COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF LOUISVILLE GAS AND ELECTRIC COMPANY FOR RENEWAL AND PROPOSED MODIFICATION OF ITS PERFORMANCE-BASED RATEMAKING MECHANISM	**)** **)** **)** **)** **)**	**CASE NO. 2019-00437**

RESPONSE OF LOUISVILLE GAS AND ELECTRIC COMPANY TO COMMISSION STAFF'S POST-HEARING REQUEST FOR INFORMATION DATED JUNE 29, 2020

FILED: JULY 8, 2020

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Pamela L. Jaynes**, being duly sworn, deposes and says that she is Manager - Gas Supply for Louisville Gas and Electric Company, and that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge and belief.

Pamela L. Jaynes

Pamela L. Jaynes

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 2nd day of July 2020.

Notary Public

Notary Public, ID No. 603967

My Commission Expires:

7/11/2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **J. Clay Murphy**, being duly sworn, deposes and says that he is Director – Gas Management Planning, and Supply for Louisville Gas and Electric Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

J. Clay Murphy

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 1st day of July 2020.

Notary Public

Notary Public, ID No. 603967

My Commission Expires:

7/11/2022

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Post-Hearing Request for Information
Dated June 29, 2020

Case No. 2019-00437

Question No. 1

Witness: J. Clay Murphy / Pamela L. Jaynes

Q-1. Refer to the table in Appendix A of the report attached to Christopher Murphy's Direct Testimony that is labeled Summary of Gas Supply Cost Performance-Based Ratemaking Results By PBR Year. Provide a version of that table that includes the same information for Performance-Based Rate (PBR) Mechanism program year 22 and the preceding 10 program years.

A-1. Attached is a table comparable to the Appendix A found in the Report attached to the Direct Testimony of J. Clay Murphy.

The table shows the annual results of LG&E's gas supply cost PBR mechanism for Year 22 and the ten preceding PBR Years. This table encompasses the results for PBR Years 12 through 22 and is similar in format to the table in Appendix A of LG&E's Report filed with Mr. Murphy's testimony in Case No 2019-00437. The table provided with this response covers activity for three different gas supply cost PBR mechanisms approved by the Commission. Each of the PBR mechanisms incorporated different benchmarks and/or sharing percentages and operated under different market conditions with different results achieved for each PBR Year.

Importantly, the gas rates paid by customers are <u>not higher</u> by the shareholder portion of savings shown in Column (3). On the contrary, the gas rates paid by customers <u>are lower</u> by the customer portion of the savings shown in Column (2). This is the case because, absent the PBR mechanism, there would be no incentive to outperform the least cost acquisition benchmarks established by the PBR mechanism.

Furthermore, it is important to bear in mind that the portion of the savings retained by LG&E is not disproportionate. This can be measured in at least three ways:

- As a percentage of LG&E's net income for its gas business, LG&E's share of the savings under the PBR mechanism on an after-tax basis has been on average approximately 3.5% over the last four PBR Years (19, 20, 21, and 22) which PBR Years are being reviewed in this proceeding.

- As a percentage of Actual Gas Supply Costs (Column 4 of the attached table), LG&E's share of PBR savings has been on average approximately 1.6% ($7,005,625 / $447,680,992) over the last four PBR Years (19, 20, 21, and 22) which PBR Years are being reviewed in this proceeding.

- As a percentage of the total Gas Supply Cost Component determined pursuant to LG&E's Gas Supply Clause, the PBR Recovery Component that recovers LG&E's portion of the savings has been on average approximately 1.0% over the last four PBR Years (19, 20, 21, and 22) which PBR Years are being reviewed in this proceeding.

In this case, LG&E has proposed a more balanced sharing of risks and rewards, that is, a 30/70 Company/Customer sharing for all amounts up to 2.0% of the benchmarked gas costs and 50/50 sharing of any amounts in excess of 2.0% of the benchmarked gas costs. The proposed sharing mechanism is the same as the sharing mechanism currently approved for Atmos Energy Corporation ("Atmos") and Columbia Gas of Kentucky ("Columbia") in their respective PBR mechanisms. LG&E's proposed sharing mechanism will better reflect the risks inherent in its PBR mechanism when compared to the risks found in the PBR mechanisms of Atmos and Columbia.

If, however, the Commission finds the need to alter the PBR mechanism in ways other than those proposed by LG&E, changing the sharing mechanism would be the least disruptive and least potentially harmful. For example, changing the benchmarks can result in unintended consequences, potential disincentives to superior performance, and negative impacts to reliability. Altering the sharing mechanism (with the understanding that the addition of caps and thresholds that limit the overall incentive available to LG&E will also limit the benefits to customers) can be a more judicious exercise. For this reason, LG&E discussed in the hearing that the Commission might consider approving the 30/70 Company/Customer sharing for all amounts up to 2.0% of the benchmarked gas costs and 40/60 Company/Customer sharing of any amounts in excess of 2.0% of the benchmarked gas costs.

Louisville Gas and Electric Company
Summary of Gas Supply Cost Performance-Based Ratemaking Results

			(1)	(2)	(3)	(4)	(5)
Year	*Case No.*	*12 Months Ended October 31*	*Total Savings*	*Customer Portion*	*Shareholder Portion*	*Total Actual Gas Supply Costs*	*Percentage By Year*
					Col. (1) - (2)		*Col. (1) / (4)*
12	*2005-00031*	*2009*	*$6,981,170*	*$5,235,878*	*$1,745,292*	*$188,487,751*	*3.70%*
13	*2005-00031*	*2010*	*$7,561,557*	*$5,671,168*	*$1,890,389*	*$191,786,791*	*3.94%*
	Subtotal		*$14,542,727*	*$10,907,046*	*$3,635,681*	*$380,274,542*	*3.82%*
14	*2009-00550*	*2011*	*$10,805,501*	*$7,429,231*	*$3,376,270*	*$180,131,567*	*6.00%*
15	*2009-00550*	*2012*	*$10,961,586*	*$6,699,576*	*$4,262,010*	*$108,336,294*	*10.12%*
16	*2009-00550*	*2013*	*$6,192,465*	*$4,644,349*	*$1,548,116*	*$153,210,511*	*4.04%*
17	*2009-00550*	*2014*	*$5,855,873*	*$4,391,905*	*$1,463,968*	*$200,905,264*	*2.91%*
18	*2009-00550*	*2015*	*$3,927,025*	*$2,945,269*	*$981,756*	*$138,744,901*	*2.83%*
	Subtotal		*$37,742,450*	*$26,110,330*	*$11,632,120*	*$781,328,537*	*4.83%*
19	*2014-00476*	*2016*	*$3,852,257*	*$2,651,816*	*$1,200,441*	*$96,758,276*	*3.98%*
20	*2014-00476*	*2017*	*$3,866,311*	*$2,770,344*	*$1,095,967*	*$111,625,084*	*3.46%*
21	*2014-00476*	*2018*	*$5,862,580*	*$3,865,848*	*$1,996,732*	*$124,607,779*	*4.70%*
22	*2014-00476*	*2019*	*$7,145,317*	*$4,432,832*	*$2,712,485*	*$114,689,853*	*6.23%*
	Subtotal		*$20,726,465*	*$13,720,840*	*$7,005,625*	*$447,680,992*	*4.63%*
	Total		*$73,011,642*	*$50,738,216*	*$22,273,426*	*$1,609,284,071*	*4.54%*

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Post-Hearing Request for Information
Dated June 29, 2020

Case No. 2019-00437

Question No. 2

Witness: J. Clay Murphy / Pamela L. Jaynes

Q-2. Refer to Appendix B of the report attached to J. Clay Murphy's Direct Testimony, which shows the net savings and expense from the PBR Mechanism on a monthly, quarterly, and annual basis for years 19 through 22 of the PBR Mechanism.

a. For each month of years 19 through 22 of the PBR Mechanism, provide the net difference between the monthly benchmark gas commodity costs for Purchases in Excess of Firm Daily Contract Quantities (PEFDCQ), represented by [PEFDCQ x DAI] on page 87.1 of the proposed tariff, and the actual monthly gas costs for PEFDCQ.

b. Provide workpapers in Excel spreadsheet format showing how those amounts were calculated in each month with all rows and columns accessible and formulas unprotected.

c. Explain how LG&E determined the actual monthly gas costs for PEFDCQ to respond to this request

A-2. a. Gas costs have been benchmarked under the PBR mechanism using the Delivery Area Index ("DAI") as follows:

- PBR Year 19, 2015/2016: none
- PBR Year 20, 2016/2017: none
- PBR Year 21, 2017/2018: December 27, 2017, January 1 and 2, 2018
- PBR Year 22, 2018/2019: January 30, 2019

In each case, the use of the DAI occurred during extreme weather. January 1, 2018, was the peak day during the 2017/2018 winter season; and January 30, 2019, was the peak day during the 2018/2019 winter season.

The attachment being provided in Excel format estimates that the savings achieved for LG&E and its customers under the DAI component of the PBR mechanism were approximately $22,622 during PBR Years 19, 20, 21, and 22. The savings (or expenses) associated with each of the four days is shown in Column 10.

The DAI index is used to benchmark purchases made by LG&E that are in excess of its firm daily contract entitlements with interstate pipelines. The purchases are made using delivered supply arrangements. Under a delivered supply arrangement, a third party (neither LG&E nor the interstate pipeline) holds the capacity and makes deliveries of gas directly to LG&E at LG&E's city-gate in Kentucky. LG&E does not control the pipeline capacity or the gas commodity supply, and they are sold together by the third party as a bundled product to LG&E with delivery made at the city-gate. These supply arrangements are different from LG&E's other supply arrangements, which are for delivery in the production area for further transportation by LG&E using its own interstate pipeline capacity. Because this supply arrangement includes interstate pipeline delivery, it does not make sense to benchmark this arrangement using an existing Supply Area Index ("SAI"). For this reason, the DAI is included in the mechanism. LG&E references the importance and value of these delivered supply arrangements and the DAI in encouraging these arrangements in PSC 1-2 and PSC 1-9. Absent the PBR mechanism, LG&E would not be willing to undertake this procurement activity and the associated risk. Instead, LG&E would contract directly with the interstate pipeline to secure additional pipeline capacity either on an annual or seasonal basis depending on how the pipeline made such capacity available.

The attachment shows that during the 2017/2018 Winter Season, an additional maximum of 6,050 MMBtu/day above LG&E's firm daily contract entitlements with interstate pipelines was required to meet system load (Line 5, Column 4) and during the 2018/2019 Winter Season, an additional maximum of 8,826 MMBtu/day was required to meet system load (Line 6, Column 4).

If LG&E had purchased firm seasonal pipeline service under Rate NNS (the pipeline service used in the construction of the DAI benchmark) to cover its incremental pipeline needs for each respective Winter Season (which replicates the manner in which that capacity is sold by the pipeline), the incremental firm pipeline capacity would have cost $382,777 (6,050 MMBtu x $0.4190/MMBtu/day x 151 days) for the 2017/2018 Winter Season (November through March, or 151 days) and $558,412 (8,826 MMBtu x $0.4190/MMBtu/day x 151 days) for the 2018/2019 Winter Season (November through March, or 151 days). The cost of this incremental firm pipeline capacity would have been totally borne by customers, and no savings would have been achieved under the PBR mechanism. Primarily, this is the case because, as previously explained, Rate NNS capacity is not discounted by the pipeline.

Therefore, the delivered supply arrangements that LG&E benchmarks under the DAI mechanism achieved savings for LG&E and its customers of $22,622 to be shared through the PBR mechanism. The real benefit to customers is disproportionate since LG&E has been able to use the delivered supply arrangements encouraged by the DAI to avoid $941,189 in costs ($382,777 + $558,412) for the 2017/2018 and 2018/2019 Winter Seasons in total. While the four (4) days on which LG&E made purchases in excess of its firm daily pipeline contract entitlements may seem like a low number of

purchases not worthy of a separate benchmark, the delivered supply arrangements used to meet the loads on these four (4) days were important to ensuring system reliability.

It is important to note that these kinds of delivered supply arrangements are not always readily available in the marketplace. Additionally, delivered supplies can only be used to supplement firm pipeline capacity (such as that available under Rates NNS, FT, or FT-A), but cannot be used instead of firm proprietary capacity. This is the case because there are operational benefits that accrue as a part of contracting for firm capacity directly with the pipeline. The most important is the provision of a minimum delivery pressure provided by the pipeline to facilitate deliveries into the system of the LDC. Neither the pipeline nor the third party providing the delivered supply arrangements will or are able to make such a minimum delivery pressure available for this supply arrangement.

During the hearing, the Commission questioned the use of the higher of the two DAI indices (as derived from either TGT-1 or TGT-4). Because of the importance of these arrangements in mitigating gas costs, LG&E outlines the two problematic alternative benchmarking arrangements discussed during the course of the hearing:

(1) Instead of the higher of the two indices derived from TGT-1 or TGT-4, the lower of the two could be used. The result of this change would have been to reduce the savings achieved for LG&E and its customers under this component by $6,558 from $22,622 to $16,064.

(2) Instead of using only TGT-1 and TGT-4 to derive the DAI benchmark, the DAI benchmark could be constructed also using TGT-SL, TGPL-0, and TGPL-1 as follows:

DAI (TGT-4) and (TGPL-2)

DAI is the Delivery Area Index to be established for **PEFDCQ** made by Company on the day(s) when Company has arranged for deliveries to Company's city gate that are in excess of its total firm pipeline quantity entitlements.

The daily DAI applicable to the daily purchases made for city-gate delivery shall be the lower of the following DAI in which Company holds form capacity at the time such city-gate deliveries are made:

DAI = DAI (TGT-SL) / (1 – FR%(TGT)) + CCS(TGT) + DDCS(TGT)

or

DAI = DAI (TGT-1) / (1 – FR%(TGT)) + CCS(TGT) + DDCS(TGT)

or

DAI = DAI (TGT-4) / (1 – FR%(TGT)) + CCS(TGT) + DDCS(TGT)

or

DAI = DAI (TGPL-0) / (1 – FR%(TGPL)) + CCS(TGPL) + DDCS(TGPL)

or

DAI = DAI (TGPL-1) / (1 – FR%(TGPL)) + CCS(TGPL) + DDCS(TGPL)

Where:

DAI (TGT-SL) represents the midpoint posting by *Platts Gas Daily* for Louisiana/Southeast, Tx. Gas, zone SL.

DAI (TGT-1) represents the midpoint posting by *Platts Gas Daily* for Louisiana/Southeast, Tx. Gas, zone 1.

DAI (TGT-4) represents the midpoint posting by *Platts Gas Daily* for Appalachia, Lebanon Hub.

DAI (TGPL-0) represents the midpoint posting by *Platts Gas Daily* for East Texas, Tennessee, zone 0.

DAI (TGPL-1) represents the midpoint posting by *Platts Gas Daily* for Louisiana/Southeast, Tennessee, 500 Leg.

FR%(TGT) is the applicable tariffed Fuel Retention Percentage under Texas Gas Transmission, LLC's Rate NNS for the zone of receipt to LG&E.

CCS(TGT) are the applicable tariffed NNS Commodity Charge and Surcharges under Texas Gas Transmission, LLC's Rate NNS for the zone of receipt to LG&E.

DDCS(TGT) are the applicable tariffed Daily Demand Charge and Surcharges under Texas Gas Transmission, LLC's Rate NNS for the zone of receipt to LG&E.

FR%(TGPL) is the applicable tariffed Fuel Retention Percentage under Tennessee Gas Pipeline Company, LLC's Rate FT-A for the zone of receipt to LG&E.

CCS(TGPL) are the applicable tariffed FT-A Commodity Charge and Surcharges under Tennessee Gas Pipeline Company, LLC's Rate FT-A for the zone of receipt to LG&E.

DDCS(TGPL) are the applicable tariffed Daily Demand Charge and Surcharges under Tennessee Gas Pipeline Company, LLC's Rate FT-A for the zone of receipt to LG&E.

In addition to being unduly complicated, the result of this change would have been to reduce the savings achieved for LG&E and its customers under this component by $8,607 from $22,622 to $14,015.

b. See the attachment being provided in Excel format.

c. Actual gas costs associated with the benchmarking activities under the DAI component of the PBR mechanism are the actual commodity costs associated with the natural gas deliveries to LG&E's city-gate by the supplier on the day that the purchase in excess of firm daily contract quantities occurred.

The attachment is being provided in a separate file in Excel format.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Post-Hearing Request for Information
Dated June 29, 2020

Case No. 2019-00437

Question No. 3

Witness: J. Clay Murphy / Pamela L. Jaynes

Q-3. Refer to the table filed as part of LG&E's response to Commission Staff's First Request for Information, Item 7(c), in which LG&E identified volumes of gas that were purchased at prices in excess of the Gas Acquisition Index Factor (GAIF) benchmark for years 19 through 22 of the PBR mechanism.

a. Identify the portions of the "Purchase Volumes in Excess of GAIF Benchmark in MMBtu" represented in that table, based on the same benchmark used to calculate the amounts on the table, that are attributable to PEFDCQ for years 19 through 22 of the PBR Mechanism.

b. For each month in years 19 through 22 of the PBR Mechanism, identify the volume of PEFDCQ in MMBtu that was purchased at a rate above the applicable DAI.

c. For each month in years 19 through 22 of the PBR Mechanism, provide the number of days LG&E arranged for deliveries to its citygate in excess of its firm pipeline entitlements and the extent to which deliveries to its citygate exceeded its firm daily pipeline entitlements in MMBtu in each month.

d. Explain how LG&E determined the actual gas costs for PEFDCQ to respond to subparts a and b of this request.

e. For each month in years 19 through 22 of the PBR Mechanism, identify the volume of gas, excluding PEFDCQ, that was obtained at a rate that exceeded the applicable monthly Service Area Index (SAI) rate for the zone and on the pipeline from which the gas was obtained.

A-3. a. None. See the response to Question No. 2 (a). As explained therein, none of these purchases exceeded the applicable DAI component of the GAIF benchmarks.

b. None. See the response to Question No. 2 (a). As explained therein, none of these purchases exceeded the applicable DAI component of the GAIF benchmarks.

c. See the response to Question No. 2 (a).

d. See the response to Question No. 2 (c).

e. In the response to PSC 1-7 (c), LG&E estimated that approximately 23% of the gas commodity purchases were made at a price in excess of the weighted average monthly benchmarks, that is the Supply Area Indices ("SAIs") weighted by the supply zone firm quantity entitlements ("SZFQE%").

In order to estimate this percentage, LG&E reviewed and sorted monthly transactional data, calculated the average monthly purchase price by transaction (or transaction type) and compared that average monthly purchase price to a weighted average monthly benchmark. LG&E determined that 77% of the gas commodity purchases contributed to savings under the PBR mechanism. That table is restated below for ease of reference.

(1)	(2)	(3)	(4)
PBR Year	Total Purchase Volumes in MMBtu	Purchase Volumes in Excess of GAIF Benchmark in MMBtu	Percentage (Col. 3 / Col. 2)
19	30,822,330	11,621,548	38%
20	30,490,852	8,265,154	27%
21	36,732,577	6,395,211	17%
22	35,968,915	4,629,667	13%
Total	134,014,674	30,911,580	23%

In order to supplement the table above, LG&E has included Appendix A as an attachment, which shows the figures in the table above on a monthly basis by pipeline and zone for each of the PBR Years 19, 20, 21, and 22.

In this question the Commission has asked LG&E to provide the same figures in Appendix A, but instead compared to the SAI for the pipeline zone in which the gas was purchased. These figures are set forth in Appendix B as an attachment. Below is a summary table response to this question in a format comparable to the table above.

(1)	(2)	(3)	(4)
PBR Year	Total Purchase Volumes in MMBtu	Purchase Volumes in Excess of SAI For Pipeline Zone of Purchase in MMBtu	Percentage (Col. 3 / Col. 2)
19	30,822,330	11,743,224	38%
20	30,490,852	7,948,334	26%
21	36,732,577	6,991,073	19%
22	35,968,915	5,929,431	16%
Total	134,014,674	32,612,062	24%

While at a first glance the percentages and volumes from both tables are similar, a deeper look into the results is necessary in order to understand what is happening in the PBR mechanism. For example:

- PBR Year 19, October 2016: In this month, the GAIF benchmark (the SZFQE% weighted SAIs) was $2.8362/MMBtu. PBR expenses were experienced for purchases of 1,249,796 MMBtu in Tennessee Zone 0. These volumes had a weighted average actual cost of $2.8683/MMBtu. The SAI for Tennessee Zone 0 was $2.8877/MMBtu. No PBR expenses from Tennessee Zone 0 would have been experienced had the Tennessee Zone 0 SAI benchmark been used in isolation.

- PBR Year 20, August 2017: In this month, the GAIF benchmark (the SZFQE% weighted SAIs) was $2.7781/MMBtu. PBR expenses were experienced for purchases of 316,820 MMBtu in Tennessee Zone 0. These volumes had a weighted average actual cost of $2.7900/MMBtu. The SAI for Tennessee Zone 0 was $2.7902/MMBtu. No PBR expenses from Tennessee Zone 0 would have been experienced had the Tennessee Zone 0 SAI benchmark been used in isolation.

- PBR Year 21, May 2018: In this month, the GAIF benchmark (the SZFQE% weighted SAIs) was $2.5860/MMBtu. PBR expenses were experienced for purchases of 610,210 MMBtu in Texas Gas Zone 1. These volumes had a weighted average actual cost of $2.6348/MMBtu. The SAI for Texas Gas Zone 1 was $2.6565/MMBtu. PBR expenses for volumes purchased from Texas Gas Zone 1 would have decreased from 610,210 MMBtu to 177,338 MMBtu had the Texas Gas Zone 1 SAI benchmark been used in isolation.

- PBR Year 22, October 2019: In this month, the GAIF benchmark (the SZFQE% weighted SAIs) was $1.9601/MMBtu. PBR expenses were

experienced for purchases of 619,999 MMBtu in Tennessee Zone 0. These volumes had a weighted average actual cost of $1.9794/MMBtu. The SAI for Tennessee Zone 0 was $2.0715/MMBtu. No PBR expenses from Tennessee Zone 0 would have been experienced had the Tennessee Zone 0 SAI benchmark been used in isolation.

These examples illustrate the dynamic nature of LG&E's PBR mechanism and how use of the SZFQE% promotes a least-cost acquisition standard by structuring the benchmark so as to include all potential supply zone choices available to LG&E. By weighting all possible supply choices in the calculation of the benchmark, the benchmark encourages LG&E to purchase gas in the lowest cost supply zone first and creates risk of loss under the PBR mechanism if it does not.

It is LG&E's understanding that the PBR mechanisms of Atmos and Columbia do not incorporate the risk created by the SZFQE% feature. The result is that supplies are benchmarked only against the index representative of the zone in which those supplies were purchased. This can have the result of encouraging the purchase of supplies in the zone which will yield the biggest difference from the benchmark, not in purchasing gas in the lowest cost zone available to the LDC.

As explained in detail in the response to PSC 1-2, and with the detailed examples therein, LG&E has conclusively demonstrated that, because LG&E's GAIF benchmark incorporates a weighted average of contractual supply zone entitlements, LG&E must continuously manage its gas supply purchase options by zone in order to outperform the benchmark and create savings.

A well-designed mechanism should not encourage "savings" at the expense of least cost acquisition. Removing the use of LG&E's supply zone entitlement in determining the GAIF benchmark would create a flaw in the mechanism by encouraging LG&E to purchase gas in the zone with the biggest difference between the price and the applicable zone benchmark in order to maximize "savings".

As discussed in the responses to Question Nos. 1 and 4 herein, changing the benchmarks in ways other than those proposed by LG&E can result in unintended consequences, potential disincentives to superior performance, and negative impacts to reliability.

Louisville Gas and Electric Company
Purchase Volumes in Excess of GAIF Benchmark (Weighted Average SAIs)
All Volumes in MMBtu
Appendix A

Year	Month	(1) Texas Gas Zone 1	(2) Texas Gas Zone 4	(3) Tennessee Zone 0	(4) Total (Col. 1 + Col. 2 + Col. 3)	(5) Total Monthly Volume	(6) Percentage (Col. 4 / Col. 5)
				PBR Year 19			
2015	Nov	220,429	0	0	220,429	2,621,570	8%
	Dec	753,300	0	81,184	834,484	1,169,484	71%
2016	Jan	534,896	0	0	534,896	2,852,531	19%
	Feb	839,560	0	243,552	1,083,112	2,267,150	48%
	Mar	0	0	0	0	1,578,253	0%
	Apr	846,516	0	0	846,516	1,021,516	83%
	May	1,024,500	0	0	1,024,500	1,632,500	63%
	Jun	0	0	454,728	454,728	2,445,946	19%
	Jul	741,828	310,000	624,898	1,676,726	3,546,624	47%
	Aug	309,976	310,000	310,000	929,976	4,073,345	23%
	Sep	300,000	300,000	604,740	1,204,740	3,881,970	31%
	Oct	1,251,645	310,000	1,249,796	2,811,441	3,731,441	75%
	Annual Total	6,822,650	1,230,000	3,568,898	11,621,548	30,822,330	38%
				PBR Year 20			
2016	Nov	100,400	0	201,268	301,668	2,082,264	14%
	Dec	10,000	20,000	265,000	295,000	3,578,901	8%
2017	Jan	200,800	0	81,268	282,068	1,943,325	15%
	Feb	144,074	0	105,951	250,025	1,181,025	21%
	Mar	0	0	0	0	625,343	0%
	Apr	627,500	0	0	627,500	1,437,600	44%
	May	878,500	0	0	878,500	1,544,817	57%
	Jun	50,200	150,000	305,286	505,486	2,379,036	21%
	Jul	502,007	885,081	316,601	1,703,689	3,777,093	45%
	Aug	225,478	895,466	316,820	1,437,764	3,910,221	37%
	Sep	928,700	0	0	928,700	3,791,779	24%
	Oct	125,500	616,814	312,440	1,054,754	4,239,448	25%
	Annual Total	3,793,159	2,567,361	1,904,634	8,265,154	30,490,852	27%
				PBR Year 21			
2017	Nov	285,384	120,000	320,000	725,384	3,553,530	20%
	Dec	452,338	0	210,016	662,354	3,903,775	17%
2018	Jan	155,256	420,000	288,516	863,772	3,941,232	22%
	Feb	101,336	0	40,004	141,340	1,619,858	9%
	Mar	0	0	0	0	1,744,040	0%
	Apr	0	365,000	225,000	590,000	1,983,398	30%
	May	610,210	0	60,000	670,210	2,177,210	31%
	Jun	0	0	0	0	2,659,926	0%
	Jul	0	589,000	0	589,000	3,551,354	17%
	Aug	0	586,248	0	586,248	3,980,364	15%
	Sep	481,346	0	0	481,346	3,785,708	13%
	Oct	216,000	549,557	320,000	1,085,557	3,832,182	28%
	Annual Total	2,301,870	2,629,805	1,463,536	6,395,211	36,732,577	17%
				PBR Year 22			
2018	Nov	206,248	390,000	400,000	996,248	4,230,544	24%
	Dec	305,184	170,000	200,000	675,184	2,949,196	23%
2019	Jan	152,592	0	0	152,592	3,810,664	4%
	Feb	25,432	0	0	25,432	1,756,524	1%
	Mar	388,590	115,000	0	503,590	2,470,406	20%
	Apr	0	0	0	0	1,512,948	0%
	May	0	0	0	0	1,563,409	0%
	Jun	0	369,622	0	369,622	2,539,596	15%
	Jul	310,000	0	0	310,000	3,887,689	8%
	Aug	310,000	0	0	310,000	3,886,933	8%
	Sep	300,000	0	0	300,000	3,727,813	8%
	Oct	367,000	0	619,999	986,999	3,633,193	27%
	Annual Total	2,365,046	1,044,622	1,219,999	4,629,667	35,968,915	13%
	Grand Total	15,282,725	7,471,788	8,157,067	30,911,580	134,014,674	23%

Louisville Gas and Electric Company
Purchase Volumes in Excess of SAI by Pipeline Zone
All Volumes in MMBtu
Appendix B

Year	Month	(1) Texas Gas Zone 1	(2) Texas Gas Zone 4	(3) Tennessee Zone 0	(4) Total (Col. 1 + Col. 2 + Col. 3)	(5) Total Monthly Volume	(6) Percentage (Col. 4 / Col. 5)
				PBR Year 19			
2015	Nov	220,429	0	0	220,429	2,621,570	8%
	Dec	753,300	0	81,184	834,484	1,169,484	71%
2016	Jan	1,185,896	0	405,574	1,591,470	2,852,531	56%
	Feb	839,560	0	243,552	1,083,112	2,267,150	48%
	Mar	0	0	0	0	1,578,253	0%
	Apr	846,516	0	0	846,516	1,021,516	83%
	May	1,024,500	0	0	1,024,500	1,632,500	63%
	Jun	0	0	454,728	454,728	2,445,946	19%
	Jul	741,828	310,000	624,898	1,676,726	3,546,624	47%
	Aug	309,976	310,000	624,898	1,244,874	4,073,345	31%
	Sep	300,000	300,000	604,740	1,204,740	3,881,970	31%
	Oct	1,251,645	310,000	0	1,561,645	3,731,441	42%
	Annual Total	7,473,650	1,230,000	3,039,574	11,743,224	30,822,330	38%
				PBR Year 20			
2016	Nov	100,400	0	201,268	301,668	2,082,264	14%
	Dec	10,000	20,000	265,000	295,000	3,578,901	8%
2017	Jan	200,800	0	81,268	282,068	1,943,325	15%
	Feb	144,074	0	105,951	250,025	1,181,025	21%
	Mar	0	0	0	0	625,343	0%
	Apr	627,500	0	0	627,500	1,437,600	44%
	May	878,500	0	0	878,500	1,544,817	57%
	Jun	50,200	150,000	305,286	505,486	2,379,036	21%
	Jul	502,007	885,081	316,601	1,703,689	3,777,093	45%
	Aug	225,478	895,466	0	1,120,944	3,910,221	29%
	Sep	928,700	0	0	928,700	3,791,779	24%
	Oct	125,500	616,814	312,440	1,054,754	4,239,448	25%
	Annual Total	3,793,159	2,567,361	1,587,814	7,948,334	30,490,852	26%
				PBR Year 21			
2017	Nov	285,384	220,000	320,000	825,384	3,553,530	23%
	Dec	452,338	0	210,016	662,354	3,903,775	17%
2018	Jan	155,256	420,000	288,516	863,772	3,941,232	22%
	Feb	101,336	0	40,004	141,340	1,619,858	9%
	Mar	0	0	0	0	1,744,040	0%
	Apr	0	365,000	225,000	590,000	1,983,398	30%
	May	177,338	279,000	60,000	516,338	2,177,210	24%
	Jun	0	270,000	0	270,000	2,659,926	10%
	Jul	0	589,000	0	589,000	3,551,354	17%
	Aug	0	586,248	0	586,248	3,980,364	15%
	Sep	0	861,080	0	861,080	3,785,708	23%
	Oct	216,000	549,557	320,000	1,085,557	3,832,182	28%
	Annual Total	1,387,652	4,139,885	1,463,536	6,991,073	36,732,577	19%
				PBR Year 22			
2018	Nov	206,248	390,000	400,000	996,248	4,230,544	24%
	Dec	305,184	170,000	200,000	675,184	2,949,196	23%
2019	Jan	152,592	0	0	152,592	3,810,664	4%
	Feb	25,432	0	0	25,432	1,756,524	1%
	Mar	388,590	115,000	0	503,590	2,470,406	20%
	Apr	0	0	0	0	1,512,948	0%
	May	0	0	0	0	1,563,409	0%
	Jun	0	369,622	0	369,622	2,539,596	15%
	Jul	310,000	387,357	0	697,357	3,887,689	18%
	Aug	310,000	387,500	0	697,500	3,886,933	18%
	Sep	300,000	369,906	0	669,906	3,727,813	18%
	Oct	367,000	775,000	0	1,142,000	3,633,193	31%
	Annual Total	2,365,046	2,964,385	600,000	5,929,431	35,968,915	16%
	Grand Total	15,019,507	10,901,631	6,690,924	32,612,062	134,014,674	24%

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Post-Hearing Request for Information
Dated June 29, 2020

Case No. 2019-00437

Question No. 4

Witness: J. Clay Murphy / Pamela L. Jaynes

Q-4. Provide the change in the net savings and expense that would have occurred in each month of years 19 through 22 of LG&E's PBR Mechanism if the "New York Mercantile Exchange Settled Closing Price" had been included as part of the benchmark for each Supply Area Index (SAI) as proposed in this matter.

A-4. The table below shows the change in the net savings and expense that would have occurred in each month of years 19 through 22 of LG&E's PBR Mechanism if the "New York Mercantile Exchange Settled Closing Price" ("NYMEX") had been included as part of the benchmark for each Supply Area Index ("SAI") as proposed in this matter.

	Year 19	*Year 20*	*Year 21*	*Year 22*
Nov.	*$11,573*	*$151,779*	*($32,173)*	*($468,277)*
Dec.	*$81,328*	*($135,887)*	*$286,999*	*$465,179*
Jan.	*$46,801*	*$226,180*	*($502,180)*	*$446,416*
Qtr. Subtotal	*$139,702*	*$242,072*	*($247,354)*	*$443,318*
Feb.	*$107,296*	*$143,364*	*$298,543*	*$117,109*
Mar.	*$30,518*	*($5,364)*	*$47,979*	*$16,697*
Apr.	*$23,711*	*$71,754*	*$58,638*	*$86,458*
Qtr. Subtotal	*$161,525*	*$209,754*	*$405,160*	*$220,264*
May	*$58,465*	*$61,945*	*$127,883*	*$78,770*
Jun.	*($158,445)*	*$205,493*	*$105,052*	*$259,471*
Jul.	*$161,630*	*$203,758*	*$248,859*	*$182,001*
Qtr. Subtotal	*$61,650*	*$471,196*	*$481,794*	*$520,242*
Aug.	*$29,432*	*$176,735*	*$41,064*	*$173,372*
Sep.	*$23,899*	*$133,925*	*$135,707*	*$117,165*
Oct.	*$108,130*	*$248,328*	*$28,320*	*$425,206*
Qtr. Subtotal	*$161,461*	*$558,988*	*$205,091*	*$715,743*

Total	*$524,338*	*$1,482,010*	*$844,691*	*$1,899,567*

This table illustrates the problem with attempts to "back cast" changes in the benchmarks (and sharing mechanism). The table shows significant changes in the results (both positive and negative) that are the result of such "back-casting". This "back-casting" analysis and its results are problematic because when the benchmarks (or sharing mechanism) are changed, the incentives under the mechanism are also changed. Therefore, retroactively changing the benchmark side of the equation without also changing the actual supply transaction cost side of the equation results in an apples-to-oranges comparison. Unfortunately, it is not possible to change the historical transactions and costs because those transactions were a factor of the then-known set of benchmarks. Despite the problems associated with a "back-casted" analysis, the back-casted results do illustrate the potential for increased savings that may be available for customers and company as a result of adding the NYMEX to the benchmarks.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Post-Hearing Request for Information
Dated June 29, 2020

Case No. 2019-00437

Question No. 5

Witness: J. Clay Murphy / Pamela L. Jaynes

Q-5. Explain whether LG&E's PBR mechanism included NYMEX as a benchmark in the past. If so, explain why it is proposing its addition at this time.

A-5. LG&E's PBR mechanism as originally approved in Case No. 97-171 included the New York Mercantile Exchange ("NYMEX") and covered PBR Years 1, 2, 3, and 4.

LG&E is proposing to modify the GAIF component of the PBR mechanism to include the NYMEX settled closing price in each of the Supply Area Indices ("SAIs"). For example, the NYMEX closing price for November 2020 would be used in each of the SAIs for November 2020. This additional benchmark would expand LG&E's gas supply contracting opportunities similar to those provided for in the mechanism of Atmos Energy Corporation which also includes NYMEX as a benchmark. If the Commission approves this modification, then LG&E will consider this contracting opportunity in its planning process. Gas suppliers have proposed pricing arrangements using the NYMEX, but because NYMEX is not a component of the PBR mechanism, LG&E has declined to enter into these pricing arrangements.

LOUISVILLE GAS AND ELECTRIC COMPANY

Response to Commission Staff's Post-Hearing Request for Information
Dated June 29, 2020

Case No. 2019-00437

Question No. 6

Witness: J. Clay Murphy / Pamela L. Jaynes

Q-6. Provide the total annual expenses for LG&E's gas procurement activities for PBR years 19 through 22 broken down by personnel costs and capital costs.

A-6. LG&E estimates that the average annual labor- and non-labor-related costs for its Gas Supply Department for the years 2016, 2017, 2018, and 2019 was $1,003,776. There were no capital costs.

Year	Labor	Non-Labor	Total
2016	$793,201	$170,541	$963,742
2017	$800,354	$190,412	$990,766
2018	$832,130	$184,036	$1,016,166
2019	$862,504	$181,927	$1,044,431
Total	$3,288,189	$726,916	$4,015,105
Average	$822,047	$181,729	$1,003,776

The Gas Supply Department has two main responsibilities: the purchase of gas for its system supply customers, and the facilitation of customer-owned gas transportation programs. Based upon the total average annual receipts by LG&E for sales and transportation customers from the interstate pipelines for the same four years, LG&E estimates that approximately 30% of these costs ($301,133) were associated with activities related to customer-owned gas transportation programs and the remaining 70% ($702,643) were associated with activities related to system supply procurement.

As described in the response to PSC 2-10, these costs cover the "what" LG&E does with respect to the procurement of gas. With or without the PBR mechanism, the "what" of gas procurement activity will not change. Because the "what" will not change, the costs associated with the "what" are not driven by the absence or presence of a PBR mechanism.

It is the PBR mechanism, a voluntary risk/reward mechanism with transparent and objective benchmarks that act as the least cost acquisition standard, that creates the

incentive and changes the "how" of gas procurement. The incentives provided for in the PBR mechanism encourage the LDC to undertake performance that is superior to the least cost acquisition standard.