

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

In the matter of: :

ELECTRONIC TARIFF FILING OF LOUISVILLE : CASE NO.  
GAS AND ELECTRIC COMPANY TO REVISE ITS : 2024-00125  
LOCAL GAS DELIVERY SERVICE TARIFF :

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**LOUISVILLE METROPOLITAN SEWER DISTRICT'S VERIFIED RESPONSE TO  
COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION  
ENTERED JULY 17, 2024**

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Comes now Louisville Metropolitan Sewer District, by counsel, and does hereby tender its  
Verified Response to Commission Staff's First Request for Information entered July 17, 2024.

**FILED: July 31, 2024**

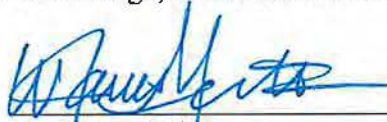
**COMMONWEALTH OF KENTUCKY**  
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In the matter of: \_\_\_\_\_ :  
ELECTRONIC TARIFF FILING OF LOUISVILLE : CASE NO.  
GAS AND ELECTRIC COMPANY TO REVISE ITS : 2024-00125  
LOCAL GAS DELIVERY SERVICE TARIFF : \_\_\_\_\_

**VERIFICATION OF W. JAMES GELLNER, P.E.**

STATE OF Ohio )  
COUNTY OF Hamilton )

W. James Gellner, P.E., Vice President of Hazen and Sawyer on behalf of Louisville Metropolitan Sewer District, being duly sworn, states that he has supervised the preparation of responses to discovery in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

  
\_\_\_\_\_  
W. James Gellner

The foregoing Verification was signed, acknowledged and sworn to before me this 31 day of July 2024, by W. James Gellner.

 (Ohio)  
\_\_\_\_\_  
Notary Public, State at Large



SHEILA MANES  
NOTARY PUBLIC - OHIO  
MY COMMISSION EXPIRES  
05-31-27

Commission No. 2022-RE-849838  
Commission Expiration: 05-31-2027

**LOUISVILLE METROPOLITAN SEWER DISTRICT  
RESPONSE TO COMMISSION STAFF'S  
FIRST REQUEST FOR INFORMATION  
DATED JULY 17, 2024**

1. Refer to the Direct Testimony of W. James Gellner (Gellner Direct Testimony), page 3, lines 1–8, and page 4, lines 5–21.
  - a. Explain whether MSD has a renewable vehicle fuel buyer for its RNG.
  - b. Explain whether the renewable vehicle fuel buyer has RNG quality parameters that must be met by MSD.
  - c. Compare and explain any similarities and differences between the RNG eligible for use as renewable vehicle fuel, for the uses contemplated in Louisville Gas and Electric Company's (LG&E) proposed tariff, and those of interstate pipeline quality gas.
  - d. If not answered above, explain whether motor vehicle engines could operate effectively and efficiently burning RNG of the quality produced by MSD's Renewable Natural Gas Project, but below the quality required by LG&E's proposed tariff.

**Response:**

- a. Louisville MSD does not yet have a renewable vehicle fuel buyer for its RNG. Louisville MSD is planning a project to convert biogas into RNG at Morris Forman Water Quality Treatment Center ("Morris Forman"). Presently, all existing biogas from the anaerobic digesters at Morris Forman is flared. The planned RNG project would inject converted RNG into an existing LG&E pipeline for sale to a customer, who would withdraw RNG and use it as renewable vehicle fuel. The RNG from Morris Forman will flow with the natural gas supply from LG&E and feed to customers as usual. The homogenous mix is sold by LG&E to customers at the standard rate.
- b. The planned RNG project at Morris Forman will require Louisville MSD to meet the minimum and maximum thresholds for RNG injection into pipeline under LG&E Local Gas Delivery Service (LGDS) standards. This will include the construction of a new facility dedicated to converting biogas into gas that meets LGDS quality specifications.
- c. RNG is eligible as a renewable vehicle fuel or as pipeline quality gas, provided it meets LGDS requirements. Both types of gas are derived from organic waste, are free of contaminants and potentially corrosive substances, and have a high Btu content, making them environmentally beneficial and compatible with existing infrastructure. RNG that meets specifications for pipeline injection also meets standards for vehicle

fueling (i.e., at compressed natural gas, CNG, or liquefied natural gas, LNG, fueling stations). RNG injected into interstate pipelines is generally of the same quality, but it must undergo additional levels of compression to overcome the high pressures of interstate transmission lines. The LG&E proposed tariff includes increases for the minimum heating value and Wobbe Index, which make it impossible for an RNG system to meet the required standards. To meet new LGDS requirements, RNG would need to be blended with significant quantities of a high Btu fossil fuel, such as propane. These conditions make the RNG design infeasible.

- d. Renewable Natural Gas (RNG) below the heating value and Wobbe Index requirements proposed by LG&E could be safely and efficiently used as vehicle fuel (i.e., compressed natural gas, CNG, fueling station). However, several factors make this infeasible for Louisville MSD. Firstly, the Morris Forman site has limited space, with the remaining footprint designated for the RNG conversion facility. Establishing an on-site refueling station would significantly heighten security concerns. Additionally, there is no current demand for renewable vehicle refueling in this area, as Louisville MSD does not own or operate CNG-enabled vehicles. Consequently, Morris Forman would have an excess of RNG, leading to its disposal through flaring. Lastly, zoning regulations under Louisville Metro Development Code Section 4.3.22 prohibit industrial sites like Morris Forman from operating retail vehicle refueling stations, necessitating an Environmental Site Assessment (ESA) submission by Louisville MSD. Given the constraints of limited site space, security concerns, lack of economic need for renewable fuel, and zoning requirements, establishing renewable vehicle refueling stations is not feasible. These constraints that make direct vehicle fueling infeasible are common among RNG producers, which is why pipeline injection is so much more common than on-site vehicle fueling.

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2. Refer to the Gellner Direct Testimony, page 4, lines 5–21.
  - a. Explain whether the heating value of MSD's RNG is such that it is of interstate pipeline quality, including heating value and the absence of other contaminants and potentially corrosive substances.
  - b. Explain whether the heating values of MSD's RNG is the only issue preventing it from potentially being transported via LG&E's pipelines.
  - c. Provide all test results and any other documentation demonstrating that the RNG is of pipeline quality such that absent transporting the gas through LG&E's pipelines, MSD's RNG could be transported through an interstate pipeline.

**Response:**

- a. The heating value of RNG produced by Louisville MSD could meet the requirements of 20 out of 23 interstate pipeline tariffs compiled by a random cross-sectional survey completed by the Center for Energy Economics ([Interstate Natural Gas - Quality Specifications & Interchangeability](#)). 87% of the interstate tariffs compiled in this survey require gas supplies to be a minimum of 950-980 BTU/SCF, which are achievable limits for RNG technologies. Additionally, RNG generally contains lower concentrations of contaminants and potentially corrosive substances than conventional natural gas according to an analysis completed by the Northeast Gas Association and GTI Energy (see figure below).

**Observed Ranges Found in Fully Upgraded RNG from WWTPs**

The following data on upgraded RNG from WWTPs is from GTI lab analyses from 2006-2016. Only one fully upgraded site was analyzed.

Parameter	AGA 4A Reported Range	Range Found in Upgraded WWTP-Derived RNG	Range Found in Natural Gas Samples
Total Sulfur	maximum 0.5 to 20 grains per 100 SCF	BDL (0.003) to 0.01 grains per 100 SCF	BDL (0.003) to 1.1 grains per 100 SCF
Hydrogen Sulfide	maximum 0.25 to 1.0 grains per 100 SCF	BDL (0.003) to 0.01 grains per 100 SCF	BDL (0.003) to 0.36 grains per 100 SCF
Hydrogen	max. 0.04 to 0.1 vol%	BDL (0.1 vol%)	BDL (0.1) to 0.3 vol%
Carbon dioxide	maximum 1 to 3 vol%	0.49 to 0.66 vol%	BDL (0.03) to 2.6 vol%
Nitrogen	maximum 1 to 4 vol%	BDL (0.03 vol%)	BDL (0.03) to 12.7 vol%
Oxygen	max. 0.001 to 1 vol% majority: 0.1 to 0.2 vol%	BDL (0.03 vol%)	BDL (0.03) to 1.2 vol%
Diluents + Inerts	maximum 3 to 6 vol%	0.49 to 0.66 vol%	0.3 to 12.7 vol %
Ammonia	none	BDL (10 ppmv)	BDL (10 ppmv)
Total Bacteria	none	9.85x10 <sup>5</sup> to 2.14x10 <sup>6</sup> # per 100 SCF	3.47x10 <sup>4</sup> to 6.39x10 <sup>7</sup> # per 100 SCF
Mercury	none	BDL (0.01 µg/m <sup>3</sup> )	BDL (0.01) to 0.06 µg/m <sup>3</sup>
Other Volatile Metals	none	BDL to 229 µg/m <sup>3</sup> (Zn)	BDL (30) to 213 µg/m <sup>3</sup> (As, Cu, Pb, Zn)
Siloxanes (D4)	none	BDL (0.51 mg/m <sup>3</sup> )	BDL <sup>1</sup>
Non-Halogenated Semi-Volatile and Volatile Compounds	none	BDL <sup>2</sup> to 6 ppbv (phthalate)	BDL <sup>2</sup> to 471 ppmv (1,3-butadiene, acrylonitrile, BTEX)
Halocarbons	none	BDL (0.1 ppmv)	BDL (0.1 ppmv)
Aldehyde/Ketones	none	BDL (10 ppbv)	BDL (10) to 103 ppbv
Polychlorinated biphenyls (PCBs)	none	BDL (1 ppbv)	BDL (1 ppbv)
Pesticides <sup>3</sup>	none	BDL (0.3 to 3 ppbv)	BDL (.3 to 3 ppbv)

<sup>1</sup> Detection limits for siloxane ranged from 0.5 mg Si/m<sup>3</sup> to 0.1 as analysis methods improved resulting in publication of ASTM D8230.

<sup>2</sup> Detection limits vary from 1 ppmv (volatiles) to 5 ppbv (semi-volatiles) depending on compound analyzed.

<sup>3</sup> Current achievable detection limit range is 0.3 to 3 ppbv

Northeast Gas Association, GTI Energy, (2022), Interconnect Guide for Emerging Fuels into Energy Delivery Networks: Introduction of Renewable Natural Gas (RNG) and Hydrogen Enriched Natural Gas (HENG).

- b. In addition to the minimum heating value required by LG&E's proposal, the proposed Wobbe Index range would also be prohibitive to RNG development because Wobbe Index is a function of the required heating value, and LG&E proposes a Wobbe Index range that is far more restrictive than what the Natural Gas Council's Interchangeability Working Group (NGC+) recommends. NGC+ published guidelines advising that the Wobbe Index range be set to plus and minus 4% variation from the local historical

average gas or adjustment or target gas for the service area. The Wobbe Index range proposed by LG&E is 1,336-1,381 which is only plus and minus 1.7% of a presumed target Wobbe Index of 1,358. This would unnecessarily restrict new gas supplies, including RNG.

- c. The US Department of Energy and American Gas Foundation state that RNG is fully interchangeable with conventional natural gas ([Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment](#), [DOE Alternative Fuels Data Center](#)). This has been well demonstrated by the substantial number of RNG facilities currently injecting into pipelines across the US. There are currently 406 RNG facilities operational, approximately 90% of which are injecting into shared pipeline infrastructure; both at the transmission and distribution levels ([CA Council on Science & Technology: Biomethane in California Common Carrier Pipelines](#)). The map below from the Coalition for Renewable Natural Gas shows the total number of RNG systems operational, in-construction, and planned in the U.S. and Canada as of July 2024.



[Renewable Natural Gas Projects & Policy | RNG Coalition](#)

There is also a long history of pipeline injection of RNG demonstrating interchangeability with conventional natural gas without problem. Atmos Pipeline in Texas has been accepting substantial amounts of RNG since 1999. An Atmos business development manager has testified that since 1999 they are unaware of any issues related to delivery of RNG to downstream residential, commercial, and industrial customers ([CA Council on Science & Technology: Biomethane in California Common Carrier Pipelines](#)).

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3. Refer to the Gellner Direct Testimony, page 4, lines 34–38. Explain the volume of RNG MSD expects to produce annually.
- a. Identify MSD's expected average household usage of RNG.
  - b. Identify the number of households that MSD expects to supply RNG to on an annual basis.

**Response:**

- a. RNG produced by Louisville MSD would be injected into an LG&E pipeline to demonstrate a pathway for the gas to a customer who would use it as renewable vehicle fuel, which would make the RNG eligible for Renewable Identification Number (RIN) credits. Louisville MSD does not have the data required to calculate expected average household usage of RNG in the Louisville Metro area. However, based on the 2020 Residential Energy Consumption Survey from the US Energy Information Administration Office of Energy Demand and Integrated Statistics, the average U.S. household uses 53.3 centum cubic feet (CCF) or 5330 cubic feet (CF) of natural gas annually ([Residential Gas Consumption - eia](#)). This unit conversion was used in the calculation in (b) below.
- b. Average RNG production is estimated to be approximately 320 million CF per year. By dividing this figure by the annual average household usage, we can determine the number of households supplied on an annual basis.

$$\begin{aligned} \text{Number of households (max)} &= \frac{320,000,000 \text{ CF}}{1 \text{ year}} \times \frac{1 \text{ house}}{5,330 \frac{\text{CF}}{\text{year}}} \\ &= 60,037 \text{ households supplied per year} \end{aligned}$$

The RNG saved at Morris Forman will be able to supply **60,000 houses per year** with an average household usage of 53.3 CCF per year. Further calculations can be performed if the necessary data is made available from LG&E.



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4. Refer to the Gellner Direct Testimony, page 5, lines 25–34. Provide the average heating values of RNG produced from the various sources enumerated in the response.

**Response:**

Typical RNG from landfill gas, wastewater digester gas, or agricultural digester gas is 95-98% methane which corresponds to 963-994 BTU/SCF ([Renewable Natural Gas \(RNG\): Gas Quality Considerations \(epa.gov\)](#)). RNG feedstock (i.e. landfill gas, wastewater digester gas, or agricultural digester gas) does not have a significant impact on RNG product gas heating value, but it will drive technology selection because some feedstocks may contain oxygen and nitrogen that need to be removed to meet pipeline specifications (typical of landfill gas). Greater heating value specifications may require additional levels of treatment, such as systems to remove trace oxygen and nitrogen, which add to project footprint, capital costs, O&M costs, and energy consumption.

KY PSC Case No. 2024-00125  
Response to the Commission Staff's Data Request Set One No. 5  
Respondent: W. James Gellner, P.E.

**LOUISVILLE METROPOLITAN SEWER DISTRICT  
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DATED JULY 17, 2024**

5. Refer to the Gellner Direct Testimony, page 5, lines 36–50. Provide copies of all correspondence with LG&E regarding the RNG project.

**Response:**

See attached Exhibit "1".

**LOUISVILLE METROPOLITAN SEWER DISTRICT  
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6. Assume that MSD's RNG is eligible for LG&E's LGDS transportation service.
  - a. Explain the volume MSD anticipates it would produce for transport and sale. Include in the response the estimated size and description of truck envisioned to be used for transport and the number of trucks per month.
  - b. Explain how MSD would certify that its RNG was of pipeline quality for acceptance by LG&E.
  - c. Explain how MSD would transport its RNG to LG&E's system. Include in the explanation whether the RNG will be pressurized and condensed in a manner similar to liquefied natural gas (LNG).

**Response:**

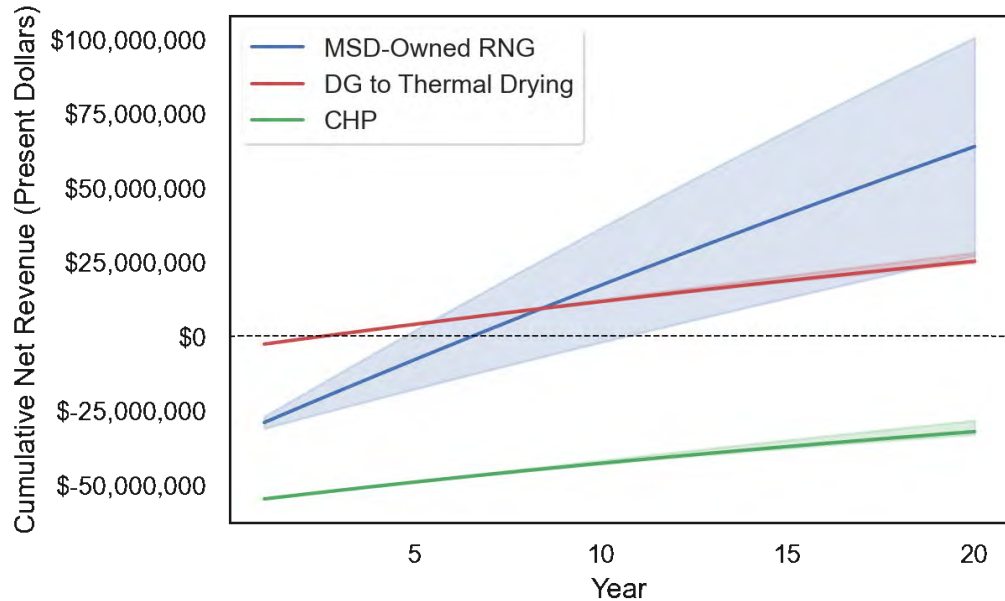
- a. Louisville MSD has not engaged with a trucking company to determine transportation rates. Space is extremely limited at Morris Forman. Louisville MSD already operates trucking services to transport separated biosolids for organic-based nitrogen fertilizer (Louisville Green) and landfill solids. The additional traffic would further increase congestion around the site.
- b. As part of the RNG design, Louisville MSD will comply with LG&E Local Gas Delivery Service, or LGDS, compliance requirements which include continuous on-line monitoring of gas quality and periodic gas sampling.
- c. Louisville MSD will pressurize RNG to the operating pressure requirements of the local distribution system, as determined by LG&E. RNG will not be liquified to LNG as part of the planned RNG project at Morris Forman.

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7. Explain whether MSD has explored business case alternative uses of RNG. Examples could include use for facilities heating or behind the meter electric generation, both of which could presumably reduce MSD's energy or electricity bills.

**Response:**

Louisville MSD previously evaluated different uses for their Morris Forman digester gas including Combined Heat and Power (CHP) to generate electricity and heat, Renewable Natural Gas (RNG), and use of digester gas in their thermal dryer facility (DG to Thermal Drying). RNG was determined to have the greatest financial benefit by ~ \$39M over the 20-year project horizon. Additionally, it was found that RNG would ensure DG is fully utilized because the system could run continuously (except for downtime for maintenance).



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8. Explain how MSD transports, stores and provides its RNG currently.

**Response:**

Louisville MSD currently does not produce RNG.

**LOUISVILLE METROPOLITAN SEWER DISTRICT  
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9. If MSD proposes to inject RNG into LG&E's pipelines, provide a table and a map identifying the specific RNG injection points where MSD anticipates injecting its RNG into LG&E's pipelines and the specific points in LG&E's system where its RNG Case No. 2024-00125 customers will receive gas. Include in the response MSD's anticipated monthly RNG volumes for delivery into LG&E's system.

**Response:**

Our assumption has been that RNG could be injected upstream of the Morris Forman plant's NG meter; however, we have been waiting on LG&E to confirm the specific location of the RNG injection point and cost for interconnection. This analysis is typically completed by the local gas utility to determine the nearest distribution or transmission line that RNG could be injected into. This analysis typically includes consideration of pipeline capacity and baseline natural gas flow.

KY PSC Case No. 2024-00125  
Response to the Commission Staff's Data Request Set One No. 5  
Respondent: W. James Gellner, P.E.

**LOUISVILLE METROPOLITAN SEWER DISTRICT  
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**EXHIBIT "1" TO COMMISSION  
STAFF'S DATA REQUEST SET NO. 1  
QUESTION NO. 5**

## Key, Colby

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**From:** Lisk, Bryan R.  
**Sent:** Monday, November 7, 2022 3:12 PM  
**To:** Zonetta English; Pierce, Joe; Behr, Adam  
**Cc:** Novak, Kyle C; Gellner, W James  
**Subject:** Agenda for LG&E RNG Discussion

All,  
Here is our agenda for tomorrow's meeting:

Purpose: Coordinate requirements for RNG injection into LG&E's natural gas network

1. LG&E's requirements and procedures for renewable natural gas (RNG) injection
  - a. Application procedures
  - b. Preliminary and detailed injection studies
  - c. Information submitted to date
  - d. Other needs
2. Discuss LG&E's information needs for customer supplied gas.
  - a. Gas Volume
  - b. Pressure
  - c. Max/Min production rates
3. RNG conveyance and injection roles and responsibilities:
  - a. Pipeline extension installation
  - b. RNG monitoring and offtake
  - c. Odorization
  - d. Gas characteristics (Specifically O2 and N2)
4. Schedule and timeline
  - a. Pipeline injection studies
  - b. Project schedule (Late 2026)
5. Next Steps

Thanks

**Bryan R. Lisk, PE, CEM**

**Associate Vice President | Hazen and Sawyer  
Energy Management Services Leader**

4011 Westchase Blvd. Raleigh, NC 27607  
919 755-8655 (direct) | 919 349-6529 (cell)  
[blisk@hazenandsawyer.com](mailto:blisk@hazenandsawyer.com) | [hazenandsawyer.com](http://hazenandsawyer.com)

-----Original Appointment-----

**From:** Lisk, Bryan R.  
**Sent:** Monday, November 7, 2022 2:30 PM  
**To:** Lisk, Bryan R.; Zonetta English; Pierce, Joe; Behr, Adam  
**Cc:** Novak, Kyle C; Gellner, W James  
**Subject:** LG&E RNG Discussion For MSD  
**When:** Tuesday, November 8, 2022 8:00 AM-9:00 AM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** Microsoft Teams Meeting

Discuss LG&E RNG interconnection procedures and requirements for RNG. Agenda in progress.



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# Microsoft Teams meeting

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# Hazen

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## Key, Colby

---

**From:** Pierce, Joe <Joe.Pierce@lge-ku.com>  
**Sent:** Thursday, November 10, 2022 9:14 AM  
**To:** Gellner, W James; Jones, Rebecca; Gruner, Robin; Paulley, David  
**Cc:** Zonetta English; Novak, Kyle C; Lisk, Bryan R.; Behr, Adam  
**Subject:** RE: Draft 11/08/22 MSD/LG&E Meeting Notes - PLS REVIEW

**Caution! External email – think before you click**

Thanks Jamie, looks good to us. We added a few comments and additional info in red below. Reach out to me with anything else you all need and I'll get it where it needs to go.

### Joe Pierce

Sr. Key Account Manager | Economic Development&Key Accts | LG&E and KU  
220 W Main St, Louisville, KY 40202  
**M:** 502-220-5313 **O:** 502-627-4084  
[lge-ku.com](http://lge-ku.com)

### Business Use

**From:** Gellner, W James <jgellner@hazenandsawyer.com>  
**Sent:** Wednesday, November 09, 2022 2:21 PM  
**To:** Pierce, Joe <Joe.Pierce@lge-ku.com>; Jones, Rebecca <Rebecca.Jones@lge-ku.com>; Gruner, Robin <Robin.Gruner@lge-ku.com>  
**Cc:** Zonetta English <zonetta.english@louisvillemsd.org>; Novak, Kyle C <KNovak@hazenandsawyer.com>; Lisk, Bryan R. <blisk@hazenandsawyer.com>; Behr, Adam <ABehr@hazenandsawyer.com>  
**Subject:** Draft 11/08/22 MSD/LG&E Meeting Notes - PLS REVIEW

**EXTERNAL email. STOP and THINK before responding, clicking on links, or opening attachments.**

Joe, Rebecca, Robin:

Thank you for your time and flexibility on our call yesterday. Zonetta is having IT issues with her computer today, so she asked me to send these draft meeting notes to you for your review. Would you please review and let us know if you have any comments / suggested edits?

We look forward to working with you on this project.

Thanks again.

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

7870 East Kemper Road, Suite 300, Cincinnati OH 45249  
513-469-2750 (main) | 513-317-0337 (cell)

## 11/8/2022 MEETING NOTES - DRAFT

**Meeting Date/Time:** 11/8/2022 – 8am Eastern via Teams

**Meeting Focus:** Background on Morris Forman WQTC Biosolids Processing Solution Project and Information Needs for Gas Metering / RNG Feasibility

### Attendees:

Zonetta English – Louisville MSD

Joe Pierce – LG&E

Rebecca Jones – LG&E

Robin Gruner – LG&E

Jamie Gellner – Hazen

Kyle Novak – Hazen

Adam Behr – Hazen

Bryan Lisk – Hazen

### Key Discussion Summary

- Joe Pierce will be LG&E's main point of contact for Louisville MSD/Hazen for all gas discussions related to the Morris Forman Water Quality Treatment Center (MFWQTC).
- Rebecca Jones is with LG&E's gas supply group and would be responsible for all renewable natural gas (RNG) coordination.
- Robin Gruner is with LG&E's gas engineering group and will work on the metering station relocation as well as potential RNG injection location discussions.
- Zonetta English, MSD's Strategic Initiatives and Project Delivery Director, is MSD's main point of contact for all discussions with LG&E related to this project.
- Jamie Gellner introduced Hazen as Louisville MSD's Owner's Advisor for the MFWQTC Biosolids Processing Solution Project, which will provide significant improvements to the solids handling facilities at the MFWQTC and address the plant's solids capacity needs without adding additional anaerobic digesters.
- Hazen noted that the site construction for the MFWQTC Biosolids Processing Solution Project will begin mid-2023. The existing gas meter relocation will be a critical path item when site construction begins. The location of the existing metering station needs to be cleared to make room for new construction.
- Zonetta English provided an overview of the project from Louisville MSD's point of view. She explained to the group that this is one of the largest capital projects for Louisville MSD and that many stakeholders are watching this project closely, including the Louisville Mayor's office.
- To begin the process of evaluating the relocation of the gas metering station, Robin Gruner stated that Louisville MSD/Hazen would need to submit a completed Gas Load Data Sheet to their gas facilities locator. Bryan Lisk stated that Louisville MSD/Hazen will include the following additional information with the Gas Load Data Sheet:
  - A site plan showing the location of the existing metering structure and the proposed location for the new structure.
  - A project construction schedule showing the anticipated time frame needed for the metering structure relocation as it relates to the overall Biosolids Processing Solution Project construction.
- Joe Pierce offered to provide the Louisville MSD/Hazen team the contact information for their gas facilities locator who will be involved in the approval process for the proposed new metering station location. Joe asked that Louisville MSD/Hazen copy the locator on all information regarding the Gas Load Data and metering station relocation discussions.
- To begin the discussions on the RNG evaluation for MFWQTC, Rebecca Jones requested that Louisville MSD/Hazen complete and submit the LGDS (gas transport service) request form.

- From that LGDS, LG&E will perform a preliminary evaluation to identify if the MFWQTC site is in an area where they can accept RNG into their distribution pipeline.
- Rebecca Jones confirmed for Louisville MSD/Hazen that LG&E would not purchase customer supplied methane and will only be responsible for the transport of the RNG, **pending further evaluation of the LGDS request form**
- Jamie Gellner committed the Louisville MSD/Hazen team to submitting the Gas Load Data Sheet and LGDS packages to LG&E by the end of next week for review. Hazen will then reach back out to Joe by the end of the following week to schedule a meeting to discuss the information that was submitted and further actions.

**Action Items**

- LG&E will provide the contact information for the gas facilities locator who will be involved with this project.
- MSD/Hazen will complete a Gas Load Data Sheet for gas demands and submit to LG&E (including the facilities locator) – Target 11/11/2022 **LGE Gas Locator - Dave Paulley ([David.Paulley@lge-ku.com](mailto:David.Paulley@lge-ku.com))**
- MSD/Hazen will provide a site plan and project construction schedule for the biosolids improvements – Target 11/11/2022
- MSD/Hazen will complete a LGDS (gas transport service) request form and submit to LG&E – Target 11/11/2022
- LG&E will review submitted information and forms for follow up discussions on next steps and feasibility of RNG transport.
- MSD/Hazen will follow up with LG&E the week of 11/14/2022 to schedule the next meeting.

**Additional info per Gas Engineering regarding existing service and relocation for consideration:**

To elaborate a bit more on the gas service ownership, prior to 2012 LG&E only owned the Company service (from the main up to the property line, where typically there is a service valve located), and the meters and regulators within the meter loop. At that time customers were responsible for the installation of their Customer service, and construction of the meter loop. This service would have fallen into the pre 2012 category. Beginning in 2012 any new services installed, or services that we made modification to, are LG&E owned, or we assumed ownership of them, all the way to the outlet of the meter loop. I am not aware of any modifications that we have made to this specific service, but may need to do a bit more research to confirm.

Looking back at the service reports it looks like the project that we did in relation to their pelletizing process was in 2011, and was the addition to the metering facilities only. If I am remembering correctly we wanted to relocate the metering then, but it was not feasible at the time. Had we done that at that time we would have treated it like a number of other high pressure commercial service projects that we were doing at the time, and the existing Customer service would have been turned over to them as houseline assuming it was hydraulically feasible to do, otherwise it would have needed to be replaced. It is probably worth additional internal conversation to make sure there are no issues doing the same here, but given the age of the service, and lack of records since it was customer installed it would probably be best if they plan on replacing that piping.

Another important thing to note is that this is a high pressure service, so the new location of the metering is going to need to be within approximately 50 feet of the road right of way, or have a first stage regulation assembly with that requirement to reduce the pressure on the property up to the metering. This is the primary reason that we wanted to complete the relocation in 2011.

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## Key, Colby

---

**From:** Lisk, Bryan R.  
**Sent:** Sunday, November 13, 2022 10:01 AM  
**To:** Pierce, Joe  
**Cc:** Zonetta English; Gellner, W James; Novak, Kyle C; Behr, Adam  
**Subject:** MSD Natural Gas Service and RNG Request Forms  
**Attachments:** RNG Preliminary Interconnection Evaluation Request 11-12-22.pdf; LMSD - LGE Meter Relocation Request Package 11-12-22.pdf

Mr. Pierce,

Please see the attached forms for the meter station relocation and pipeline interconnection evaluation we discussed during our meeting on 11/8/22. Please free to reach out if you have anu questions or need additional information. Also, please make sure to copy Zonetta English (copied) on all correspondence related to the natural gas metering station relocation and RNG interconnection emails.

Thanks

**Bryan R. Lisk, PE, CEM**

**Associate Vice President | Hazen and Sawyer  
Energy Management Services Leader**

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919 755-8655 (direct) | 919 349-6529 (cell)  
[blisk@hazenandsawyer.com](mailto:blisk@hazenandsawyer.com) | [hazenandsawyer.com](http://hazenandsawyer.com)

## Key, Colby

---

**From:** Pierce, Joe <Joe.Pierce@lge-ku.com>  
**Sent:** Monday, November 21, 2022 9:07 AM  
**To:** Gellner, W James; Jones, Rebecca; Gruner, Robin; Paulley, David  
**Cc:** Zonetta English; Novak, Kyle C; Lisk, Bryan R.; Behr, Adam  
**Subject:** RE: MSD/LG&E Follow Up Meeting - Potential Dates - PLS REVIEW

**Caution! External email – think before you click**

Good Morning Jaime,  
LGE is currently in the process of internal review of the modeling/engineering data for the LGDS interconnection request. We can discuss meter relocation and some potential follow-up questions that Rebecca's group may have regarding the RNG connection on 11/29 if that works for everyone, but LGE is currently going to need until around mid-December to share info regarding the RNG portion. Let me know if that works and we can set up for then or if you would like to wait until we schedule discussion after the RNG info is internally reviewed.

Joe

## Business Use

**From:** Gellner, W James <jgellner@hazenandsawyer.com>  
**Sent:** Friday, November 18, 2022 2:02 PM  
**To:** Pierce, Joe <Joe.Pierce@lge-ku.com>; Jones, Rebecca <Rebecca.Jones@lge-ku.com>; Gruner, Robin <Robin.Gruner@lge-ku.com>; Paulley, David <David.Paulley@lge-ku.com>  
**Cc:** Zonetta English <zonetta.english@louisvillemsd.org>; Novak, Kyle C <KNovak@hazenandsawyer.com>; Lisk, Bryan R. <blisk@hazenandsawyer.com>; Behr, Adam <ABehr@hazenandsawyer.com>  
**Subject:** MSD/LG&E Follow Up Meeting - Potential Dates - PLS REVIEW

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Joe:

As we discussed, we wanted to reach out to you and your team to find a good time for our next call. That call will be focused on review of the information we sent on 11/13, related to meter relocation and potential RNG transport. Would you please let us know if any of the following dates and times would work for you (anticipated call time is 45 to 60 minutes)?

Tuesday (11/22) - 4pm  
Monday (11/28) - 9am or 1pm  
Tuesday (11/29) - 8am or 8:30am

Thank you!

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

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[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com) | [hazenandsawyer.com](http://hazenandsawyer.com)

**From:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>  
**Sent:** Thursday, November 10, 2022 1:43 PM  
**To:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>; Jones, Rebecca <[Rebecca.Jones@lge-ku.com](mailto:Rebecca.Jones@lge-ku.com)>; Gruner, Robin <[Robin.Gruner@lge-ku.com](mailto:Robin.Gruner@lge-ku.com)>; Paulley, David <[David.Paulley@lge-ku.com](mailto:David.Paulley@lge-ku.com)>  
**Cc:** Zonetta English <[zonetta.english@louisvillemsd.org](mailto:zonetta.english@louisvillemsd.org)>; Novak, Kyle C <[KNovak@hazenandsawyer.com](mailto:KNovak@hazenandsawyer.com)>; Lisk, Bryan R. <[blisk@hazenandsawyer.com](mailto:blisk@hazenandsawyer.com)>; Behr, Adam <[ABehr@hazenandsawyer.com](mailto:ABehr@hazenandsawyer.com)>  
**Subject:** Revised Draft 11/08/22 MSD/LG&E Meeting Notes

Joe:

Thanks for the review and the additional information.

We've incorporated your changes, along with the additional information you included at the end for a clean copy of the notes (see below).

We'll review that additional information and be ready to discuss the next time we meet with you. We'll be in touch later next week to coordinate a time with you for that discussion.

Thank you!

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

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[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com) | [hazenandsawyer.com](http://hazenandsawyer.com)

## **11/8/2022 MEETING NOTES - DRAFT**

**Meeting Date/Time:** 11/8/2022 – 8am Eastern via Teams

**Meeting Focus:** Background on Morris Forman WQTC Biosolids Processing Solution Project and Information Needs for Gas Metering / RNG Feasibility

### **Attendees:**

Zonetta English – Louisville MSD  
Joe Pierce – LG&E  
Rebecca Jones – LG&E  
Robin Gruner – LG&E  
Jamie Gellner – Hazen  
Kyle Novak – Hazen  
Adam Behr – Hazen

### Key Discussion Summary

- Joe Pierce will be LG&E's main point of contact for Louisville MSD/Hazen for all gas discussions related to the Morris Forman Water Quality Treatment Center (MFWQTC).
- Rebecca Jones is with LG&E's gas supply group and would be responsible for all renewable natural gas (RNG) coordination.
- Robin Gruner is with LG&E's gas engineering group and will work on the metering station relocation as well as potential RNG injection location discussions.
- Zonetta English, MSD's Strategic Initiatives and Project Delivery Director, is MSD's main point of contact for all discussions with LG&E related to this project.
- Jamie Gellner introduced Hazen as Louisville MSD's Owner's Advisor for the MFWQTC Biosolids Processing Solution Project, which will provide significant improvements to the solids handling facilities at the MFWQTC and address the plant's solids capacity needs without adding additional anaerobic digesters.
- Hazen noted that the site construction for the MFWQTC Biosolids Processing Solution Project will begin mid-2023. The existing gas meter relocation will be a critical path item when site construction begins. The location of the existing metering station needs to be cleared to make room for new construction.
- Zonetta English provided an overview of the project from Louisville MSD's point of view. She explained to the group that this is one of the largest capital projects for Louisville MSD and that many stakeholders are watching this project closely, including the Louisville Mayor's office.
- To begin the process of evaluating the relocation of the gas metering station, Robin Gruner stated that Louisville MSD/Hazen would need to submit a completed Gas Load Data Sheet to their gas facilities locator. Bryan Lisk stated that Louisville MSD/Hazen will include the following additional information with the Gas Load Data Sheet:
  - A site plan showing the location of the existing metering structure and the proposed location for the new structure.
  - A project construction schedule showing the anticipated time frame needed for the metering structure relocation as it relates to the overall Biosolids Processing Solution Project construction.
- Joe Pierce offered to provide the Louisville MSD/Hazen team the contact information for their gas facilities locator who will be involved in the approval process for the proposed new metering station location. Joe asked that Louisville MSD/Hazen copy the locator on all information regarding the Gas Load Data and metering station relocation discussions.
- To begin the discussions on the RNG evaluation for MFWQTC, Rebecca Jones requested that Louisville MSD/Hazen complete and submit the LGDS (gas transport service) request form.
  - From that LGDS, LG&E will perform a preliminary evaluation to identify if the MFWQTC site is in an area where they can accept RNG into their distribution pipeline.
  - Rebecca Jones confirmed for Louisville MSD/Hazen that LG&E would not purchase customer supplied methane and will only be responsible for the transport of the RNG, pending further evaluation of the LGDS request form.
- Jamie Gellner committed the Louisville MSD/Hazen team to submitting the Gas Load Data Sheet and LGDS packages to LG&E by the end of next week for review. Hazen will then reach back out to Joe by the end of the following week to schedule a meeting to discuss the information that was submitted and further actions.

### Action Items

- LG&E will provide the contact information for the gas facilities locator who will be involved with this project. *LGE Gas Locator: Dave Paulley ([David.Paulley@lge-ku.com](mailto:David.Paulley@lge-ku.com))*
- MSD/Hazen will complete a Gas Load Data Sheet for gas demands and submit to LG&E (including the facilities locator) – Target 11/11/2022
- MSD/Hazen will provide a site plan and project construction schedule for the biosolids improvements – Target 11/11/2022
- MSD/Hazen will complete a LGDS (gas transport service) request form and submit to LG&E – Target 11/11/2022
- LG&E will review submitted information and forms for follow up discussions on next steps and feasibility of RNG transport.



- MSD/Hazen will follow up with LG&E the week of 11/14/2022 to schedule the next meeting.

***Additional info LG&E Gas Engineering regarding existing service and relocation for consideration:***

*To elaborate a bit more on the gas service ownership, prior to 2012 LG&E only owned the Company service (from the main up to the property line, where typically there is a service valve located), and the meters and regulators within the meter loop. At that time customers were responsible for the installation of their Customer service, and construction of the meter loop. This service would have fallen into the pre 2012 category. Beginning in 2012 any new services installed, or services that we made modification to, are LG&E owned, or we assumed ownership of them, all the way to the outlet of the meter loop. I am not aware of any modifications that we have made to this specific service, but may need to do a bit more research to confirm.*

*Looking back at the service reports it looks like the project that we did in relation to their pelletizing process was in 2011, and was the addition to the metering facilities only. If I am remembering correctly we wanted to relocate the metering then, but it was not feasible at the time. Had we done that at that time we would have treated it like a number of other high pressure commercial service projects that we were doing at the time, and the existing Customer service would have been turned over to them as houseline assuming it was hydraulically feasible to do, otherwise it would have needed to be replaced. It is probably worth additional internal conversation to make sure there are no issues doing the same here, but given the age of the service, and lack of records since it was customer installed it would probably be best if they plan on replacing that piping.*

*Another important thing to note is that this is a high-pressure service, so the new location of the metering is going to need to be within approximately 50 feet of the road right of way, or have a first stage regulation assembly with that requirement to reduce the pressure on the property up to the metering. This is the primary reason that we wanted to complete the relocation in 2011.*

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## Key, Colby

---

**From:** Pierce, Joe <Joe.Pierce@lge-ku.com>  
**Sent:** Monday, December 5, 2022 2:43 PM  
**To:** Gellner, W James; Jones, Rebecca; Gruner, Robin; Paulley, David; Pritchett, Meredith  
**Cc:** Zonetta English; Novak, Kyle C; Lisk, Bryan R.; Behr, Adam  
**Subject:** RE: Discuss Morris Forman WQTC Gas Metering - Draft 11/29/2022 Meeting Notes - PLS REVIEW

**Caution! External email – think before you click**

Thanks Jamie, this looks good to me. I have a meeting scheduled with Zonetta on 12/12 and provided the electrical load data sheet last week.

Joe

## Business Use

**From:** Gellner, W James <jgellner@hazenandsawyer.com>  
**Sent:** Thursday, December 01, 2022 10:32 PM  
**To:** Pierce, Joe <Joe.Pierce@lge-ku.com>; Jones, Rebecca <Rebecca.Jones@lge-ku.com>; Gruner, Robin <Robin.Gruner@lge-ku.com>; Paulley, David <David.Paulley@lge-ku.com>; Pritchett, Meredith <Meredith.Pritchett@lge-ku.com>  
**Cc:** Zonetta English <zonetta.english@louisvillemsd.org>; Novak, Kyle C <KNovak@hazenandsawyer.com>; Lisk, Bryan R. <blisk@hazenandsawyer.com>; Behr, Adam <ABehr@hazenandsawyer.com>  
**Subject:** Discuss Morris Forman WQTC Gas Metering - Draft 11/29/2022 Meeting Notes - PLS REVIEW

**EXTERNAL email. STOP and THINK before responding, clicking on links, or opening attachments.**

Joe et. al:

Thank you again for your time on Tuesday this week to further discuss the Morris Forman WQTC Gas Metering and RNG Evaluation. We have included a draft summary of our discussion for your review. Would you please let us know if you have any questions or comments? We will be in touch on the follow-up information as soon as possible.

Thanks.

Jamie

## 11/29/2022 MEETING NOTES - DRAFT

**Meeting Date/Time:** 11/29/2022 – 8:30am Eastern via Teams

### Attendees:

Joe Pierce – LG&E (main point of contact for LMSD/Hazen)  
Rebecca Jones – LG&E (member of gas supply group responsible for the LGDS application)  
Meredith Pritchett – LG&E (member of gas engineering group responsible for the meter relocation project)  
Robin Gruner – LG&E (member gas engineering group)  
David Paulley – LG&E (gas facilities locator)  
Zonetta English – Louisville MSD (LMSD)

James Gellner – Hazen

Bryan Lisk – Hazen

Kyle Novak – Hazen

Adam Behr – Hazen

### Key Discussion Summary:

- Jamie Gellner reminded the LG&E Team that the following draft packages were submitted by LMSD/Hazen on 11/13/2022 for review:
  - Rate LGDS Service Request Form package for customer supplied RNG.
  - Natural gas meter relocation package, which included the Gas Load Data Sheet and site plans with the proposed meter relocation.
- Related to the LGDS Service Request Form package, Rebecca Jones had the following questions/comments:
  - LG&E works off two (2) different tariffs, so LG&E asked for clarification on whether the customer supplied RNG will be delivered to the interstate pipeline or sold to a local customer on LG&E's network.
    - Bryan Lisk responded that LMSD's customer has not yet been identified at this stage but that RNG will most likely need to be delivered to the interstate pipeline to give LMSD the most flexibility.
  - LG&E requested additional detail on the expected monthly, daily, and hourly variability in customer delivered RNG from the Morris Forman Water Quality Treatment Center (MFWQTC).
    - Jamie Gellner noted that Hazen will consult with Design-Build Team for these expected uptimes and variability and provide a written response to LG&E with this information.
  - LG&E requested information about the expected commissioning time of the RNG system.
    - Bryan Lisk estimated 6-8 months for initial commissioning and startup of the system and to ramp up RNG production to the design flow. Hazen will consult with the Design-Build Team to verify and provide additional information to LG&E if necessary.
  - LG&E asked if an outage would be possible with construction for new gas meter tie-ins / commissioning.
    - Jamie Gellner stated that an outage would be possible, but would likely need to be minimized to maintain operation of existing processes at the plant. Hazen will consult with the Design-Build Team to verify and provide additional information to LG&E.
- The following topics were discussed related to the natural gas meter relocation package:
  - Jamie Gellner noted that the meter relocation is the current priority for the LMSD project, as it is a critical path for construction that is planned for mid next year (June/July 2023)
    - David Paulley cautioned that there have been extended lead times on the equipment that LG&E typically specifies for meter relocations of late.
    - Robin Gruner stressed that the appropriate gas metering system design (usage and pressure) will need to be determined and ordered ASAP to minimize disruptions to the construction schedule.
  - Robin Gruner stated that LMSD is currently on the FT rate schedule at MFWQTC and asked whether there will be any changes in gas consumption at the plant with the new project.
    - Kyle Novak noted that LMSD/Hazen doesn't expect a significant increase in gas usage with the new project (THP is being added but two of the four direct drum dryers have been removed) but will confirm the numbers and verify for LG&E in a follow-up response.
  - Jamie Gellner asked about LG&E's knowledge of their existing infrastructure at the plant, such as the rating of the existing gas system and condition of distribution lines on the plant's property.
    - Robin Gruner responded that they do not have many records or info about the existing infrastructure that is located on plant property because previously it was customer-owned.
      - Jamie Gellner stated that LMSD/Hazen understand that there may be some liability in attempting to repurpose the distribution lines that traverse plant property because little is known about their condition.

- Robin Gruner stressed that LG&E will need to know the desired delivery pressure after the meter so they can size their metering station appropriately.
  - Jamie Gellner stated that LMSD/Hazen will confirm with the Design-Build Team that the gas pressure requirements of equipment being constructed has not increased.
  - Bryan Lisk noted that LMSD/Hazen also understands that the length of “house-line” between the LG&E meter and the plant equipment will increase with the proposed meter relocation, so it is important to evaluate pressure drop downstream of the proposed meter.
- Robin Gruner stated that the current gas service is regulated from approximately 99psi to 20 psi at the existing meter. Depending on required service pressure with the new improvements, a new first stage regulator may need to be installed 50 feet from the road right of way. LMSD/Hazen will verify the delivery pressure needed downstream of the new meter.
  - David Paulley cautioned that all piping will be tested to 1.5x the design pressure and required to show zero leakage prior to the meter being turned on.
- Rebecca Jones noted that LG&E’s records show five (5) meters at MFWQTC.
  - David Paulley would like to schedule a site visit in the next few weeks to validate LG&E’s existing metering infrastructure.
    - LMSD/Hazen will coordinate a date/time for the site visit in the next two weeks.
    - Kyle Novak will accompany David Paulley on his site visit.
- All parties on the call agreed that everything from the high pressure distribution to the proposed metering system will be LG&E’s responsibility and everything downstream of the relocated metering station will be LMSD/Hazen/Design-Build Team’s responsibility.
- Joe Pierce will send LMSD/Hazen an LG&E load sheet to begin filling out as a start to the electrical distribution coordination that will need to take place for the project.

**Action Items:**

- LMSD/Hazen will consult with Design-Build Team for the expected uptimes and variability of the customer supplied RNG, startup times, and outage constraints and provide a written response to LG&E with this information.
- LMSD/Hazen will confirm the expected gas usage numbers and verify those numbers for LG&E.
- LMSD/Hazen will confirm with the Design-Build Team that the gas pressure requirements for any new equipment being constructed is not higher than the current pressure being delivered.
- LMSD/Hazen will evaluate the pressure drop downstream of the proposed meter to confirm for LG&E what pressure needs to be delivered downstream of the metering station.
- LMSD/Hazen will coordinate a date/time with David Paulley for a site visit to MFWQTC.
- Zonetta English will coordinate the required LMSD safety training for David Paulley and the site visit with Kyle Novak.
- Joe Pierce will email LMSD/Hazen the LG&E electrical load sheet that will need to be filled out for MFWQTC as part of the project.
- LMSD/Hazen will coordinate date/time with LG&E for a follow up meeting the week of December 12-16. Information related the action items listed above will be submitted to LG&E beforehand. *Zonetta English is coordinating a time to touch base with Joe Pierce the week of 12/12. A meeting with the group will be scheduled shortly thereafter.*

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

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## Key, Colby

---

**From:** Gellner, W James  
**Sent:** Tuesday, January 10, 2023 9:29 AM  
**To:** Pierce, Joe; Jones, Rebecca; Gruner, Robin; Paulley, David; Pritchett, Meredith  
**Cc:** Zonetta English; Novak, Kyle C; Lisk, Bryan R.; Behr, Adam  
**Subject:** Morris Forman WQTC Gas Metering - Follow Up Information from Call 11/29/22

Joe and Team:

We have included answers to the questions / information needs that were identified during our last discussion below. We plan to summarize these during our call this Thursday (1/12/23).

Jamie

- **LMSD/Hazen will consult with Design-Build Team for the expected uptimes and variability of the customer supplied RNG, startup times, and outage constraints and provide a written response to LG&E with this information.** *We anticipate 90% uptime for the RNG system, and a few short duration periods each year where delivery of RNG to the transmission system would be approximately 50% of normal production. Startup time for the digesters and RNG system will be between 6 and 9 months. We anticipate production from 30% to 100% of average production during that time. Outages can be accommodated for both the LG&E supplied natural gas and the RNG. We'd like to get input from LG&E on preferred outages for meter installation and system check out.*
- **LMSD/Hazen will confirm the expected gas usage numbers and verify those numbers for LG&E.** *We evaluated the connected loads at the site to help determine the metering necessary to ensure that both non-zero and maximum flows are measurable. Overall, we found that a range of natural gas flows to the site from 0.2 MMBTU/hr to 90 MMBTU/hr are possible.*

*We found that a minimum non-zero flow of 0.2 MMBTU/hr could be reasonably expected. This minimum demand is not expected to occur frequently. The minimum non-zero load of 0.2 MMBTU/hr could occur under two (2) scenarios:*

- 1. Boiler supplying heat to the lab building is the only non-zero load and is turned down to its minimum fuel demand of 0.2 MMBTU/hr.*
- 2. The primary building's (main headworks building) natural gas main air handler is the only non-zero load and is turned down to a minimum fuel demand of 0.2 MMBTU/hr.*

*On the upper end of the flow range, 90 MMBTU/hr is also not expected to occur frequently but could occur, if every connected load were to simultaneously run at max capacity.*

*We understand this wide range in flow conditions may make it difficult to install a single meter. Therefore, we have grouped loads in (3) general areas that are to be supplied by separate pipe runs:*

- 1. Solids handling loads, including thermal dryers, RTOs, THP boilers, and Main Equipment Building boilers. Range of 5 MMBTU/HR to 84 MMBTU/HR*
- 2. Lab building loads, including lab building boiler and 201 HP lab generator. Range of 0.2 MMBTU/hr to 2.3 MMBTU/hr.*
- 3. Headworks loads, including Primary Building natural gas air handler and 22 kW secondary bypass gate generator. Range of 0.2 MMBTU/hr to 1.2 MMBTU/hr.*

*Note (2) and (3) have similar flow ranges and could potentially be metered by a single meter. We'd like to discuss metering scenarios with LG&E during our call this week.*

- **LMSD/Hazen will confirm with the Design-Build Team that the gas pressure requirements for any new equipment being constructed is not higher than the current pressure being delivered.** *A pressure of 20 psi downstream of the meter is recommended. No increase in pressure requirements is anticipated with new equipment.*
- **LMSD/Hazen will evaluate the pressure drop downstream of the proposed meter to confirm for LG&E what pressure needs to be delivered downstream of the metering station.** *A pressure of 20 psi downstream of the meter is recommended.*

We will send a proposed agenda for our Thursday call to you tomorrow.

Thank you!

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

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## Key, Colby

---

**From:** Gellner, W James  
**Sent:** Thursday, January 19, 2023 1:46 PM  
**To:** Pierce, Joe; Jones, Rebecca; Gruner, Robin; Paulley, David; Pritchett, Meredith  
**Cc:** Novak, Kyle C; Behr, Adam; Lisk, Bryan R.; Zonetta English  
**Subject:** Morris Forman WQTC Gas Metering (3) - DRAFT MEETING NOTES

Joe and Team:

Draft meeting notes from our discussion last Thursday are included below. Would you please review and let us know if you have any comments? Please also let us know if there is any additional information that you need as you progress in your evaluations.

Thank you.

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

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### **1/12/2023 MEETING NOTES - DRAFT**

**Meeting Date/Time:** 1/12/2023 – 8:00am Eastern via Teams

#### **Attendees:**

Joe Pierce – LG&E (main point of contact for LMSD/Hazen)  
Rebecca Jones – LG&E (member of gas supply group responsible for the LGDS application)  
Meredith Pritchett – LG&E (member of gas engineering group responsible for the meter relocation project)  
Robin Gruner – LG&E (member gas engineering group)  
Zonetta English – Louisville MSD (LMSD)  
James (Jamie) Gellner – Hazen  
Bryan Lisk – Hazen  
Kyle Novak – Hazen  
Adam Behr – Hazen

#### **Key Discussion Summary:**

- Jamie Gellner guided the group through a summary of responses that LMSD/Hazen sent to LG&E via email on 1/10/2023 related to the proposed relocation of the supply natural gas metering station and proposed RNG system. The information provided by LMSD/Hazen to LG&E included:
  - Expected uptimes and variability of customer supplied RNG.
  - Expected startup times for RNG system.
  - Ability for LMSD/Hazen to accommodate outages for LG&E supplied natural gas and RNG receiving.
  - Expected gas usage, including the range of potential non-zero flows, to help LG&E evaluate the proper metering equipment needed for the meter relocation.
  - Confirmation of the pressure needed downstream of the metering station to be 20 psi.



- Regarding the natural gas metering station relocation:
  - James Gellner asked LG&E what the expected windows for natural gas outages LMSD could expect while the new metering station is installed so that this can be communicated to the Progressive Design-Build (PDB) Team:
    - Meredith Pritchett responded that this was not currently known, but that LG&E would let LMSD/Hazen know as soon as they complete their internal work on the metering station requirements.
  - Bryan Lisk asked LG&E whether there is any adjustability to the pressure directly downstream of the metering station:
    - Meredith Pritchett responded that the downstream pressure is set and cannot be adjusted.
  - Jamie Gellner asked whether LG&E needed anything else from LMSD/Hazen to proceed with their evaluations of the metering station relocation:
    - Meredith Pritchett responded that LG&E should have everything they need, but that David Paulley may reach out if he needs anything else.
    - LG&E agreed that the next steps are: 1.) LG&E will review the data provided by LMSD/Hazen on gas consumption ranges and determine the metering equipment that is needed; 2.) LG&E will determine the improvements needed, provide an estimate of the construction costs, and develop a schedule for the improvements; and 3.) LMSD and LG&E will sign a contract for the metering station relocation construction.
- Regarding the proposed RNG / customer supplied gas interconnection:
  - Rebecca Jones asked about the location of the proposed metering equipment and the space available for the RNG interconnection / gas monitoring station, as well as its location relative to the road (Algonquin Parkway):
    - Jamie Gellner responded that LMSD/Hazen will prepare an updated site map showing the area available for a RNG interconnection station and its distance to the road to assist LG&E in developing their costs.
  - Bryan Lisk asked whether LG&E has any other programs available to support customer supplied RNG (such as a decarbonization program)
    - Rebecca Jones stated that the LGDS tariff is the only option LG&E offers.
      - Customer pays for interconnection station and all operating costs, and LG&E owns and operates the station.
      - LG&E does not cover any costs associated with construction, operation, or maintenance – those would all be costs covered by LMSD.
  - Rebecca Jones stated that LG&E is still evaluating whether they can receive RNG at the MFWQTC site and that they don't currently need anything else from LMSD/Hazen to continue their evaluation. LG&E will keep LMSD/Hazen updated on the status of the RNG injection evaluation as it progresses.
  - Rebecca Jones asked if LMSD/Hazen if they foresaw any problem with meeting the gas quality requirements given on the LGDS tariff
    - Bryan Lisk stated that there are no concerns with meeting the customer supplied gas standard for gas quality for this project.
- Jamie Gellner stated that LMSD/Hazen is still working on the electrical load data sheet and will provide it to LG&E as soon as it's complete.
  - *LG&E and MSD will coordinate a meeting to discuss the projected electrical loads as needed.*

**Action Items:**

- LMSD/Hazen will complete the electrical load data sheet and submit it to Joe Pierce for review.
- LMSD/Hazen will prepare a site map that shows the proposed location of the supply natural gas metering station and the area available for an RNG interconnection station, calling out the distance to the nearest right-of-way (Algonquin Pkwy) (*Sent 1/18/23*).

- LG&E will evaluate the metering station equipment required to determine the costs and a timeline for the improvements.
- LG&E will evaluate the RNG interconnection to determine whether customer supplied gas may be injected into their system near the site and to estimate the approximate cost of a RNG interconnection station.
- LMSD/Hazen will reach out to LG&E in approximately a week to check in on the status of their meter relocation and RNG evaluations and to determine whether a meeting should be set to discuss any questions LG&E may have.

## Key, Colby

---

**From:** Jones, Rebecca <Rebecca.Jones@lge-ku.com>  
**Sent:** Monday, March 20, 2023 3:23 PM  
**To:** Gellner, W James; Pierce, Joe; Paulley, David; Pritchett, Meredith; Gruner, Robin  
**Cc:** Zonetta English; Novak, Kyle C; Lisk, Bryan R.; Behr, Adam  
**Subject:** RE: Morris Forman Gas Metering Status Meeting 3/17/2023 - DRAFT Minutes

Some people who received this message don't often get email from rebecca.jones@lge-ku.com. [Learn why this is important](#)

**Caution! External email – think before you click**

Jamie,

For the second bullet point under item 2, could you please modify the wording as follows (changes tracked in purple)? I think you understand what I was saying during the meeting, but prefer this wording for official notes if you are OK with these proposed changes.

- LG&E has concerns about gas quality and BTU content/heating value for potential RNG injection at the proposed location ~~legal / regulatory impacts and the quality of gas potentially introduced into their system with RNG.~~
  - To address these concerns, LG&E has hired a consultant to advise them on industry best practices and standards for gas quality and to help develop internal guidelines for customer-supplied RNG. They are considering proposing changes to changing gas quality standards and other requirements in the tariff.

Thanks,  
Rebecca

## Confidential

**From:** Gellner, W James <jgellner@hazenandsawyer.com>  
**Sent:** Sunday, March 19, 2023 9:56 AM  
**To:** Pierce, Joe <Joe.Pierce@lge-ku.com>; Jones, Rebecca <Rebecca.Jones@lge-ku.com>; Paulley, David <David.Paulley@lge-ku.com>; Pritchett, Meredith <Meredith.Pritchett@lge-ku.com>; Gruner, Robin <Robin.Gruner@lge-ku.com>  
**Cc:** Zonetta English <zonetta.english@louisvillemsd.org>; Novak, Kyle C <KNovak@hazenandsawyer.com>; Lisk, Bryan R. <blisk@hazenandsawyer.com>; Behr, Adam <ABehr@hazenandsawyer.com>  
**Subject:** Morris Forman Gas Metering Status Meeting 3/17/2023 - DRAFT Minutes

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*Joe et. al:*

*Below are the draft meeting minutes from our call on Friday. Would you please review and let us know if you have any comments / modifications?*

*Thank you.*

*Jamie*

## 3/17/2023 MEETING NOTES - DRAFT

**Meeting Date/Time:** 3/17/2023 – 11:00am Eastern via Teams

### **Attendees:**

Joe Pierce – LG&E (main point of contact for LMSD/Hazen)  
Rebecca Jones – LG&E (member of gas supply group responsible for the LGDS application)  
Meredith Pritchett – LG&E (member of gas engineering group responsible for the meter relocation project)  
Robin Gruner – LG&E (member of gas engineering group)  
Zonetta English – Louisville MSD (LMSD)  
James (Jamie) Gellner – Hazen  
Bryan Lisk – Hazen  
Kyle Novak – Hazen  
Adam Behr – Hazen

### **Key Discussion Summary:**

**MEETING OBJECTIVE:** The primary purpose of today's meeting was to get an update on the following items from LG&E: (1) the incoming natural gas meter relocation and (2) the RNG feasibility analysis.

- 1.) Incoming natural gas meter relocation update:
  - LG&E has finished sizing the new gas meter station components.
  - LG&E is currently working on the draft cost estimate / contract for the new incoming gas meter station.
  - Next step is for LMSD and LG&E to execute a contract for the procurement and construction of the meter station relocation.
    - Joe Pierce stated that he will coordinate with the LG&E team and provide an update to LMSD next week (week of 3/20/2023) on anticipated timing of draft cost / contract.
  - LG&E anticipates that the gas meter station installation will take ~ 6 months once the contract is executed based on the current lead time of equipment.
  - LG&E requested confirmation that the maximum natural gas demand at MFWQTC would not exceed the current contractual limit of 1,500 MCF/day after the BPS Project is complete.
    - Hazen/LMSD will verify and provide a written response to LG&E via email.
- 2.) Renewable Natural Gas (RNG) feasibility analysis update:
  - LG&E continues to work on their feasibility assessment to determine whether they can accept customer-supplied RNG into their distribution network near MFWQTC.
  - LG&E has concerns about legal / regulatory impacts and the quality of gas potentially introduced into their system with RNG.
    - To address these concerns, LG&E has hired a consultant to advise them on industry best practices and standards for gas quality and to help develop internal guidelines for customer-supplied RNG. They are considering changing gas quality standards and other requirements in the tariff.
  - LMSD asked if LG&E could provide an estimate for how long the RNG feasibility assessment will take.
    - LG&E cannot provide any definite timeline at this point, but that it would not be done within the next few weeks.
    - LG&E committed to providing updates to LMSD/Hazen on the assessment schedule as more details are developed.

- LMSD reminded the LG&E team that there are decisions to be made by LMSD that depend on whether it is feasible to inject RNG at MFWQTC, so it would be good to know that timeline for completion as soon as possible.
- Hazen also noted that there are drivers, such as federal funding, to move quickly with an RNG project (e.g. to have the project started in 2024) if deemed feasible by LG&E.

**Action Items:**

- LMSD/Hazen will verify that the incoming natural gas demand at MFWQTC will remain under the 1,500 MCF/day in order to be in compliance with the current contract limit.
- LG&E will get back to LMSD/Hazen next week (week of 3/20/2023) on potential timing of draft cost / contract for gas meter relocation.
- LMSD/Hazen will continue to coordinate with the Design-Build team to complete the electrical load sheet for the BPS project and send it to LG&E for review.

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## Key, Colby

---

**From:** Gellner, W James  
**Sent:** Tuesday, July 18, 2023 4:33 AM  
**To:** Lisk, Bryan R.; Behr, Adam; Novak, Kyle C  
**Subject:** FW: Morris Forman Gas Meter Relocation Update

FYI

**From:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>  
**Sent:** Monday, July 17, 2023 1:32 PM  
**To:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>; Zonetta English <[zonetta.english@louisvillemad.org](mailto:zonetta.english@louisvillemad.org)>  
**Subject:** RE: Morris Forman Gas Meter Relocation Update

Joe:

Thanks very much for this update. We'll follow up with you toward mid-August to see if we can schedule a time to meet to discuss further.

Thank you.

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

7870 East Kemper Road, Suite 300, Cincinnati OH 45249  
513-469-2750 (main) | 513-317-0337 (cell)  
[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com) | [hazenandsawyer.com](http://hazenandsawyer.com)

**From:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>  
**Sent:** Monday, July 17, 2023 1:18 PM  
**To:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>; Zonetta English <[zonetta.english@louisvillemad.org](mailto:zonetta.english@louisvillemad.org)>  
**Subject:** RE: Morris Forman Gas Meter Relocation Update

Hello Jamie, sorry I forgot to include where they stood on this. We'll coordinate a meeting as soon as Gas Dept gives me a good target date, but they've told me early-mid August is when they are expecting. They've been evaluating this from a specific customer perspective with respect to system location and impacts along with analyzing the specs with regard to contaminants and sampling requirements as a whole. We do have another large customer looking to do something similar at a different location, so they are wanting to make sure that we are consistent in how we analyze all requests as bio-gas production and injection requests are expected to increase. What they've prepared is currently under review from all the appropriate internal groups, so I'll share that as soon as I get the green light.

Business Use

**From:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>  
**Sent:** Monday, July 17, 2023 8:18 AM  
**To:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>; Zonetta English <[zonetta.english@louisvillemad.org](mailto:zonetta.english@louisvillemad.org)>  
**Subject:** RE: Morris Forman Gas Meter Relocation Update

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Thank you Joe. Are there any updates you can share on progress related to RNG?

Happy Monday!

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

7870 East Kemper Road, Suite 300, Cincinnati OH 45249  
513-469-2750 (main) | 513-317-0337 (cell)  
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## Business Use

**From:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>

**Sent:** Thursday, July 13, 2023 3:56 PM

**To:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>; Zonetta English <[zonetta.english@louisvillemd.org](mailto:zonetta.english@louisvillemd.org)>

**Subject:** Re: Morris Forman Gas Meter Relocation Update

Thanks Jamie, I've let them know to proceed and they should be sending the quote soon

## Business Use

---

**From:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>

**Sent:** Thursday, July 13, 2023 11:18:47 AM

**To:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>; Zonetta English <[zonetta.english@louisvillemd.org](mailto:zonetta.english@louisvillemd.org)>

**Subject:** RE: Morris Forman Gas Meter Relocation Update

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Joe:

Thanks for sending the attachment.

We have reviewed your email and plans for the metering station. **Please proceed with putting together the contract for the meter relocation work.** We'll be ready to review and work with MSD to finalize as soon as possible after you send it.

Please note that we had envisioned leaving space near the new metering station for the potential metering for RNG as well.

Would you please also let us know the status of the RNG evaluation on your side? As you know, there is a funding deadline for implementation that is important to MSD's plan at Morris Forman.

Thanks.

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

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513-469-2750 (main) | 513-317-0337 (cell)  
[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com) | [hazenandsawyer.com](http://hazenandsawyer.com)

## Business Use

**From:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>

**Sent:** Thursday, July 13, 2023 7:11 AM

**To:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>; Zonetta English <[zonetta.english@louisvillemad.org](mailto:zonetta.english@louisvillemad.org)>

**Subject:** Re: Morris Forman Gas Meter Relocation Update

Sorry about that. CGS is on page 10 and Rate FT is on page 30.

## Business Use

---

**From:** Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>

**Sent:** Wednesday, July 12, 2023 7:21:03 PM

**To:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>; Zonetta English <[zonetta.english@louisvillemad.org](mailto:zonetta.english@louisvillemad.org)>

**Subject:** RE: Morris Forman Gas Meter Relocation Update

**EXTERNAL email. STOP and THINK before responding, clicking on links, or opening attachments.**

Joe:

Thanks for this information. We'll quickly review and get back to you on moving forward. We did not see the rate schedules that you referred to. Would you please try to re-send?

Jamie

**W. James Gellner, PE**

**Vice President | Hazen and Sawyer**

7870 East Kemper Road, Suite 300, Cincinnati OH 45249  
513-469-2750 (main) | 513-317-0337 (cell)  
[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com) | [hazenandsawyer.com](http://hazenandsawyer.com)

**From:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>

**Sent:** Wednesday, July 12, 2023 3:02 PM



To: Zonetta English <[zonetta.english@louisvillemsd.org](mailto:zonetta.english@louisvillemsd.org)>; Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>

Subject: Morris Forman Gas Meter Relocation Update

**Caution!** *External email – think before you click*

Hello Zonetta and Jaime,

Sorry for the delay on this, but here's an update regarding the meter relocation provided by the gas dept:

LG&E evaluated the Gas Load Data Sheet and other information provided for the requested meter relocation at the Morris Forman Water Quality Treatment Center. Existing service at this location is provided at 5 meters (Delivery Points), which are all served under Rate FT. Based on evaluation of the information provided for the relocation, three meters are needed to accurately measure expected gas usage at this location going forward.

Two of the meters will be 23M rotary meters. These meters meet the tariff requirements for Rate FT and are compatible with telemetry equipment required for service under Rate FT. These two meters cover most of the gas usage at this site.

The third meter will be a smaller, diaphragm meter to measure gas usage at the lab building at this site. Due to the expected usage of the lab and situations where the load would be too low to register on the larger rotary-type meters, Gas Operations determined that it will need to be split off onto a separate meter. The meter for the lab does not qualify for service under Rate FT, so service for that meter will be provided under Rate CGS (Firm Commercial Gas Service).

Rate schedules for Rate FT and Rate CGS are attached. For Rate CGS, note the meter for the lab building has a capacity < 5,000 cf/hr, so the applicable Basic Service Charge per day will be \$2.30.

Please let me know if you would like for me to coordinate a call with everyone to discuss further. Otherwise, we will move forward with preparing the contract for the meter relocation work.

**Joe Pierce**

Sr. Key Account Manager | Economic Development&Key Accts | LG&E and KU

220 W Main St, Louisville, KY 40202

M: 502-220-5313 O: 502-627-4084

[lge-ku.com](http://lge-ku.com)

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## Key, Colby

---

**From:** Jones, Rebecca <Rebecca.Jones@lge-ku.com>  
**Sent:** Thursday, March 28, 2024 9:15 AM  
**To:** Zonetta English; Gellner, W James; Lisk, Bryan R.; Behr, Adam; Novak, Kyle C  
**Cc:** Pierce, Joe  
**Subject:** Proposed Changes to Local Gas Delivery Service Tariff for LG&E  
**Attachments:** Notice of Proposed Changes to LGE Rate LGDS - MSD.pdf

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**Caution! External email – think before you click**

Tomorrow, March 29, LG&E plans to submit proposed changes to its Local Gas Delivery Service (“LGDS”) tariff to the Kentucky Public Service Commission for approval. The LGDS tariff describes the terms and conditions for the delivery of locally produced gas to LG&E, which includes RNG. Because you have recently inquired about the possibility of delivering gas under the tariff, LG&E is providing notice of the proposed changes in advance of the filing.

Please see attached for a letter summarizing the proposed tariff changes and a redline version of the tariff showing the proposed language changes.

In addition to this email, the attached letter and redline tariff were mailed via U.S. mail to the customer contact provided on the Rate LGDS service request form when you inquired about this service.

Thank you for your interest in this service.

Rebecca

### Rebecca C. Jones

Manager | Gas Management, Planning, and Supply | Louisville Gas and Electric Company  
820 West Broadway, Louisville, KY 40202  
O: 502-627-2424 | F: 502-627-3584  
[lge-ku.com](http://lge-ku.com)

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**Key, Colby**

---

**From:** Zonetta English <zonetta.english@louisvillemsd.org>  
**Sent:** Wednesday, April 10, 2024 2:36 PM  
**To:** Jones, Rebecca; Gellner, W James; Lisk, Bryan R.; Behr, Adam; Novak, Kyle C  
**Cc:** Pierce, Joe  
**Subject:** RE: Proposed Changes to Local Gas Delivery Service Tariff for LG&E

**Caution! External email – think before you click**

Ms. Jones,

Thank you for getting back to us regarding potential exemptions for RNG producers. As we discussed during our call on Friday (4/5/2024), MSD is requesting that an exemption to the increased BTU requirement for facilities producing renewable natural gas (RNG). Without an exemption, we believe that the new requirements under review by the KY Public Service Commission places renewable source gas production at a disadvantage due to the operational cost of adding a higher BTU value gas prior to injection. We do plan to provide comments on the proposed tariffs to the KY Public Service Commission within the comment period reflecting this.

We will provide a copy of our comments to LG&E for your information when we submit. Please let us know if you have any questions or would like to discuss further.

Sincerely,

Zonetta



**Zonetta E. English, MBA, Associate DBIA™**  
**Strategic Initiatives & Project Delivery Director**

**P** 502.540.6706      **C** 502.396.3081      **F** 502.540.6779  
**A** Morris Forman WQTC 4522 Algonquin Parkway Louisville KY-40211



---

**From:** Jones, Rebecca <Rebecca.Jones@lge-ku.com>  
**Sent:** Wednesday, April 10, 2024 2:17 PM  
**To:** Zonetta English <zonetta.english@louisvillemsd.org>; Gellner, W James <jgellner@hazenandsawyer.com>; Lisk, Bryan R. <blisk@hazenandsawyer.com>; Behr, Adam <ABehr@hazenandsawyer.com>; Novak, Kyle C <KNovak@hazenandsawyer.com>

Cc: Pierce, Joe <Joe.Pierce@lge-ku.com>

Subject: RE: Proposed Changes to Local Gas Delivery Service Tariff for LG&E

**[CAUTION: This email originated from outside of MSD. DO NOT click URLs/links or open attachments unless you recognize and/or trust the sender. Contact the MSD IT Helpdesk with questions or concerns.]**

Zonetta,

Thank you for reaching out and for the opportunity to better understand MSD's position on the proposed LGDS tariff changes during our meeting last Friday.

LG&E's proposed LGDS tariff does not include a provision that would permit LG&E to exempt a local gas producer from the tariff. At this time, the Public Service Commission is considering LG&E's filing and any approved revisions will be applicable to all local producers delivering gas to LG&E's system.

Best regards,  
Rebecca

## Business Use

**From:** Zonetta English <[zonetta.english@louisvillemsd.org](mailto:zonetta.english@louisvillemsd.org)>

**Sent:** Tuesday, April 02, 2024 5:05 PM

**To:** Jones, Rebecca <[Rebecca.Jones@lge-ku.com](mailto:Rebecca.Jones@lge-ku.com)>; Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>; Lisk, Bryan R. <[blisk@hazenandsawyer.com](mailto:blisk@hazenandsawyer.com)>; Behr, Adam <[ABehr@hazenandsawyer.com](mailto:ABehr@hazenandsawyer.com)>; Novak, Kyle C <[KNovak@hazenandsawyer.com](mailto:KNovak@hazenandsawyer.com)>

**Cc:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>

**Subject:** RE: Proposed Changes to Local Gas Delivery Service Tariff for LG&E

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Ms. Jones, I would propose on Friday at 0930 EDT.

We appreciate your consideration.

Zonetta



**Zonetta E. English, MBA, Associate DBIA™**  
**Strategic Initiatives & Project Delivery Director**

**P** 502.540.6706

**C** 502.396.3081

**F** 502.540.6779

**A** Morris Forman WQTC 4522 Algonquin Parkway Louisville KY-40211



## Business Use

**From:** Jones, Rebecca <[Rebecca.Jones@lge-ku.com](mailto:Rebecca.Jones@lge-ku.com)>

**Sent:** Monday, April 1, 2024 5:03 PM

**To:** Zonetta English <[zonetta.english@louisvillemsd.org](mailto:zonetta.english@louisvillemsd.org)>; Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>; Lisk, Bryan R. <[blisk@hazenandsawyer.com](mailto:blisk@hazenandsawyer.com)>; Behr, Adam <[ABehr@hazenandsawyer.com](mailto:ABehr@hazenandsawyer.com)>; Novak, Kyle C <[KNovak@hazenandsawyer.com](mailto:KNovak@hazenandsawyer.com)>

**Cc:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>

**Subject:** RE: Proposed Changes to Local Gas Delivery Service Tariff for LG&E

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Zonetta,

Yes, I'm happy to meet this week. Do you have availability Wednesday between 9 a.m. and 1 p.m. or Friday before noon?

Thanks,  
Rebecca

## Business Use

**From:** Zonetta English <[zonetta.english@louisvillemsd.org](mailto:zonetta.english@louisvillemsd.org)>

**Sent:** Thursday, March 28, 2024 4:22 PM

**To:** Jones, Rebecca <[Rebecca.Jones@lge-ku.com](mailto:Rebecca.Jones@lge-ku.com)>; Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>; Lisk, Bryan R. <[blisk@hazenandsawyer.com](mailto:blisk@hazenandsawyer.com)>; Behr, Adam <[ABehr@hazenandsawyer.com](mailto:ABehr@hazenandsawyer.com)>; Novak, Kyle C <[KNovak@hazenandsawyer.com](mailto:KNovak@hazenandsawyer.com)>

**Cc:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>

**Subject:** RE: Proposed Changes to Local Gas Delivery Service Tariff for LG&E

**EXTERNAL email. STOP and THINK before responding, clicking on links, or opening attachments.**

Ms. Jones,

Thank you for providing these proposed changes to the tariff for our review. In reviewing the document, Hazen and Sawyer noted that LG&E is proposing to increase the heating value range on Page 13 from 967-1,110 BTU/SCF (HHV) to 1,035-1,070 BTU/SCF (HHV). Since 100% methane has a heating value of 1,011 BTU/SCF, this proposed increase in the heating value standard would require our potential RNG producer to blend propane or some other higher heat density gas with our digester gas before putting it into the distribution system. This in turn would increase the O&M costs by \$3-5/MMBTU, nearly doubling the O&M costs we had previously assumed based on the original heating value range.

Would LG&E be willing to meet with our team (MSD/Hazen) sometime next week to discuss this proposed change and how it affects our economic evaluation of RNG at our facility?

We would appreciate your consideration.

Respectfully submitted,

Zonetta



**Zonetta E. English, MBA, Associate DBIA™**  
**Strategic Initiatives & Project Delivery Director**

**P** 502.540.6706    **C** 502.396.3081    **F** 502.540.6779  
**A** Morris Forman WQTC 4522 Algonquin Parkway Louisville KY-40211



## Business Use

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**From:** Jones, Rebecca <[Rebecca.Jones@lge-ku.com](mailto:Rebecca.Jones@lge-ku.com)>

**Sent:** Thursday, March 28, 2024 9:15 AM

**To:** Zonetta English <[zonetta.english@louisvillemad.org](mailto:zonetta.english@louisvillemad.org)>; Gellner, W James <[jgellner@hazenandsawyer.com](mailto:jgellner@hazenandsawyer.com)>; Lisk, Bryan R. <[blisk@hazenandsawyer.com](mailto:blisk@hazenandsawyer.com)>; Behr, Adam <[ABehr@hazenandsawyer.com](mailto:ABehr@hazenandsawyer.com)>; Novak, Kyle C <[KNovak@hazenandsawyer.com](mailto:KNovak@hazenandsawyer.com)>

**Cc:** Pierce, Joe <[Joe.Pierce@lge-ku.com](mailto:Joe.Pierce@lge-ku.com)>

**Subject:** Proposed Changes to Local Gas Delivery Service Tariff for LG&E

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Tomorrow, March 29, LG&E plans to submit proposed changes to its Local Gas Delivery Service (“LGDS”) tariff to the Kentucky Public Service Commission for approval. The LGDS tariff describes the terms and conditions for the delivery of locally produced gas to LG&E, which includes RNG. Because you have recently inquired about the possibility of delivering gas under the tariff, LG&E is providing notice of the proposed changes in advance of the filing.

Please see attached for a letter summarizing the proposed tariff changes and a redline version of the tariff showing the proposed language changes.

In addition to this email, the attached letter and redline tariff were mailed via U.S. mail to the customer contact provided on the Rate LGDS service request form when you inquired about this service.

Thank you for your interest in this service.

Rebecca

**Rebecca C. Jones**

Manager | Gas Management, Planning, and Supply | Louisville Gas and Electric Company  
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O: 502-627-2424 | F: 502-627-3584  
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**Business Use**

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