

**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 :

**LOUISVILLE/JEFFERSON COUNTY METROPOLITAN SEWER
DISTRICT’S RESPONSIVE BRIEF**

The Louisville and Jefferson County Metropolitan Sewer District (MSD), as an intervenor in this action, submits the following as its responsive brief in this matter.

Appropriately setting customer-supplied gas tariff requirements for Total Heating Value and, relatedly, Wobbe Number is crucial for sustainable development of renewable natural gas (RNG) projects, like MSD’s, in the Commonwealth. When the minimum Total Heating Value requirement is set too high, beyond that of pure methane, it makes it impossible to produce compliant RNG without adding propane or other gas with a higher Total Heating Value. LG&E has done just that by proposing a minimum Total Heating Value of 1,035 BTU/SCF. This is the highest Total Heating Value requirement by any gas utilities in the U.S. that MSD and Hazen are aware of.

LG&E has not taken issue with injection of RNG at 967 BTU/SCF from the perspective of gas safety nor gas quality. Their consultant ReeThink, who was tasked with assessing the LGDS tariff, did **not** recommend increasing the Total Heating Value or Wobbe Number. Instead, LG&E’s reasoning has centered on potentially unreasonable cost impacts to customers near the RNG injection point, if injected gas has a lower Total Heating Value than the average of LG&E’s interstate suppliers. Blanketing all prospective RNG producers with such a high and prohibitive minimum Total Heating Value is unnecessary and ignores 1) unique cases where an RNG is a

fraction of annual gas flow through a given pipeline such that there are insignificant impacts to local customers' costs, 2) the potential that interstate suppliers provide gas with a reduced Total Heating Value in the future, and (3) a combination of both.

MSD has shown how they are a prime example of a prospective RNG injector who poses negligible risk to nearby gas users because 90% of the time's MSD on-site equipment will use more gas than MSD can produce as RNG, minimizing the amount of RNG transferred to other customers. MSD discussed in their Simultaneous Brief how this amounts to a maximum increase in yearly gas consumption of just 0.2-0.3%.¹ Cases like this would not contravene KRS 278.170 as the limited discrimination is within acceptable limits.

LG&E used a static maximum monthly gas production value with no reduction via MSD usage to argue in their Simultaneous Brief that, even in MSD's unique case, customers would experience unreasonable cost impacts from MSD injecting RNG. When consideration of gas usage over an entire year and MSD's usage is considered, significantly less RNG gas enters the distribution system but MSD estimates that the real impact would be just \$5,000 to \$12,000 per year. The basis for MSD's estimate of the cost impact is discussed in Section 1 below.

LG&E generalizes propane blending as a "straightforward solution" to increasing the Total Heating Value of RNG from 967 to 1,035 Btu/SCF because it would not adversely impact the status of biogas as a renewable fuel. This disregards MSD's other considerations when deciding that the amount of required propane blending would be untenable, including safety aspects, technical issues with existing infrastructure, and site space constraints.

Finally, LG&E is inconsistent in arguing injection of RNG without propane would cause other customers to "be unreasonably prejudiced", while allowing interstate gas suppliers to supply

¹ MSD Response to Commission Staff Post-Hearing Data Request No. 1, dated November 13, 2024.

gas as low as 967 BTU/SCF within their existing interstate gas supply agreements.² There is nothing that prevents an interstate gas supplier from providing gas near 967 BTU/SCF, whereas LG&E is proposing to subject RNG producers to a higher Minimum Heating Value standard.

MSD urges the Public Service Commission (PSC) to consider less rigid alternatives to raising the minimum Total Heating Value for all cases of RNG injection. Setting such a high minimum poses a barrier to RNG project development and may act like a de facto ban on RNG interconnections. For MSD, this would be the case. Propane injection would be so detrimental to the technical feasibility, safety risks, and pro forma of the project that MSD would no longer pursue RNG injection.

Alternatively, LG&E could follow the lead of other gas utilities around the country who maintain reasonable minimum gas standards, like the original 967 Btu/SCF, and evaluate injection points on a case-by-case basis to ensure RNG doesn't become an outsized portion of overall flow. This strategy safeguards against unreasonable cost impacts to customers while allowing RNG resources to develop within the Commonwealth, which is a benefit for all.

LEGAL STANDARD FOR DISCRIMINATION

In *National-Southwire Aluminum Co. v. Big Rivers Electric Corp.*, 785 S.W.2d 503 (Ky.App.1990), two aluminum smelters complained of discrimination pursuant to KRS 278.170(1) based upon the PSC instituting a variable rate applicable only to them. They argued that over the 10-year life of the ordered rates, they will pay an extra 76 million dollars. *Id.* at 514. Affirming the PSC, the Court held, “[w]e conclude that there is no statutory violation and that any discrimination is either too uncertain or that it is within acceptable limits.” And, “[e]ven if some discrimination actually exists, Kentucky law does not prohibit per se. According to KRS

² LG&E Opening Brief, p. 3, dated December 4, 2024.

278.170(1), we only prohibit ‘unreasonable prejudice or disadvantage’ or an ‘unreasonable difference.’” KRS 278.030(3) allows reasonable classifications for service, patrons, and rates by considering the ‘nature of use, the quality used, the quantity used, the time when used...and any other reasonable consideration.’” *Id.* Like *National-Southwire Aluminum Co*, the limited and debatable discrimination from MSD’s RNG to nearby customers would also surely be within acceptable limits.

I. LG&E GREATLY OVERESTIMATES COST IMPACTS OF RNG INJECTION

It’s critical to express the facts accurately and without exaggeration, so the PSC can properly assess the balance between costs and benefits of the proposed Total Heating Value changes. LG&E estimated that “nearby customers will incur an additional \$200,000 per year in heating costs”³ if MSD were to inject RNG, but this inflates the true impacts by 1,700-4,000% a/k/a \$5,000 to \$12,000 per year. **See, discussion within this Section 1.**

LG&E’s \$200,000 annual cost assumes that all of MSD’s injected RNG volume is transferred to other gas customers. As discussed in MSD’s prior Simultaneous Brief, the gas injection point could be configured such that MSD’s equipment draws more gas from the system than it injects most of the time. Therefore, MSD estimates that the actual total cost impact is just \$5,000-12,000 per year, assuming \$10/MMBTU for retail gas cost. **See, discussion within this Section 1.**

MSD used conservative assumptions for uptime of their gas consuming equipment, like HVAC boilers, advanced digestion process boilers, and biosolids thermal dryers, to simulate total gas demands each day over a given year (**Table 1 - below**). When all process equipment is running, MSD’s gas demands are 21 MMBTU/HR higher than the expected RNG production in 2045 (end

³ LG&E Opening Brief, p. 1, dated December 4, 2024.

of project horizon). However, there are times when some process equipment is down for maintenance, which will temporarily reduce MSD’s gas demand. MSD estimates that the net amount of RNG transferred to other customers during these periods would be 13,500 MMBTU/year, or 14,000,000 SCF/year (assuming RNG heating value is 970 BTU/SCF), by the end of the project horizon. Assuming normal pipeline gas is 1,050 BTU/SCF and retail gas costs \$10/MMBTU on average, then gas consumption is billed at \$0.0105/SCF of metered flow. Therefore, 13,500 MMBTU of 100% RNG energy would cost \$147,000 per year, whereas an equivalent amount of energy from 100% pipeline gas would cost \$135,000 per year, based on the assumptions stated above. This is a difference of \$12,000 per year.

Table 1: MSD’s Basis for Cost Impact

	Average (MMBTU/HR)	Uptime (%)*	Notes
Gas Demands (2045)			
HVAC Boilers	9	33%	Operated primarily January-April
Advanced Digestion Process	22	100%	Year round, continuous process
Thermal Biosolids Drying Process	30	80%	Year round, continuous process**
Gas Production (2045)			
RNG	40	90%	Year round, continuous process. During downtime, gas is flared.

*Equipment downtime is assumed to occur randomly.

**MSD's intent is to always run at least one of their thermal drying trains in the future, but 80% uptime was assumed to be conservative - based on historical performance.

In contrast, blending propane to negate this small cost impact would cost approximately \$680,000 per year.⁴ MSD and LG&E share ratepayers, such that this would be a net negative to ratepayers overall.

II. REQUIRING INCREASED TOTAL HEATING VALUE AND, CONSEQUENTLY, PROPANE BLENDING IS PROHIBITIVE TO MSD'S RNG PROJECT AND WILL INHIBIT DEVELOPMENT OF RNG RESOURCES, IN GENERAL.

LG&E oversimplifies the feasibility of propane blending as a way to raise the Total Heating Value of RNG. In reality, propane blending can be a fatal flaw to potential RNG projects for a variety of reasons. For MSD, propane blending to meet a 1,035 BTU/SCF minimum heating value is not feasible for three main reasons: (1) storing large volumes of propane on site is a safety hazard that MSD's wastewater treatment plant is not designed for; (2) the plant site does not have space for the full footprint required for a propane storage, blending system, and required buffers; and (3), least importantly, propane blending would significantly increase the project cost.

MSD estimated that raising the heating value from 970 to 1,035 BTU/SCF would consume 600 gallons per day of propane, therefore MSD would need a 5,000-gallon propane storage tank filled approximately once per week.

If MSD were to store this much propane on-site, the Facility may become regulated under both 29 CFR 1910.119 - the OSHA Process Safety Management Standard and 40 CFR Part 68 USEPA Chemical Accident Prevention Provisions as enforced under Regulation 5.15 by the Air Pollution Control District of Jefferson County. Given that the Morris Forman plant was not designed for storage of large amounts of propane, compliance with these regulations could result in significant modifications to existing plant infrastructure and building protections. Risk modeling

⁴ MSD Response to LG&E DR No. 1.3 dated 7/31/24.

and compliance under these Regulations may further require that all occupied buildings be reconstructed with appropriate features to protect employees in the event of a release and subsequent explosion.

The hazard report completed by ENTrust™ for MSD noted that a propane storage tank and offloading station would require 13,750 SF of space to comply with NFPA 58 – Liquefied Petroleum Gas Code. This footprint exceeds the amount of space that MSD has available for the entire RNG production system (13,570 SF). LG&E states in their Simultaneous Brief that “MSD conceded that it owned nearby property that could potentially be used for propane storage and also admitted it had not investigated purchasing additional property”. It is true that MSD owns one small parcel on Gibson Lane, but this lot has environmental issues and is not currently permitted for use as an RNG facility by the Louisville Metro Planning Department. A pipe bridge or other pipe crossing would also be required along Algonquin Parkway and/or across Gibson Lane requiring extensive permitting and likely easement negotiations with other adjacent property owners. This option would also carry significant public safety concerns. Any additional property would need to be in close proximity to the RNG facility for feasible and safe transfer of the biogas from the MFWQTC digesters. Therefore, these are not practical options for MSD.

In addition to the technical and space constraints discussed above, a minimum Total Heating Value of 1,035 BTU/SCF would drastically increase MSD’s, or other RNG producers’, operating costs. For MSD, the cost of propane blending is not the fatal flaw but it does stack on to the other critical aspects that make propane blending infeasible. An additional financial consequence of the proposed LGDS changes and resultant project delay in its consideration is that MSD will no longer be able to meet the construction start deadline for the Section 48 Qualified Biogas Property Investment Tax Credit (ITC). The ITC was “potentially worth up to 30% of the

qualified anaerobic digestion process and RNG costs, which can be as high as \$10M.”⁵ The deadline for these incentives, which required the commencement of construction of improvements by the end of 2024, was conveyed to LG&E early in our communications with them in 2022.

All amounts of propane blending are not the same. Small amounts of stored propane are not a big deal – for example, many of us keep a small tank at home for a gas fireplace or barbecue grill. However, as the required heating value gets further from the limits of RNG, more propane must be blended to keep the product gas in-spec and therefore more propane must be stored on-site. At some point it’s no longer practical, as is the case here with meeting LG&E’s proposed 1,035 BTU/SCF minimum Total Heating Value.

III. INTERSTATE PIPELINE GAS SUPPLIERS ARE ONLY SUBJECT TO A 967 BTU/SCF MINIMUM

In a perfect world, all conventional gas that utilities distribute would be identical in composition and heating value, and RNG would match these supplies exactly. Unfortunately, neither of these statements are true; conventional gas varies depending on its source and how it’s refined, and even gas from a single source will have inherent variability over time. LG&E confirms in their Simultaneous Brief that their interstate pipeline gas supplies from Texas Gas Transmission and Tennessee Gas Pipeline Company have different heating values. Additionally, these interstate sources are injected at different points in LG&E’s distribution system, so they don’t have a chance to mix and provide homogenous gas to all users in LG&E’s territory.

LG&E points to KRS 278.170 as justification for placing a higher minimum Total Heating Value requirement on RNG producers but does not apply the same standard to their interstate gas supplies. LG&E admits in their Simultaneous Brief that “interstate tariffs contain a minimum

⁵ Testimony of W. James Gellner on Behalf of Louisville MSD, p. 6-7, dated July 3, 2024.

heating value of 967 BTU per scf” for gas they deliver.⁶ They excuse this by explaining that deliveries have historically averaged higher heat content than the minimum, but this doesn’t dispute the fact that one or both pipeline suppliers could at any time begin to provide gas with a much lower heat content. In setting the interstate tariff’s requirements, LG&E must have decided that it would be “reasonable” for any individual interstate supplier to deliver gas as low as 967 BTU/SCF, so why is LG&E now deciding that this would be “unreasonable” for a RNG producer to do the same?

CONCLUSION

LG&E should not increase the minimum Total Heating Value and Wobbe Number required in their LGDS tariff:

- LG&E is overestimating the cost impacts of RNG injection by 1,700-4,000%.
- RNG would not cause financial or safety harm to other customers.
- Increasing the minimum Total Heating Value requirement would make it impossible to produce compliant RNG without mixing a substantial amount of propane. For MSD, 5,000 gallons of propane storage would be needed, requiring broad reaching and expensive impacts on the plant site and imposing an additional safety risk to MSD employees.
- LG&E’s interstate gas tariffs only require a minimum Total Heating Value of 967 BTU/SCF from interstate gas deliveries, yet LG&E proposes to make the minimum 1,035 BTU/SCF for RNG injectors.

⁶ LG&E Opening Brief, p. 3, dated December 4, 2024.

- Propane blending is not a straightforward solution to raising the Total Heating Value for MSD because (1) storing large volumes of propane on site is a safety hazard that MSD's wastewater treatment plant is not designed for; (2) the plant site does not have space for the full footprint required by a propane storage, blending system, and required buffers; and (3), least importantly, propane blending would significantly increase project cost.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that MSD's December 18, 2024 electronic filing is a true and accurate copy of MSD's pleading and Read 1st Document to be filed in paper medium; that the electronic filing has been transmitted to the Commission on December 18, 2024; that an original and one copy of the filing will not be mailed to the Commission given the pandemic orders; that there are currently no parties excused from participation by electronic service; and that, on December 18, 2024, electronic mail notification of the electronic filing is provided to all parties of record.

/s/Matt Malone

ATTORNEY FOR LOUISVILLE/JEFFERSON COUNTY

METROPOLITAN SEWER DISTRICT