

Short Concept, Agenda and Speakers list - Side Event “Energy transition and source diversification through biogas”

Date: 22 of June of 2021 - 15h15 to 16h30 EST

Promoters: Itaipu Binacional and CIBiogás

Concept Note:

The preservation of biodiversity and the management of waste in an intelligent way contribute significantly to improve the quality of life of our society, as well as ensuring that the country's development happens in a sustainable way. Biogas is an asset for energy transition because it contributes to the preservation of the environment and to the increase in quality of life through the transformation of natural resources and biomass from production chains waste into products with energetic value.

Biogas is a clean and renewable energy source, and has as its main objective the transformation of environmental liabilities into energetic assets (electrical, thermal and vehicular). Other than promoting residual treatment for waste deriving from agribusiness activities, urban solid waste and sewage, biogas decentralizes energy, stimulates local bioeconomy - with the strong features as a non intermittent, safe and high quality source - and positively impacts the environment, social development and economic competitiveness.

Biogas results from the treatment of organic residues by anaerobic digestion (in the absence of oxygen) with the help of microorganisms. The process produces biogas itself, as well as a byproduct, the digestate - a biofertilizer with a high nutritive value, which can be used in farming activities.

When refined, biogas is considered to be a biofuel called biomethane, which has a high calorific power and is chemically compared to Natural Gas, its source being organic and not fossil.

Brazil has a large biogas production potential: 82,58 billions of m³/per year. A significant portion of the Brazilian economy is related to agribusiness. Big

urban centers have the capacity of turning waste into economically viable assets. Brazil has enough biomass to contribute to the energy matrix of all its federative entities.

Currently, there are 675 operating biogas plants with the estimated production of 2,22 billions of m³/per year, treating different biomass sources that are able of generating:

- a) electric energy, both isolated or connected to the grid;
- b) thermal energy, in order to obtain heat for agribusiness; and
- c) biomethane, to supply light and heavy vehicle fleets (an important strategy for the internalization of the gas market in Brazil).

As a renewable energy alternative, biogas has a relevant importance and participation in the global energetic transition, seen as a highly valued energy resource in the decarbonization process within the European Union, China and the United States, among other countries.

Production flexibility with several types of biomass makes biogas a highly viable option. This source of energy comes to complement other renewable sources, such as solar, wind, hydro and hydrogen, which is an important step towards the diversification of sources in the Brazilian energy matrix.

This event presents the Brazilian experience with biogas, which has been contributing to diversify the country's energetic matrix.

Agenda:

1) Introduction to the event: (9 minutes)

Briefly, the host welcomes the audience, the guests, mentions the present officials, contextualizes the event and explains the presentation schedule for the event. (1 minute)

The floor is then given to Mr. Paulo César Domingues, Secretary of Planning and Energetic Development of the Ministry of Mines and Energy (MME), in order to contextualize Biogas in the Ten-Year Energetic Planning (4 minutes)

The host then gives the floor to Mr. Paulo César Rezende De Carvalho Alvim, Secretary of Entrepreneurship and Innovation of the Ministry of Science, Technology and Innovation (MCTI), for him to explain about the conception of the GEF Biogas Brasil Project. (3 minutes)

2) Messages from other officials (12 minutes)

Following:

- Coordination Director Gen. Luiz Felipe Kraemer Carbonell of Itaipu Binacional: Biogas, Regional Development and the diversification of sources. (4 minutes)
- Ms. Jerry D Murphy, Professor of Civil Engineering and Director of MaREI Center Environmental Research Institute University College Cork Ireland and International Energy Agency Representative: Task Force 37 - Bioenergy. (4 minutes)
- World Biogas Association (WBA) Representative: how biogas promotes energetic transition around the world. (4 minutes)

3) Context - Biogas in Brazil (13 minutes)

The host announces a new part of the event and invites speakers according to the sequence below : (1 minute total)

- CEO of the International Center for Renewable Energies (CIBiogás), Rafael González: The evolution of biogas in the Brazilian market since RIO+20. (4 minutes)
- CEO of the Brazilian Biogas Association (ABiogás), Alessandro Gardemann: Biogas potential and attributes. (4 minutes)
- UNIDO Representative in Brazil, Alessandro Amadio, head of the GEF Biogas Brasil project: Achievements of the GEF Biogas Brasil project (4 minutes);

4) Technologies and the Future of Biogas (13 minutes)

The host announces a new part of the event and invites speakers according to the sequence below : (1 minute total)

- Ms. Heloísa Borges, Energy Research Company's (EPE) Director of Petroleum, Natural Gas and Biofuels Studies: PNE 2050. (4 minutes)
- Ms. Margarete Maria Gandini, Ministry of Economy's (ME) General Coordinator of the Automotive Regimes Inspection: Biomethane as fuel for Heavy Vehicle Fleets. (4 minutes)
- Mr. Felipe Marques, CIBiogás' Director of Technological Development: Innovation with Biofuels and Blue Routes. (4 minutes)

5) Q&A - LIVE (20 minutes)

The host calls 4 participants live and invites representatives from ABiogás, CIBiogás, EPE and GEF Biogas Brasil to the closing. (1 minute)

15 minutes answering questions from the audience

6) Closing (1 minute)

The host then wraps up the event and thanks everyone for their participation. Event wrapped up after 1h10 minutes of duration.

Speakers list:

- 1) Paulo César Magalhães Domingues, Secretary for Energy Planning and Development at the Ministry of Mines and Energy (MME);
- 2) Paulo César Rezende De Carvalho Alvim, Secretary of Entrepreneurship and Innovation of the Ministry of Science, Technology and Innovation (MCTI);
- 3) General Luiz Felipe Kraemer Carbonell, Coordination Director at Itaipu Binacional;
- 4) Jerry D. Murphy, Professor of Civil Engineering and Director of MaREI Center Environmental Research Institute University College Cork Ireland
- 5) Charlotte Morton, UK Anaerobic Digestion and Bioresources Association - World Biogas Association (WBA);
- 6) Rafael González - CEO at International Center for Renewable Energies and Biogas (CIBiogás);
- 7) Alessandro Gardemann - CEO Brazilian Biogas Association (ABiogás);
- 8) Alessandro Amadio - UNIDO representative in Brazil, director of GEF Biogas Brazil project
- 9) Heloísa Esteves, Director of Oil, Natural Gas and Biofuels Studies at the Empresa de Pesquisa Energética (EPE);

10) Margarete Maria Gandini, General Coordinator of Inspection of Automotive Regimes of the Ministry of Economy (ME)

11) Felipe Marques, Director of Technological Development at International Center for Renewable Energies and Biogas (CIBiogás);

Cerimony Master: Nicolas Berhorst - Economist and Market Intelligence manager at International Center for Renewable Energies and Biogas (CIBiogás);