



# Latin American & Caribbean Bioelectricity Community of Practice (BioE-CoP)

3<sup>rd</sup> Session of 2018: Small-scale rural biogas production

Ana María Majano, LEDS LAC Secretariat  
Alexander Ochs, LEDS Energy Working Group



# Agenda

## **00:00 – 00:20 Introduction**

- Welcome, introduction of session agenda
- Self-introduction of session participants including their work on BioE and biogas

## **00:20 – 01:00 Technical & market challenges and solutions for small-scale biogas production and use (Mariela Pino - RedBioLac)**

- Questions and comments

## **01:00 – 01:40 Presentation of Chile's experience in small-scale biogas (Christian Malebrán Ulloa - Ministry of Energy, Chile)**

- Questions and comments

## **01:40 – 02:10 Facilitated discussion: Main challenges of such projects and potential solutions**

## **02:10 – 02:20 Summary of challenges, expert comments and topics for in-person meeting**

- Topics for further in-depth analysis

## **02:20 – 02:30 Wrap up, Next Steps & Closing**

- Next meetings
- REAL Services
- Other logistics e.g. Linkedin group, Whatsapp.

# Countries represented in the CoP\*

Argentina

Belize

Bolivia

**Chile**

Colombia

Costa Rica

**Cuba**

Dominican Republic

El Salvador

Ecuador

Germany

Guatemala

Mexico

Jamaica

United States

Uruguay

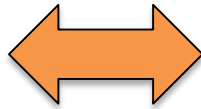
# How the BioE-CoP works

**Direct technical assistance to countries**

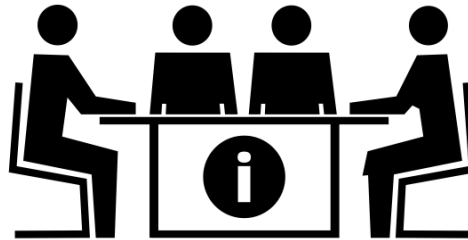


Incl. early mover activities

Provided by EWG, LEDS LAC & other partners

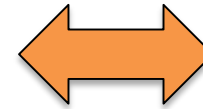


**Community of practice**

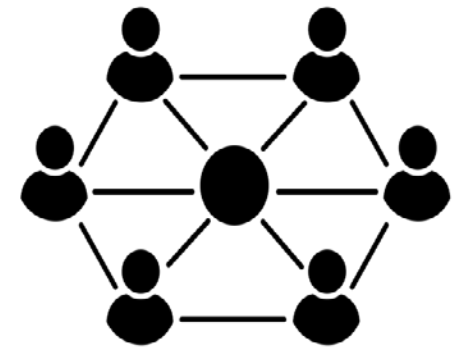


Online and in-person exchange

Provided by EWG, LEDS LAC & other practitioners



**LEDS LAC & LEDS GP**



Broader dissemination of knowledge

Webinars, reports, case studies, sessions at regional & global events

# BioE CoP - Background

- Launched in 2016 – first community of practice for LEDES GP and LEDES LAC
- 1<sup>st</sup> year: 3 online sessions and in-person workshop in Costa Rica, December 2016
- 2<sup>nd</sup> year: 3 online sessions and in-person meeting, Mexico, October 2017
- 3<sup>rd</sup> year: 4 online sessions and in-person workshop, Montevideo/Uruguay, 20 August 2018

# 2016 – Advancing bioelectricity development

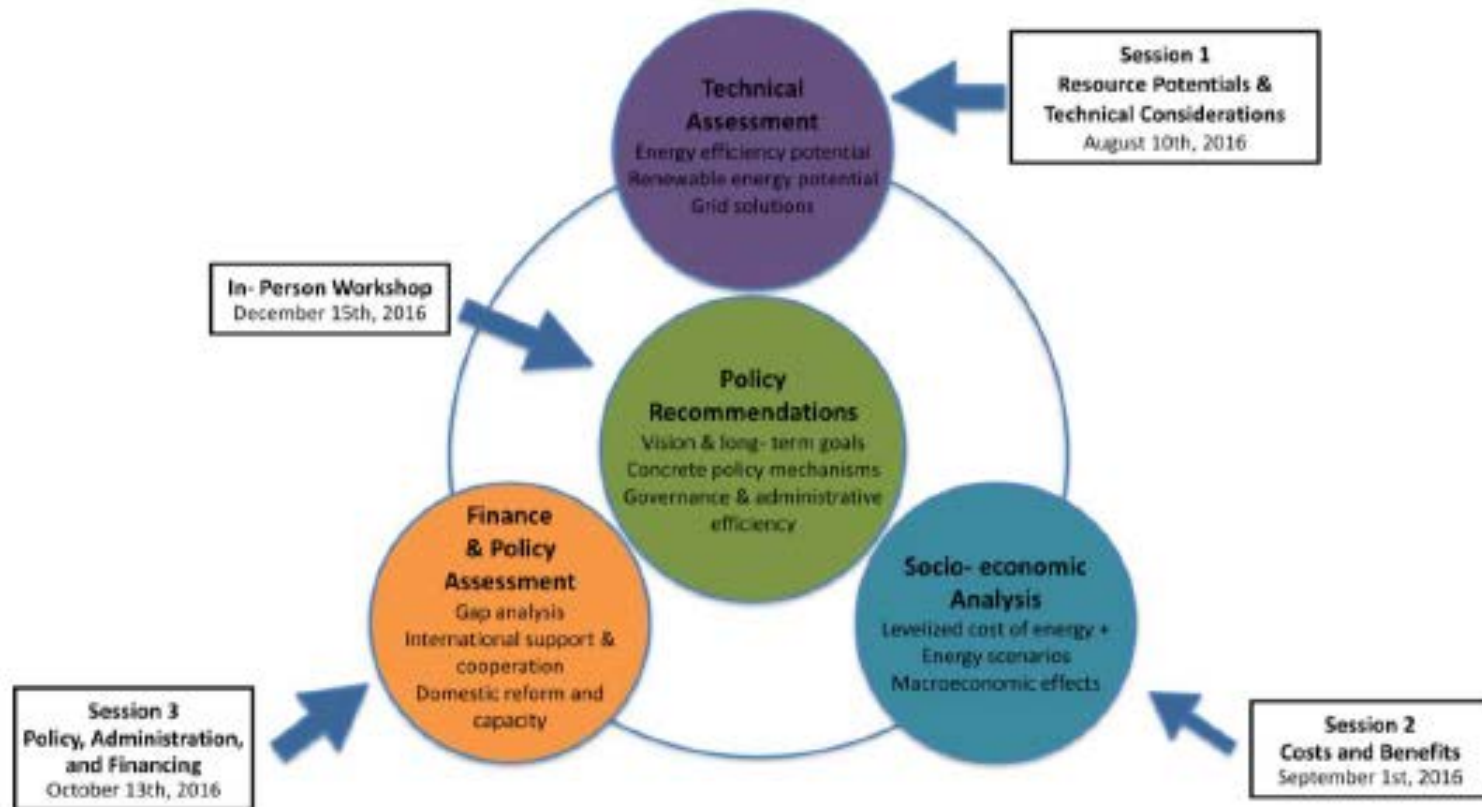


Figure 1: Overview of Community of Practice Proceedings

# 2017 – De-Risking investments in bioelectricity

Online Session 1. Bioelectricity Investment Risks and De-Risking Measures, Sept. 13

Online Session 2. Addressing biomass feedstock-specific investment risks in bioelectricity project development, Oct. 4

In-person meeting. Oct. 18, Mexico City, as part of LEDS LAC's Sixth Regional Workshop

Online Session 3. 2017 Summary of Findings & 2018 CoP planning, Dec. 15

# 2018 – Policy and market environment for sustainable biogas investments

*Sessions organized by geographical setting, role and scale of operation*

Online session 1. Introduction & discussion of work plan

Online session 2. Rural large scale: Power to the Farmland!

Online session 3. Rural small scale: Energize your cows and crops!

Online session 4. Urban biogas: Don't waste your waste!

In-person meeting. Final exchange and hands-on work  
- Business models, financing, enabling policies -



# Market & finance challenges

- Ultimate goal needs to be to ensure a sustained market that strengthens the commercial supply of biomass
- In on-grid settings, bioelectricity is not yet price-competitive with other energy sources
  - Requires incentives and mechanisms to reduce risks for often large investments required.
  - Requires financing tailored to the specific needs of this projects (longer paybacks, etc.)
- To develop a sustainable biogas market and facilitate access to renewable energy for micro-, small- and medium-size agricultural producers and rural households, for both productive and domestic use, we need to first create awareness and stimulate demand about the potential of biogas as an alternative energy solution
  - This includes a gender perspective.
- Main challenge is related to the assessment of environmental externalities of biogas
- A key problem is the cleaning and compression of the gas
- Financing is the key problem
  - Banks don't believe in this type of projects.
  - Open the market for bioelectricity.

# Policy challenges

- How to best organize the integration and involvement of stakeholders in strategy development and implementation (government, banking, investors, providers of technology/innovation, distribution, final users)?
- What are the best-working cornerstone policies?
- Goals and broad policy frameworks are not enough. Need to find new bureaucratic and administrative processes that make the policy functional.
- Although in some countries there is a strong policy related to renewable energy, its effect on biogas energy utilization have been minimal.
  - Detailed information about technologies, bioenergy potential, technologies, and markets are non-existent, so each biogas-related initiative must invest significant resources, even at screening or pre-operational levels
- In some countries, biogas use as energy source is highlighted the energy policy, there is no plan for implementation
- In some countries, there is renewed interest in the support biogas to address problems with high amount of intermittent resources

# Topics to be discussed

- Business cases:
  - Installation, maintenance and operation (M&O), financing and economic feasibility for operators or contractors
  - Industry lookout: needed importers, producers, builders, service providers (e.g. M&O)
- Governance
  - Laws, regulation, standards, certification and non-governmental initiatives setting the framework for biogas investments
- Implementation on the ground:
  - Site identification, getting permissions, construction, securing input and offtake via contracts

## Session 2. May 23<sup>rd</sup>

# Rural Biogas: Power to the Farmland

- Technology: medium sized digesters with CHP to produce power and heat
- End use:
  - Off-grid electricity/heat for large farms and/or agricultural processing
  - Mini-grids for electricity/heat for rural communities/towns
  - Grid-connected electricity if grid access available; in combination with self-consumption of electricity/heat
  - Digestate as fertilizer in all cases
- Input: residues (e.g. press mud, manure, household waste), energy crops from marginal or unused agricultural land
- Advantages: waste management, stable energy supply, residual load supply to compensate volatile wind and solar; value stays in region

## Session 3. June 20<sup>th</sup>

### Farm Biogas: Energetic cows & crops

- Technology: small scale digesters (e.g. bag systems), connected to cooking stoves
- End use: replacement of wood, coal etc. for cooking
- Input: cow manure, kitchen waste, other organic waste
- Advantages: reduction of waste, replacement of unsustainable fuels, forest protection, health (clean burning), comfort

## Session 4. July 18<sup>th</sup>

# Urban Biogas: Don't waste your waste!

- Technology: Medium to large-scale biogas plants with CHP (power/heat) or upgrading to biomethane (cooking gas, transportation fuel, grid injection)
- End use:
  - Grid-connection – power, heat, natural gas
  - Self-consumption, if operated by industry
  - Self-consumption of biomethane as transportation fuel, e.g. municipal companies
  - Biomethane for various end uses via grid injection – remote CHP, heating (incl. Industry), transportation fuel
  - Fertilizer from digestate
- Input: Urban residues such as organic fraction of Municipal Solid Waste, kitchen waste, sewage sludge, grass cuttings, water plants
- Advantages: waste management, flexible power source for residual load, high efficiency through high demand for power and heat – high utilization rates

# In-person workshop

## August 20<sup>th</sup>, Montevideo

- One day workshop
  - Business models and financing
  - Enabling policies
- Interactive sessions to exchange experiences, discuss cases, learn about tools
- Closed meeting for participants in the Community of Practice
  - those who have attended the online session.
- Possibility of funding (plane tickets and hotel) for a number of participants – one or two per country, depending on donor criteria
- Agenda and information on support allocation to be provided during the May 23<sup>rd</sup> meeting

Please introduce yourself briefly:

- Name
- Country
- Organization
- Why are you interested in the Community of Practice?
- Are there any important recent developments in your country regarding small-scale biogas?





# Mariela Pino

Red de Biodigestores para Latino América y el Caribe (RedBioLac)

## Technical and market challenges and solutions for biogas production and use

# Questions & Comments



Christian Malebrán Ulloa  
Ministry of Energy, Chile

Chile's experience in small-scale biogas

# Questions & Comments

Facilitated discussion

Main challenges of small-scale biogas projects and potential solutions

Summary of challenges,  
expert comments,  
and topics for in-person meeting

# Wrap up, Next Steps & Closing

Linkedin group and Whatsapp group

# Thank you!

## Contact Information

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