Methane Challenge Program Continuous Improvement Update

Create a Commitment for Supply of Renewable Natural Gas

Proposed by: Methane Challenge Program

Date finalized: March 25, 2021

Category of change: Finalizing a new BMP commitment and adding additional data elements to ONE Future reporting

Summary of change: Develop a commitment for reporting on supply of renewable natural gas through natural gas transmission and distribution systems.

Overview

Through the Methane Challenge Program ("the Program"), EPA encourages Partners to make ambitious commitments to reduce natural gas (methane) emissions through broad scale implementation of cost-effective technologies and practices. EPA recognizes ongoing advances in technologies and approaches for identifying, measuring, and mitigating methane emissions and will consider creating new commitment options, as well as revising approaches to track, implement, and report on current commitments through the Continuous Improvement Process.[1]

This program update creates a new Best Management Practice (BMP) commitment under which natural gas transmission and distribution companies that receive and supply renewable natural gas (RNG) through their systems would report on this RNG. The intent of this commitment is to recognize efforts that Partner companies are making to diversify their portfolio and their role in facilitating recovery and use of otherwise-emitted methane from landfills, wastewater treatment plants, livestock farms, etc. By transmitting and distributing RNG in their pipelines and systems to end users, transmission and distribution companies are playing a valuable role in providing market access for these methane recovery projects. The mission of several of EPA's voluntary methane outreach programs, including AgSTAR and the Landfill Methane Outreach Program in particular, is to advance recovery and use of otherwise-wasted methane from these sources. Methane Challenge Partners that adopt this commitment will be advancing information about the extent of RNG projects and these projects' overall impact in terms of reducing methane emissions from the biological decomposition of organic materials at municipal solid waste landfills, water resource recovery facilities (wastewater treatment plants), livestock farms, food production facilities, and organic waste management operations.

[1] Details available on the Program website at https://www.epa.gov/natural-gas-star-program/methane-challenge-continuous-improvement

The commitment will be available to both BMP and ONE Future commitment option partners.[2] Companies that operate and deliver and/or supply RNG in states with regulations requiring that a portion of natural gas delivered/supplied be RNG can participate in this commitment and should contact the Methane Challenge program managers to discuss further.

About Renewable Natural Gas

For the purposes of this document and the commitment, "biogas" is gas produced by the anaerobic digestion of organic matter at one or more of the following sources: municipal solid waste (MSW) landfills, anaerobic digestion (AD) at municipal water resource recovery facilities (WRRFs), AD at livestock farms, and AD at stand-alone organic waste management operations. For the purposes of this document and the commitment, "renewable natural gas"[3] encompasses biogas that has been upgraded for use in place of fossil natural gas. In the reporting form for this commitment, partners will also have the opportunity to provide general information about their companies' strategies for supplying other "low carbon" fuels.

As a substitute for natural gas, RNG has many end-uses, including in thermal applications, to generate electricity, for vehicle fuel, or as a bio-product feedstock. For the purpose of this commitment, all of these end-uses are appropriate, and the end-use would be a requested, but not required, data element.

RNG can be used locally at the site where the gas is produced and upgraded, or it can be injected into natural gas transmission or distribution pipelines. This commitment is focused on natural gas injected into transmission or distribution pipelines.

Raw biogas has a methane content between 45 and 65 percent, depending on the source of the feedstock, and must go through a series of steps to be converted into RNG. Treatment includes removing moisture, carbon dioxide (CO_2) and trace level contaminants (including siloxanes, volatile organic compounds, or VOCs, and hydrogen sulfide), as well as reducing the nitrogen and oxygen content. Once upgraded, the gas has a methane content of 90 percent or greater. Typically, RNG injected into a natural gas pipeline has a methane content between 96 and 98 percent.

Additional information on renewable natural gas can be found in a discussion paper published by EPA's voluntary methane programs in 2020: https://www.epa.gov/lmop/overview-renewable-natural-gas-biogas

Methane Challenge RNG Commitment

This commitment will apply to RNG that is injected into natural gas transmission and distribution systems. This commitment will not encompass RNG attributes that are purchased, unless the gas is also

[2] BMP partners would make a new commitment to "Renewable Natural Gas" and would include RNG data on the new RNG tab in their reporting forms. ONE Future partners would not make a separate commitment and would include RNG data on the new RNG tab in their reporting forms. RNG data from both commitment options will be published on the partner profile pages.

[3] There are many different definitions of renewable natural gas currently used; these definitions are specifically tailored to each context. For example, the American Gas Association has developed this consensus definition: "Renewable natural gas (RNG) is any pipeline compatible gaseous fuel derived from biogenic or other renewable sources that has lower lifecycle CO2e emissions than geological natural gas". Further information on AGA's definition can be found at this URL: https://www.aga.org/natural-gas/renewable/

directly injected into the Partner's system or another system that is physically connected to the Partner's system.[4] For the purpose of this commitment, the biogas used to produce RNG may be derived from one or more of the following sources: municipal solid waste landfills, digesters at water resource recovery facilities (wastewater treatment plants), livestock farms, food production facilities, and organic waste management operations.

In making a Methane Challenge commitment to Renewable Natural Gas, a Partner in the transmission or distribution segments will need to directly receive (i.e., via pipeline interconnect or virtual pipeline—transportation via truck) or deliver or supply RNG generated by a biogas project (i.e., from a municipal solid waste landfill or from a digester at a water resource recovery facility, livestock farm, food production facility, or organic waste management operation).

Companies that operate and deliver/supply RNG in states with regulations requiring that a portion of natural gas delivered/supplied be RNG can participate in this commitment and should contact the Methane Challenge program managers to discuss further.

Within 5 years of its commitment start date, the Partner commits to:

- Annually report RNG data elements to the Program;
- Research the nature and extent of RNG in its system (i.e., information about the biogas project that generated the gas and how the gas is being used by end users) so that the Partner can report as complete a representation of the RNG it has acquired, transported, and delivered as possible by the end of its commitment. However, EPA recognizes that transmission and distribution companies may not be privy to all the information being requested, particularly about the end use of the RNG in their systems.

The primary goal of this commitment is to share data on RNG supply through natural gas systems, to develop a more robust understanding of the extent and nature of RNG distributed and used through natural gas systems. As such, this commitment will focus on collecting and publishing data from Partners that make an RNG commitment. Partners that make this commitment will have the RNG commitment added to their Partner Profile Webpage and their RNG data added to their Methane Challenge Data Download. The dataset would include information on the biogas project(s) that generate the RNG, the pipeline interconnect(s) with the Partner company's system, and the designated end use of the RNG. Recognizing that the Partner company may not have all the information requested, the Program does not plan to create or track a 'commitment progress metric' for this commitment at this time. However, the Program does encourage the Partner to work on understanding as much about the RNG in its system as possible by the end of its commitment.

If the project(s) from which a Partner receives all its RNG permanently go(es) offline during its commitment, the Partner should report this to the Methane Challenge Program as soon as possible. If the Partner does not plan to source RNG from another project, it can change its 'Commitment Achievement Year' to the year the project went offline and would not be required to report when not sourcing RNG.

[4] Methane Challenge certainly does not expect to "track molecules" of RNG, but there should be pipeline connections that would theoretically allow the gas to travel to the partner's system.

Reporting Approach

Methane Challenge reporting is done at the facility level, through the electronic Greenhouse Gas Reporting Tool (e-GGRT) system. The RNG data will be reported through the same mechanism. EPA's intention is to set up the reporting form to allow Partners to report the requested data elements for each RNG biogas project/end use in its system. Partners will be asked to report the information about the biogas project(s) from which the RNG was sourced, the interconnect(s) through which the RNG was injected into the Partner's system, and the designated end use(s) for the gas.

Methane Challenge is defining a robust set of data elements for this commitment because it is entirely focused on reporting. By offering this detailed set of data elements, partners that have information and want to share it will have an opportunity to do so. However, EPA recognizes that transmission and distribution companies may not be privy to all information being requested, particularly about the end use of the RNG in their systems and especially if the company is not both receiving the gas from an RNG project and supplying it to customers. Further, if any data are considered confidential (e.g., by the biogas project developer) and the partner cannot report them, the partner should not report these data and can indicate that the requested data are confidential and cannot be shared in the applicable free-text field.

As such, all data elements will be considered *optional* and are requested to be reported if feasible for the partner company. It is not expected that all partners will report all data elements and companies that cannot report all requested data will not be penalized in any way.

As an outcome of this commitment, EPA intends to gather and publish data on the volumes of RNG injected into transmission and distribution systems to enhance understanding of the magnitude of "biogas methane emissions avoided" by the supply of RNG to end users. Partners should only report on RNG (1) that they receive directly from a biogas project (i.e., the RNG is directly injected into the Partner's system at an interconnect) or (2) that they receive via interconnect with another natural gas company and deliver and/or supply to their customers. Partners should not report on RNG attributes that are purchased unless the gas is directly injected into the Partner's system or another system that is physically connected to the Partner's system**.**

Specific data elements for Methane Challenge reporting on this commitment are detailed in Appendix A.

A Note about EIA's 176 Reporting Updates

At the time this version of the proposal was finalized, EIA had not yet finalized updates to its 176 Natural Gas Supply annual reporting for 2021-2024. As described in its Federal Register notice on December 8, 2020[5], EIA is proposing to make the following modification to the 176 data collection:

> *EIA is modifying the survey instructions to include Renewable Natural Gas (RNG) producers who inject high-Btu RNG into an interstate pipeline, intra-state pipeline, or natural gas distribution company system. This excludes on-site and local pipelines that deliver to a nearby end-user, such as to a CNG fueling station or power plant. EIA is adding this type of RNG producer because these facilities produce the equivalent of pipeline-quality natural gas that is not captured elsewhere in EIA's production statistics.*

[5] https://www.federalregister.gov/documents/2020/12/08/2020-26884/agency-information-collection-extension

Methane Challenge does not expect this change to affect natural gas transmission and distribution companies that would report to Methane Challenge. Nevertheless, Methane Challenge will review the final specifications for EIA 176 reporting when they are published. If any of the Methane Challenge data elements are ultimately included in EIA's reporting requirements for natural gas transmission and distribution companies, these data elements will not need to be reported to EPA. In this scenario, Methane Challenge partners would be asked to provide EPA with the Company ID in the EIA dataset that corresponds to each of their Methane Challenge facilities.

Appendix A. Updates to Methane Challenge BMP Technical Document

Renewable Natural Gas

Applicable Segments: Transmission & Storage; Distribution

Source Description: This commitment addresses the supply of renewable natural gas (RNG) through natural gas transmission and distribution systems. For the purposes of this commitment, "biogas" is gas produced by the anaerobic digestion of organic matter at one or more of the following sources: municipal solid waste (MSW) landfills, anaerobic digestion (AD) at municipal water resource recovery facilities (WRRFs), AD at livestock farms and AD at stand-alone organic waste management operations. For the purposes of this commitment, "renewable natural gas"[6] encompasses biogas that has been upgraded for use in place of fossil natural gas. In the reporting form for this commitment, partners will also have the opportunity to provide general information about their companies' strategies for supplying other "low carbon" fuels.

Raw biogas typically has a methane content between 45 and 65 percent, depending on the source of the feedstock, and must go through a series of steps to be converted into RNG. The treatments used will depend on the source of the raw biogas and the constituents found in the raw biogas. These may include removing moisture, carbon dioxide (CO_2) and trace level contaminants (which, depending on the biogas source, can include siloxanes, volatile organic compounds-- VOCs, and hydrogen sulfide), as well as reducing the nitrogen and oxygen content. Once upgraded, the gas has a methane content of 90 percent or greater.

As a substitute for natural gas, RNG has many end-uses, including in thermal applications, to generate electricity, for vehicle fuel, or as a bio-product feedstock. For the purpose of this commitment, the end-use is a requested, but not required, data element. To develop a greater understanding of the RNG market and the role of natural gas transmission and distribution systems in advancing use of RNG, the end use is a valuable piece of information. However, EPA recognizes that transmission and distribution companies may not be privy to the information about the end use of the RNG projects for RNG in their systems.

RNG can be used locally at the site where the gas is produced and upgraded, or it can be injected into natural gas transmission or distribution pipelines. This commitment is focused on natural gas injected into transmission or distribution pipelines. This commitment does not encompass RNG attributes that are purchased, unless the RNG is directly injected into the Partner's system or another system that is physically connected to the Partner's system.

Additional information on renewable natural gas can be found in a discussion paper published by EPA's voluntary methane programs in 2020: https://www.epa.gov/lmop/overview-renewable-natural-gas-biogas

[6] There are many different definitions of renewable natural gas currently used; these definitions are specifically tailored to each context. For example, the American Gas Association has developed this consensus definition: "Renewable natural gas (RNG) is any pipeline compatible gaseous fuel derived from biogenic or other renewable sources that has lower lifecycle CO2e emissions than geological natural gas". Further information on AGA's definition can be found at this URL: https://www.aga.org/natural-gas/renewable/

Partners Commit To:

- Annually report RNG data elements to the Program;
- Research the nature and extent of RNG in its system (i.e., information about the biogas project that generated the gas and how the gas is being used by end users) so that the Partner can report as complete a representation of the RNG it has acquired, transported, and delivered as possible by the end of its commitment.

Commitment Timeframe: Partners commit to report as many data elements as possible annually and to research the nature and extent of RNG in their systems by the designated commitment achievement date, not to exceed five (5) years from the commitment start date. If the project(s) from which a Partner receives its RNG permanently go(es) offline during its commitment, the Partner should report this to the Methane Challenge Program as soon as possible. If the Partner does not plan to source RNG from another project, it can change its 'Commitment Achievement Year' to the year the project went offline and would not be required to report when not sourcing RNG.

Facility-level Annual Reporting:

Data will be reported at the facility-level through e-GGRT as for other BMP commitments. The RNG reporting form tab will be set up so Partners can report the requested data elements for each biogas project (if more than one). Partners can also use multiple lines per category to indicate multiple interconnects, designated end uses, etc. Data should only be reported on RNG that is received directly from an interconnect with a biogas project or a virtual pipeline or that is received from another system that is physically connected to the Partner's system and that is then delivered and/or supplied to customers by the partner.

All data elements for this commitment option are *OPTIONAL and to be provided if feasible.* If data are considered confidential (e.g., by the biogas project developer) and the partner cannot report them, the partner should not report these data and can indicate that the requested data are confidential and cannot be shared in the applicable free-text field. It is not expected that all partners will report all data elements and companies that cannot report all requested data will not be penalized in any way.

Data Category	Data Elements Collected via Facility-Level Reporting
General Information	What role(s) does your company play in the RNG process? (please indicate all that apply) [Investing in biogas projects; Directly interconnecting with biogas project; Delivering RNG to end users; Supplying RNG to end users; Purchasing environmental attributes for RNG that *is* physically connected to the company's system; Purchasing environmental attributes for RNG that *is not* physically connected to the company's system]
	For Distribution Partners[7] – • Does your company offer a 'green gas' option to residential customers? • Is your company in the process of offering a 'green gas' option?
	Any additional information on the role(s) your company plays in the RNG process, or about 'green gas' offerings?

[7] If your company operates in multiple states and is in different phases of offering 'green gas' to customers in the different states, you can provide additional details in the 'additional information' free text field.

Data Category	Data Elements Collected via Facility-Level Reporting
Information about the biogas source	Biogas Project ID[8]
	What is the feedstock for the biogas? (Anaerobic digester – livestock farm; Anaerobic digester – co-digestion; Anaerobic digester – food production facility; Anaerobic digester – organic waste management; Anaerobic digester – wastewater treatment plan; Landfill; Other (Specify)[9])
	Name the specific municipal solid waste landfill or digester (i.e., at water resource recovery facilities (wastewater treatment plants), livestock farms, food production facilities or organic waste management operations) from which the RNG was generated
	What upgrading technology was used? [*to be selected from a list*]
	Any additional information on the biogas project/upgrading process you wish to share?
Information about the pipeline interconnect(s)	Type of interconnect [Direct interconnect with biogas project; Interconnect with natural gas transmission company *delivering*/*transporting* RNG; Interconnect with natural gas distribution company *delivering*/*transporting* RNG; Interconnect with natural gas distribution company *delivering and supplying* RNG]
	If interconnect with natural gas transmission company or distribution company, name of interconnecting company
	If interconnect with biogas project:
	• Biogas Project ID[10]
	• Location of the interconnect (*latitude/longitude*)
	• Volume of gas received this year (*scf gas*)
	• Reference to the company's gas quality standards that are applicable to this project (e.g., pipeline tariff)
	• How far is the interconnect from the feedstock source (km)?
	• Is there a virtual pipeline?
	○ If yes, details about the virtual pipeline
	Any additional information on the interconnect process you wish to share?
Information about the end use(s) and environmental attributes	Biogas Project ID [*if known*][11]
	What is the destinated market for the RNG (region/city/state/facility) [*if known]*?
	What is the designated end use [*if known*]? (Thermal applications; Electricity generation; Vehicle fuel; Bio-product feedstock; Interconnect with other natural gas company (specify company); Not designated; Other (specify end use); Unknown)
	Volume of RNG going to this end use, this year (*scf gas*) [*if known*]
	Any additional information on the end use you wish to share?

[8] This ID is to be generated by the reporting partner and can be of any alphanumeric format desired. The same ID should be used for any given project across the different tables on the reporting form.
[9] If project feedstock is a combined waste stream, please specify the waste streams using the nomenclature from the drop-down list
[10] This ID is to be generated by the reporting partner and can be of any alphanumeric format desired. The same ID should be used for any given project across the different tables on the reporting form.
[11] *Ibid*.

Data Category	Data Elements Collected via Facility-Level Reporting
	Does your company currently own the environmental attributes for the RNG? [Yes; No; Unknown]
	If your company does not own the environmental attributes now, who does? [*If known*]
	If, your company does, or at one point did, own the attributes for RNG, does your supply contract for "renewable" natural gas include conveyance of environmental attributes to your company (e.g., by way of a contract clause, attestation)? [Yes; No; Unknown]
	If your company is selling "renewable" natural gas supply to another downstream entity (e.g., distributor, end consumer etc.), have you contractually conveyed the RNG environmental attributes to the downstream buyer? [Yes; No; Unknown]
	Is your company using a third party provider to certify or track attributes? If so, which one(s)?
	Any additional information about environmental attributes that you wish to share?
Information about the Company's strategy for supply of "low carbon fuels"	Company-specific goals or strategies for supply of "low carbon fuels" (such as upgraded biogas, hydrogen, etc.) (e.g., percent of natural gas supply to be RNG by a certain year; convert vehicle fleet to run on natural gas and use RNG for fuel), *if applicable.*
	Is your company blending hydrogen into its natural gas supply? [Yes; Planning to; Researching; No; Unknown]
	If yes, or planning to/researching:
	• At what rate will you be blending (% hydrogen by volume)
	• What is the source and/or feedstock of the hydrogen? (e.g., renewable/nuclear/etc.)
	• Is any upgrading/cleaning of the hydrogen required before injection?
	• What pipeline types does your company inject hydrogen into (material and pressure)?
	• Have you done any related customer engagement?
	• Has anything been done to customer appliances (if yes, what)?