MINNESOTA
PUBLIC UTILITIES COMMISSION

Staff Briefing Papers

Meeting Date	November 19, 2020		Agenda Item 6**
Company	CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Minnesota Gas		
Docket No.	**G-008/M-20-434**		
	In the Matter of the Petition by CenterPoint Energy (CPE) to Introduce a Renewable Natural Gas Interconnection Tariff		
Issue	Should the Commission approve CPE's Renewable Natural Gas Interconnection Tariff?		
Staff	Ganesh Krishnan	ganesh.krishnan@state.mn.us	651-201-2215
	Andrew Larson	andrew.m.larson@state.mn.us	651-201-2259

✓ **Relevant Documents**	**Date**
Initial Filing	
CenterPoint Energy (CPE)	April 23, 2020
Comments	
Center for Energy and Environment	June 25, 2020
Fresh Energy, MCEA, Sierra Club	June 25, 2020
Partnership on Waste and Energy	June 25, 2020
Amp Americas	May 27, 2020
American Biogas	June 12, 2020
Bioeconomy Coalition of Minnesota	June 25, 2020

✓ Relevant Documents	Date
Coalition for Renewable Natural Gas	June 25, 2020
Laborers International Union of North America (LIUNA) – Laborers District Council of Minnesota and North Dakota	June 25, 2020
Department of Commerce, Division of Energy Resources (DOC-DER)3	June 25, 2020
Reply Comments	
CPE	July 10, 2020
Partnership on Waste and Energy	July 10, 2020
American Biogas	July 10, 2020
Coalition for Renewable Natural Gas	July 9, 2020
LIUNA	July 10, 2020
Supplemental Comments	
DOC-DER	September 22, 2020
CPE	September 23, 2020
Intervenor General Comments	
REV LNG, LLC	May 14, 2020
BioEnergy DevCo	June 22, 2020
DMT Clear Gas Solutions	June 12, 2020
Quantalux LLC	June 12, 2020
Organic Waste Systems, Inc.	June 15, 2020
Waste Management	June 16, 2020
Bluesource	June 17, 2020
Sacyr Environment USA, LLC	June 23, 2020
Mississippi Watershed Management	June 23, 2020
Agricultural Utilization Research Institute (AURI)	June 24, 2020
ID8 RNG Development (ID8 Energy Group)	June 24, 2020
Energy Vision	July 6, 2020
Yorth, Inc.	July 8, 2020

Table of Contents

I. Statement of the Issue

Should the Commission approve CPE's Renewable Natural Gas Interconnection Tariff?

A. CPE's Petition[1]

On April 23, 2020, CPE filed a petition to offer a Renewable Natural Gas ("RNG") interconnection service.

The proposed interconnection service would allow RNG producers to interconnect with CPE's distribution system and transport their RNG to a buyer who is not connected to CPE's distribution system, or to a customer on CPE's system who wants to purchase RNG.

CPE stated that it is proposing this service "to meet demand from RNG producers who wish to sell their product within existing and developing national markets."

CPE's petition sets forth the terms and conditions of the tariffed service, the process by which an RNG producer will connect to the Company's system, the gas quality standards the RNG producer must meet, and the proposed rates to be charged for the interconnection service.

CPE assured that the proposed interconnection service would not result in increased costs for existing customers as the proposed rates for interconnect customers were designed to fully cover the Company's costs for offering the tariffed interconnection service.

CPE indicated that it anticipated offering this service no sooner than the spring of 2021.

In response to the Department's interrogatory, CPE acknowledged that it will not own, design, or operate RNG facilities or market RNG under the proposed interconnection tariff.

CPE anticipates that much of the RNG put into its distribution system will be sold to buyers who would use it as vehicle fuel to generate credits in the national RNG credit market.

As a future step, CPE expects to request Commission approval of an "amended green tariff." If approved, CPE would offer to deliver RNG to sales customers who opt to purchase RNG as part of their natural gas supply. CPE stated that it intends to file a petition for a program similar to the program it proposed in Docket 18-547 after it has identified a local source of RNG supply.

CPE proposed a pilot program offering natural gas from RNG sources which customers could purchase at an additional charge in Docket No. G-008/M-18-547 (Renewable Natural Gas Pilot

[1] CPE's Initial Filing contains seven exhibits: Exhibit A: Interconnection Feasibility Study Agreement; Exhibit B: RNG Interconnection Agreement; Exhibit C: RNG Quality Standards; Exhibit D: RNG Interconnection Tariff; Exhibit E: Cost Basis for the RNG Rates; Exhibit F: CIAC Example; Exhibit G: Other Tariff Changes.

Program). The Commission denied the Petition without prejudice because "there remain[ed] many unanswered questions about the proposed pilot, including how the RNG will be tracked and verified, whether local sources of RNG can be utilized, and how the scale of the program could grow beyond the pilot level."

B. Brief Description of Intervening Parties

In addition to the state agencies (DOC-DER and the OAG), and the coalition of Fresh Energy, Minnesota Center For Environmental Advocacy, and the Sierra Club, which have appeared before the Commission, no less than 20 other intervenors are participating in this docket and have filed general or substantive comments.

In the following, Staff provides a brief background of these 20 parties.

American Biogas Council[2] claims it is the only national trade association representing the entire biogas industry in the U.S. It claims to represent over 200 companies in all parts of the biogas supply chain which are dedicated to maximizing the production and use of biogas from organic waste. The Council indicates that Minnesota ranks 8th out of 50 states for its biogas production potential.

Amp Americas[3] notes that its mission is to build RNG projects and develop commercial models to convert farm, industrial and municipal waste into sustainable sources of transportation fuel.

Agricultural Utilization Research Institute[4] (AURI) is a nonprofit public corporation established by legislative action. Its mission is to foster long-term economic benefit for Minnesota through value-added agricultural products. AURI helps develop new uses for agricultural products through science and technology and partner with businesses and entrepreneurs to bring ideas to reality.

The Bioeconomy Coalition of Minnesota[5] (BCM) is facilitated by the Great Plains Institute[6] and "brings everyone involved in the Bioeconomy together to collaborate and grow the industry, along the entire value chain from research and development to production and use." BCM indicated that its membership includes industry, forestry, agriculture, government entities, utility sector, and NGOs. Developing anaerobic digestion and RNG technology in Minnesota is BCM's priority.

---

[2] https://americanbiogascouncil.org/

[3] http://www.ampamericas.com/about/story/

[4] https://www.auri.org/about-auri/

[5] https://mnbioeconomy.org/about-us/

[6] www.betterenergy.org

BioEnergy Devco[7] uses anaerobic digestion to recycle organics once destined for incineration or already crowded landfills. This process creates renewable natural gas. BioEnergy helps finance, develop, construct, and operate anaerobic digesters that generate renewable natural gas.

Bluesource[8] specializes in renewable natural gas and carbon offset development in the U.S. and Canada. It represents 160 compressed natural gas (CNG) stations throughout the U.S. and pair gas to those stations.

Coalition for Renewable Natural Gas[9] (RNG Coalition) serves as the public policy advocate and education platform for the Renewable Natural Gas industry in North America. RNG Coalition's membership is diverse and includes, among many others, waste collection, waste management & recycling companies, renewable energy/gas developers.

DMT Clear Gas Solutions[10] specializes in RNG, biogas upgrading, gas desulfurization and thermal hydrolysis. It has an RNG project in development in MN that will convert 2000 standard cubic feet per minute of biogas deriving from dairy manure, which, DMT claims, is equivalent to removing 7,180 passenger vehicles driven in one year or 3.7 million gallons of gasoline consumed.

Energy Vision[11] is an environmental organization with the primary focus on preventing methane emissions from food and farm waste.

ID8 Energy Group[12] is a renewable thermal energy development company which builds, owns and operates assets. ID8 is currently working with a family-owned dairy farm outside of Wyanett Township, Minnesota to help recycle its waste into renewable natural gas.

Laborers' International Union of North America (LIUNA)[13] represents 12,000 unionized construction workers, including those involved in building and maintaining natural gas pipelines.

Mississippi Watershed Management[14] works to protect and improve water quality, habitat and natural resources in an urban watershed that drains directly into the Mississippi River.

---

[7] https://bioenergydevco.com/

[8] http://www.bluesource.com/

[9] https://www.rngcoalition.com/

[10] https://www.dmt-cgs.com/

[11] https://energy-vision.org/

[12] https://id8energy.com/

[13] https://www.liuna.org/

[14] https://www.mwmo.org/about/about-the-mwmo/

Organic Waste Systems, Inc[15] (OWS) provides large scale facilities for the conversion of organic waste from both municipal solid waste and agricultural residues to renewable natural gas. OWS claims that it has developed innovative and patented designs for biogas plants, with a pretreatment, digester concept and post-treatment adapted to each type of feedstock.

Partnership on Waste and Energy[16] manages more than 450,000 tons of waste material per year. Trash is processed to recover recyclable metals and make fuel for producing electricity. Through this system, recovery of resources is maximized and diverting as much as possible from landfills. In 2018, over 90% of waste in the two counties was diverted from landfills.

Quantalux LLC[17] offers technical assessments for sustainable bioenergy systems. It specializes in optimization of organic co-feedstocks, financial modeling of anaerobic digester facilities; feasibility studies for renewable natural gas upgrades; and technical training for operators of anaerobic digesters. Quantalux also builds and tests prototypes.

REV LNG[18] notes that it has become one of the largest developers of RNG in the U.S. over the last few years and that it is currently in negotiations with more than a dozen MN dairy. REV claims it is extremely active in WI, MN and SD. REV notes that LNG produced from geologic natural gas is already a clean, low-carbon option, but RNG takes it a step further. REV's work with RNG includes the development of on-farm systems that produce biogas and RNG from dairy and other agricultural operations.

Sacyr Environment USA LLC is part of the Sacyr Group, a publicly traded global infrastructure and services company with a presence in 30 countries. Over the past 2 years Sacyr has been following the Organics Diversion Anaerobic Digestion project in Hennepin County, and has been investing resources to develop the project.

Waste Management (WM)[19] provides collection of waste, landfill, recycling, and other services to approximately 20 million residential customers, including over two million commercial

---

[15] https://www.ows.be/

[16] http://morevaluelesstrash.com/partnership-meetings/#:~:text=The%20Chair%20of%20the%20Partnership%20on%20Waste%20and,compliance%20with%20Minnesota%20Statute%2013D.021%20and%2013D.04%20Subd.

[17] http://www.quantalux.com/

[18] https://revlng.com/

[19] https://www.wm.com/us/en/cpn/wm-services?cmp=PS_Bing_Brand_Exact_US_382388815&msclkid=d8f37eb8398a107776a7212877b5c0ee&utm_source=bing&utm_medium=cpc&utm_campaign=WM%20-%20Brand%20-%20Exact%20-%20US&utm_term=waste%20management&utm_content=Waste%20-%20Management&gclid=CMKKgPH6xewCFZqPxQId6EwCuQ&gclsrc=ds

customers throughout the United States and Canada. WM also produces transportation fuel, making compressed and liquefied renewable natural gas (RNG) from landfill biogas.

The Yorth Group[20] is a Minneapolis based consulting firm which helps local governments and businesses realize sustainability goals related to the circular economy. Key to this approach is reusing "waste" to displace the need for constant input of new resources into the system.

C. Parties' Overall Positions

The Department has reviewed CPE's petition strictly as an interconnections service and recommended approval subject to several modifications.

Several RNG producers and potential interconnection customers have raised issues with CPE's proposed rates for interconnection and argued for relaxation of quality of service standards regulating the transport of RNG. In particular, the RNG producers have called attention to the proposed quality standards governing the constituents oxygen, heating value, and siloxane in the transport of RNG as too stringent.

Center for Energy and Environment (CEE), an environmental advocate, has encouraged the Commission to approve CPE's Petition. Although CEE is supportive of CPE's interconnection tariff, it raised several reservations about RNG as an alternative energy source. CEE also pointed to the need for additional work to accurately quantify and verify the greenhouse gas emissions of renewable natural gas from various sources. A more accurate accounting of the benefits of greenhouse gas emissions of renewable natural gas would allow Minnesota's regulators, stakeholders, and customers to make more informed choices about investments in this resource. This accounting and verification work, according to CEE, could take place through this docket or outside of this docket.

Fresh Energy (FE) does not recommend approval of the petition as filed. FE has indicated that CPE's petition should not be viewed merely as an interconnection service. Fresh Energy has argued that the instant petition should be reviewed in the expectation that CPE would soon file a tariff for the sale of RNG to its own customers. FE warns that although biogas and RNG are often described as clean and low-carbon natural gas alternatives, if they are not carefully managed, these fuels risk posing serious climate, environmental, and health risks. FE urges the Commission to evaluate CPE's RNG interconnection tariff carefully, especially as the proposed tariff pertains to the purported benefits to local producers and Minnesota ratepayers. Among other requirements, FE has recommended that the Commission include a life-cycle carbon accounting of biogas production in the Interconnection Feasibility Study. In particular, FE asked that producers determined to be climate intensive be not interconnected with CPE's distribution system.

[20] https://yorthgroup.com/

II. CPE's 2018 Request for a Renewable Natural Gas Pilot Program[21]

The interconnection service and tariff proposed by CPE in the instant docket is different from the petition filed by CPE in Docket No. G-008/M-18-547. In that docket, CPE proposed to offer its end-use customers the option of offsetting a portion of their natural gas consumption with RNG for an additional charge.[22]

However, the issues in the instant docket (20-434), as the Department noted, are:

> related to the "interconnection tariff" that the Company has proposed. As such, issues on developing and introducing a "voluntary green tariff" or a future green tariff proposal would need to be decided in a future docket. Thus, the merits of the Company's future green tariff proposal and development are not ripe for discussion until the Company files its proposal.

CPE's proposal in docket 18-547 was a five-year pilot program. The price that CPE proposed to charge to participating customers included the cost of the RNG and a program charge consisting of administrative and marketing costs for the proposed pilot.

In that docket, CPE proposed to contract with gas suppliers to obtain RNG from producers outside of Minnesota; the Company indicated that there were "operational and other challenges" of sourcing directly from producers in Minnesota that precluded a local contract prior to implementation of the proposed pilot. In its reply comments in that docket, CPE indicated that it is developing a tariff that would specify how producers of RNG in Minnesota could interconnect to CPE's system in order to access local and national RNG markets.

The following intervenors supported CPE's petition in 18-547: City of Minneapolis; Bioeconomy Coalition of Minnesota; Center for Resources Solutions; Coalition for Renewable Natural Gas; Energy Vision; Partnership on Waste and Energy; American Biogas Council; and Mississippi Watershed Management Organization.

The following parties opposed CPE's petition in 18-547: the Department; OAG; and Fresh Energy; Minnesota Center for Environmental Advocacy; and Sierra Club. The main criticisms included the cost of the proposed pilot and the lack of well-developed verification and tracking systems for non-vehicle uses of RNG.

---

[21] In the Matter of a Petition by CenterPoint Energy to Introduce a Renewable Natural Gas Pilot Program, Docket No. G-008/M-18-547

[22] The following intervenors in the instant docket also intervened in 18-547: Bioeconomy Coalition of Minnesota, Coalition for Renewable Natural Gas, Energy Vision, Fresh Energy, Minnesota Center for Environmental Advocacy, and Sierra Club, and Partnership on Waste and Energy, American Biogas Council, and Mississippi Watershed Management Organization.

In that docket, Fresh Energy filed comments noting that "Minnesota has no policy framework in place to evaluate and verify the carbon intensity of renewable natural gas feedstocks."

The Commission's August 29, 2019 Order Denying Petition Without Prejudice, noted that it "appreciates CenterPoint's efforts to explore RNG's potential to meet customer demand for more sustainable options." The August 29, 2019 Order then stated that "there remain many unanswered questions about the proposed pilot, including how the RNG will be tracked and verified, whether local sources of RNG can be utilized, and how the scale of the program could grow beyond the pilot level." The Commission denied CPE's petition without prejudice.

III. CPE's Petition (in this docket)

A. RNG Interconnection

CPE's petition provides for RNG producers within the State of Minnesota to interconnect with CPE's distribution system and transport RNG to end-use customers.

CPE indicated that it has received more than a dozen inquiries from RNG producers regarding interconnection with its Minnesota distribution system and that it is currently in discussions with project developers who are planning to produce RNG from food waste, wastewater, or agricultural waste and wish to connect to CPE's distribution system to deliver RNG to the market.

CPE's RNG interconnection service filing sets forth the process by which an RNG producer will connect to the Company's system, the gas quality standards the RNG producer must meet, and the terms and conditions of the tariffed service, including the proposed rates for the interconnection service.

B. Interconnection Feasibility Study Agreement (Exhibit A, Initial Petition)

The petition notes that when CPE receives an inquiry for interconnection, CPE would request basic details such as location and an estimate of the quantity of RNG to be produced at the site. Using such basic information, CPE will conduct an initial engineering review of the project to determine whether interconnection is feasible at the proposed site. If in this initial review, the proposed volumes are in excess of the Company's load, the project will be deemed infeasible because there is no space on the system to accept additional gas at that site.

If the initial review indicates that interconnection is feasible, the applicant may request a full Interconnection Feasibility Study, by remitting a fee of $7,500,[23] to determine the actual potential of the proposed RNG interconnection. The purpose of this feasibility study is to confirm project feasibility and project cost and construction-timeline estimates.

[23] The fee offsets the costs incurred by CPE to complete the feasibility study.

Through the Interconnection Feasibility Study Agreement, CPE will confirm interconnection feasibility and provide the applicant with an estimate for a contribution-in-aid-of-construction ("CIAC") that would be required to proceed with the interconnection process.

CPE warns that not all interconnection requests may be feasible. Some producers of RNG may be far away from CPE's distribution system and the project will require too much piping and infrastructure to be feasible, or there may be system limitations (for example, the downstream gas load is less than the expected output of the RNG producer) which preclude interconnect at a nearby distribution system point.

The interconnection tariff specifically states that if in the opinion of CPE, interconnection is not economically feasible, CPE will provide an estimate of the cost of the project and move forward with interconnection only if the applicant pays a non-refundable contribution-in-aid-of-construction to CPE for the portion of the capital expenditure and annual operating costs not justified by the annual revenue.

C. RNG Interconnection Agreement (Exhibit B, Initial Petition)

The Interconnection Agreement describes the applicant's obligations and requirements to receive service under the interconnect tariff, including the ongoing operational requirements, the obligation to deliver certain volumes, and the obligation to satisfy the Company's gas quality standards so that the RNG the Company receives is safe and compatible with the other natural gas on its system. The Interconnection Agreement sets forth the terms and conditions under which CenterPoint Energy agrees to provide facilities for Interconnect Service from the Customer's pipeline facilities in Minnesota to CPE's existing utility system.

D. RNG Quality Standards (Exhibit C of the Initial Petition)

CPE indicated that the quality of the renewable natural gas delivered to its distribution system is an important consideration in the offering of this interconnection service.

(Staff Note: According to SoCalGas, "RNG quality standards cover two major aspects: gas constituent limits (composition-based specifications) and gas interchangeability specifications (performance-based quality specifications). Gas constituent limits restrict the concentration of gas impurities to protect pipeline integrity and ensure safe and proper combustion in end-user equipment. The interchangeability specifications address end- user combustion performance, ensuring safe and proper combustion for customers.")[24]

While CPE has traditionally received natural gas delivered through the interstate pipelines from suppliers located throughout the U.S. and Canada, the proposed interconnection service envisages a new source for delivery, and the Company has designed quality of service standards

[24] Adapted from SoCalGas, a Sempra Energy utility, Renewable Natural Gas Quality Standards information sheet. (https://www.socalgas.com/1443740736978/gas-quality-standards-one-sheet.pdf)

for accepting RNG into its system.[25] CPE's main objective in framing the quality of service standards is that the RNG does not impact CPE's ability to deliver safe and reliable service.

A recent report, "Survey of Renewable Natural Gas in the United States," University of Delaware, June 2020, notes that biogas must be processed further and satisfy the natural gas utility pipeline specifications before it could be injected into the natural gas pipeline network.

In particular, the processing of RNG involves removal of harmful constituents (such as siloxanes, hydrogen sulfide, ammonia, and other volatile organic compounds) and upgrading to increase the energy content of the fuel to the level of conventional natural gas, which is 1,000 British Thermal Units (BTUs) per cubic feet of gas at standard temperature and pressure. After cleaning, the resulting biogas is essentially pure methane and can be used interchangeably with conventional natural gas in any of its ends uses.

CPE noted that the proposed interconnection service will provide a new avenue for deliveries, and the Company must ensure that accepting RNG into its system from local producers will not impact its ability to deliver safe and reliable service to its customers. CPE stated that it has proposed a set of gas quality specifications for RNG that will ensure that the RNG entering the distribution network is safe for use in customer appliances and in the Company's facilities.

The Gas Quality Standards proposed by CPE also detail the testing and monitoring procedures CPE will require to ensure RNG suppliers are continually meeting these gas quality specifications. These procedures require the interconnection applicant and CPE to test for constituents of concern over a two-to-four- week period prior to interconnection, and the Company will not permit interconnection until the producer's RNG meets gas quality requirements. After interconnection, CPE will require the producer to periodically test the quality of the RNG to ensure that it is continuing to meet all gas quality standards. CPE will also continually monitor the quality of the gas as it flows into the distribution system.

CPE indicated that the proposed quality standards were based in large part on the standards adopted by the California Public Utilities Commission ("CPUC") and that the California standards are appropriate for Minnesota. While the proposed standards are largely the same as the CPUC's, they have been simplified in some respects. For example, CPE stated that the Wobbe Index[26] varies throughout the U.S. and is generally higher in Minnesota than in California.

[25] CPE indicated that the Minnesota Office of Pipeline Safety focuses on pipelines themselves and does not have any gas quality standards and requirements.

[26] The Wobbe Index is the ratio of a fuel's heating value to the square root of its relative density. CPE indicated that its proposed Wobbe Index range for RNG will ensure that the RNG received into CPE's distribution system is similar in quality (heating value) to other gas on CPE's distribution system in Minnesota.

CPE notes that non-conformance with the 12 quality of service general specifications[27] may result in "shut-in" (refuse receipt of) of an RNG interconnection customer. However, CPE's tariff allows forbearance: "CenterPoint Energy may allow deviations from these standards on a case-by-case basis in its discretion."

Staff notes the following specifications in particular because certain parties have argued for relaxation of these standards:

> Heating Value: The minimum higher heating value is nine hundred and seventy-five (975) Btu (gross) per standard cubic foot on a dry basis. The maximum heating value is one thousand (1100) Btu (gross) per standard cubic foot on a dry basis.
>
> Oxygen: The RNG shall not have an oxygen content in excess of two-tenths of one percent (0.2%) by volume, and customer will make every reasonable effort to keep the gas free of oxygen.
>
> Delivery Temperature: The RNG delivery temperature is not to be below 50 degrees F or above 105 degrees F.

The Gas Quality Standards also detail the testing and monitoring procedures CPE will require to ensure RNG suppliers are meeting the gas quality specifications. These procedures require the applicant and Company to test for constituents of concern over a two-to-four-week period prior to interconnection, and the Company will not permit interconnection until the producer's RNG meets gas quality requirements.

E. RNG Interconnection Tariff (Exhibit D, Initial Filing)

After the interconnection requirements are met, CPE will provide transport service to the interconnect customer pursuant to the terms and conditions of the RNG Interconnect Service Tariff.

CPE proposes to offer service to RNG producers on generally the same terms that it provides to existing transportation customers (with the added requirements to ensure the gas standards are being met and that the Company can accept the quantities of RNG being produced).

However, after interconnecting a few customers under this tariff, CPE expects to reevaluate the pricing structure to determine whether the customers in the interconnect class are covering their fixed and variable costs.

Under the interconnection tariff, RNG customers that deliver natural gas into CPE's system should do so for a minimum of one year pursuant to the following rate schedule:

---

[27] Section VI, Proposed Original Page 45, Exhibit C: RNG Quality Standards (Initial Petition).

Monthly Basic Charge: $7,500.00
Per Therm Rate: $0.15748[28]

These charges are in addition to the $7,500 feasibility study fee and any applicable CIAC.

CPE provided cost support for the proposed rates in Exhibit E of the initial Petition.

CPE based the proposed rates for RNG producers on existing rates for Large Volume Dual Fuel Transportation Service. CPE took the investments required to serve this customer class and added in the additional operations and maintenance ("O&M") expenses of providing interconnection service to derive the proposed rates.

The monthly charge is based on the annual estimated incremental O&M expenses of $74,639 (or $6,220 monthly) to which CPE added the Large Interruptible Monthly Customer Charge of $1,000 and rounded it up to $7,500 per month.

The per therm receipt charge is based on the costs of additional equipment that CPE will install to serve RNG interconnection customers. CPE estimated the total project costs at $857,400 (Table 3 of Exhibit E in the initial petition). The annual cost of service which includes the return on capital costs, depreciation expense, property tax, income tax, and O&M expense is then calculated as shown in Exhibit E of the initial petition. The fixed charge revenue ($90,000) is then subtracted from this annual cost of service ($223,210) and then divided by the estimated annual production (1,204,200 therms) to derive the cost/therm of $0.1106 to transport RNG.

F. No Harm to Existing Customers

CPE claims that its existing customers will not be harmed by the proposed interconnection tariff.

First, CPE maintains that its customers will see no difference in their natural gas service or operation of their gas appliances because the gas quality specifications that it has proposed are designed to ensure that the RNG entering CPE's distribution system is interchangeable with the conventional natural gas that it provides.

Second, CPE stated that the proposed rates for interconnection are fully compensatory and, thus, no existing customer will subsidize the interconnection process.

G. Other Tariff Changes

[28] CPE's initial proposed per therm rate was $0.1500. CPE revised this rate upwards to $0.15748 in response to the Department's recommendation that CPE be required to charge RNG interconnection customers the same non-gas rate as charged to interruptible transportation customers, less the Conservation Cost Recovery Charge (CCRC).

In addition to the proposed RNG Interconnect Service, CPE has also proposed several minor changes to other provisions of the tariff.

These changes are set forth in Exhibit G (Initial Petition) and are meant to clarify that certain tariff provisions will apply to customers taking service under the RNG Interconnect Service Tariff. For example, CPE made the following changes:

- modified Table of Contents in Section 1 by adding proposed new tariff pages to table of contents;
- modified Technical terms and Abbreviations in section IV, page 1 and clarified that terms "applicant" and "customer" may include RNG interconnect service customers;
- modified table of Contents in Section V, page ii by adding proposed new tariff pages to table of contents; and
- modified Credit Policy Rider Section V, page 26 by making the rider applicable to RNG interconnect service customers.

Staff Note: The Department reviewed these other changes and concluded that they are reasonable. No other party commented on these changes. These changes are not discussed further in this briefing paper but are included in the Decision Alternatives.

IV. Parties' Comments

A. Department of Commerce

The Department noted that the issues in the current docket are related to the proposed interconnection tariff.

As such, issues on developing and introducing a "voluntary green tariff" or a future green natural gas tariff proposal will need to be decided in a future docket and the merits of a future green natural gas tariff are not ripe for discussion until CPE has filed its proposal.

As for the interconnection tariff, the Department noted several concerns regarding CPE's petition.

1. Interconnection Rates

Regarding the cost support for the proposed interconnection service rates, the Department investigated in-depth CPE's cost of providing service. The Department concluded that "actual costs will not be known until the full detailed engineering review is done when the Interconnection Feasibility Agreement is completed." However, the Department noted that it is now known that RNG producers/developers can be expected to use CPE's distribution system. Therefore, they should be charged the same non-gas rate as charged to interruptible transportation customers, less the Conservation Cost Recovery Charge (CCRC). The Department acknowledged that this recommendation will increase the per-therm charge from $0.15000 per therm to $0.15748 per therm.[29]

2. Tracking Costs and Quantity

The Department recommended that the Commission require CPE to track all of the actual costs separately for each and all RNG producer and/or developer that it interconnects with and the total RNG received for each RNG producer and/or developer (in Dekatherms or Dths).

3. Harm to Existing Customers

(a) Up-Front Fees

Regarding CPE's claim that its existing customers will not be subject to increased costs, the Department recommended that the Company require the RNG producers and/or developers to pay the entire CIAC upfront.

(b) Exit Fees

In lieu of paying the entire CIAC upfront, the Department suggested the implementation of exit fees from RNG producers/developers, if they leave CPE's system before they pay for the costs of installation, operation and maintenance of the interconnection facilities.

(c) Rebates/Incentives

The Department stated that any rebates and/or incentives used by the Company in its interconnection process should not be allowed to be charged to customers.

The Department stated that while the Company has not mentioned in its Petition whether it would use any incentives and/or rebates to induce RNG producers and/or developers to

[29] Large Interruptible Per Therm Delivery Rate ($0.07048) less CCRC ($0.02362) plus Proposed RNG Producer Per Therm Receipt Rate ($0.11062) equals Total Calculated RNG Producer Per Therm Receipt Rate ($0.15748). See CPE's Initial Filing, Exhibit E, page 5 of 5.

interconnect with their distribution system, if the Company does do so, such costs should be deemed shareholder expenses.

This recommendation, the Department stated, would ensure that its proposal would not result in increased costs for existing customers – and that the rates proposed for interconnect customers are designed to fully recover the Company's costs for offering the interconnection service.

4. Quality Standards

Noting that there is no clear statement in the quality standards regarding acceptance of RNG from a hazardous source such as a hazardous waste landfill, the Department recommended that CPE specify explicitly the following requirements:

> Gas from Hazardous Waste Landfills
>
> i. RNG sourced from Hazardous Waste Landfills will not be knowingly purchased, accepted into or transported on the pipeline system.
>
> ii. RNG producer/supplier and/or developer must certify and provide documentation or other suitable proof that the biogas/RNG source feedstock was not derived or collected from a hazardous waste landfill.

The Department concluded that it is CPE's burden to ensure the integrity, safety, and reliability of its system.

5. Affiliated Transactions

The Department stated that it has learned through discovery that CPE has two affiliates:

(1) CenterPoint Energy Intrastate Pipelines (CEIP) which builds and operates interconnections, "generally between interstate pipelines and large customers, but they are also capable of building interconnections to RNG facilities for receipt of RNG supply; and

(2) Energy Systems Group (ESG) which was a subsidiary of Vectren Corporation and became an affiliate of the Company after the CenterPoint Energy/Vectren merger. According to CPE, ESG builds, operates and in a few cases owns biogas facilities and has been involved in a few projects that upgrade RNG for pipeline injection.

The Department noted that CPE indicated to the Department that it will "inform the Department and Public Utilities Commission and follow all applicable affiliate-interest rules and requirements" if the Company ever does decide to contract with any of its affiliates on an RNG project.

The Department recommended that CPE seek prior approval rather than simply "inform" the Commission of any anticipated use of its affiliates on RNG projects.

Specifically, the Department recommended that the Commission require CPE to

> . . . seek prior approval from the Commission prior to any such transactions and explain how the above transaction(s) would comply with Minn. R.7825.1900 – 7825.2300 and Minn. Stat. §216B.48 and the relevance of these regulations to all applicable projects.

6. Extension of Service

The Department expressed concern, although the exact nature of this concern was not explained, that the pipe and/or related equipment deployed for the interconnect customer could also be used to extend service to other customers in the proximate area.

Through discovery the Department learned that while the Company does not plan to do so at this time, in the future, the Company could add other RNG producers and/or developers and it could also add customers that would be considered residential, small commercial, and so on.

The Department recommends that the Company be required to track and identify all of the customers it adds and their associated costs and revenues using the FERC accounts, sub accounts, and/or FERC account equivalents and CPE charted accounts and/or sub-accounts from its internal accounting system and to provide a discussion and analysis in its next general rate case.

B. Fresh Energy, Minnesota Center for Environmental Advocacy, and the Sierra Club (collectively, Fresh Energy or FE)

FE evaluated CPE's proposed RNG interconnection tariff in the expectation that a green tariff, offering RNG to customers who opt to purchase RNG as part of their natural gas supply, will soon follow. FE has urged the Commission and other stakeholders to consider how best to grow biogas and RNG markets in Minnesota to achieve the greatest carbon mitigation, environmental, and consumer benefits possible.

FE warns that although biogas and RNG are often described as ultra-clean and ultra-low-carbon natural gas alternatives, if they are not carefully managed, these fuels risk posing serious climate, environmental, and health risks. FE urges 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.

Therefore, FE notes that it is critical to consider the portfolio of end-uses now served by fossil fuels and the suite of fuels and technologies (e.g. biogas, RNG, hydrogen, electrification) that will most efficiently and effectively decarbonize those end uses.

FE adds that it is also important to consider the environmental and health ramifications of alternative fuels which 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.

Although FE believes biogas and RNG (biogas that has been upgraded to meet the standard of pipeline grade gas by removing impurities, water, and carbon dioxide) could play important roles in decarbonizing Minnesota's economy, FE warns that there is a growing body of evidence that demonstrates that low carbon fuels should be used sparingly and strategically to maximize carbon mitigation, environmental, and consumer benefits.

FE raised the following concerns:

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.

FE claims that the proposed 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 CPE's system. FE asks that CPE'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. FE also asks that CPE establish 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.

FE claims that methane leakage across natural gas transmission and distribution systems significantly lowers the climate value of low carbon fuels like biogas and RNG. FE claims that current estimates of methane leakage across U.S. natural gas distribution systems range from 0.8% to greater than 2.5%, and total methane leakage across pipeline mains in local distribution systems is now five times greater than current EPA greenhouse gas inventory estimates.

In evaluating this proposed RNG Interconnection Tariff and the corresponding development of a local marketplace for biogas and/or RNG, FE urges the Commission to carefully consider the best use cases for the home-grown low carbon fuels. For example, industrial end-uses with high 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 clean up requirements as proposed lack rigor.

FE notes that 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 an RNG program for Minnesota, when the Commission, utilities, and stakeholders are still learning about the risks and opportunities associated with biogas and RNG.

FE asks that the Commission require CPE to periodically reevaluate gas quality standards and recommended that the Commission require the Company to update its standards whenever the relevant standards are updated in California.

FE objects to the proposed provision in the interconnection tariff that indicates the Company "may allow deviations" from gas quality standards "on a case-by-case basis."[30] FE recommended the Commission disapprove this provision. FE requests that CPE be required to maintain gas quality standards at all times.

FE notes that regardless of source, gas combustion in homes poses health risks. FE maintains that studies have shown that indoor air pollution from gas stoves can exceed standards for outdoor air pollution. FE admits that while the proposed interconnection tariff is not intended to improve public health, FE urges the Commission to keep these concerns in mind when considering the path forward to a cleaner energy future.

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

FE argues that CPE's aim of developing a marketplace for RNG that relies on interconnection to its pipeline creates a number of barriers for potential local producers. In particular, FE argues that the charge for interconnection is high and would likely be cost-prohibitive to small producers. FE maintains that the "high interconnection fees" should be lowered to make the marketplace more accessible to local producers of all sizes.

Further, geography and system limitations may preclude participation by local producers. For example, dairies, poultry and swine farms, and landfills across Minnesota are often sited far from potential injection sites. This presents a cost barrier to extending utility infrastructure to connect with local renewable natural gas producers.

Another barrier cited by FE 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. The EPA suggests that the production of RNG is economically viable at a size of 500 cows or more.

FE asks that the Commission 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. FE believes the Commission should ensure its policies support small operations with sustainable manure management practices that prevent methane creation, rather than large industrial operations.

[30] Section VI, Proposed Original Page 45, CPE Reply Comments.

5. The Company has not presented evidence that RNG production and use result in environmental benefits to justify the omission of the Conservation Cost Recovery Charge (CCRC) from the delivery charge for the RNG Interconnect Service Tariff.[31]

FE objects to the omission of the CCRC from the interconnection 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. FE argues that CPE has presented no evidence that the net environmental benefit of RNG is positive, when accounting for life cycle carbon (LCC) emissions, indoor air quality ramifications upon combustion, and impacts to outdoor air quality.

FE maintains that RNG is a byproduct of the decision to dispose of organic waste (as food scraps and cow manure in an anaerobic (oxygen-free) environment). While capturing biogas is one way to prevent it from escaping into the atmosphere, another is to devise methods that avoid its generation altogether. To maximize environmental benefit, waste streams should be minimized first, and the remaining waste stream can be used 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.

In view of its concerns, FE recommends that the Commission amend CPE's proposed interconnection tariff in the following ways:

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.

FE argues that the interconnection tariff neither evaluates the carbon intensity of RNG nor set an acceptable range of carbon intensity of RNG delivered for transport.

FE maintains that because biogas is produced from a variety of organic waste streams (landfill, livestock waste, wastewater, and so on) and through different processes (anaerobic digestion or thermal gasification), its carbon "footprint" and emissions are not uniform.

FE provided a "link" to Natural Resources Defense Council (NRDC)[32] publication, "A Pipe Dream Or Climate Solution?"[33] NRDC is highly skeptical of the potential of biogas to replace natural gas and its potential to reduce greenhouse gas emissions. "NRDC estimates biogas and synthetic gas from ecologically sound sources may be able to replace only roughly 3 to 7

[31] Staff Note: FE, while complaining about "high interconnection fee" in point 4 above, also argues for a higher per therm rate here.

[32] NRDC is a non-profit international environmental advocacy group.

[33] https://www.nrdc.org/sites/default/files/pipe-dream-climate-solution-bio-synthetic-gas-ib.pdf

percent of today's gas use, at projected costs that are many times the current price for fossil gas." "In addition, biogas and synthetic gas produce the same health-harming pollutants as fossil gas when burned, and leaks will still release methane—an especially harmful greenhouse gas—directly into the atmosphere."

Another "link" provided in FE's Comments,[34] "Renewable Natural Gas," notes: "All natural gas of similar composition, whether it is renewable or traditional, emits the same amount of GHG emissions when combusted in the same process." However, because "the climate impact of methane is greater than that of carbon dioxide (CO2), eliminating methane emissions from waste streams yields a net life-cycle GHG reduction when that methane is combusted in lieu of traditional gas, rather than emitted to the atmosphere or flared." This report estimates that "compared to traditional natural gas, net life-cycle GHG emissions from RNG are at least 40 percent lower, with some feedstocks providing net-negative GHG emissions. The primary factor driving carbon intensities is whether the methane, if not processed to RNG, would otherwise be flared or emitted to the atmosphere."

This report states that "[c]urrently, RNG quality is handled on a project-by-project basis without an established standard. Aside from recently established rules in California, the lack of clear and consistent regulations governing RNG quality standards creates uncertainty for project developers."

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 enough 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.

C. American Biogas Council (ABC)

ABC emphasized that the instant petition is about interconnection, maintaining pipeline safety, and establishing gas quality standards, and not about agreement on "whether RNG will reduce [carbon] emissions by 30%, 100% or over 100%."

[34] https://www.mjbradley.com/sites/default/files/MJB%26A_RNG_Final.pdf

In its initial Comments, ABC noted five reasons in support of CPE's proposed interconnection service:

1. Minnesota has enormous untapped potential to recycle organic material to produce biogas and RNG;

2. RNG is one of the most significant ways for the gas business to shrink its carbon footprint;

3. Gas customers want the option to buy RNG instead of conventional natural gas;

4. The proposal would make Minnesota an attractive state for project development that leads to more sustainable agriculture and recycling and new investment and jobs; and

5. Minnesota has an opportunity to be included among the leading states to promote decarbonization of its gas supply.

In its Reply Comments, ABC pointed to four environmental benefits flowing from the production of biogas:

1. the connection between biogas systems and the state's need to recycle organic waste cannot be ignored. ABC asked, if not with biogas systems, how will Minnesota manage its 29 million tons of manure, 1.75 million tons of food waste, and 135 billion gallons of wastewater generated each year;

2. it is not claimed that biogas or RNG will replace all energy use in the US or Minnesota, but the potential environmental and economic benefits are still large. That is why barriers to developing new projects, like pipeline interconnection, must be removed;

3. life-cycle analysis to show the carbon impact of renewable energy is important, but does not belong in an interconnection agreement; and

4. the viewpoint that biogas systems only support large farms, including concentrated animal feeding operations (CAFOs) is not supported by actual data. Only 10% of on-farm biogas systems are located on large farms.

Regarding the quality standards proposed by CPE, ABC noted that they are in range with industry norms, including ABC's purity recommendation and the Interconnect Guide for Renewable Natural Gas in New York State.

ABC argued for the relaxation of quality standards regulating oxygen and heating value in the transport of RNG. For example, the quality standard proposed by CPE for oxygen content of RNG is 0.2% by volume; ABC, however, recommends that it be raised to 0.4% oxygen content.[35]

ABC indicated that for a recent RNG project in California, the extra 0.2% oxygen restriction cost the project several millions of additional dollars with little real benefit to the pipeline system except to conform to a rigid standard.

ABC mentioned that at least 15 pipeline systems that allow 0.4 to 1.0% oxygen content.

The quality standard relating to heating value proposed by CPE is a minimum of 975 Btu (gross) per standard cubic foot on a dry basis and a maximum heating value of 1100 Btu (gross) per standard cubic foot on a dry basis.

ABC argues for relaxing the heating value from 975 to 960 Btu/cubic foot and allowed that the Wobbe number would have to be adjusted as a result.

D. Centre for Energy and Environment (CEE)

CEE encourages the Commission to approve CPE's Petition.

Although CEE is supportive of CPE's RNG interconnection tariff, CEE raised several reservations about RNG as an alternative energy source.

CEE noted that it considers CPE's petition as a first step in building a local renewable natural gas market. CPE's interconnection tariff may allow CPE's customers greater access to lower-carbon fuel source (i.e., RNG), while also providing economic and waste management benefits to the state.

CEE also pointed to the need for additional work to accurately quantify and verify the greenhouse gas emissions benefits of renewable natural gas from various sources. A more accurate accounting of the greenhouse gas benefits of renewable natural gas would allow Minnesota's regulators, stakeholders, and customers to make more informed choices about investments in this resource. CEE indicated that this accounting and verification work, according to CEE, could take place through this docket or outside of this docket. In either case, putting CPE's renewable natural gas interconnection tariff in place will bring forward local renewable natural gas projects to be studied and assessed for their greenhouse gas emissions benefits.

[35] The presence of oxygen in natural gas pipelines can result in corrosion and lead to catastrophic leaks. Some pipeline customers use the natural gas as a chemical feedstock where the presence of oxygen can pose problems. http://trimeric.com/assets/oxygen-removal-in-natural-gas-systems-lrgcc-paper.pdf

CEE stressed that the potential greenhouse gas emissions benefits of renewable natural gas projects vary significantly depending on the characteristics of a project, such as feedstock, baseline methane emissions, and leakage rates. Having local renewable natural gas projects operating and interconnected to the natural gas system could provide better, more accessible data necessary to support a robust carbon accounting analysis. Lessons learned through such analyses may help develop standardized practices and methodologies for carbon accounting for renewable natural gas in Minnesota.

CEE also pointed out that a policy framework is needed to target the use of renewable natural gas to the highest and best use-cases in Minnesota because RNG is an expensive and limited resource.

E. The Coalition for Renewable Natural Gas (RNG Coalition)[36]

The RNG Coalition raised concerns about the quality standards as well as the rates proposed by CPE.

The RNG Coalition maintains that the quality standards should be properly designed and can be a hinderance to RNG project development if not properly designed. It contends that gas quality standards for RNG should never be set more stringently than those in place for conventional natural gas.

The RNG Coalition noted that the standards have been taken from the examples given in the Gas Technology Institute's Final Report for the Northeast Gas Association dated August 2019, entitled Interconnecting Guide for Renewable Natural Gas in New York (GTI/NGA Report).

The RNG Coalition noted that it participated in and contributed to the GTI/NGA process and that the standards stated therein were intended only as an educational guide —a tool to bring utilities and developers together, to discuss the specific needs of their pipeline and project based on the capacity and point of interconnect.

The RNG Coalition stated that although CPE has properly selected values within the ranges presented by the GTI/NGA document, the GTI/NGA document suggested that their example standards should serve "as a starting place for discussions between the pipeline operator and the developer." The RNG Coalition noted that the GTI/NGA document contains many important recommendations that could be better clarified in the CPE Proposal and provided the following examples:

- if a constituent of concern (COC) is not reasonably expected to be found above background levels in flowing gas supplies at the point of interconnect, then testing for that COC should not be required;

[36] RNG Coalition filed comments and reply comments.

- the Gas Sales and Interconnect Agreement should offer a process to request a project-specific exception or modification to specific gas quality requirements (especially heating value);

- blending strategies, or other potential mechanisms to eliminate impacts to downstream customers, should be allowed where and when they can be justified; and

- the utility should further justify selecting a more stringent siloxane standard (0.01 mg Si/m3) relative to the value proposed by GTI/NGA (0.5 mg Si/m^3) and selecting from the middle of the range of possible Oxygen specifications in the GTI/NGA work (0.2%) rather than the upper end of the range (0.4%).

The RNG Coalition argued that adjusting these standards to be more flexible and lenient would be conducive to lower-cost RNG projects. In the absence of any utility-specific information as to why such strict standards are needed, the RNG Coalition recommended that these standards be adjusted to be more permissive.

RNG Coalition contended that maximum flexibility should be allowed for collaboration between the project developer and pipeline utility on a project-by-project basis, including taking into consideration the pipeline capacity at the point of proposed interconnect, properly accounting for local dilution effects, and incorporating reduced testing for constituents that are unlikely to be present from certain feedstocks.

The RNG Coalition also questioned the reasonableness of the rates proposed for interconnection stating that the material provided in the filing is not sufficiently transparent to demonstrate the appropriateness of charges. The RNG Coalition believes the $7,500 monthly basic charge and the receipt charge of $0.15 per therm are likely to exceed the true costs for interconnecting and moving gas from RNG projects.

The RNG Coalition illustrated its concern with an example. For a reasonably sized landfill producing 750,000 dekatherms per year, this would add $1.125 million in costs per year and $22.5 million over 20 years. The RNG Coalition believes these costs are very high in relation to the interconnection services provided by CPE. Although CPE states that many of the costs are "associated with the need to monitor RNG to ensure it meets the Company's proposed RNG Quality Standards," the data (individual cost components) presented in Table 3 of Exhibit E in CPE's Initial Filing show that the primary source of the estimated per-therm cost is driven by assumptions related to costs for laying additional utility-owned pipeline to reach a theoretical location of RNG projects (assumed to be on the order of three miles per project).

The RNG Coalition maintains that CPE's assumptions underlying the cost basis of rates do not match industry experience with RNG development elsewhere. RNG Coalition also contends that CPE's cost analysis does not account for cost savings. "For example, CenterPoint requests recovery of odorant costs, but does not account for the fact that it will be odorizing less gas on

other parts of the system as the retail customer will reduce its purchases of gas delivered from other sources."

The RNG Coalition asks that the tariffed rate be applicable to smaller producers of RNG (producers who are likely to receive both Low Carbon Fuel Standard and Renewable Fuel Standard revenue, e.g., agricultural projects) and that CPE develop interconnection rates on an individual, case-by-case basis – "allowing for either a negotiated interconnection fee (based on the actual cost of service along with transportation services and meter fees charged at the prevailing utility rates) or the ability pay to build interconnection lines and install necessary equipment directly in order to avoid all, or a portion, of the interconnection monthly customer charge (should it prove cost-effective for a project to do so)."

F. Partnership on Waste and Energy (PWE)[37]

PWE stated that Hennepin County is located within CPE's service territory and that Hennepin County is working towards development of an anerobic digester (AD) facility to support organic recycling programs throughout the County.

PWE contends that deviation from the proposed quality standards should be allowed on a case-by-case base, PWE agrees that the proposed standards for oxygen and heating value should be reviewed from a cost-benefit perspective and their potential detrimental impact on RNG facility development.

PWE expressed its concern with the rates for interconnection. PWE noted that charging a flat rate of $0.15 per therm (as initially filed by CPE, but subsequently revised upwards), regardless of the RNG volumes injected or the infrastructure required for a facility, is problematic. Ideally, each facility would be analyzed individually instead of being grouped together with all RNG producers.

PWE gave an illustrative example comparing the pricing of a large producer versus a small producer. In the illustration, PWE's own AD system produces 1,000 MMBtu per day, whereas a small dairy digester facility produces 200 MMBtu per day; each entity would pay the following total charges to CPE based on the proposed interconnection rates:

• PWE would pay $6,150,000[38] over the 10-year period, assuming 360 days in a year ($7,500/month plus the $0.15/therm rate);

[37] The Partnership is a joint powers board including Hennepin County and the Ramsey/Washington Recycling & Energy Board.

[38] $7,500*10*12=$900,000 plus (1,000*350*10)*1,000,000Btu * 0.00001 (factor for conversion to therms)*$0.15 equals $6,150,000.

• Dairy digester project (which requires more infrastructure to interconnect) would pay $1,950,000 over the same 10-year timeframe, assuming 360 days in a year ($7,500/month plus the $0.15/therm rate).

The Partnership supports a methodology to pay for the CPE improvements required for its project rather than subsidize other RNG facilities which may have a higher return.

The Petition implies that most RNG is used as transportation fuel with high economic returns. This may be the case for certain types of RNG, but the trend for RNG derived from landfill gas, wastewater treatment plant biogas and food waste/organics biogas has trended away from transportation fuel markets to lower value, longer term fixed-price markets.

While RNG sold into transportation fuel markets can see returns of $15 to $75 per MMBtu, RNG sold into fixed price markets may only see $9 to $12 per MMBtu returns. The CPE charge of $0.15 per therm ($1.50 per MMBtu), is a significant ongoing cost for these facilities and may deter RNG projects from moving forward.

G. Other Parties' Comments

The following parties filed comments supporting CPE's petition.

Amp Americas II, LLC ("Amp") supports CPE's petition. Amp indicated that it has reviewed CPE's petition, including the proposed rates and terms of service and noted that CPE's interconnection option offers many benefits compared with other alternatives. These alternatives include interconnecting with an interstate pipeline which will require Amp to construct its own gathering system. Another alternative, Amp indicated, is to engage a non-regulated party to build the pipeline and interconnection. Compared to these alternatives, Amp noted CPE's distribution system is advantageous because CPE's system operates at a lower pressure than interstate pipelines and, as such, would require less capital equipment and lower operating expenses to pressurize the RNG than Amp's alternative options.

Agricultural Utilization Research Institute (AURI) supports CPE's RNG interconnection tariff.

Bioeconomy Coalition of Minnesota (BCM) indicated that many RNG project developers are seeking to sell RNG to compressed natural gas vehicle operators in markets with Low Carbon Fuel Standard or Clean Fuel Standard policies such as California or Oregon. The Renewable Fuel Standard also provides incentives for the use of RNG as an advanced biofuel. RNG markets and supply are frequently not in the same place, and access to the natural gas system is needed to transport the product to its market. Further, interconnection to an interstate natural gas pipeline is a requirement for programs like the California Low Carbon Fuel Standard.

Bluesource indicated that an RNG program would be beneficial to CPE, the State of Michigan [sic], and the wider global community as it would provide needed support for the fledgling biogas industry while tackling climate change.

Bioenergy DevCo (BDC) supports CPE's interconnection petition. Approval of the petition, BDC maintains, will make BDC's projects more economically feasible and increase the likelihood of further RNG development in Minnesota.

DMT Clear Gas Solutions supports CPE's filing because it will make Minnesota more attractive for project development; harness the state's untapped potential to produce RNG; and provide customers the option to purchase RNG instead of conventional natural gas.

Energy Vision (EV) is a New York-based national 501(c)(3) environmental organization. EV supports CPE's proposed renewable natural gas (RNG) interconnection tariff because it would provide much-needed access to end-use markets for in-state producers and users of this ultra-low-carbon waste-based fuel.

Laborers District Council of Minnesota and North Dakota (LIUNA) noted that the proposed tariff would allow Minnesota-based RNG producers to access existing gas infrastructure to move low-carbon and net-zero natural gas to customers nationwide. This will be accomplished at no added cost to ratepayers, since the proposed tariff would allocate those costs to producers, and if successful, the initiative could ultimately help lower costs for ratepayers through new revenue from producers. In Reply Comments, LIUNA stated its disagreement with Fresh Energy's contention that the Commission should require CPE to establish or monitor carbon standards for producers in a circumstance where the utility is merely providing conveyance at no cost to retail customers. LIUNA also opposes the assessment of CIP charges on RNG producers.

Mississippi Watershed Management Organization (MWMO) indicated that "programs like the one proposed by CenterPoint Energy can help raise awareness about how waste systems, water quality, and energy are all connected, and help advance solutions for waste that protect our waters while providing an environmental benefit."

Organic Waste Systems (OWS) is a leading provider of large-scale facilities for the conversion of organic waste from both municipal solid waste and agricultural residues to renewable natural gas. OWS fully supports the petition and urges the Commission to adopt it.

Quantalux is involved in RNG project development in Michigan, and a part of its work is to coordinate with utilities (such as CMS Energy and DTE Energy) to design RNG injection solutions. Quantalux supports the petition.

REV LNG, Sacyr Environment USA LLC, Waste Management (WM), and the Yorth Group support CPE's.

V. CPE's Reply Comments

1. CPE's Reply to the Department

a. Per therm rate

Regarding the Department's recommendation that CPE charge RNG customers the same non-gas margin as charged to interruptible transportation customers, less the CCRC ($0.15748 per therm), CPE agreed to change the per therm rate to $0.15748.

b. Upfront CIAC or Exit Fee

Regarding the Department's recommendation that CPE require the RNG producers and/or developers to pay all the costs of interconnecting to CPE's system, either by paying the entire CIAC upfront, or imposing an exit fee, if the interconnection customer leaves CPE's system prior to paying fully for all of the costs of interconnection, operation and removal of such facilities, CPE responded that it does not support the recommendation that the Company charge the entire CIAC upfront, but agreed to implement an Exit Fee.

CPE proposed the following language regarding Exit Fee to be inserted in the interconnection tariff:[39]

Exit Fee:
If Customer suspends RNG production, Customer will pay an exit fee equal to the total cost of installing the RNG facilities, including main to connect to CenterPoint Energy's distribution system, and any costs for removal of facilities, less the initially paid contribution-in-aid-of-construction; any depreciation of facilities that has occurred between project inception and suspension of RNG production; and any cost for infrastructure that is utilized by other customers.

c. RNG from hazardous sources

CPE also agreed, in principle, to the Department's recommendation that CPE add language in its gas quality standards regarding acceptance of RNG from a hazardous source.

The Department suggested the following (or similar) language:

Gas from Hazardous Waste Landfills

RNG sourced from Hazardous Waste Landfills will not be knowingly purchased, accepted into or transported on the pipeline system.

---

[39] CPE's description of the "exit fee" in the tariff did not contain the phrase and "and any costs for removal of facilities;" however, CPE corrected this oversight in its Supplemental comments.

RNG producer/Supplier and/or developer must certify and provide documentation or other suitable proof that the biogas/RNG source feedstock was not derived or collected from a hazardous waste landfill.

In response, CPE proposed the following language (modified from the Department's proposed language for clarity and to better fit the conventions of the gas quality standards proposed by the Company):

17.09 Gas from Hazardous Waste Landfills

RNG sourced from Hazardous Waste Landfills will not be knowingly purchased, accepted, or transported on CenterPoint Energy's system. Customer must certify and provide documentation that the RNG feedstock is not derived or collected from a hazardous waste landfill prior to interconnection and whenever there is a change in feedstock.

d. Separate Tracking of Costs and Separate Tracking of RNG Receipts for each RNG producer and/or project developer

Regarding the Department's recommendation that CPE track all actual costs separately for each RNG producer and/or developer the Company signs and the total RNG received from each RNG producer and/or developer (in Dekatherms or Dths), identifying these actual costs using the FERC accounts, sub accounts and/or FERC account equivalents and CPE charted accounts and/or sub-accounts from its internal accounting system that the Company identified in its responses to Department IR Nos. 2, 4, 5, 31, and 47, CPE responded that it had no objection.

e. Pre-approval of affiliate transactions

Regarding the Department's recommendation that CPE seek prior approval from the Commission and explain how any transaction(s) with its affiliates would comply with Minn. R.7825.1900 – 7825.2300 and Minn. Stat. §216B.48 and the relevance of these regulations to all applicable projects, CPE responded that it agrees to inform the Department and Commission if any affiliates are, or become, involved in any interconnection project. In its notification, the Company indicated that it will explain whether the affiliate rules and regulations are implicated, and if so, the Company will seek Commission approval of the transaction. CPE noted that it does not commit to obtaining preapproval of the engagement because of the timing required, but the Company does commit, upon learning of the existence of an affiliated interest in a particular interconnection process, to notify the Department and Commission of that relationship and to collaborate with the Department on whether an affiliate interest filing should be pursued.

f. RNG for CPE's fueling stations

Regarding the Department's recommendation that CPE seek approval from the Commission prior to engaging in any RNG transaction(s) for its fueling station, CPE agreed to seek approval from the Commission before engaging in any RNG transactions for its fueling station.

g. Rebates and incentives as shareholder expense

Regarding the Department's recommendation that CPE absorb any rebates and/or incentives used by the Company in its interconnection process as a shareholder expense, CPE responded that it agrees that shareholders should bear the expense of any rebates or incentives offered to RNG Interconnect customers or potential RNG Interconnect customers.

h. Use of FERC Uniform System of Accounts for tracking customer additions and associated costs and revenues

Regarding the Department's recommendation that CPE track and identify all of the customers it adds and their associated costs and revenues using the FERC accounts, sub accounts and/or FERC account equivalents and CPE charted accounts and/or sub-accounts from its internal accounting system and to provide a discussion and analysis in its next general rate case, the Company responded that it had no objection.

2. CPE's Reply to Fresh Energy

a. Requirement of Life Cycle Carbon Accounting Prior to Interconnection

CPE disagrees with Fresh Energy's initiative.

CPE argued, first, that RNG produced in the United States is generally already assessed for its carbon intensity in compliance with federal Renewable Fuels Standard or state Low Carbon Fuel Standard requirements. To require RNG Interconnect Customers to demonstrate carbon benefits before interconnection would be duplicating requirements that are already imposed by RNG buyers or compliance markets.

Further, the estimated carbon intensity of any RNG project is not a good test of overall project value. CPE urged the Commission to consider two example projects: (1) a project that uses methane from manure that would otherwise be emitted directly into the atmosphere as a substitute for gasoline in vehicles; and (2) a project that uses food waste as a substitute for fossil natural gas in an industrial process.

The lifecycle carbon intensity of the first project will likely be deeply negative whereas the lifecycle carbon intensity of the second project may be near zero or even slightly positive (while still being significantly less carbon intensive than use of fossil natural gas in industry).

However, the second project may support a local government organic recycling effort and have important benefits in the community for waste management and water quality. It may also

offset the use of fossil fuels for a process that cannot be electrified or otherwise made less carbon intensive. Note also that RNG projects may change feedstocks or end uses after they are built, so an *a priori* estimate of carbon intensity may not even accurately reflect the long-term carbon emissions benefits of any particular project.

CPE also pointed out that no other states, utilities, or pipelines require RNG Interconnect customers to demonstrate carbon benefits prior to interconnection. RNG producers may interconnect with any federally regulated interstate pipelines (including interstate pipelines operating in Minnesota) as well as many other local distribution company systems outside of Minnesota. CPE maintained that requiring RNG Interconnect customers to pass an extra carbon test before interconnection would uniquely disadvantage CPE and potential projects near CPE's distribution system and would discourage development of these resources.

Finally, the CPE stated that it is uncomfortable with the idea of imposing environmental tests on customers before offering them services. The Company does not require any other large customer to demonstrate that their business is "environmentally friendly" or that their use of CPE's services will produce benefits for the state, nor does CPE think that it would be appropriate for it to do so. If the state wanted to shape or limit development of the RNG industry for environmental reasons, CPE noted that the Minnesota Pollution Control Agency or a similar body could impose these requirements.

b. Deviations from RNG Quality Standards on a Case-by-Case Basis

Responding to FE's opposition to CPE's proposal of case-by-case deviation from the quality standards, CPE stated that it does not entirely agree with this modification. CPE insists on retaining flexibility to deviate from its proposed standards where a deviation would be safe for customers, customers appliances, and Company equipment. However, CPE noted that it will not allow deviations for constituents of concern for human health.

CPE requested that the Commission allow the Company flexibility to deviate from its proposed standards where a deviation would be safe for customers, customers appliances, and Company equipment.

Specifically, CPE agrees to strictly enforce limits and testing requirements for all of the constituents listed under "Health Protective Constituent Levels," but requests that the Commission grant flexibility for the Company with respect to pipeline protective constituent levels as well as other aspects of the proposed gas quality standards (e.g. gas heating value, delivery temperature, etc.).

CPE proposes to add the following sentence[40] to its gas quality standards:

[40] Section VI, Proposed Original Page 45, CPE Reply Comments, "Exhibit B: RNG Quality Standards."

"CenterPoint Energy will not allow deviations from these standards related to the health protective constituent levels or testing requirements."

c. Periodically Updating of Gas Quality Standards

Regarding FE's recommendation of periodic reevaluation of CPE's gas standards, CPE indicated that such a review was both appropriate and necessary and agrees to this proposed requirement.

d. Inclusion of the CCRC in RNG Charges

CPE does not agree with FE's argument that the Company's proposed omission of CCRCs for interconnect customers 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."

CPE argued that that it omitted to charge the CCRC for the following two reasons:

- customers that pay for CPE's conservation improvement program ("CIP") have the ability to participate in CIP programs that can help them reduce their gas consumption and accordingly their bill. CPE's CIP does not have programs to help RNG Interconnect customers reduce their production, nor would RNG interconnect customers be interested in such a program; and

- unlike energy waste, RNG production is environmentally beneficial. CIP programs place a fee on energy use in order to discourage wasteful use of energy, and it does not make sense to extend this fee to production of energy, particularly low-carbon energy. CPE indicated if the Commission requires CPE to charge RNG interconnect customers for CIP, electric utilities should be required to charge interconnected wind and solar producers for CIP.

e. Small Producers

CPE acknowledges that smaller projects may not be able to access the Company's system at the rates proposed. Small and geographically remote sources may not be good candidates for interconnection.

However, as CPE gathers experience with this offering, it noted that it will gain a better understanding of which projects are able to take advantage of the proposed service and which are not. At that time, CPE may be able to propose changes to the proposed service such as multiple RNG interconnect customer rates classes, that make the service more accessible to small producers.

3. CPE's Response to Other Proposed Modifications to its Gas Quality Standards

a. Case-by-Case Deviations from Proposed Standards Not Related to Health-Protective Constituent Levels (ABC, the Partnership on Waste and Energy, and the RNG Coalition)

In response to ABC, the Partnership on Waste and Energy, and the RNG Coalition, CPE noted that some level of flexibility to particular RNG projects is important given the mix of potential projects that developers have brought to the Company's attention. CPE stated that where there is enough blending with other gas supplies, the Company may consider relaxing some of its standards while still ensuring the safety of every customer and the Company's equipment. Another instance where flexibility may be warranted is when temporary conditions cause an RNG Interconnect customer to exceed temperature specifications in a way that does not pose short-term risk. CPE noted that it would consider allowing a temporary deviation from these standards on a very hot day, rather than requiring an RNG Interconnect customer to install costly equipment to ensure that it will be able to meet temperature requirements every day of the year.

Regarding the RNG Coalition's recommendation that CPE's gas quality standards include a process to allow a project-specific exception or modification to specific gas quality requirements, CPE stated that it expects that an RNG Interconnect Customer seeking an exception to the general gas quality requirements will alert its assigned Key Account Manager who will work with the customer and CPE's engineering department to determine whether an exception can be granted safely.

b. Constituents of Concern

1. Oxygen

ABC, the Partnership on Waste and Energy, and the RNG Coalition asked for leniency regarding CPE's standards with respect to oxygen. CPE responded by relaxing the oxygen standard from less than 0.2% to less than 0.4%. CPE's revised standard for oxygen content of RNG is as follows:

"The RNG shall not have an oxygen content in excess of four-tenths of one percent (0.4%) by volume, and customer will make every reasonable effort to keep the gas free of oxygen."

2. Siloxanes

Siloxanes is essentially silica deposits in combustion equipment. These silica deposits can build up and cause malfunction in consumer appliances. CPE contended that the established standards could not be relaxed.

3. Heating Value

The heating value of gas is a measure of the energy density of the fuel and is related to the Wobbe Index which is a measure of interchangeability of fuel gases in gas burning appliances.

RNG producers of standard biogases will not be able to achieve the Company's required Wobbe index without meeting or exceeding the Company's proposed heating value, and because of the importance of the Wobbe index for safe and proper combustion of gas, "the Company does not think it is of value" to lower the heating value proposed in the Company's gas quality specifications. In the unlikely event that an RNG Interconnect customer demonstrates that it can achieve the required Wobbe index without also achieving the required heating value, the Company would work with that customer and consider making an exception.

c. Constituents Tested Depends on RNG Source

With respect to RNG Coalition's question about whether the Company would require RNG Interconnect customers to test for constituents of concern that are not reasonably likely to exceed the specified levels, the Company notes that it has proposed constituent testing to be dependent on the source of the RNG. Because RNG produced from dairy manure is very unlikely to contain problematic levels of antimony, for example, testing for antimony will not be required for dairy projects.

VI. Department's Reply to CPE

On September 22, 2020, the Department filed its response to CPE's reply.

a. Upfront CIAC or Exit Fee

Regarding CPE's reluctance to charge the entire CIAC up-front, the Department stated that it agrees with the Company that payment of all up-front CIAC costs could discourage smaller RNG Interconnect customers. Consequently, the Department asserted that CPE's imposition of an exit fee is a reasonable alternative.

b. RNG from hazardous sources

The Department agreed with CPE's re-write of Gas from Hazardous Waste Landfills.

c. Rebates and incentives as shareholder expense

The Department indicated that its dispute with CPE regarding rebates/incentives was resolved in light of CPE's acquiescence to the Department's suggestion.

d. Pre-approval of affiliate transactions

Regarding affiliated transactions, the Department accepted CPE's position that it does not commit to obtaining preapproval of any transactions with affiliates arising from the interconnection projects because of the timing required. The Department noted that, to the extent the Company seeks approval if any affiliates become involved RNG interconnection projects, the Company's counterproposal appeared to comply with Minn. R.7825.1900 – 7825.2300 and Minn. Stat. §216B.48. The Department concluded that, so long as CPE fully meets the filing requirements that the Commission set out in Docket No. E, G-999/CI-98-651 (98-651) to provide all required information within 30 days of executing a contract or arrangement with an affiliate, CPE's proposal is acceptable.

VII. Staff Analysis and Comment

1. General Comment

CPE has not identified the RNG producers which have inquired about interconnection; however, CPE noted that it has received more than a dozen inquiries from RNG producers regarding interconnection. Judging by the "estimated annual production" 120,420 Dth used in the cost study, Staff concludes that the RNG volume likely to be transported on the distribution system will be a relatively large amount.[41] The RNG market implied by this calculation is fairly substantial. CPE has also noted that it is "currently in discussions with project developers who plan to produce RNG from food waste, wastewater, or agricultural waste and wish to interconnect" with its system to deliver RNG to the market.

CPE has indicated that after RNG producers are interconnected, the Company plans to solicit local RNG supply and to submit an amended green tariff offering to deliver RNG to sales customers who opt to purchase RNG as part of their natural gas supply. Nevertheless, CPE believes that the interconnection tariff is a useful first step towards encouraging the development of local supply that could be used in a future green tariff proposal.

CPE has proposed a set of gas quality specifications for RNG with the aim of protecting customer appliances and in its own distribution facilities. These gas quality specifications are derived in large part from those adopted by the California Public Utilities Commission. Staff generally agrees that adherence to these standards is necessary for the integrity of the gas distribution system.

[41] CPE's Small Volume Commercial and Industrial Sales Service is available to Commercial and Industrial firm customers whose peak day requirements are less than 2000 therms. On an annual basis, this works out to (2000/10)*360 = 72,000 Dth. CPE's Large General Firm Sales Service is available to Commercial and Industrial firm customers whose peak day requirements are greater than or equal to 2000 therms.

2. Interconnection Agreement – Analysis of Lifecycle Carbon Intensity

Staff believes the interconnection agreement proposed by CPE is generally reasonable after incorporating some of the modifications suggested by intervening parties.

One issue, however, where there is a sharp difference of opinion between Fresh Energy and CPE is regarding the necessity of performing a lifecycle carbon intensity[42] study.

Fresh Energy's references show that RNG derived from any of a variety of sources is less carbon-intensive than traditional natural gas:[43]

Table 1 California LCFS Carbon Intensities

Gas Source	Carbon Intensity (g CO_2e/MJ)
California Natural Gas (Traditional)	78.37
Landfill Gas	46.42
Dairy Digester Gas	-276.24
Wastewater Treatment	19.34
Municipal Solid Waste (MSW)	-22.93

Source: California Air Resources Board

(LCFS: Low Carbon Fuel Standard)

The Carbon Intensity (CI) rating is the total measure of greenhouse gas emissions involved in producing, distributing and consuming a fuel. RNG from Dairy Digester has a negative carbon intensity rating, meaning it takes more carbon out of the environment than it produces over the life-cycle.

Fresh Energy recommends that the Commission require CPE to estimate the lifecycle carbon intensity of RNG as part of the Interconnection Feasibility Study and to refuse to interconnect with any RNG interconnect customer (producer) that is determined to be "climate intensive."

CPE opposes this recommendation. LIUNA also opposes this recommendation. CPE has responded that RNG production is generally already assessed for its carbon intensity in compliance with federal Renewable Fuels Standard or state Low Carbon Fuel Standard requirements.

---

[42] Carbon intensity is expressed in grams of carbon dioxide equivalent per megajoule of energy provided by that fuel. CI takes into account the GHG emissions associated with all of the steps of producing, transporting, and consuming a fuel—the complete life cycle of that fuel.

[43] https://www.mjbradley.com/sites/default/files/MJB%26A_RNG_Final.pdf , p. 1. Cited in Fresh Energy's Comments.

However, CPE did not elaborate fully on this point, but simply noted that low-carbon fuel standard programs in California and Oregon require individual lifecycle carbon assessments. CPE did not extrapolate what these standards imply for the State of Minnesota.

CPE also stated that the EPA does not require individual carbon intensity assessments for compliance with the Renewable Fuel Standard but does evaluate average lifecycle carbon intensities for RNG by feedstock.

In any event, CPE maintains that that requiring interconnecting customers to demonstrate carbon benefits before interconnection would be duplicating requirements that are already imposed by RNG buyers or compliance markets. However, CPE stated that if CPE were to buy RNG through a green tariff program, it would be appropriate and necessary for the Company to require a demonstration of carbon reduction.

The Department has not weighed in on this issue, noting that the issues in the current docket are confined to the interconnection tariff. The Department stated that, as such, issues relating to developing and introducing a "voluntary green tariff" or a future green tariff proposal will have to be decided in a future docket.

Details of the lifecycle carbon intensity study are not on the record in this docket. Neither are the details concerning the meaning and substance of "climate intensive" present on this record.

If the Commission determines that testing for carbon-intensity is necessary as part of the interconnection feasibility study, the Commission could require CPE to file a proposal for implementing a procedure, including the criteria, for evaluating whether an interconnecting customer/producer is "climate intensive."

If the Commission directs CPE to undertake a study of the life-cycle carbon intensity of RNG, and finally implements standards for the acceptance of RNG for transport, the Commission should bear in mind that it is possible that some of the existing RNG producers/customers may fall below the standard. Uncertainties relating to carbon intensity may stifle, or run counter to, the fledgling interconnection market.

In light of this consideration, the Commission may wish to reject without prejudice CPE's instant interconnection petition and inform (not direct or order) CPE to re-file its proposal concurrent with, or after, filing for approval, a petition to offer RNG to sales customers which includes a proposal for evaluating carbon reduction.

2. Rates and Cost Support for Rates

CPE proposes to offer service to RNG producers on generally the same terms that it provides it to existing transportation customers (with requirements to ensure the gas standards are being met and that the Company can accept the quantities of RNG being produced). The Company is proposing to charge RNG Interconnect Service customers more than the Company charges any

other class of customer because the Company expects to incur higher costs to serve interconnect customers both upfront and on an ongoing basis. CPE claims that many of these costs are associated with the need to monitor RNG to ensure it meets the Company's proposed RNG Quality Standards.

In its cost estimation and feasibility study model CPE has adopted similarity of service configuration and service features to estimate the costs of providing interconnection service. CPE has also added certain service- or product-specific costs of providing interconnection service to the base costs of providing large volume transport service. These two cost functions are similar except for some additional costs associated with providing large volume transport service.

However, the Coalition for Renewable Natural Gas (RNG Coalition) has raised broad questions regarding CPE's cost study. RNG Coalition has concluded that the proposed rates far exceed the actual costs of interconnection. RNG points out that contrary to CPE's claim that additional costs arise because of the need to monitor RNG quality standards, the per-therm cost is driven by the assumptions relating to the costs of deploying additional utility-owned pipeline to reach a theoretical location of RNG projects (assumed to be on the order of three miles per project). RNG Coalition also contends that CPE's cost analysis does not account for cost savings – for example, even as CPE seeks to recover deodorant costs from the interconnection customers, CPE does not account for the fact that it will be odorizing less gas on other parts of the system as the retail customer will reduce its purchases of gas delivered from other sources.

3. Individual Case-Based (ICB) Pricing and Cross-Subsidization

The RNG Coalition's critique of CPE's cost support provides the basis for its argument that rates for small interconnection customers may be tariffed, while rate for the larger customers should on an individual-case basis.

The RNG's advocacy is supported under general utility-pricing principles. Standardized tariffed rates are reasonable when there is uniformity of the underlying service circumstances (distance, quality of RNG, amount of RNG, and so on) so that an average rate reflects the average of service conditions. Residential customers, for example, are generally similarly-situated, so tariffed rates are reasonable for this class of customers. On the other hand, when the underlying circumstances vary between customers, the application of standardized tariffed rates invariably involves one set of customers subsidizing the other set(s) of customers.

Aside from this instance cross-subsidization within the interconnection class of customers, Staff notes that the recommendations of the Department will safeguard against unwarranted cross-subsidization.

The discussion in subsections **2.** and **3.** of Staff Analysis is the basis for **Decision Alternative 11**.

4. Conservation Recovery Charge

CPE has proposed to exempt the interconnection customers from paying the conservation cost recovery charge. LIUNA opposes the assessment of CIP charges on RNG producers. Fresh Energy has argued for the assessment of this charge on the interconnecting customers.

The Department has not opposed CPE's position.

Staff notes that CPE's large volume transport customers pay this charge. CPE argues that customers who pay this charge have the ability to participate in conservation improvement programs that can help them reduce their gas consumption and accordingly their bill. However, CPE notes that it does not have programs to help RNG interconnect customers reduce their production (nor would RNG interconnect customers be interested in such a program), and, on this basis, argues that CIP charges should not apply to interconnection customers.

Staff reviewed CPE's tariff pages[44] relating to Large Volume Firm/Interruptible Transportation Service, Large Volume Dual Fuel Sales Service, and Large Volume Firm Transportation Service. The rates charged for these services are identical (to the extent the same rate element applies to the services) and they all are subject to conservation recovery charge.

Insofar as the interconnection service is comparable to these services – and it is to a great extent – the case for exempting the interconnection customers from the payment of conservation recovery charge is not justifiable.

Staff recommends that the Commission direct CPE to add this charge to the interconnection tariff.

5. Quality Standards

The debate regarding quality standards is both an economic and a technical issue. The intervening parties have argued for more tolerant standards based on the economic issue, while CPE has adopted the California standards in order to protect end-user appliances and its own distribution network.

Staff recognizes that the quality standards will evolve over time and, for now, the Commission may consider the modifications to the quality standards previously discussed and set forth in **Decision Alternative 7** and **Decision Alternative 8** below.

[44] https://www.centerpointenergy.com/en-us/Corp/Pages/rates-and-tariffs-MN.aspx

VIII. Decision Alternatives

CPE's Overall Petition for Interconnection

1. Approve CPE's Interconnection Petition as filed, or

2. Approve CPE's Interconnection Petition with modifications, or

3. Reject CPE's Interconnection Petition without prejudice.

Interconnection Feasibility Study Agreement (Exhibit A, Initial Petition)

4. Approve the proposed Interconnection Feasibility Study Agreement (Exhibit A, Initial Petition) as filed by CPE. (CPE)

or,

5. Approve the proposed Interconnection Feasibility Study Agreement (Exhibit A, Initial Petition) subject to the following modifications (Fresh Energy):

Direct CPE to:

a. file a proposal for implementing a procedure,[45] including the criteria, for evaluating whether an interconnecting customer/producer is "climate intensive" within 45 days of the issue of this order,

b. include life cycle carbon accounting of biogas production and upgrading facilities in the Interconnection Feasibility Study, and

c. not interconnect with RNG producers determined to be climate intensive.

RNG Interconnection Agreement (Exhibit B, Initial Petition)

6. Approve the proposed RNG Interconnection Agreement as filed by CPE.

(PUC staff note: No party has proposed any modification to the RNG Interconnection Agreement.)

[45] Staff interpretation of FE's proposal.

RNG Quality Standards (Exhibit C, Initial Petition)

7. Approve the proposed RNG Quality Standards subject to the following modifications:

a. Gas from Hazardous Waste Landfills

Require CPE to include the following language:

Section 17.09 Gas from Hazardous Waste Landfills

RNG sourced from Hazardous Waste Landfills will not be knowingly purchased, accepted, or transported on CenterPoint Energy's system. Customer must certify and provide documentation that the RNG feedstock is not derived or collected from a hazardous waste landfill prior to interconnection and whenever there is a change in feedstock. (Department and CPE)

b Periodic Updates of Standards

Require CenterPoint Energy to periodically update its gas quality standards to maintain consistency with the California Public Utilities Commission's requirements and according to the best available science. (Fresh Energy; CPE agrees)

c. Heating Value – General Specification

Heating Value: The minimum higher heating value is ~~nine hundred and seventy-five (975)~~ nine hundred and sixty (960) Btu (gross) per standard cubic foot on a dry basis; and

direct CPE to adjust the Wobbe Index accordingly. (American Biogas Council)

d. Oxygen – General Specifications

Oxygen: The RNG shall not have an oxygen content in excess of ~~two-tenths of one percent (0.2%)~~ four-tenths of one percent (0.4%) by volume, and customer will make every reasonable effort to keep the gas free of oxygen. (ABC, the Partnership on Waste and Energy, and the RNG Coalition; CPE agrees)

8. Permissibility of case-by-case deviations from proposed standards

Approve the RNG Quality Standards subject to the following modifications:

a. Delete the following provision in the proposed tariff: (Fresh Energy)

> Section 17, Renewable Natural Gas Quality Standards
>
> CenterPoint Energy may allow deviations from these standards on a case-by-case basis in its discretion.

or,

b. Approve the following language: (CPE; ABC, the Partnership on Waste and Energy; and the RNG Coalition)

> With respect to case-by-case deviations from the proposed standards for health protective constituents:
>
> > allow deviation from the proposed standards where a deviation would be safe for customers, customers appliances, and Company equipment. CenterPoint Energy will not allow deviations from these standards related to the health protective constituent levels or testing requirements.

RNG Interconnection Tariff (Exhibit D, Initial Petition)

9. Conservation Cost Recovery Charge (CCRC).

Approve the RNG Interconnection Tariff subject to the following modifications:

a. Direct CPE to charge RNG customers the same non-gas margin as charged to interruptible transportation customers, less the conservation cost recovery charge ("CCRC"), i.e., $0.15748 per therm. (Department; CPE agrees)

or,

b. Restore the CCRC ($0.02362) to the delivery charge for the RNG Interconnect Service Tariff; direct CPE to charge interconnection customers ($0.15748 plus $0.02362 = 0.1811/therm). (Fresh Energy)

10. Exit Fee.

Direct CPE to include:

> If Customer suspends RNG production, Customer will pay an exit fee equal to the total cost of installing the RNG facilities, including main to connect to CenterPoint Energy's distribution system, and any costs for removal of facilities, less the initially paid contribution-in-aid-of-construction; any depreciation of facilities that has occurred between project inception and suspension of RNG production; and any cost for infrastructure that is utilized by other customers. (Department; CPE agrees)

11. Within 90 days of the anniversary of this tariff, file a report exploring the possibility of segmenting the market between small and large customers, and the practicability of ICB-pricing of large customers; the report should Include the costs and revenues of each interconnecting customer. (PUC Staff)

Other Tariff Changes (Exhibit G, Initial Petition)

12. Approve the other tariff changes indicated in Exhibit G of the Initial Petition. (Department)

Staff Note: No other party commented on this issue.

Miscellaneous Requirements

Direct CPE to: (Department; CPE agrees)

13. Track all actual costs separately for each RNG producer or developer that the Company interconnects with and the total RNG received for each RNG producer or developer (in dekatherms);

14. Inform the Department and Commission if any affiliates are, or become, involved in any interconnection project; and explain whether the affiliate rules and regulations are implicated, and if so, the Company will seek Commission approval of the transaction. The Company will also explain how any transactions with its affiliates would comply with Minn. R. 7825-1900 – 7825-2300 and Minn. Stat. § 216B.48 and the relevance of these regulations to all applicable projects;

15. Seek approval from the Commission prior to engaging in any RNG transactions for its fueling station;

16. Absorb any rebates or incentives used by the Company in its interconnection process as a shareholder expense; and

17. Track and identify all of the customers the Company adds (to lines built to accommodate RNG Interconnect Customers) and the associated costs and revenues and provide a discussion and analysis in its next general rate case.