COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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

LOUISVILLE/JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT'S INITIAL POST-HEARING BRIEF

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

I. BACKGROUND INFORMATION

In response to Louisville Gas and Electric Company's ("LG&E") filing of proposed changes to its Local Gas Delivery Service ("LGDS") tariff, the Commission facilitated a formal hearing and review process pursuant to 807 KAR 5:011. LG&E's proposed revisions to the tariff included the following three categories: 1) clarifying the definition of local gas to exclude gas delivered by virtual pipeline or containing hazardous waste, 2) requiring producers to have their own gas quality testing equipment and 3) updating the gas quality specifications. Of special note in the 3rd category, the proposed changes to the gas quality specifications included increasing the minimum gas Total Heating Value from 967 British thermal units per standard cubic feet (Btu/scf) to 1,035 Btu/scf and increasing the minimum Wobbe Index from 1,314 to 1,336.

MSD owns and operates the Morris Forman Water Quality Treatment Center ("MFWQTC") located at 4522 Algonquin Parkway in Louisville, Kentucky. As part of the wastewater treatment process, MFWQTC produces biogas from anerobic digestion of biosolids removed during clarification. The Biosolids Processing Solution ("BPS") Project is currently being constructed by MSD to optimize and improve biosolids dewatering and biogas production

capability at MFWQTC. The BPS Project includes upgrades to the existing anaerobic digesters and dewatering centrifuges, addition of thermal hydrolysis pretreatment (THP), and enhancements to gas handling, odor control, and related support systems. The BPS Project is an investment of over $250M and is intended to eliminate landfilling of biosolids, to reduce the quantity of residual solids, to increase renewable gas production, to reduce odors, and to produce exceptional quality Class A biosolids, suitable for beneficial reuse as a soil amendment. Biogas, when treated to meet pipeline standards as defined in the LGDS tariff, is a sustainable, energy-rich gas, known as a renewable natural gas ("RNG"), which can qualify as a renewable vehicle fuel under the United States Environmental Protection Agency's ("USEPA") Renewable Fuel Standard (RFS). MSD obtained a low-interest loan for the BPS Project under the Water Infrastructure Finance and Innovation Act ("WIFIA"). A key factor in MSD being awarded this low interest loan was "the increased digester biogas production and capture, allowing for renewable energy recovery." The BPS Project improvements are currently underway and are anticipated to be complete by March 2028.

MSD contracted Hazen and Sawyer (Hazen) to serve as MSD's Advisor for the BPS Project. In this role, Hazen is responsible for monitoring and overseeing the Design-Builder on MSD's behalf as a third-party, to ensure compliance with the applicable Contract Documents, and to assist with WIFIA recordkeeping, disbursement requests, and reporting. Hazen is a professional services firm that provides water-related engineering, architecture, construction management, and other technical services to MSD as a consultant. Hazen does not profit directly from facility operations and Hazen does not sell nor operate RNG treatment systems.

In 2022, MSD engaged Hazen to perform an engineering study to investigate several alternatives for beneficial reuse of biogas at MFWQTC including using the biogas as an

alternative to natural gas to fuel the gas-consuming equipment at the facility, the feasibility of using the biogas to fuel a combined heat and power generator to produce electricity, and the feasibility of producing RNG from biogas and potentially transporting it via LG&E's distribution system to the renewable transportation fuels market. Hazen's 2022 study concluded that RNG production and injection into LG&E's distribution system was the most advantageous option for MSD and its ratepayers to acquire value from a sustainable resource while also qualifying for various funding programs and incentives administered by USEPA.

MSD's initial call with LG&E regarding the possibility of RNG injection at the MFWQTC site occurred on November 8, 2022. During that initial meeting, LG&E asked MSD to submit a Rate LGDS Service Request Form to initiate LG&E's RNG evaluation process. Hazen, on behalf of MSD, submitted the completed Rate LGDS Service Request Form to LG&E on November 13, 2022. MSD and Hazen conducted subsequent calls on November 29, 2022 and January 12, 2023 to continue coordinating with LG&E on the possibility of injecting RNG into their distribution system at MFWQTC. During the January 12, 2023 call, LG&E informed MSD that they were still evaluating whether they could receive RNG at the site and once MSD confirmed they did not see an issue with being able to meet the gas quality requirements in the original LGDS tariff, LG&E stated they did not need anything additional from MSD to continue their evaluation. In a follow up call on March 17, 2023, LG&E notified MSD that they had concerns with the gas quality and heat content of potential RNG injection at the proposed location. LG&E informed MSD they 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 from MSD and other potential suppliers. LG&E said they were considering changes to their gas quality standards and other requirements, but they did not share those potential changes with

MSD because they stated their evaluation was ongoing. At that time, MSD could only assume that LG&E was planning to further restrict non-fuel gas constituents, such as nitrogen, hydrogen sulfide, etc., and could not make any assumptions on what the heating value changes would be as LG&E never shared that information. MSD, Hazen, and LG&E did not meet again to discuss the possible RNG injection until August 23, 2023, nine (9) months after the Rate LGDS Service Request Form was submitted, at which time LG&E provided an update on their RNG evaluation. The slides that LG&E presented to MSD and Hazen at that time have been provided by LG&E in Exhibit TCR-2. LG&E confirmed in their evaluation that it would be hydraulically feasible to accept RNG injection at the MFWQTC facility, that they would be proposing to amend the existing LGDS tariff to include limits for siloxanes, halogens, and heavy metals, and that they would be considering an increase to the minimum heating value. However, again, LG&E did not indicate what the new heating values would be. LG&E did not share their proposed changes to the heating values with MSD until a day before submitting the proposed changes to the Public Service Commission on March 29, 2024. MSD made every effort to try to work with LG&E during this 16-month evaluation and would have been willing to discuss the concerns with increasing the heating value to the level that LG&E is proposing but were not given the opportunity.

In response to LG&E's claim that MSD did not formally complete or submit an "Interconnection Agreement", MSD was awaiting confirmation from LG&E that they could transport the proposed amount of RNG along with various other technical details such as the proposed point of interconnection and pressure/flow requirements at that location. LG&E did not provide confirmation that they could transport MSD's biogas hydraulically until August 2023 and never asked MSD to submit an "Interconnection Agreement" at that time, as they were still

evaluating the other technical details of the gas requirements. Additionally, although LG&E notified MSD that they were considering changing the minimum heating value, they never notified MSD that they intended to increase the minimum heating value by 7%, from 967 Btu/scf to 1,035 Btu/scf, until the draft gas quality requirements were received just a day prior to the filing of its proposed changes to the LGDS with the Commission.

The RFS is a national policy that requires that refiners and importers of fossil fuels, also known as "obligated parties", blend a certain volume of renewable fuels and/or obtain credits of renewable fuels (known as "Renewable Identification Numbers" or "RINs"). RINs are a form of regulatory currency which are valuable and tradeable directly to obligated parties and to other RIN brokers. The RFS was recently reformed and reissued on September 12, 2023. To qualify for RINs under the revised regulations, RIN generators must demonstrate that RNG is injected and withdrawn from a physically connected natural gas pipeline.

In the past, MSD has utilized biogas to fuel the biosolids dryers and some boilers on-site, however, these uses do not qualify for RIN credits. When used on site in lieu of potential injection into LG&E's distribution system, the biogas is treated to lower quality standards than would be required for injection into a gas supply system. For use within the plant, the biogas is treated to remove moisture and hydrogen sulfide only. The improvements being implemented as part of the BPS Project will increase the amount of biogas produced by enhancing the digestion of wastewater solids with the addition of THP. Once the BPS Project improvements are implemented, more biogas will be generated, resulting in a larger sustainable resource.

II. LG&E'S BASIS FOR THE PROPOSED GAS QUALITY REQUIREMENTS

In their testimony, LG&E asserted that they were updating their gas quality requirements to align with the current quality of the gas they receive from their interstate pipeline suppliers.

The changes that LG&E has proposed to the gas constituent treatment requirements, such as nitrogen, oxygen, and heavier hydrocarbons, are typical for injection of RNG and were anticipated to be requirements for injection into LG&E's system. Those are also necessary to maintain gas quality for potential users, so MSD does not have any objections to those proposed changes. However, LG&E's purchase agreements for gas from their suppliers mandate a minimum Total Heating Value of 967 Btu/scf (which is below the Total Heating Value of RNG derived from most bio-renewable sources, including municipal wastewater biogas from anaerobic digesters). LG&E has proposed raising the minimum heating value for LGDS customers to 1,035 Btu/scf, which is 7% higher than the minimum value required for delivery of gas under their interstate purchase agreements.

LG&E provided RNG dispersion modeling results, completed by their consultant, as part of their testimony in this hearing. The dispersion model results show that RNG injection at MFWQTC into the distribution pipeline along Algonquin Parkway could result in nearby downstream customers receiving up to 49% RNG, by volume. LG&E based their simulations on a maximum RNG production flowrate condition that was provided by MSD with the Rate LGDS Service Request Form. MSD was under the assumption that this maximum RNG production flowrate would be used to assess capacity or hydraulics of LG&E's distribution system near the injection point only, not to assess a monthly increase in gas consumption as LG&E has misrepresented in their testimony.

LG&E bills customers on a volumetric basis, not a heating value basis, so they argue that there is a substantial cost impact to their customers who receive RNG because it has a lower

Total Heating Value than their conventional pipeline gas supply. LG&E Witness Rieth estimated a loss to customers in the approximate amount of $200,000 annually.[1]

III. MSD ASSERTS THAT LG&E'S GAS QUALITY REQUIREMENTS ARE UNFAIR, UNJUST, AND UNREASONABLE

The proposed minimum Total Heating Value of 1,035 Btu/scf is among the highest in the nation.[2] The dispersion modeling provided by LG&E does not provide an accurate representation of the impact to LG&E's customers. The modeling provided by LG&E had the following misrepresentations and flawed logical assumptions:

- The dispersion modeling only depicts the potential presence of RNG from a volumetric standpoint, and not the estimated impacts on the blended heating values.
- The dispersion modeling does not consider a blended heating value to LG&E customers due to mixing of RNG and natural gas in the distribution pipeline(s).
- The dispersion modeling assumes that the maximum RNG production rate at MFWQTC would occur continuously. However, in reality, the maximum flow conditions would not be sustained throughout the year. When looking at the RNG production compared to the natural gas consumption at MFWQTC, MSD accounted for the expected uptimes of major gas-consuming equipment onsite during times of high and low RNG production. In doing so, MSD anticipates the RNG production will only exceed the gas consumption 9-10% of the time over an entire calendar year.[3]

[1] Hearing Video Record, 11/6/24, LG&E Witness Rieth, 35:31, 9:26 a.m.
[2] Public Comments filed in this matter, Synthica Energy, LLC dated September 26, 2024; Coalition for Renewable Natural Gas, August 14, 2024.
[3] MSD Response to Commission Staff Post-Hearing Data Request No. 1, dated November 13, 2024.

- The dispersion modeling did not account for variations in RNG production with biosolids productions and other operations and did not consider process "uptime". [4]
- The dispersion modeling did not account for any immediate RNG consumption by MSD at their meter connection, given that their RNG interconnection could be configured so RNG flows to MFWQTC when MSD's gas consumption exceeds their RNG production (which MSD expects about 90% of the time each year).

The 4th case dispersion modeling provided by LG&E (no flow-thru) is an improbable case that is unsustainable for long durations as gas flow through the local gas distribution company (LGDC) from the interstate pipelines is usually required to maintain consistent operating pressures throughout the system.

In addition to the misrepresentations noted for the dispersion modeling data provided, the financial impact to LG&E ratepayers is less than LG&E estimates. MSD agrees there would be an increase in the gas consumption rate to the LG&E customers, but under worst-case conditions modeled by LG&E the most impacted, nearby customers would experience a maximum increase in their yearly gas consumption of 0.16-0.32%, which is far less than what LG&E has presented in their testimony.[5]

A direct consequence of the proposed heating value requirement changes by LG&E is that MSD and other RNG producers with biomass feedstocks will need to blend RNG with propane or another higher Btu additive. The operational cost of purchasing and blending propane is unfeasible for MSD and will negatively impact other potential renewable gas producers. MSD estimates that the operating costs alone for propane blending is over $0.7M annually. MSD does not have unoccupied land available at MFWQTC to comply with the NFPA LP tank clearance

[4] *Id.*

provisions.[6] Propane is a Category 1 Flammable Gas as defined in Table B.2.1 of 29 CRF 1910.1200 (Appendix B). If propane were utilized on site, MSD would need to complete a Facility Siting Study to include a Blast Consequence Analysis of all buildings and other structures within the potential blast radius of the operation in accordance with 29 CFR 1910.119(e)(3)(v). Blast resistance design and protective mitigation for MSD's occupied structures as part of the Facility Siting Process could result in capital construction costs which exceed the estimated cost of the entire RNG system.

Much like LG&E, MSD is obligated to make decisions that are in the best interest of its customers.[7] Therefore, for any capital projects considered by MSD, an evaluation of alternatives is performed to identify the best options relative to life cycle cost and ultimately impact to ratepayers. The lifecycle cost of RNG production and sale on the RIN market must be more advantageous than other alternatives for MSD to implement this option. The need to inject propane to meet the revised heating values included in the proposed tariffs makes the RNG option more expensive and less favorable than reuse of biogas on site. MSD is aware of several other local gas suppliers which will allow RNG direct injection with a lower minimum Total Heating Value than what LG&E is proposing. Those local gas suppliers include Northern Indiana Public Service Company (NIPSCO) which allows a minimum Total Heating Value of 967 Btu/SCF, Columbia Gas of Kentucky which allows a minimum Total Heating Value of 967 Btu/scf, the Public Service Company of North Carolina which allows a minimum Total Heating Value of 980 Btu/scf.

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[5] *Id*.
[6] MSD Response to First Data Request of LG&E, Question 2(b), dated July 17, 2024.
[7] The RNG saved at Morris Forman will be able to supply 6,000 houses per year with an average household usage of 533.3 CCF per year. Of note, this is a math correction to MSD's First Response to Commission Staff's Data Request Question No. 3(b) dated July 17, 2024.

MSD is receptive to a potential installation of a conveyance system to a different injection point to minimize impacts to local customers. MSD requested information on other injection options in a Post Hearing Data Request to LG&E that would further minimize impacts to local LG&E customers. In response, LG&E noted the nearest LG&E higher-flow transmission pipeline is located approximately 3,300 feet south when measured from the MFWQTC entrance at its intersection with Algonquin Parkway.[8] This is an option that MSD is willing to explore with LG&E if the minimum Total Heating Value remains unchanged. MSD is also receptive to locating their RNG injection point just upstream of LG&Es meter which would allow for the majority of the RNG to be used by MSD under their normal gas demands. During conditions where RNG production exceeds MSD's gas demand, only the excess RNG would enter LG&Es distribution system and mix with conventional pipeline gas.

IV. LG&E's GAS QUALITY REQUIREMENTS HAVE RAMIFICATIONS BEYOND MSD'S APPLICATION

The proposed tariff changes for minimum heating requirements makes injection of RNG into LG&Es distribution system infeasible for MSD. The MFWQTC is the single largest wastewater facility in the Commonwealth and therefore, the single largest potential source of RNG from wastewater in the Commonwealth.

The proposed tariff changes for minimum heating requirements will also negatively impact the economic viability of RNG from other sources as well. Implementation of RNG projects in LG&E's service area will be slowed (compared to other States) due to compliance with the proposed gas quality requirements which will require the use of a higher Btu blend gas (such as propane). RNG entities will seek to locate in other states with tariff exemptions and incentives for RNG interconnection and less stringent gas quality requirements for direct injection. LG&E's

[8] Post-Hearing Data Request Response of LG&E to MSD, Question No. 3-2, dated November 13, 2024.

policies will pose a barrier to renewable energy entities developing projects in the area, resulting in decreased job creation and lost economic development opportunities in the Commonwealth.

The PSC has plenary authority to regulate and investigate utilities and to ensure that rates charged are fair, just and reasonable pursuant to KRS 278.030 and 278.040. *Ky. PSC v. Commonwealth ex rel. Conway*, 324 S.W.3d 373, 374, (Ky. 2010). Allowing LG&E to set their LGDS heating value requirements at such high levels will establish precedence that other LGDC's can determine gas quality requirements solely based on historical interstate supplier quality without considering the potential advantage of alternative gas sources for their customers and without congruency with interstate pipeline supply contracts. Approval of the tariff also further incentivizes volumetric billing by LGDS's overbilling adjustments based on heat content, which could eliminate the differential impacts to local customers.

Respectfully submitted,

/s/Matt Malone
Matthew R. Malone (KBA #90508)
William H. May, III (KBA #86540)
Hurt, Deckard & May PLLC
201 East Main Street; Suite 1402
Lexington, Kentucky 40507
(859) 254-0000 (office)
(859) 254-4763 (facsimile)
mmalone@hdmfirm.com
bmay@hdmfirm.com

Counsel for the Petitioner,
LOUISVILLE/JEFFERSON COUNTY
METROPOLITAN SEWER DISTRICT

CERTIFICATE OF SERVICE

I hereby certify that MSD's December 4, 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 4, 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 4, 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