps down as President after four years. Former President, Remigijus Lapinskas wished Rakos all the best. At the Steering Committee meeting, a new board was also elected. WBA welcomed the board members who were reelected as well as new candidates. The SC also voted for a new Nominating Committee in charge of proposing candidates for WBA board for the future.

FADEEAC Seminar on Argentina Transport Sector



International leaders, academicians, public officials and

private sector representatives participated in a virtual seminar to discuss the main challenges for the energy transformation of Argentina's transport sector. Biofuels were presented as one of the most efficient alternative to be implemented in the short term.

The webinar was convened by the Argentinian Federation of Freight Transport Companies (FADEEAC - Federación Argentina Federation of Freight Transport) and had more than 200 people joining the seminar on June 25th, where the trends and challenges of transport sector were presented. The webinar 'For the Energy Transformation in Argentina's Transport and Its Challenges' featured welcome remarks from FADEEAC President Hugo Bauza who informed about the objectives of FADEEAC to be more sustainable and to explore alternative and sustainable options including liquid biofuels. WBA Executive Director was invited to participate in the first panel discussion: 'Fuel Basket for Greener and More Efficient Transport'.

REN Alliance webinar



The REN Alliance organised a webinar, which brought together the world's leading renewable energy organisations. Special thanks go to the speakers from Renewable Energy Policy for 21st Century (REN21), the International Energy Agency (IEA), International Renewable Energy Agency (IRENA), the International Geothermal Association (IGA), the International Hydropower Association (IHA), the International Solar Energy Society (ISES), the World Bioenergy Association (WBA), and the World Wind Energy Association (WWEA). The message from the renewable industries is clear. The sector will work together to deliver 100% renewables energy.

IRENA Innovation Week – Growing the bioeconomy

The International Renewable Energy Agency (IRENA) hosted the IRENA Innovation Week 2020 during 05 – 08, October 2020. For the first time, bioenergy was included as a session during the innovation week where sustainable solutions to grow the bioeconomy were discussed. WBA was invited as a moderator for the panel discussion.

The session had two panel discussions with 13 expert speakers as well as 349 participants. The panels brought to-

gether experts from across the globe to showcase best practices and innovative approaches for securing sustainable biomass as feedstock for both industry and transport sector decarbonization. The panel also discussed new and emerging approaches to maximize biomass value streams through co-processing and co-production in biorefineries or in the biomass industry cluster as innovative solutions toward the bio-based economy.



Sustainable biomass feedstock webinar



Sustainable bioenergy is the EU's largest single source or renewable energy, and will play a significant role in achieving its ambitious climate goals. However, there are also calls to limit certain feedstock for woody biomass over concerns about its impact on forest biodiversity.

In this regard, WBA organized a webinar on 12 November 2020: Sustainable Biomass - Understanding its role in the forest value chain and preserving biodiversity.

WBA webinar – Agricultural residues to energy

Agriculture residues are one of the most abundantly available resource worldwide as millions of tons of husk, straw etc. are produced globally which are either left to rot or burned on the fields. Efficient utilization of these residues to produce heat, electricity and biofuels offer various advantages including replacing fossil fuel use, reducing emissions, and promoting local economic development. However, various technological, social and policy challenges hinder the progress of the sector.

In this regard, WBA organized a webinar focussed on the



latest combustion technologies available in currently operational commercial facilities worldwide. The webinar highlighted the latest technological developments in thermal conversion of agricultural residues to energy. Speakers from around the world showcased success stories along with opportunities and challenges for development of the sector.

Projects

E-videos

WBA initiated a new project - bioenergy video series highlighting the various benefits of bioenergy technologies including technical, social and economic benefits in different parts of the world. The videos are uploaded on the WBA website as well as on the YouTube channel.



Collaborations

In the mission to promote sustainable bioenergy development in the overall context of a renewable energy, it is important to work with like-minded partners. WBA works with many international organizations in varying capacities and 2020 saw the following developments:

CPLC

WBA is pleased to join the Carbon Pricing Leadership Coalition (CPLC) as a partner. The CPLC brings together leaders from government, private sector, academia, and civil society to expand the use of carbon pricing policies. By joining the Coalition, WBA will identify and share best practices on design and implementation of carbon pricing instruments around the world, advocate for successful carbon pricing initiatives, engage with public and private sector stakeholders to accelerate uptake of carbon pricing policies and provide

input on the effects of carbon pricing on bioenergy development and deployment so as to strengthen the evidence base for carbon pricing.

REN Alliance

WBA works closely with REN Alliance comprising of leading renewable energy organizations including ISES (International Solar Energy Society), IHA (International Hydro-power Association), WWEA (World Wind Energy Association) and IGA (International Geothermal Association). We regularly participate in meetings and co-organize events at COP climate conferences.

REN21

REN21 is a policy network promoting renewables in the 21st century. WBA is part of the Steering Committee of REN21 and contributes with information on bioenergy technologies, policies and markets worldwide. WBA also contributes to the Global Status Reports – a key publication of REN21.

IRENA

IRENA is the leading governmental organization promoting renewable energies globally. WBA already has a letter of cooperation in the statistics project. We regularly contribute with reviews on their reports on bioenergy. The IRENA Coalition for Action forms a key international network to discuss industry trends among other things to promote the wider and faster uptake of renewable energy technologies. WBA is part of a Working Group on 100% Renewable Energy and reviewed the white paper – a key deliverable for the working group. WBA also participated in the IRENA GA 2020.

Organization

WBA Board Members 2020 – 2021

- Christian Rakos, Propellets Austria (Austria)
- Kelvin Hong, Great Resources (China)
- Tanay Sidki Uyar, Beykent University (Turkey)
- Alarik Sandrup, Lantmännen (Sweden)
- Ben Moxham, Camberwell Energy (UK)
- Dawn Lambe, Bioeconomy Canada (Canada)
- Georgiy Geletukha, Bioenergy Association of Ukraine (Ukraine)
- Glauca Souza, University of Sao Paulo (Brazil)
- Hazir Farouk, Sudan University of Science and Technology (Sudan)
- Jean Marc Jossart, European Biomass Association (Belgium)
- Larissa Rose, below50 Australia (Australia)
- Mika Ohbayashi, Japan Renewable Energy Institute (Japan)

- Oscar Espinosa Mijares, Pellet Mexico Bioenergia (Mexico)
- Pharoah Le Feuvre, International Energy Agency (France)
- Remigijus Lapinskas, Lithuania Biomass Energy Association (Lithuania)
- Saku Rantanen, Tasma Bioenergy (Singapore)
- Vadim Zubarev, Ethanol Europé (Hungary)
- Werner Sitzmann, Amandus Kahl (Germany)
- Zygmunt Gzyra, President, Polish Chamber of Biofuels (Poland)

Nominating Committee

- Gustav Melin, Svebio, Sweden (Convenor)
- Andrew Lang, WBA, Australia
- Christoph Pfemeter, Austrian Bioenergy Association, Austria

Secretariat

- Bharadwaj Kumamuru, Executive Director (Sweden)
- Karin Haara, Senior Advisor (Sweden)

Members of Honour

- Kent Nystrom, Stockholm

Full members

Spanish Bioenergy Association, Swedish Bioenergy Association, European Biomass Association, proPellets, Energy Farm International Foundation, CZ Biom - Czech Bioenergy Association, Eurosolar Turkey, German BioEnergy Association, African Bioenergy Association, Austrian Biomass Association, Norsk Bioenergiföreningen, Fachverband Biogas e.V, Bioenergy Association of New Zealand, New World Hope, Advanced Biofuels Association, Bioenergy Association of Turkey, Lithuanian biomass energy association, Swedish Peat Producers Ass., Bioenergy 2.0 Association, the Bioenergy Association of Finland, Biomass Energy Efficient Technologies Association, Bioenergy Association of Ukraine, UABio, Central Africa Network for Renewable Energies, Namibia Biomass Industry Association, Cluster VALBIOM Maroc, ePure, Croatian Biomass Association, Polish Chamber of Biofuels, Indian Bioenergy Association, Hungarian Bioethanol Association, International Biochar Institute, Asosiasi Pengusaha Cangkang Sawit Indonesia, Power Workers Union, US Industrial Pellets Association

Associated members

First Bioenergy, Elmia AB, Scandinavian Forestry & Engineering, Firefly AB, CPM Europe BV, C.F. Nielsen A/S, W.Kunz Dry Tec AG (Swiss Combi), Ekman & Co AB, Bronswerk Heat Transfer BV, Herz Energietechnik GmbH, En-

ergie Steiermark AG, Agrana Group, Ingenieurbüro Riebenbauer, Forstbetrieb Regnier-Helenkow, Sunbird Bioenergy Ltd, BDI - BioEnergy International AG, Sveaskog Förvaltnings AB, Lund University Biofuels, Bioenergie Wärmeservice GmbH, Södra Skogsägarna ek. för., Probstdorfer Saatzucht GmbH & Co Kg, nahwaerme.at Energiecontracting GmbH, nahwaerme.at Energiecontracting GmbH, nahwaerme.at Energiecontracting GmbH, HSH Nahwärme & Photovoltaik GmbH, Bioenergie Tirol Nahwärme GmbH, TB Harald Kaufmann GmbH, Meva Energy, MAB Powertec Oy, Siemens Industrial turbomachinery AB, WSP Sverige AB, World Thermal Service AB, ENERSTENA Group, Mongolian Federation of Engineering organizations, Amandus Kahl GmbH & Co.KG, Pragati Koraput, Imperiya Agro, Syn-craft, Henriksson Salix AB, Repotec GmbH & Co KG, ANER, ENOIL Bioenergies SA, GEXCON UK Ltd., MANTEX AB, Reliance Industries Ltd., Investancia Paraguay SA, Pellet Mexico Bioenergia S.A., Lantmännen Energi AB, Bioendev, Mine Biomass Synergies, Renewable Energy Institute, Alternativa Verde Corporation, Expand med Oss, Lithuanian Energy Institute, Enviva, Ekotrend Sp., Biomass Ventures Pte Ltd, Aichernig Engineering GmbH, Serge Energy, Pellet Invest LLC, DLG Service GmbH, Fröling, SSBE Bioenergy Company Ltd.

Individual members

Individual members are not listed.

Silver Supporters

- Agrana (Austria)
- Lantmännen (Sweden)
- Fröling (Austria)

Funding

WBA is grateful for the funding we receive from our membership. The companies, associations and individuals comprising our member base support us immensely. Apart from the core membership, we are also thankful for the support of our supporter members.

- AGRANA AG, Austria
- Lantmännen Energi AB, Sweden
- Fröling, Austria

Detailed analysis of WBA financing is available in the authority version and will be available upon request. Please send your request info@worldbioenergy.org

Board members below have signed the Annual Report for 2020

Christian Rakos

Hong Hao

Tanay Sidki Uyar

Alarik Sandrup

Ben Moxham

Dawn Lambe

Georgiy Geletukha

Glaucia Souza

Hazir Farouk

Jean Marc Jossart

Larissa Rose

Mika Ohbayashi

Oscar Espinosa Mijares

Pharoah Le Feuvre

Remigijus Lapinskas

Saku Rantanen

Vadim Zubarev

Werner Sitzmann

Zygmunt Gzyra

The WBA Audit Report 2020 has been submitted and signed on 2020 - 03 - 31

Öhrlings PricewaterhouseCoopers

Maria Wigenfeldt, Authorized public accountant

SILVER SUPPORTERS OF WBA





World Bioenergy Association

– the GLOBAL VOICE OF BIOENERGY

Mission:

To promote the use of sustainable bioenergy globally & support the business environment for bioenergy.

Together with our members

- We work for an increased use of biomass in the global energy system in the markets for heat, electricity and mobility
- We follow the principles of sustainable, efficient and economic biomass development
- We influence and inform the public opinion in favor of sustainable biomass solutions worldwide and in individual countries
- We promote bioenergy as an important player in the global climate mitigation policy
- We cooperate with global institutions such as UNEP, UNFCCC, IPCC, IEA, IEA Bioenergy, IRENA, REN Alliance, FAO, REN 21 etc. towards the target of 100% Renewable

How we work

- **Office** in Stockholm, Sweden
- **Our board:** 19 members from 5 continents
- **Our members:** Companies, research institutes, associations, individuals from all over the world
- **Main areas:** Biomass potential, sustainability of biomass, pellets, small scale heat with biomass, combined heat and power, conventional & advanced biofuels, biogas, carbon neutrality of biomass, bioenergy statistics, biomass trade, bioenergy policy, traditional biomass
- **Main activities:** Fact sheets, statistics, position papers, policy reports, workshops, equipment directory press-releases, networking, presentations in conferences & exhibitions

What kind of membership is possible

Full members

Associations on regional, national or international level, (fee between 300 and 5 000 Euro annually, depending on situation and size)

Associated members

Companies, energy agencies, research institutes, consultants working in the field of bioenergy (fee between 300 and 5 000 Euro annually, depending on situation and size)

Individual members

Individuals, interested in the global development of bioenergy as sustainable and renewable energy source (fee 50 Euro annually)

Benefits of WBA membership

- Strengthen of the voice in favor of biomass on a global scale
- Exchange of information and experience between the bioenergy sector worldwide
- Possible cooperation in working groups and projects
- Access to new global studies and information about bioenergy

We invite you: join WBA!