



Carbon Accounting Methodology for Biogas

Prepared by American Biogas Council and EcoEngineers



Quick Notes



You should be able to hear me talking now. If you can't, use the questions module to describe your issue.

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Pro tip: Don't call in on our phone if your audio is set to "Mic and Speakers"

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Audio

Questions

Who We Are



The only US organization representing the entire biogas industry

All sectors represented

- Project developers/owners
- Equipment retailers and dealers
- Waste management companies
- Waste water companies
- Farms
- Utilities
- Municipalities
- Consultants and EPCs
- Financiers, accountants, lawyers and engineers
- Non-profits, universities and government agencies

370+
organizations

5,000+
individuals



Today You Will Hear From...



Michael Welch

Manager,
Carbon Consulting,
VCM

EcoEngineers



**Zhichao Wang,
Ph.D., P.E.**

Life-Cycle Analysis
Director

EcoEngineers

Agenda



American Biogas Council Introduction

Approach to the Methodology

Methodology Intent

User Guidelines

LCA Tools and Approach

- Co-Digestion

Biogas Project Definition

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Q&A Session





ABC sought industry-wide feedback and input through a variety of channels during its creation.



Approach to the Methodology



Most Common Biogas Facilities

- Business-as-usual practices represent the absence of controlled AD activities and, therefore, the absence of biogas recovery.
- The below categories capture most project types, reaffirming the critical role of biogas systems. Digestate is addressed as a co-product of each of the applicable project types.
 - Animal manure management systems
 - Landfills
 - Wastewater treatment plants (WWTPs)
 - Food waste digesters
 - Other waste digesters

Other Methodology Coverage

- GHG accounting principles
- Methodology boundaries
- LCA tools and approach
- Means for quantifying GHG reductions
- Associated methodologies
- Pathways to a crediting program
- Additionality
- Project monitoring recommendations
- Communication with the Public
- End uses
- Digestate pathways

Methodology Intent

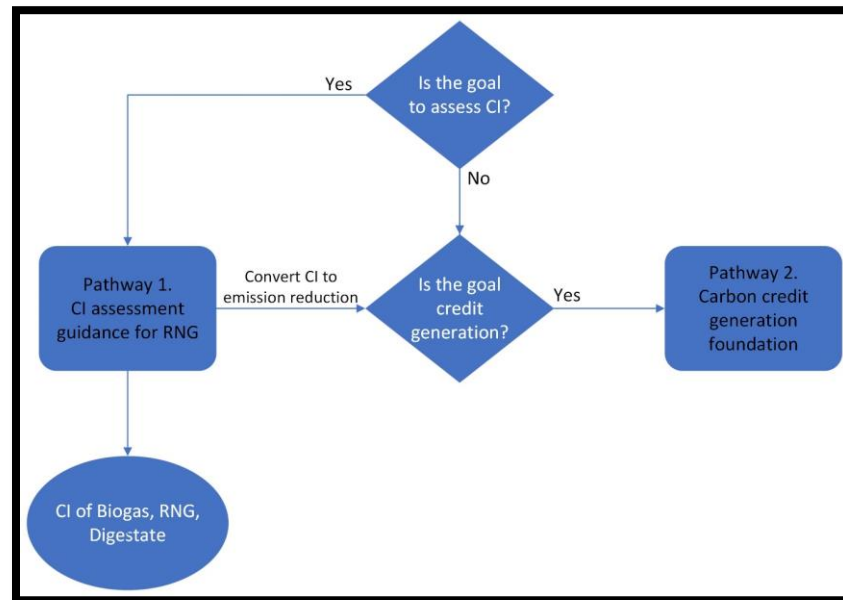


- Build on existing regulatory programs and voluntary carbon market (VCM) methodologies to supplement the needs and interests of the biogas industry, specifically:
 - Providing an opportunity to calculate carbon intensity (CI) for biogas projects on an emission per energy basis (g CO₂e/MJ) and based on the fate of the product where the destination of its product is unique.
 - Providing an opportunity for biogas projects to convert their CI score calculated with this methodology to an equivalent greenhouse gas (GHG) reduction amount.
 - Providing an opportunity for biogas projects to account for and capture more environmental monetary benefits around their digestate.
 - Providing an opportunity for users of this methodology to open the door for future conversations around practical applications within the VCM industry.

User Guidelines



- The current version of this methodology comprises two pathways:
 1. Framework for assessment of CI.
 2. Framework for assessment of entrance into the VCM.



Source: EcoEngineers 2024

LCA Tools and Approach



- System boundary and baseline selection
- Tool selection- CA-GREET with modifications:
 - Why CA-GREET as a basis?
 - Modifications based on CA-GREET

LCA Tools and Approach



- Co-Digestion

- This approach considers the measurement and/or allocation of certain project parameters, such as process energy and biogas production. Biogas production can be allocated based on biomethane potential testing results, while process energy can be allocated based on biogas production or other factors as deemed reasonable.

Biogas Project Definition



- This methodology contemplates biogas projects that capture, process, and/or utilize biogas from landfills, wastewater treatment, and recovery plants, animal manure management and storage systems, food waste handling sites, and other waste processing facilities.
- Applicable uses of the biogas and their attributes:
 - Flaring
 - Converting to electricity
 - Upgrading to RNG
 - Heating

Project Proponent



- Pathway to a Crediting Program
 - Location
 - Start Date
 - Crediting Period
 - Project Specific Requirements
- Additionality
 - Regulatory Test
 - Performance Test

Use Cases



- Sheep farmer with a bio digester using this to calculate emissions reductions transferred through the supply chain to reduce the client's third-party emissions.
- Small public landfill operator looking to sell methane but keep the environmental benefits for the county emissions inventory
- An existing bio-digestion facility with an interest in deriving further environmental benefits from produced digestate.

Next Steps



- Collect feedback from the Public Comment process and incorporate it in the methodology and/or consider it for future versions. Submit your comments to the following email: carbon@americanbiogascouncil.org
 - April 19, 2024, is the final date to submit your comments
- Support the adoption of the ABC methodology by broader RNG buy-sell community.
- Develop simplified lifecycle emissions (LCA) carbon intensity (CI) calculator.

Q&A Session

The background features a dark blue gradient with two large, overlapping teal circles on the right side, creating a modern, abstract design.

Thank you for joining!

Next steps:

<https://americanbiogascouncil.org/cam>

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