

Michigan Renewable Natural Gas Study
Project Kickoff Comments
SEMCO ENERGY Gas Company
January 31, 2022

On January 10, 2022, the Michigan Public Service Commission (“Commission” or “MPSC”) hosted a Renewable Natural Gas (“RNG”) Study workgroup kickoff meeting and is soliciting comments to be submitted no later than January 31, 2022, 5:00pm. SEMCO ENERGY Gas Company (“SEMCO Gas”) appreciates the opportunity and offers the following comments to be considered to guide the scope of the RNG Study.

RNG Study Scope as defined by 2021 PA 87 and Commission order in Case No U-21170:

1. From the funds appropriated in [2021 PA 87] part 1 for public service commission renewable natural gas study, the public service commission must conduct a study into the potential for renewable natural gas development in this state. The study shall do all of the following:
 - a. Identify existing and potential sources of renewable natural gas in this state and provide, to the greatest extent possible, an estimate of the energy content and greenhouse gas abatement potential of these sources.
 - b. Estimate the cost per unit of heat, should the potential sources of renewable natural gas identified in subdivision (a) be utilized to the greatest practical extent.
 - c. Estimate the greenhouse gas emission reduction, per unit of heat, that would be achieved should the potential sources of renewable natural gas in subdivision (a) be utilized to the greatest practical extent.
 - d. Compare the estimated per-unit cost savings of greenhouse gas emission reductions estimated for RNG sources to the estimated per-unit cost savings likely to be achieved by comparable use of other carbon abatement technologies, including, but not limited to, hydrogen blending, building electrification, and similar technologies.
 - e. Estimate the production potential by applicable feedstock sources for renewable natural gas in this state. (f) Identify barriers to developing and utilizing renewable natural gas in this state.
 - f. Identify barriers to developing and utilizing renewable natural gas in this state.

SEMCO Gas Comment – Part b:

SEMCO Gas supports the study’s recommendations toward an RNG quality standard for Michigan. SEMCO Gas believes this recommendation fits within part b of the defined scope in that the gas quality standard required of RNG producers to process pipeline quality RNG greatly impacts the cost of RNG and

the resulting value proposition of adopting RNG as a supply standard in Michigan. Michigan's gas quality standard determines the level and cost of processing.

The American Gas Association says it best. "Gas quality specifications should be designed to ensure that gas tendered to, and delivered by, the interstate pipelines is safe and reliable, and meets the requirements of end-use applications. Gas quality specifications should not unreasonably limit the development of new or expanded gas supplies, or limit the diversity of sources of gas supply."¹ The same holds true for intrastate pipelines and local distribution systems.

Recommendation:

Any RNG gas quality standard recommended made as part of this study should be considered when assessing the cost per unit of heat.

SEMCO Gas does not offer a gas quality standard it feels best suitable to RNG in Michigan but does offer the following resources for reference.

Resources:

RNG Gas Quality Standards Examples:

- Section 4120 – Washington Gas Operations and Maintenance Manual – Gas Quality (attached)
- CenterPoint Energy – Renewable Natural Gas Quality Standards:
<https://www.centerpointenergy.com/en-us/InYourCommunity/Documents/RNG-Quality-Standards.pdf>
- Baltimore Gas and Electric Company – Renewable Natural Gas Quality Standards:
<https://www.bge.com/MyAccount/MyBillUsage/Documents/Gas/GasScheduleRNG.pdf>

Examples of Gas Quality Standard – Interstate Pipelines currently transporting to Michigan:

- ANR Pipeline Company: Part 6.13 Quality <http://ebb.anrpl.com/>
- Great Lakes Gas Transmission Company: Part 6.8 Quality
<http://tcplus.com/Great%20Lakes/Tariff/EntireTariff>
- Northern Natural Gas: Sheet No. 281
<https://apps.northernnaturalgas.com/Public/Tariff/Data/EntireTariff.pdf>
- Panhandle Eastern Pipeline Company: Section 3 Quality of Gas
<https://peplmessenger.energytransfer.com/ipost/PEPL/tariff/title-sheet-section>

¹ <https://www.aga.org/research/policy/natural-gas-quality-and-gas-interchangeability/>

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SCOPE

Gas chromatographic analysis is used to determine values for BTU content, specific gravity, and gas composition. This information along with volume measurements is then used to determine energy values for gas receipt at delivery points. This information is also used to determine the quality of the gas.

CODE REQUIREMENTS

DOT §192.605 requires that Washington Gas have written procedures for conducting operations and maintenance activities.

DOT §192.475(c) states that gas containing more than 0.25 grain of hydrogen sulfide per 100 standard cubic feet (4 parts per million) may not be stored in pipe-type or bottle-type holders.

COMAR 20.55.08.01 requires that gas supplied to customers must be free of impurities that may cause corrosion of pipelines or cause corrosive or harmful fumes when burned.

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1. GAS QUALITY

WG evaluates the quality of gas to determine the BTU content, specific gravity, and the composition. The BTU is a measure of the heating content. The gas chromatograph analysis determines the composition of the gas. The heating value and specific gravity are calculated from the analysis. **The measured compositions and calculated heating value are compared against limits stated in supply contract requirements.**

Water and other impurities lower the heating value of gas, contribute to the formation of hydrates, and promote internal corrosion in pipelines. The maximum amount of water allowed in WG lines is stated in contract requirements; **normally 7 pounds per million standard cubic feet.** The amount of hydrogen sulfide is limited to less than 0.25 grain per 100 standard cubic feet.

2. RENEWABLE NATURAL GAS

WG considers receipt of gas from biogenic sources on a case-by-case basis. Sources may include landfills, wastewater treatment plants, dairy farms, or power-to-gas facilities. WG approves interconnections with these sites based on:

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ENGINEERING AND OPERATING STANDARDS

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- ▶ **System Capacity; WG cannot accept RNG injection if there is a threat to the system MAOP. That is, if the system cannot consume injected gas at a sufficient rate then pipeline pressures will rise. Pressures cannot rise above the system MAOP.**

- ▶ **Gas Quality;**

- ▷ **Constituents must be limited per agreements between the supplier and WG. Consideration must be given towards the following. Note that the typical limits listed below represent maximum levels after blending (before delivery to a customer) with existing natural gas in the system:**

<u>Constituent</u>	<u>Typical Limit</u>	<u>Unit</u>
Carbon Dioxide	2.0	% Vol.
Oxygen	0.4	% Vol.
Nitrogen	3.0	% Vol.
Total Inerts	5.0	% Vol.
Hydrogen Sulfide	0.25	grains / CSCF
Total Sulfur	20	grains / CSCF
Water Vapor	7.0	lbs / MMSCF
Ammonia	0.001	% Vol.
Hydrogen	0.1	% Vol.
Siloxanes	0.5	mg / m ³
Total Fluorine	1.0	mg / m ³
Total Chlorine	10	mg / m ³
Mercury	0.08	mg / m ³
Arsenic	0.19	mg / m ³
Copper	0.6	mg / m ³

- ▷ **Parameters requiring consideration include hydrocarbon dew point, gas temperature, and objectionable matter (dust, gums, and bacteria).**
- ▷ **The final-mix gas product higher heating value must be no less than 967 Btu/SCF.**
- ▷ **The final-mix gas product Wobbe Number (higher heating value divided by square root of specific gravity) must be no less than 1297 Btu/SCF.**

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