



## Report on the Webinars

*Author(s):* Maya Misikir (Iceaddis)

*Review:* AKBOE

*Date:* 26.02.2022

*Deliverable N°:* D 5.4

DiBiCoo – Digital Global Biogas Cooperation  
Grant Agreement N°857804



## **Executive Summary of D5.4**

A series of 10 thematic webinars about European biogas technologies and biogas development was conducted. The purpose was to inform especially those stakeholders about project and cooperation opportunities, who were not able to attend the physical capacity building events. In each webinar, selected experts gave presentations on, among other topics, project development, biogas technologies (including feedstock and digestate handling), business models, financing, and sustainability issues.



## Summary of the DiBiCoo Project

The **Digital Global Biogas Cooperation (DiBiCoo)** project is part of the EU's Horizon 2020 Societal Challenge 'Secure, clean and efficient energy', under the call 'Market Uptake Support'.

The target importing emerging and developing countries are Argentina, Ethiopia, Ghana, South Africa and Indonesia. Additionally, the project involves partners from Germany, Austria, Belgium and Latvia. The project started in October 2019 with a 33 months-timeline and a budget of 3 Million Euros. It is implemented by the consortium and coordinated by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

The overall objective of the project is to prepare markets in developing and emerging countries for the import of sustainable biogas/biomethane technologies from Europe. DiBiCoo aims to mutually benefit importing and exporting countries through facilitating dialogue between European biogas industries and biogas stakeholders or developers from emerging and developing markets. The consortium works to advance knowledge transfer and experience sharing to improve local policies that allow increased market uptake by target countries. This will be facilitated through a digital matchmaking platform and classical capacity development mechanisms for improved networking, information sharing, and technical/financial competences. Furthermore, DiBiCoo will identify five demo cases up to investment stages in the 5 importing countries. Thus, the project will help mitigate GHG emissions and increase the share of global renewable energy generation. The project also contributes to the UN Sustainable Development Goals (SDG 7) for 'Affordable and clean energy', among others.

Further information can be found on the DiBiCoo website: [www.dibicoo.org](http://www.dibicoo.org).



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## List of Abbreviations

D	Deliverable
T	Task
SC	Steering Committee



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## 1 Introduction to DiBiCoo's Web Seminar Series

Enabling knowledge exchange, creating capacity and facilitating technology transfer are integral parts of the Digital global Biogas Cooperation (DiBiCoo) project. The aim of the web seminar series is to inform about cooperation opportunities, to familiarize industry stakeholders with European technologies and to share lessons learned and best practices on successful biogas, biomethane and gasification project management.

The web seminar themes include but are not limited to:

- How to collaborate with the DiBiCoo project
- Introduction to European biogas, biomethane and gasification technologies
- Experience sharing on successful biogas project development & implementation
- Biogas sector perspectives from DiBiCoo's emerging/developing target economies

All web seminars were recorded and made available for free via DiBiCoo's YouTube channel here: <https://bit.ly/3u9w2zu>

### 1.1 Target Audience

DiBiCoo web seminar series are open to biogas-/biomethane-/gasification industry stakeholders; biogas project developers; suppliers; policymakers; technology providers; experts; consultants, financing institutions, potential plant operators and other local stakeholders. Particularly, the web seminars target:

- Stakeholders from emerging and developing industries, especially those from the DiBiCoo partner countries in Argentina, Ethiopia, Ghana, Indonesia and South Africa
- Plant developers and technology providers from the European biogas industry

The webinar series had an average number of 66 attendees coming from Ghana, Ethiopia, South Africa, Liberia, Kenya, Indonesia, Malaysia, Vietnam, Argentina, Peru, Mexico, Colombia, India, Germany, Norway, Austria, Netherlands, UK, Belgium, Turkey and other countries.

The professional background of the attendees varied from researchers, students, engineers, government officials, project developers, analysts, consultants and directors in the biogas sector.

### 1.2 Speakers

The DiBiCoo project network includes biogas associations, key biogas plant developers, consultants and stakeholders with expertise from markets in Europe, Africa, Asia and Latin America. Selected experts from associated institutions and industry leaders were invited as speakers. The presentations were recorded and posted on the [DiBiCoo Website](#), and on the [DiBiCoo YouTube channel](#) later on. Each web seminar also featured a Q&A session where registrants could join the discussion and an interactive exchange with experts and speakers.





### 1.3 Topics

A list of the topics covered and dates of all webinars are presented in the table below.

*Table 1: Webinar Schedule*

No.	Topic	Date
1	Introduction to DiBiCoo, Demo Cases & the Web Seminar Series	June 2, 2021
2	Overview of European Biogas Technologies and Adaptations in Emerging / Developing Markets	July 28, 2021
3	Importance of Feedstock in Anaerobic Digestion: Characteristic & Potentials	September 7, 2020
4	Pretreatment of Feedstock in Anaerobic Digestion	October 13, 2020
5	Sustainable Biogas Production and Use	November 17, 2020
6	Biomethane (CNG & LNG) and Waste Treatment	January 14, 2021
7	Safety Measures for Biogas Plants	March 3, 2021
8	Values, Post-treatment & Digestate Application II	April 22, 2021
9	Biogas Project Management and Lessons from Other Projects	June 17, 2021
10	Thermal Gasification of Wooden Biomass	August 5, 2021
11	Biogas Plants: Legal Framework Conditions and Policy Considerations	September 30, 2021



## 2 Web Seminar Series

### 2.1 Introduction to DiBiCoo, Demo Cases & the Web Seminar Series

As the first DiBiCoo Webinar, this session clearly detailed what DiBiCoo means for importing country stakeholders. The web seminar discussed on how anyone can partner on the project and provided a briefing on what to expect of the DiBiCoo Webinar Series.

Table 2: Webinar 1, agenda

Topics	Speakers	Facilitator
DiBiCoo: What is DiBiCoo and how we can work together	Dr. Johannes Anhorn Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	GIZ
Demo and Follower Projects	Michael Rohrer, Austrian Energy Agency	

Table 3: Webinar 1, participant breakdown

Title	Attendees
Introduction to DiBiCoo, Demo Cases & the Web Seminar Series	56

### 2.2 Overview of European biogas technologies and adaptations in emerging/developing markets

Europe is at the forefront of biogas development with Installed Electricity Capacity (IEC) of more than 11 GW and housing the highest number of industrial biogas plants globally. This edition of our web seminar series discussed a range of European technologies and technical solutions for biogas development by seasoned experts from the German Biogas Association. It offered perspectives of emerging/developing markets on adaptations of European technologies by experienced experts from Argentina and South Africa.

Table 4: Webinar 2, agenda

Topics	Speakers	Facilitator
Overview of European biogas technologies	Mr. Frank Hofmann, International Affairs, German Biogas Association (FvB)	WIP
Adaptations of European technologies (Insights from Africa)	Mr. Alberto Borello, Co-founder and Operations Manager, Fountain Green Energy	
Adaptations of European technologies (Insights from Latin America)	Ing. Agr., MSc. Jorge Hilbert, International Consultant for Innovation Management; National Institute for Agricultural Technology (INTA)	



Table 5: Webinar 2, participant breakdown

Title	Registered	Attendees
Overview of European Biogas Technologies and Adaptations in Emerging / Developing Market	94	58

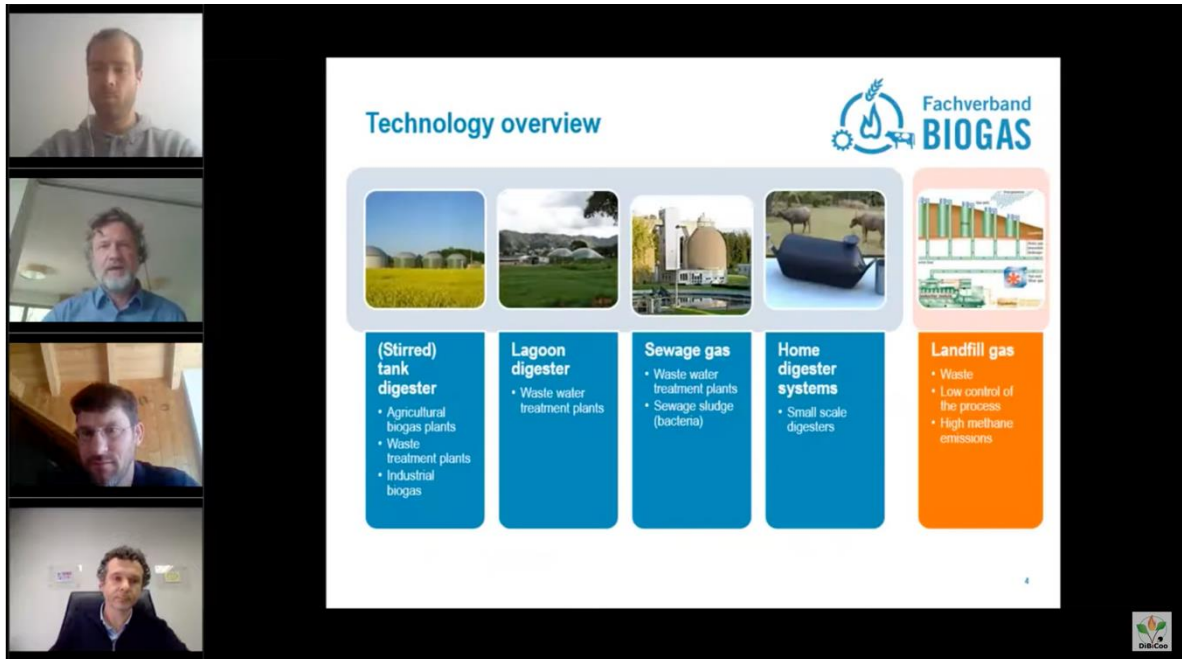


Figure 1: Screenshot of webinar 2 in progress



Figure 2: Webinar 2 poster design

## 2.3 Importance Of Feedstock In Anaerobic Digestion: Characteristics & Potentials

Biogas has started being acknowledged worldwide as the most upfront technology for upgrading waste to valuable fertilizer and renewable energy. Feedstocks for biogas production come in many forms including energy crops, livestock manure, food-processing waste, or sewage sludge. The quality of biogas production largely depends on the quality of the feedstock. This web seminar highlighted key characteristics and potential of different feedstocks by European experts and presented lessons learned and innovative practices from emerging countries.

Table 6: Webinar 3, agenda

Topics	Speakers	Facilitator
An Overview on biogas feedstocks and characteristics	Michael Köttner, IBBK Biogas Network	Harmen Dekker, Director, European Biogas Association (EBA)
Exploring the Biogas Done Right concept	Guido Bezzi, Consorzio Italiano del Biogas	
Feedstock: Successful projects and impacts in South Africa	Yaseen Salie, GreenCape, SA	Angela Sainz, Communications Manager, European Biogas Association (EBA)
Feedstock: Successful projects and impacts in Indonesia	Elisabeth Rianawati, Resilience Development Initiative (RDI), Indonesia	

Table 7: Webinar 3, participant breakdown

Title	Registered	Attendees
Importance of Feedstock in Anaerobic Digestion: Characteristics & Potentials	158	95



Figure 3: Screenshot of webinar 3 in progress



## 2.4 Pretreatment Of Feedstock In Anaerobic Digestion

This webinar series focused on commonly used substrates for biogas production including industrial waste, and agricultural residues among others. It showcased pretreatment of feedstocks through various technologies that enhance biogas production.

Table 8: Webinar 4, agenda

Topics	Speakers	Facilitator
Pretreatment of Agricultural Residues	Josef Höckner, BioG	GIZ
Pretreatment of Industrial and Commercial Waste	Mathias Hartel, Fachverband Biogas e.V. (FVB)	
Challenges, opportunities and success stories in South Africa	Yaseen Salie, GreenCape, SA	

Table 9: Webinar 4, participant breakdown

Title	Registered	Attendees
Pretreatment Of Feedstock In Anaerobic Digestion	117	55

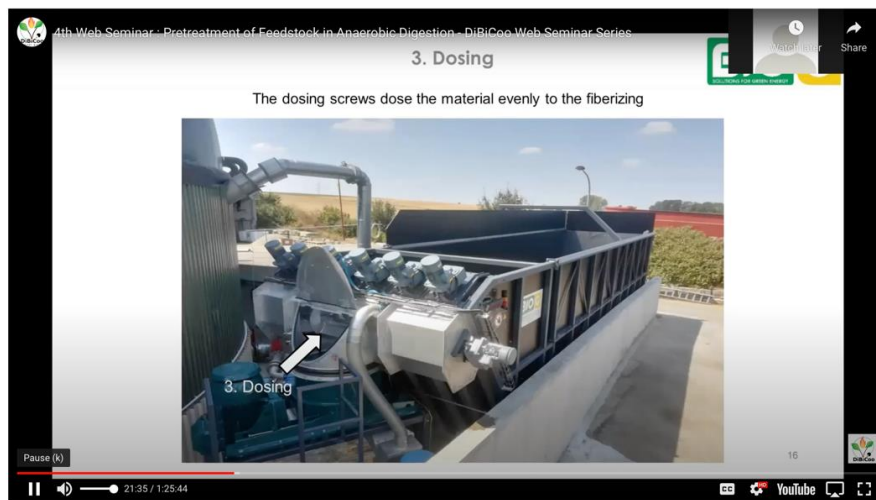


Figure 4: Screenshot of webinar 4 in progress



**Pretreatment of Feedstock in Anaerobic Digestion**

  
**Josef Höckner**  
BioG

  
**Mathias Hartel**  
Fachverband Biogas e.V. (FVB)

  
**Yaseen Salie**  
GreenCape, SA

Commonly used substrates for biogas production include, among others, industrial waste and agricultural residues. Pretreatment of these feedstocks through various technologies enhances biogas production. Join us on our 4th web seminar as we discuss Pretreatment of feedstock for Anaerobic Digestion by European experts and hear successful implementations from South Africa.

 [www.dibicoo.org](http://www.dibicoo.org)    
 <https://bit.ly/3n9QvhJ>    
 October 13, 2020 1:00 PM - 2:30 PM, CEST

Figure 5: Webinar 4 poster design

## 2.5 Sustainable Biogas Production and Use

This web seminar was intended at enabling knowledge exchange on the necessary requirements to ensure the sustainable production of biogas. It looked into the impact of policy measures in the development of the sector in Europe. Finally, it analyzed the examples of Indonesia and South Africa on sustainable biogas production.

Table 10: Webinar 5, agenda

Topics	Speakers	Facilitator
Key elements of a sustainable biogas production process	Eddie Cooke, South African Biogas Industry Association (SABIA)	GIZ
Re-thinking sustainability: adapting EU legislation to the green transition	Frank Hofmann, Fachverband Biogas e.V. (FVB)	
Sustainable biogas production and use in Indonesia	Andriah Feby Misna, MEMR Directorate General of Bioenergy	
Sustainable biogas production and use in South Africa	Yaseen Salie, GreenCape, SA	

Table 11: Webinar 5, participant breakdown

Title	Registered	Attendees
Sustainable Biogas Production and Use	99	76





Figure 6: Screenshot of webinar 5 in progress



Figure 7: Screenshot of webinar 5 announcement on DiBicoo's [Facebook account](#)

## 2.6 Bio Methane (CNG & LNG) And Waste Treatment

Our 6th web seminar focused on two important aspects: Biomethane & Waste treatment. The web seminar started with an introduction on biomethane and its use as CNG or LNG from a European perspective. This was followed by practical lessons and a presentation of biomethane production and use in Argentina. The second section discussed 'biowaste to biogas' technologies.



Table 12: Webinar 6, agenda

Topics	Speakers	Facilitator
Biomethane: CNG and LNG	Alexey Mozgovoy, Fachverband Biogas e.V. (FVB)	EBA
Biomethane Production & Use in Argentina	Ing. Nicolas Marinelli, Tecnored Energia	
Biowaste to Biogas Technologies	Marion Melix, Chargée de Mission Digestats at ATEE Club Biogaz	

Table 13: Webinar 6, participant breakdown

Title	Registered	Attendees
Bio Methane (CNG & LNG) And Waste Treatment	108	66



Figure 8: Screenshot of webinar 6 in progress

## 2.7 Safety Measures For Biogas Plants

A biogas plant must be operated with safety. Every accident is disastrous to the affected individual and/or for the environment. Experiences from Europe show that accidents can be prevented with the right regulation and controls in place; beginning from the design of the plant through the construction; and day to day operation. This Web Seminar featured a presentation on European and South African safety regulations, followed by a panel discussion and experience sharing by experts from different countries.



Table 14: Webinar 7, agenda

Topics	Speakers / Panelists	Facilitator
<p>Safety of Biogas Plants: General introduction, Practical Experiences and Lessons Learned</p> <p>Safety Regulations for Biogas in South Africa</p>	<p>Eng. Marion Wiesheu, GBA</p> <p>Eddie Cooke, Director for Southern African Gas Association (SAGA)</p> <p>Harmen Dekker, European Biogas Association (EBA)</p> <p>Eng. Marion Wiesheu, Director for Southern African Gas Association (SAGA) and Technical Director for Southern African Biogas Industry Association (SABIA) (panelist)</p> <p>Eddie Cooke, Director for Southern African Gas Association (SAGA) and Technical Director for Southern African Biogas Industry Association (SABIA) (panelist)</p> <p>Prof. Tjandra Setiadi, Professor at Bandung Institute Technology; Evaluator for Indonesian Biogas Plant in Palm Oil Factory (panelist)</p> <p>Raymond Ategbi Okrofu, Technical Adviser – Renewable Energy and Energy Efficiency – GIZ Ghana (panelist)</p> <p>Ing. Jorge Antonio Hilbert, International Advisor and Professional in Management of Innovation Activities at Rural Engineering Institute – National Agroindustry Technology Institute (panelist)</p> <p>Frank Hofmann, International Consultant at German Biogas Association (panelist)</p>	EBA

Table 15: Webinar 7, participant breakdown

Title	Registered	Attendees
Safety Measures for Biogas Plants	237	86

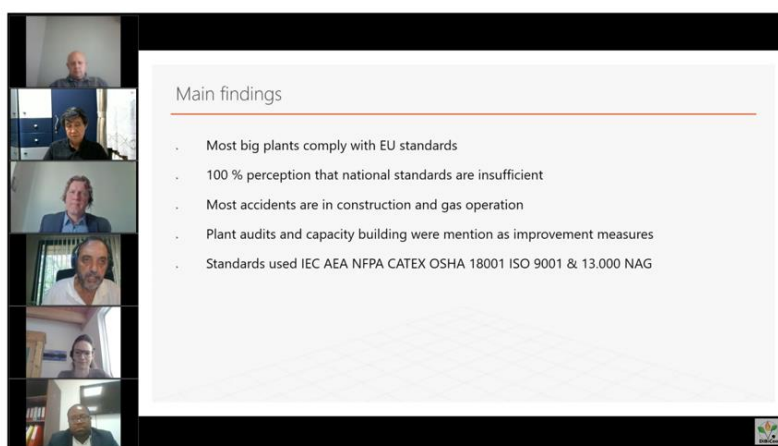


Figure 9: Screenshot of webinar 7 in progress





Figure 10: Screenshot of Webinar 7 announcement on DiBiCoo's [Twitter account](#)

## 2.8 Values, Post-Treatment & Digestate Application

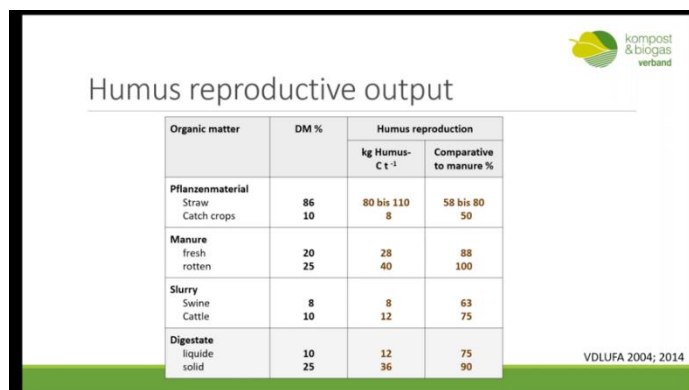
Following the web seminar on pre-treatment of feedstock in October 2020; part II of this seminar focused on post-treatment and digestate application. It discussed digestate applications, upgrading and marketing of digestate in the European market and lessons from South Africa.

Table 16: Webinar 8, agenda

Topics	Speakers	Facilitator
Digestate Values and Application Technologies	Bernhard Stürmer; Austrian Compost & Biogas Association (AKBOE)	Franz Kirchmery (Kompost & Biogas Verband)
Upgrading and Marketing of Digestate	Mathias Hartel, German Biogas Association (FvB)	
Digestate: Challenges & Solutions in South Africa	Yaseen Salie; Greencape	

Table 17: Webinar 8, participant breakdown

Title	Registered	Attendees
Values, Post-Treatment & Digestate Application	175	72



Organic matter	DM %	Humus reproduction	
		kg Humus-C t <sup>-1</sup>	Comparative to manure %
Pflanzenmaterial Straw Catch crops	86	80 bis 110	58 bis 80
	10	8	50
Manure Fresh rotten	20	28	88
	25	40	100
Slurry Swine Cattle	8	8	63
	10	12	75
Digestate liquide solid	10	12	75
	25	36	90

VDLUFA 2004; 2014

Figure 11: Screenshot of webinar 8 in progress



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 857804. The sole responsibility for the content of this document lies with the authors. It does not necessarily reflect the opinion of the EU.

## 2.9 Biogas project management and lessons from other projects

This webinar was intended to address challenges and learn lessons from projects developed in emerging economies so that the project development and implementation process can be made more efficient. In addition, to demonstrate and share insights on the realities on the ground versus planning these projects.

The aim of this web seminars was to familiarize stakeholders in importing countries with European technologies and to share lessons learned and best practices on successful biogas, bi-omethane and gasification project management.

Table 18: Webinar 9, agenda

Topics	Speakers	Facilitator
Project Management Implementation, European Perspective	Georgi Kirov, BIOGEST, Head of Sales and Market Development Manager at BIOGEST	GreenCape
Biogas Project launch and management, Argentine Perspective, INTA	Jorge Antonio Hilbert, INTA, Agronomical Engineer and Member of the Scientific Advisory Board (SAB) of IINAS	
Panel Discussion: Biogas Project Management in developing markets	Dwight Rosslee, Selectra, founding member and CEO of Selectra CC  Dennis Thiel, Anaergia Africa, Managing Director of Anaergia Africa	

Table 19: Webinar 9, participant breakdown

Title	Registered	Attendees
Biogas project management and lessons from other projects	83	30



Figure 12: Screenshot of webinar 9 in progress



Figure 13: Webinar 9 poster design

## 2.10 Thermal Gasification Of Wooden Biomass

The 10th DiBiCoo Web Seminar focused on gasification and key topics as: possible feedstock & properties; gasification techniques; product gas properties, gas cleaning & application; ingredients and properties of ash, biochar & charcoal.

Table 20: Webinar 10, agenda

Topics	Speakers	Facilitator
Possible Feedstock & Properties	Franz Kirchmeyr, AKBOE, Head of Biogas Department, Austrian Compost & Biogas Association (AKBOE)	GreenCape
Gasification Techniques	Richard Zweiler, GET Güssing, General Manager, GET Güssing	
Product Gas Properties, Gas Cleaning and Application	Florian Benedikt, TU Vienna, founding member and CEO of Selectra CC	
Ash, Biochar and Charcoal (ingredients and properties)	Gerhard Soja, Senior Scientist, Austrian Institute of Technology GmbH and University of Natural Resources and Life Sciences	

Table 21: Webinar 10, participant breakdown

Title	Registered	Attendees
Thermal Gasification of Wooden Biomass	179	63

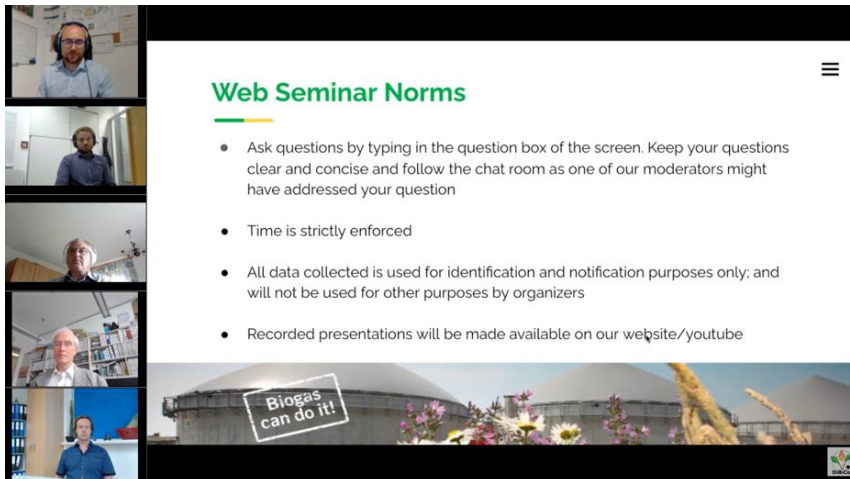


Figure 14: Screenshot of webinar 10 in progress

## 2.11 Biogas Plants: Legal Framework Conditions and Policy Considerations

Biogas development holds various challenges, and its successful implementation depends not just on the installation of a suitable technology system, but also the appropriate framework conditions both regulation-based and economic-based. The 11th DiBiCoo Web Seminar was initiated to present regulatory frameworks and required legal conditions of biogas development in Europe and emerging economies. A panel discussion and experience sharing by different countries from the Global South was also featured in this webinar.

Table 22: Webinar 11, agenda

Topics	Speakers	Facilitator
<p>Description of European Legal, Institutional and Policy Frameworks</p> <p>The potential of Argentine biogas to contribute to the fulfillment of Argentina's NDCs contributions under the Paris Agreement</p>	<p>Marco Giacomazzi, EBA, Head of Sales and Market Development Manager at BIOGEST.</p> <p>Jorge Hilbert, INTA, Agronomical Engineer and Member of the Scientific Advisory Board (SAB) of IINAS</p> <p>Suzana Yusup, Universiti Teknologi PETRONAS/UTP, Malaysiaer and Member of the Scientific Advisory Board (SAB) of IINAS</p> <p>Paul Butarbutar (Indonesia Research Institute for Decarbonization) (Panelist)</p> <p>Pruk Aggarangsi (Director, Energy Research and Development Institute, Chiang Mai University Thailand) (Panelist)</p> <p>Tawanda Sango (GreenCape) (Panelist)</p> <p>Dr. Wondwossen (ICEADDIS) (Panelist)</p> <p>Mutala Mohammed (ISEES) (Panelist)</p>	<p>Suzana Yusup, Universiti Teknologi PETRONAS/UTP, Malaysiaer and Member of the Scientific Advisory Board (SAB) of IINAS</p>

Table 23: Webinar 11, participant breakdown

Title	Registered	Attendees
Biogas Plants: Legal Framework Conditions and Policy Considerations	133	71

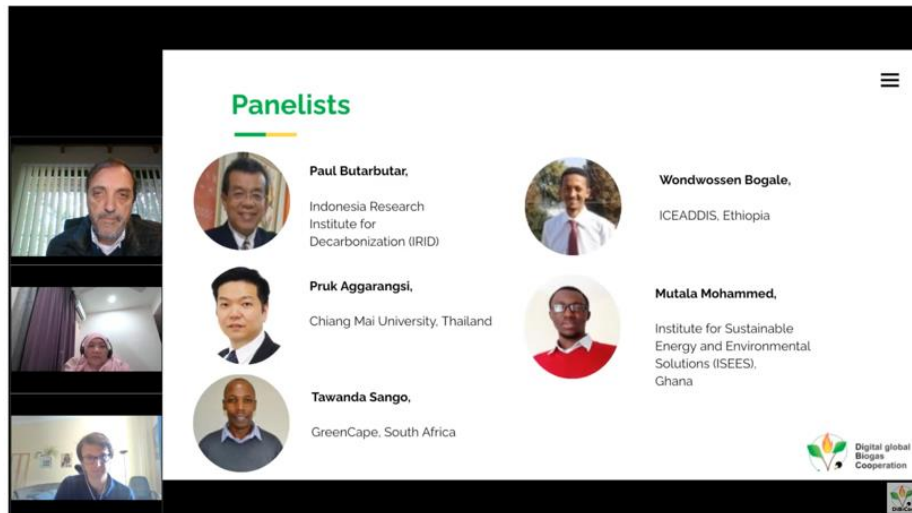


Figure 15: Screenshot of webinar 11 in progress

## The DiBiCoo Consortium

### COORDINATOR



### PARTNERS FROM EXPORTING COUNTRIES



### PARTNERS FROM IMPORTING COUNTRIES







# Digital global Biogas Cooperation

Project website: [www.dibicoo.org](http://www.dibicoo.org)

<b>Project Coordinator Contact</b> Dr. Johannes Anhorn Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH <a href="http://www.giz.de">www.giz.de</a>	Wielinger Straße 52 82340 Feldafing, Germany <a href="mailto:johannes.anhorn@giz.de">johannes.anhorn@giz.de</a>
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*Author(s)*

Maya Misikir (ICEADDIS)

*Review*

AKBOE

*Photo credits:*

The author(s) if not otherwise stated (Name/Partner Acronym).

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Ethiopia, 2022



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 857804.

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