STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

Katie Sieben	Chair
Mattew Schuerger	Commissioner
John Tuma	Commissioner
Valerie Means	Commissioner
Joseph Sullivan	Commissioner

June 25, 2020

In the Matter of CenterPoint Energy's Petition to Introduce a Renewable Natural Gas Interconnection Tariff — Docket No. G-008/M-20-434

INITIAL COMMENTS OF FRESH ENERGY, MINNESOTA CENTER FOR ENVIRONMENTAL ADVOCACY, AND THE SIERRA CLUB

Fresh Energy, Minnesota Center for Environmental Advocacy, and the Sierra Club respectfully submit these initial comments in response to CenterPoint Energy's April 23, 2020 Initial Filing.

In Minnesota we have made considerable progress in drawing down greenhouse gas (GHG) emissions from the power sector, but the carbon footprint associated with the building and industrial sectors continues to grow, underpinned in large part by the combustion of natural gas.[1] If we are to meet Minnesota's 2030 and 2050 GHG reduction goals,[2] now is the time to critically evaluate how best to decarbonize end-uses currently served by fossil fuels.

To this end, we commend CenterPoint Energy's March, 2020 commitment to reduce operational emissions by 70% by 2035 and emissions attributable to natural gas usage in heating, appliances and equipment within the residential and commercial sectors by 20-30% by 2040.[3] Meeting these goals, and going beyond them, will require bold action. We are particularly supportive of measures that ramp up affordable energy efficiency and conservation programs, reduce fugitive methane emissions across the Company's natural gas

[1] MN Pollution Control Agency. 2019. *Greenhouse gas emissions in Minnesota: 1990-2016*. Link
[2] Minnesota Statute §216H.02. Link
[3] CenterPoint Energy. March 2, 2020. *CenterPoint Energy introduces Carbon Policy committing to reductions in emissions*. Link

system, and explore innovative, carbon-free solutions (e.g. GeoMicroDistrict systems,[4] deep energy retrofits and installation of cold climate electric air-source heat pumps[5]).

With regards to the development of alternative fuel programs, we believe that biogas (a mixture of methane, carbon dioxide, and other constituents) and renewable natural gas (RNG; biogas that has been upgraded to meet the standard of pipeline grade gas by removing impurities, water, and carbon dioxide) will play important roles in decarbonizing Minnesota's economy. However, there is a growing body of evidence that demonstrates our limited supply of these low carbon fuels should be used *sparingly* and *strategically* to maximize carbon mitigation, environmental, and consumer benefits.[6]

In evaluating the Company's petition to introduce a RNG Interconnection Tariff, with the expectation that an amended RNG green tariff offering for sales customers who opt to purchase RNG as part of their natural gas supply will soon follow, it is critical to consider the portfolio of end-uses now served by fossil fuels across Minnesota and the suite of fuels and technologies (e.g. biogas, RNG, hydrogen, electrification) that will most efficiently and effectively decarbonize those end uses. It is also important to consider the environmental and health ramifications of alternative fuels proposed as a direct substitute for fossil natural gas, especially if they are intended to serve end-uses that are dependent on receiving service through existing natural gas infrastructure systems.

Biogas and RNG are often described as 'ultra-clean and ultra low-carbon natural gas alternatives'[7] that pose great potential to 'reduce GHGs'[8] across existing natural gas systems. However, the reality is that if biogas and RNG are not carefully managed, these fuels risk posing serious climate, environmental, and health risks. Given the limited availability of these fuels and their relatively high cost, we urge the Commission to evaluate the Company's RNG Interconnection Tariff carefully, especially as it pertains to the purported benefits to local producers and Minnesota ratepayers.

Fresh Energy, Minnesota Center for Environmental Advocacy, and the Sierra Club share the following concerns:

---

[4] HEET and Buro Happold Engineering. 2019. GeoMicroDistrict Feasibility Study. Link
[5] S.F. No. 3013. Link
[6] Borgeson. June 2020. *Issue Brief: The Opportunities and Limits of Biogas and Synthetic Gas to Replace Fossil Gas*. National Resource Defense Council. Link
[7] The Coalition for Renewable Natural Gas. Accessed 6-24-2020. Link
[8] The American Biogas Council. Accessed 6-24-2020. Link

1. There is no accounting framework in place to evaluate and verify the carbon intensity of RNG or validate its effectiveness in reducing carbon emissions from natural gas systems;
2. Growing Minnesota's RNG market to serve end-uses that rely on fuel delivery from existing natural gas distribution systems presents climate challenges;
3. Air pollution and clean up requirements as proposed lack rigor;
4. A Minnesota RNG marketplace that requires pipeline interconnection runs counter to the public interest because it creates insurmountable barriers to local producer participation, and
5. The Company has not presented evidence that RNG production and use results in environmental benefits to justify the omission of the Conservation Cost Recovery Charge from the delivery charge for the RNG Interconnect Service Tariff.

1. There is no accounting framework in place to evaluate and verify the carbon intensity of RNG or validate its effectiveness in reducing carbon emissions from natural gas systems

As proposed, the Company's RNG Interconnection Tariff fails to evaluate the carbon intensity of locally produced RNG or set any kind of guidance on an acceptable range of carbon intensities that would confer sustainable carbon emissions benefits across the Company's gas system. Biogas feedstocks, production and upgrade processing, methane leakage profiles, and total carbon intensity of resulting biogas and/or RNG fuels are highly variable and must be evaluated before interconnecting to the Company's pipeline system with the promise of conferring significant environmental and climate benefits to Minnesotans.

The baseline carbon footprint of biogas feedstocks, as well as the emissions associated with the production and upgrading processes used to produce biogas and RNG respectively, are not uniform.[9,10,11] This is because biogas is produced from a number of different organic waste streams (e.g. landfill waste, livestock waste, wastewater, municipal solid waste, wood residue, energy crops, agricultural residue), through different processes (anaerobic digestion or thermal gasification), at sites under different management. While embodied GHGs associated

[9] Borgeson. 2020. *Issue Brief: The Opportunities and Limits of Biogas and Synthetic Gas to Replace Fossil Gas*. National Resource Defense Council. Link
[10] M.J. Bradley & Associates. 2017. Renewable natural gas: The RNG opportunities for natural gas utilities. Link
[11] World Resources Institute. 2018. *The production and use of renewable natural gas as a climate strategy in the United States*. Link

with production feedstocks are commonly excluded from the boundary analyses that determine the carbon intensity of RNG fuels (whose accounting only begins at the point when waste emissions are diverted from the original management strategy), a life cycle carbon accounting approach to assessing the true climate value of these fuels is considered best practice.[12,13]

Further, the climate benefits of biogas and RNG are often predicated on the assumption that these fuels are manufactured from waste methane that would have otherwise been emitted directly to the atmosphere (e.g. manure lagoons). However, it is common in waste management practices for this waste methane to be flared (combusted) and released to the atmosphere as less-climate-intensive carbon dioxide (e.g. landfills).[14,15] Producers who are diverting the most climate intensive waste streams (e.g. methane) through the production of biogas will deliver biogas and/or RNG with the lowest carbon intensity and greatest climate value. Producers that normally flare methane waste streams (e.g. landfills) will therefore be diverting waste carbon dioxide and delivering biogas and/or RNG that is relatively more carbon intensive with a lower climate value.

Finally, the climate benefits of RNG and biogas are further eroded by methane leaks across the production, upgrading, and distribution processes leading up to and following interconnection. Current estimates of methane leakage from biogas production and upgrading facilities, specifically, indicate that leakage rates are between 2-4% and as high as 15%.[16] Methane is a potent greenhouse gas, evaluated as 84 times more effective as a heat-trapping gas during its lifetime in earth's atmosphere as compared to carbon dioxide. Therefore, methane leakage presents a serious challenge to alternative fuels programs aimed at reducing GHG emissions.[17]

It is critically important that the Company's Interconnection Feasibility Study evaluate the total carbon intensity of RNG fuels, taking into account feedstock, production and upgrade processing, and methane leakage of candidate producers. The Company should also set

---

[12] *Id.*
[13] Grubert. 2020. *At scale, renewable natural gas systems could be climate intensive: The influence of methane feedstock and leakage rates*. Environmental Research Letters, Link
[14] *Id.*
[15] World Resources Institute. 2018. *The production and use of renewable natural gas as a climate strategy in the United States*. Link
[16] Grubert. 2020. *At scale, renewable natural gas systems could be climate intensive: The influence of methane feedstock and leakage rates*. Environmental Research Letters, Link
[17] IPCC AR5. 2013. *Climate change 2013: The physical science basis – Anthropogenic and natural radiative forcing*, page 714. Link

guidelines on acceptable carbon intensity values for interconnection that provide demonstrable climate benefits to Minnesotans.

2. Growing Minnesota's RNG market to serve end-uses that rely on fuel delivery from existing natural gas distribution systems presents climate challenges

Growing Minnesota's RNG market to serve end-uses that rely on fuel delivery from existing natural gas distribution systems presents climate challenges that must be considered when evaluating the Company's proposed RNG Interconnection Tariff. Specifically, methane leakage across natural gas transmission and distribution systems significantly lowers the climate value of low carbon fuels like biogas and RNG.

Available biomass feedstocks in the U.S. are not sufficient to fully supplant the use of natural gas with RNG. It is prudent to identify the best use cases – those that confer the greatest carbon reduction potential for the cost of service – for the limited supply of these low carbon fuels. Use cases that rely on distribution through natural gas systems necessarily erode the climate benefit of these finite and expensive fuels. Current estimates of methane leakage across U.S. natural gas distribution systems range from 0.8% to greater than 2.5%,[18] and total methane leakage across pipeline mains in local distribution systems is now five times greater than current EPA GHG inventory estimates.[19]

We commend CenterPoint Energy's for its commitment to reduce methane leakage across its system.[20] However, fugitive methane emissions are difficult to mitigate and there is currently no efficient or cost-effective solution to eliminating these emissions completely. Further, in the likely event that local producers sell RNG to the national market, the Company has no ability to mitigate methane leaks across pipelines outside of its service territory. Notably, use cases that co-locate biogas and/or RNG production with the end-uses they serve avoid fugitive methane emissions incurred by pipeline systems entirely.

We appreciate the Company's engagement in developing strategies to spur decarbonization of the state's economy as well as their own operating systems. However, in evaluating the proposed RNG Interconnection Tariff and the corresponding development of a local marketplace for biogas and/or RNG, we urge the Commission to carefully consider the best use cases for our home-grown low carbon fuels. For example, industrial end-uses with high

---

[18] Howarth. 2019. *Ideas and perspectives: is shale gas a major driver of recent increase in global atmospheric methane?* Biogeosciences, Link

[19] Weller, Hamburg, and von Fischer. 2020. *A national estimate of methane leakage from pipeline mains in natural gas distribution systems.* Environmental Science and Technology, Link

[20] CenterPoint Energy. March 2, 2020. *CenterPoint Energy introduces Carbon Policy committing to reductions in emissions*. Link

thermal loads (e.g. smelting, concrete production) that are technically difficult and cost prohibitive to decarbonize through electrification are ideal candidates for low carbon fuels.

3. Air pollution and safety requirements as proposed lack rigor

As indicated in CenterPoint Energy's filing, like natural gas, biogas contains many trace constituents including volatile metals, ammonia, chlorinated compounds, and siloxanes.[21] Some of these constituents are harmful to human health, and others can damage pipeline infrastructure and equipment, for example by corroding pipelines.[22] Recognizing the potential for public health risks associated with biogas, in 2012 California adopted Assembly Bill 1900 ("AB 1900"), requiring the California Public Utilities Commission ("CPUC") to develop standards for constituents in biogas.[23] To develop recommendations for this proceeding, the California Office of Environmental Health Hazard Assessment ("OEHHA") was tasked with "compiling a list of constituents of concern found in biogas that could pose a health risk and that are at levels that significantly exceed the concentrations of those constituents found in natural gas."[24]

Based on the OEHHA report — which focused on landfills, dairies, and sewage treatment plants as the three largest sources of biogas in the state — there are several constituents of concern that may present health hazards to utility workers and gas end users if biogas is not sufficiently cleaned and upgraded.[25] These are the same constituents that CenterPoint Energy proposes to monitor in its petition.[26] Because of the potential risks associated with RNG use, it is important to maintain rigorous standards for monitoring and reporting, as well as for regularly updating the gas quality standards. This is particularly true in the beginning stages of a RNG program for Minnesota, when the Commission, utilities, and stakeholders are still learning about the risks and opportunities associated with biogas and RNG.

---

[21] Von Wald et al. 2018. *Biomethane in California Common Carrier Pipelines: Assessing Heating Value and Maximum Siloxame Specifications,* at 26. Link

[22] Russell, Lowell, and Jones. 2017. *Renewable Natural Gas: The RNG Opportunities for Natural Gas Utilities*, M.J. Bradley & Associates. Link

[23] California Environmental Protection Agency Air Resources Board ("CARB"). 2013. Recommendations of the California Public Utilities Commission Regarding Health Protective Standards for the Injection of Biomethane into the Common Carrier Pipeline, at 1, Link

[24] *Id*.

[25] *Id*. at 1-2.

[26] DOC G008/M-20-434. CenterPoint Energy Initial Filing. page 22.

a. The Commission Should Require CenterPoint Energy to Periodically Reevaluate Gas Quality Standards

Particularly for an emerging technology like RNG, safety standards should not be static. Rather, the Company should engage in a periodic reevaluation of its gas quality standards and the constituents of concern it is evaluating. In California, AB 1900 requires that the California Air Resources Board and OEHHA update their recommendations at least every five years.[27] In its 2020 update to the AB 1900 Biogas Recommendations incorporated "additional biogas sampling data, updated toxicity and risk information, and consideration of exposure to several potentially harmful biogas combustion products," and added "six new chemicals and chemical groups" that result from exposure to biogas combustion products.[28] Clearly, the science around RNG and gas quality standards is still evolving, and the Company should be required to take this changing landscape into account.

The Company indicated that it developed gas quality standards based on the CPUC proceeding.[29] The Commission should require the Company to update its standards whenever the relevant standards are updated in California. As stated by the Company on page 8 of its petition, "The CPUC has undertaken detailed investigation of the gas quality standards needed to protect distribution utility pipelines," and the Company is "satisfied that the standards decided on by the CPUC are also appropriate for CenterPoint Energy's Minnesota distribution system." The Company has an opportunity to continue benefiting from the hard work and expertise of the CPUC and California's utilities on this issue. Accordingly, the Company should commit to continue updating its standards alongside changes in California's standards.

b. The Commission Should Require CenterPoint Energy to Maintain Gas Quality Standards at All Times

In its initial filing, the Company states that it "may allow deviations" from gas quality standards "on a case-by-case basis."[30] However, these gas quality standards are necessary to protect both utility workers and end-use consumers, as well as to maintain the integrity and safety of gas pipelines and facilities. If the Commission decides to approve CenterPoint Energy's petition for a RNG Interconnection Tariff, it should require the Company to remove this allowance, and instead to commit to maintaining rigorous gas quality standards for all interconnected

[27] California Office of Environmental Health Hazard Assessment (OEHHA), AB 1900 Biogas Recommendations: Biogas Constituents of Concern and Health-Protective Levels for Biomethane, January 2020, at 2, available at https://oehha.ca.gov/media/downloads/air/report-document-background/biomethane010320.pdf
[28] *Id*. at 1
[29] CenterPoint Energy Petition at 8
[30] *Id*. at 21

producers. Relaxing these standards would be particularly problematic for the carcinogenic constituents—arsenic, p-Dichlorobenzenes, Ethylbenzene, n-Nitroso-di-n-propylamine, and vinyl chloride.[31]

c. Regardless of Source, Gas Combustion in Homes Poses Health Risks

Finally, when considering the health and safety impacts of RNG, it is important to consider that gas combustion in homes — regardless of the fuel source — is inherently more harmful to human health than electric appliances. Fuel combustion emits particulate matter, nitrogen oxide, nitrogen dioxide (NO_2), formaldehyde, and carbon monoxide.[32] In fact, studies have shown that indoor air pollution from gas stoves can exceed standards for outdoor air pollution. For instance, roasting meat in a gas oven can produce up to 296 parts per billion (ppb) of NO_2, compared to the EPA's outdoor standard of 100 ppb and the World Health Organization's indoor guideline of 106 ppb.[33] Health Canada, the federal department responsible for public health in Canada, recently found that short-term exposure to NO_2 levels above 90 ppb can cause decreased lung function and increased airway responsiveness in asthmatics. Another recent study found that electrifying gas appliances would result in 354 fewer deaths and 596 and 304 fewer cases of acute and chronic bronchitis, respectively.[34] This is particularly important for low-income households, which tend to have more exposure to indoor air pollution, and are therefore more likely to suffer health impacts like asthma.[35]

Similar to the science around gas quality standards, our understanding of the potential health impacts of RNG is still evolving. A recent 2020 study by the California Energy Commission (CEC) found that exposure to combustion exhaust from RNG-fueled appliances had a slightly greater impact on DNA damage and on mutagenicity, which is related to possible carcinogenicity, than exposure to combustion exhaust from fossil natural gas.[36] The CEC also noted that this difference in toxicity between fuels points to the need for future studies to determine safe standards for biogas, RNG, and natural gas.[37]

---

[31] *Id*.
[32] Brady Anne Seals and Andee Krasner, *Health Effects From Gas Stove Pollution*, Rocky Mountain Institute, Mothers Out Front, Physicians for Social Responsibility, and Sierra Club, 2020, at 8, available at https://rmi.org/insight/gas-stoves-pollution-health
[33] *Id*. at 11
[34] Yifang Zhu, Rachel Connolly, Yan Lin, Timothy Mathews, and Zemin Wang, *Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California*, UCLA Fielding School of Public Health, April 2020 at 41, available at https://ucla.app.box.com/s/xyzt8jc1ixnetiv0269qe704wu0ihif7
[35] *Id*. at 15
[36] Michael Kleeman, Thomas Young, Peter Green, Stefan Wuertz, Ruihong Zhang, Bryan Jenkins, Norman Kado, and Christopher Vogel, *Air Quality Implications of Using Biogas to Replace Natural Gas in California*, California Energy Commission, May 2020. Link
[37] *Id*. at 3

We understand that CenterPoint Energy's proposal for a RNG Interconnection Tariff is not intended to improve public health for Minnesotans. Still, we urge the Commission to keep these concerns in mind when considering the path forward toward a cleaner energy future. The potential for different or more significant health impacts from RNG compared to natural gas underline the need for a deliberate approach.

4. A Minnesota RNG marketplace that requires pipeline interconnection runs counter to the public interest because it creates insurmountable barriers to local producer participation

CenterPoint Energy aims to develop a Minnesota marketplace for RNG that relies on interconnection to its pipeline system. This would create a number of barriers for potential local producers. In particular, CenterPoint Energy proposes a high interconnection fee that would likely be cost prohibitive to small producers. If the Company aims to create a marketplace that is accessible to local producers of all sizes, these interconnection fees should be revised.

Geography and system limitations may preclude participation by local producers. Dairies, poultry and swine farms, and landfills across Minnesota are often sited far from potential injection sites, which presents a cost barrier to extending utility infrastructure to connect with local renewable natural gas producers.[38,39] In CenterPoint Energy's initial filing, they write:

> ...though many RNG producers will be able to benefit from the proposed interconnection service, the Company may not be able to satisfy every interconnection request. Some producers of RNG may be too geographically distant from CenterPoint Energy's distribution system and the project will therefore require too much piping and infrastructure to be feasible. In other cases, CenterPoint Energy may have system limitations that preclude interconnect at a nearby distribution system point. For example, the Company will be unable to interconnect RNG producers in cases where the downstream gas load is less than the expected output of the RNG producer. In such cases, interconnection may be impossible or more expensive than the pipe proximity would suggest.[40]

[38] Center for Energy and Environment. 2007. Identifying effective biomass strategies: Quantifying Minnesota's resources and evaluating future opportunity. Link
[39] M.J. Bradley & Associates. 2017. Renewable natural gas: The RNG opportunities for natural gas utilities. Link
[40] DOC G008/M-20-434. CenterPoint Energy Initial Filing. page 7.

Moreover, CenterPoint Energy has proposed annual interconnection charges of $90,000 ($7,500 per month), which will likely be cost prohibitive to small producers, further limiting Minnesota producer participation.[41] These charges, in addition to capital investments and operational costs required for digester and clean-up infrastructure, can range from hundreds of thousands to tens of millions of dollars depending on the technologies used and the scale of production.[42,43]

Another barrier is that Minnesota's local farms are not large enough, on average, to support investment in the anaerobic digesters needed to produce RNG. Minnesota has 2,456 dairy farms with an average size of 180-200 cows.[44] The EPA suggests that the production of RNG is economically viable at a size of 500 cows or more.[45] Dairies in California that have received support for anaerobic digesters for the production of RNG are some of the largest industrial feedlots in the country, with average herd sizes of 7,430 cows.[46] The cost of interconnection and capital investments needed to join this marketplace will be out of reach to most dairy farms in Minnesota.

Because economic use of anaerobic digesters relies on the enormous manure lagoons that only large industrial farms can produce, this interconnection charge incentivizes existing large industrial farms and risks promoting the coalescing of waste streams from multiple farms in order to make the most of economies of scale. Coalescing waste streams increases the carbon intensity of resulting fuels as a direct result of the emissions incurred through the transportation of those waste streams.

These large industrial farms also have an enormous environmental impact, releasing pollution into the air and water that greatly impacts the health of workers and nearby residents. The use of digesters to capture manure does not address these air and water quality impacts. Water pollution from industrial farms enters the environment throughout the farming process including from where the cows are confined, leaks from manure lagoons and application of manure on land. Air pollutants such as smog-forming volatile organic compounds (VOC) also

[41] DOC G008/M-20-434. CenterPoint Energy Initial Filing. page 9.
[42] World Resources Institute. 2018. The production and use of renewable natural gas as a climate strategy in the United States. Link
[43] M.J. Bradley & Associates. 2017. Renewable natural gas: The RNG opportunities for natural gas utilities. Link
[44] University of Minnesota Extension. 2020. The role of Dairy Farmers in Minnesota's economy. Link
[45] EPA. Market opportunities for biogas recovery systems at U.S. livestock facilities. U.S. Environmental Protection Agency; 2011. Link
[46] California Climate and Agriculture Network, California Dairies Tackle Methane Emissions, (citing California Department of Food and Agriculture, A Report to the Joint Legislative Budget Committee (July 2018)). Link

enter the environment throughout the farming process from the cows directly, from the fermentation of their food, and from the decomposition of their manure.[47,48] These large farms also pose an economic threat to the small dairy farmers in our state that are already struggling to survive. The Commission should guard against creating a RNG market that reduces the carbon benefit of RNG use, increases co-pollutants, and further incentivizes the consolidation of dairy farms in Minnesota.

Instead, the Commission should incentivize co-location of biogas production with end-uses (e.g. electricity generation, combined heat and power, industrial applications) to allow greater market participation and the lowest possible carbon footprint. The Commission must ensure its policies support small operations with sustainable manure management practices that prevent methane creation, rather than large industrial operations.

5. The Company has not presented evidence that RNG production and use results in environmental benefits to justify the omission of the Conservation Cost Recovery Charge from the delivery charge for the RNG Interconnect Service Tariff.

CenterPoint Energy proposes to omit the CCRC from the RNG Interconnect Service Tariff. This omission is predicated on the assumption that RNG production, distribution, and consumption result in a net environmental benefit that is greater than the environmental benefit of conservation. CenterPoint Energy states in its initial filing:

> The goal of RNG producers is to produce RNG, and if an RNG producer produces more it will result in increased environmental benefit. Because the production and use of RNG results in environmental benefits the Company believes it is appropriate to encourage producers to maximize the RNG that can be produced locally.[49]

However, CenterPoint Energy presents no evidence that the net environmental benefit of RNG is positive, when accounting for life cycle carbon emissions, indoor air quality ramifications upon combustion, and impacts to outdoor air quality.

RNG is a byproduct of the decision to dispose of organic waste such as food scraps and cow manure in an anaerobic (oxygen-free) environment. While capturing biogas is one way to

---

[47] Sheraz Gill et al. 2012. *Air Pollution Control Officer's Revision of the Dairy VOC Emission Factors*. SJVAPCD, at 9. Link

[48] MacMullan, supra note 70, at 10; Attach. 11, Leadership Counsel for Justice & Accountability, A Working Paper on the CDFA Dairy Digester Research and Development Program, at 2 (Apr. 3, 2019) ("LC Working Paper"). Link

[49] DOC G008/M-20-434. CenterPoint Energy Initial Filing. page 9.

prevent it from escaping into the atmosphere, another is to adopt more sustainable methods of waste disposal that avoid its generation and associated localized impacts in the first place. To maximize environmental benefit, we need to first minimize waste streams and use remaining waste streams for biogas production. RNG policies that encourage biogas creation without first incentivizing minimization of waste streams will result in both increased carbon emissions as well as increased health and safety risks in communities where RNG production sites are located.

Regardless of the source of gas (fossil or biological), continued investment in conservation is critical to reduce system GHG emissions and other co-pollutants, reduce health impacts from indoor air pollution resulting from gas combustion in homes and businesses, and help customers lower costs by using less gas. Conservation is always the cleanest option. In the absence of clear evidence of the environmental benefits of RNG in Minnesota, the Commission should reject the Company's proposal to omit the Conservation Cost Recovery Charge from their proposed RNG Interconnection Tariff.

Conclusion

We believe that biogas and RNG will play important roles in decarbonizing Minnesota's economy, and we appreciate CenterPoint Energy's exploration of alternative fuel programs to this end. However, in developing Minnesota's biogas and RNG markets, we believe that it is vitally important to consider the best use cases for our limited supply of these low carbon fuels in order to maximize carbon mitigation, environmental, and consumer benefits.

For the above reasons, Fresh Energy, Minnesota Center for Environmental Advocacy, and the Sierra Club do not recommend approval of CenterPoint Energy's petition as filed. At a minimum, we recommend that the Commission require the Company to amend their proposed RNG Interconnection Tariff to:

1. Include life cycle carbon accounting of biogas production and upgrading facilities in the Interconnection Feasibility Study. Producers determined to be climate intensive should not be interconnected to the Company's distribution system.

2. Strike the provision that would allow the Company to authorize deviations from RNG Quality Standards on a case-by-case basis in its discretion. The Company's judgement alone is not sufficient to determine when and if deviations from the RNG Quality Standards Tariff will risk harm to CenterPoint Energy facilities, the facilities of any CenterPoint Energy customer, human health, or the environment.

3. Include a requirement that the Company periodically update its gas quality standards to maintain consistency with the CPUC's requirements and according to the best available science. This will ensure that the health and safety of customers and utility workers is protected.

4. Restore the CCRC to the delivery charge for the RNG Interconnect Service Tariff. The CCRC should be included in the absence of robust evidence that RNG production and use results in environmental benefits.

Additionally, we urge the Commission and Minnesota stakeholders to consider how best to grow biogas and RNG markets in Minnesota to achieve the greatest carbon mitigation, environmental, and consumer benefits possible. This requires an evaluation of end-uses that are served by fossil fuels today and a determination of how best to decarbonize those end-uses. We maintain that end-uses that require large thermal loads, which will be technically difficult to electrify, are best served by low carbon fuels like biogas, RNG, or hydrogen. We have also identified the co-location of biogas production and consumption as a strategy to allow greater market participation and achieve the lowest possible carbon intensity for these fuel types.

/s/ *Margaret Cherne-Hendrick*
Fresh Energy
408 Saint Peter Street, Suite 220
St. Paul, MN 55102
651.294.7143
cherne-hendrick@fresh-energy.org

/s/ Jessica Tritsch
Sierra Club
Senior Campaign Representative, Beyond Coal Campaign
2300 Myrtle Avenue, Suite 260
St. Paul, MN 55114
612.963.9642
jessica.tritsch@sierraclub.org

/s/ Carolyn Berninger
Minnesota Center for Environmental Advocacy
1919 University Avenue West, Suite 515
St. Paul, MN 55104
651.287.4878
cberninger@mncenter.org