STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

Dan Lipschultz	Vice Chair
Mattew Schuerger	Commissioner
Katie Sieben	Commissioner
John Tuma	Commissioner

March 1, 2019

In the Matter of CenterPoint Energy's Petition to Introduce a Renewable Natural Gas Pilot Program — Docket No. G-008/M-18-547

REPLY 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 reply comments in response to CenterPoint Energy's August 23, 2018 Initial Filing. We respond to arguments made by the Coalition for Renewable Natural Gas, the Bioeconomy Coalition of Minnesota, the Partnership on Waste and Energy, and Energy Vision.

The next few years are pivotal to shaping the future of Minnesota's energy markets. We have made considerable progress in drawing down greenhouse gas emissions from the power sector, but the carbon footprint associated with the building and industrial sectors continues to grow, while the transportation sector is now Minnesota's largest source of greenhouse gas emissions.[1,2] There is now consensus amongst energy and climate experts that the electrification of end-uses (space and water heating, cooking, vehicles, etc.) will play a pivotal role in decarbonizing these remaining sectors.[3]

The agriculture and waste sectors are also a significant source of greenhouse gas emissions in Minnesota.[4] Capturing biogas (a mix of methane and carbon dioxide) from agricultural and municipal waste streams as well as landfills is an important strategy to draw down these emissions. However, the manner in which this biogas is utilized has important implications for the decarbonization trajectories of the building, transportation, and industrial sectors. In evaluating CenterPoint Energy's pilot program proposal, we urge the Commission to carefully

[1] MN Pollution Control Agency. 2019. *Greenhouse gas emissions in Minnesota: 1990-2016*. Link
[2] Rhodium Group. 2019. *Preliminary US Emissions Estimates for 2018*. Link
[3] IPCC SR15. 2018. *Global Warming of 1.5°C – Summary for policymakers*. Link
[4] MN Pollution Control Agency. 2019. *Greenhouse gas emissions in Minnesota: 1990-2016*. Link

consider how best to utilize biogas in order to maximize the scale and pace of decarbonization efforts across all economic sectors in Minnesota.

For the reasons we outlined in our initial comments[5] and for the reasons we submit below, Fresh Energy, Minnesota Center for Environmental Advocacy, and the Sierra Club continue to not recommend approval of CenterPoint's petition as filed.

Renewable natural gas is not a scalable decarbonization strategy for natural gas systems.

As acknowledged by the Coalition for Renewable Natural gas,[6] available biogas feedstocks in the United States are only sufficient to produce enough renewable natural gas to replace 4-10% of existing distributed fossil natural gas demand.[7] As such, renewable natural gas alone will never be a scalable decarbonization strategy for natural gas systems in the building sector. The limited extent to which CenterPoint Energy's proposed pilot program will facilitate decarbonization should be acknowledged fully when weighing the cost to consumers and the limited greenhouse gas reduction potential.

Supplementing renewable natural gas with synthesized methane -- produced through emerging power-to-gas technologies -- as suggested by the Coalition for Renewable Natural gas[8] is not a viable decarbonization strategy. Power-to-gas uses electricity to drive a chemical reaction to create methane where none existed before. Where the utilization of biogas has the direct effect of drawing down emissions from diverted waste streams, power-to-gas technology has no such impact. Without first putting policies in place to reduce our extraction and consumption of fossil natural gas, investing in power-to-gas technology risks producing even more methane fuel than we use today. The full carbon footprint of power-to-gas is as yet unknown and the technology remains cost prohibitive. We urge the Commission to evaluate CenterPoint Energy's proposed pilot program independent of these emerging technologies.

Distributed renewable natural gas is not a tool that Minnesota can afford to include in its building sector decarbonization toolkit.

There are multiple pathways to achieving building sector decarbonization. While these pathways will all increase costs to society in the short term, they differ by the rate and magnitude at which greenhouse mitigation will be achieved.

---

[5] Initial comments. Fresh Energy, Minnesota Center for Environmental Advocacy, Sierra Club. Link
[6] Reply comments. Coalition for Renewable Natural Gas. Link
[7] American Gas Foundation. 2001. *The potential for renewable gas: Biogas derived from biomass feedstocks and upgraded to pipeline quality*. Link
[8] Reply comments. Coalition for Renewable Natural Gas. Link

An electrification pathway requires substantial energy efficiency retrofits for existing building stock, enhanced energy efficiency standards for new construction, and the implementation of new air- or ground-source heating technology, all of which will require considerable investment to be accomplished to scale. A renewable natural gas pathway will displace finite volumes of fossil natural gas in existing distribution systems, but is very expensive and lacks the capacity to scale. Adopting these strategies simultaneously risks driving up costs and ultimately slowing the pace of decarbonization in the building sector.

The Coalition for Renewable Natural gas has twice referenced[9,10] a Navigant-SoCalGas report that concludes that replacing fossil natural gas use in buildings with renewable natural gas can reduce greenhouse gases on a level commensurate with building electrification in California. However, this report adopts a number of assumptions[11] that advantage gas and underestimate the greenhouse gas reduction potential associated with building electrification while overestimating its costs.[12]

In stark contrast, a report prepared by E3 for the California Energy Commission found that building electrification is the state's lower-cost and lower-risk climate change mitigation strategy.[13] California and Minnesota have very different heating and cooling demands, but a report by Vibrant Clean Energy prepared for the McKnight Foundation found that significant energy efficiency coupled with end-use electrification powered by renewable energy is not only possible in Minnesota, but in fact represents Minnesota's least cost, most effective strategy for achieving deep decarbonization by mid-century.[14] The electrification pathway is also expected to exert downward pressure on electricity rates, resulting in appreciable energy cost savings for Minnesota households, and create an estimated 50,000 new clean energy jobs across the state.[15]

We know that the actions we take over the next decade are imperative to avoiding the worst economic and health impacts associated with climate change.[16] Therefore, we maintain that limited financial resources would be better invested in pursuing a building electrification

[9] Initial comments. Coalition for Renewable Natural Gas. Link
[10] Reply comments. Coalition for Renewable Natural Gas. Link
[11] Assumed an unrealistic biomethane supply, overlooked limitations of scale, ignored carbon footprint of leakage from gas infrastructure, ignored heath impacts, biased efficiency and cost assumptions, and underestimated growth in renewable energy.
[12] Sierra Club Comments on SoCalGas and Navigant Report. Docket No. 18-IEPR-09. Link
[13] E3. 2018. *Deep decarbonization in a high renewables future*. Link
[14] Vibrant Clean Energy, LLC for McKnight Foundation and GridLab. 2018. *Minnesota's smarter grid: Pathways toward a clean, reliable and affordable transportation and energy system*. Link
[15] *Id.*
[16] IPCC SR15. 2018. *Global Warming of 1.5°C – Summary for policymakers*. Link

pathway with the potential to achieve sector-wide decarbonization and also confer health benefits, create secure jobs, reduce energy use, and contribute to grid flexibility.[17]

Market growth for biogas and/or renewable natural gas in Minnesota is not contingent on the approval of CenterPoint Energy's proposed pilot program.

A number of parties have suggested that approval of CenterPoint Energy's proposed pilot program will play a pivotal role in developing a renewable natural gas market in Minnesota by increasing demand for the product and attracting interest and investment from project developers.[18,19,20,21] However, as the Company has not proposed to source renewable natural gas within Minnesota for their pilot, it is unclear how either of these outcomes are linked to the fate of the Company's program.

While the prospect of long-term gas-purchasing contracts from utility entities may be attractive to anaerobic digester developers and financers,[22] no such opportunities exist in the Company's pilot program as proposed. Further, CenterPoint Energy has made no commitment to source their post-pilot renewable natural gas supply locally, the likelihood of which remains low if production costs from existing out-of-state projects remain price competitive.

In Minnesota, there is already widespread interest in anaerobic digestion development in the private and public sector.[23,24] Intervenors have highlighted the versatility of anaerobic digester systems for their ability to produce renewable energy in the form of biogas which can then be used to produce various forms of energy, including but certainly not limited to renewable natural gas.[25,26] The production of renewable natural gas for transportation fuel is the primary market driver today. Contrary to the claim that digester projects that produce renewable natural gas for vehicle fuels are perceived as risky,[27] we understand that transportation-specific biogas projects are a viable, financially attractive investment for financiers, investors, and developers.[28, 29]

---

[17] Fresh Energy. 2019. *Beneficial electrification and our clean energy future*. Link
[18] Initial comments. Bioeconomy Coalition of Minnesota. Link
[19] Initial comments. Energy Vision. Link
[20] Initial comments. Partnership on Waste and Energy. Link
[21] Reply comments. Coalition for Renewable Natural Gas. Link
[22] *Id.*
[23] Initial comments. Energy Vision. Link
[24] Initial comments. Partnership on Waste and Energy. Link
[25] *Id.*
[26] Initial comments. Bioeconomy Coalition of Minnesota. Link
[27] Reply comments. Coalition for Renewable Natural Gas. Link
[28] Biofuels Digest. 2018. *The was then, This is NOW! or The New Economics of Biogas Project*. Link
[29] Energy News Network. 2019. *Analysis: Why utilities aren't doing more with renewable natural gas*. Link

There is also increased interest and advocacy in compelling the Environmental Protection Agency to implement an existing program within the Renewable Fuel Standard that would allow electricity generated from renewable sources like biogas to generate credits.[30,31] Through this eRIN credit pathway, renewable electricity generated from biogas would become price competitive with vehicle-specific RIN and LCFS credits. Implementation of this biogas-to-electricity pathway is poised to further increase investment in and development of anaerobic digester facilities in Minnesota.

Emerging environmental tracking systems and carbon intensity metrics for non-vehicle renewable natural gas fuel pathways must be piloted and scaled carefully and would better advantage non-distribution applications.

We appreciate that systems for tracking and trading environmental attributes, renewable energy credits, and carbon intensity metrics associated with new applications for biogas are in development and likely scalable in the near future.[32,33] We applaud efforts to develop these tracking systems. However, implementing new systems always requires trouble shooting and time to work out inevitable procedural issues. We urge the appropriate allocation of resources to robustly implement verification systems in order to avoid incidents of credit fraud and inaccurate emissions accounting.[34]

We continue to advocate for the utilization of biogas that has been captured from diverted waste streams in a manner that maximizes the decarbonization potential across the agriculture, waste, building, transportation, and industrial sectors in Minnesota. Renewable electricity that powers electric vehicles and/or provides dispatchable load are two such applications. Utilizing small volumes of renewable natural gas for industrial processes that prove particularly difficult and expensive to decarbonize is another. District energy systems powered by biogas produced from local waste streams that are digested onsite is yet another.

We agree with CenterPoint Energy that we have an imperative to decarbonize Minnesota's building sector. However, the Company's proposed pilot program is limited by the economics, scalability, and decarbonization potential of distributed renewable natural gas. We maintain that investing limited resources in whole-building electrification is our lowest cost, highest impact strategy to draw down significant greenhouse gas emissions in Minnesota's building sector. Exploring both of these decarbonization pathways simultaneously risks driving up

[30] 40 CFR §80.1426(f)(11)(i). Link
[31] RFS Power Coalition. Accessed 2-2019. *Across the country, Americans are calling on the EPA to process RFS applications for electricity*. Link
[32] Reply comments. Coalition for Renewable Natural Gas. Link
[33] Initial comments. Center for Resource Solutions. Link
[34] *Id.*

consumer costs and ultimately slowing the pace of greenhouse gas mitigation across the state. We respectfully ask that the Commission consider the tradeoffs between these decarbonization pathways when evaluating the proposed pilot program.

Conclusion

For the above reasons and the reasons we outlined in our initial comments,[35] Fresh Energy, Minnesota Center for Environmental Advocacy, and the Sierra Club continue to not recommend approval of CenterPoint's petition as filed.

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

/s/ Laurie Williams
Sierra Club
Campaign Representative
1536 Wynkoop Street, Suite 200
Denver, CO 80202
303.454.3358
laurie.williams@sierraclub.org

[35] Initial comments. Fresh Energy, Minnesota Center for Environmental Advocacy, Sierra Club. Link