

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

**In the Matter of:**

**ELECTRONIC EXAMINATION BY THE PUBLIC )**  
**SERVICE COMMISSION OF THE ENVIRONMENTAL )**  
**SURCHARGE MECHANISM OF KENTUCKY ) CASE NO.**  
**UTILITIES COMPANY FOR THE SIX-MONTH ) 2016-00437**  
**BILLING PERIOD ENDING OCTOBER 31, 2016 )**

**DIRECT TESTIMONY OF**

**DEREK A. RAHN**  
**MANAGER, REVENUE REQUIREMENT**  
**LG&E AND KU SERVICES COMPANY**

**Filed: January 24, 2017**

1 **Q. Please state your name, title, and business address.**

2 A. My name is Derek A. Rahn. I am the Manager, Revenue Requirement for Kentucky  
3 Utilities Company (“KU” or “Company”) and Louisville Gas and Electric Company  
4 (“LG&E”) and an employee of LG&E and KU Services Company, which provides  
5 services to LG&E and KU (collectively “Companies”). My business address is 220  
6 West Main Street, Louisville, Kentucky, 40202. A complete statement of my education  
7 and work experience is attached to this testimony as Appendix A.

8 **Q. Have you previously testified before this Commission?**

9 A. Yes. I testified in KU’s 2016 environmental compliance plan Case No. 2016-00026. I  
10 also have testified in KU’s environmental surcharge mechanism six-month review Case  
11 No. 2015-00411 and Case No. 2016-00214.

12 **Q. Are you sponsoring any exhibits?**

13 A. No.

14 **Q. What is the purpose of this proceeding?**

15 A. The purpose of this proceeding is to review the past operation of KU’s environmental  
16 surcharge during the six-month billing period ending October 31, 2016 and determine  
17 whether the surcharge amounts collected during the period are just and reasonable.

18 **Q. What is the purpose of your testimony?**

19 A. The purpose of my testimony is to summarize the operation of KU’s environmental  
20 surcharge during the billing period under review, demonstrate that the amount collected  
21 during the period was just and reasonable, present and discuss KU’s proposed  
22 adjustment to the Environmental Surcharge Revenue Requirement based on the

1 operation of the surcharge during the period and explain how the environmental  
2 surcharge factors were calculated during the period under review.

3 **Q. Please summarize the operation of the environmental surcharge for the billing**  
4 **period included in this review.**

5 A. KU billed an environmental surcharge to its customers from May 1, 2016 through  
6 October 31, 2016. For purposes of the Commission's examination in this case, the  
7 monthly KU environmental surcharges are considered as of the six-month billing  
8 period ending October 31, 2016. In each month of the six-month period under review  
9 in this proceeding, KU calculated the environmental surcharge factors in accordance  
10 with its ECR Tariff and the requirements of the Commission's previous orders  
11 concerning KU's environmental surcharge. The calculations were made in accordance  
12 with the Commission-approved monthly forms and filed with the Commission ten days  
13 before the new monthly charge was billed by the Company.

14 **Q. What costs were included in the calculation of the environmental surcharge**  
15 **factors for the billing period under review?**

16 A. The capital and operating costs included in the calculation of the environmental  
17 surcharge factors for the six-month billing period under review were the costs incurred  
18 each month by KU from March 2016 through August 2016, as detailed in the  
19 attachment in response to Question No. 2 of the Commission Staff's Request for  
20 Information, incorporating all required revisions.

21 The monthly environmental surcharge factors applied during the billing period  
22 under review were calculated consistent with the Commission's Orders in KU's  
23 previous applications to assess or amend its environmental surcharge mechanism and

1 plan, as well as, Orders issued in previous review cases. The monthly environmental  
2 surcharge reports filed with the Commission during this time reflect the various  
3 changes to the reporting forms ordered by the Commission from time to time.

4 **Q. Please describe the most recently approved changes to KU's ECR Compliance**  
5 **Plan.**

6 A. In Case No. 2014-00371, KU's most recently approved rate case, the Commission reset  
7 the return on equity to be used in the monthly environmental surcharge filings.  
8 Pursuant to the Commission's June 30, 2015 Order in that case, the changes were  
9 implemented with the July 2015 expense month. The approved 10.00% return on  
10 equity is used in this proceeding to establish the overall rate of return on capital to be  
11 used to calculate the environmental surcharge for all 2009 Plan and 2011 Plan projects.

12 In Case No. 2016-00026, the Commission approved KU's 2016 ECR  
13 Compliance Plan that included seven new projects and associated operation and  
14 maintenance costs. Pursuant to the Commission's August 8, 2016 Order approving the  
15 Settlement Agreement in Case No. 2016-00026, KU began including the approved  
16 projects in the monthly filing for the September 2016 billing month. The Commission  
17 ordered KU to use a 9.80% return on equity for the 2016 Plan.

18 **Q. Please describe the most recently approved changes to the environmental**  
19 **surcharge mechanism and the monthly ES forms.**

20 A. In Case No. 2016-00026, as mentioned above, the Commission approved KU's 2016  
21 ECR Compliance Plan. Several changes were made to the ES forms to incorporate the  
22 2016 Plan and the different return on equity ordered for the 2016 Plan.

- 1           • ES Form 1.10 was modified to separate Pre-2016 Plans and the 2016 Plan due  
2           to differing return on equity approved for the Plans.
- 3           • ES Form 2.00 was modified to account for the impact of surface-impoundment-  
4           related construction on environmental compliance rate base of construction  
5           related to compliance with the federal Coal Combustion Residuals (“CCR”)  
6           Rule and to change various references to other ES Forms to track the proposed  
7           ES Form changes discussed below. Also, ES Form 2.00 was modified to  
8           separate Pre-2016 Plans and the 2016 Plan due to differing return on equity  
9           approved for the Plans.
- 10          • ES Form 2.10 was modified to include the approved 2016 Plan projects.
- 11          • ES Forms 2.30 through 2.33 were modified to reflect changes associated with  
12          the implementation of the Cross-State Air Pollution Rule (“CSAPR”) in  
13          January 2015.
- 14          • ES Form 2.30 was modified to allow for the differentiation of SO<sub>2</sub>  
15          allowances between CAIR and CSAPR allowances. This is being done by  
16          including two additional columns to display the differentiation.
- 17          • ES Form 2.31 was removed since it was redundant relative to the renamed  
18          ES Forms 2.31 and 2.32 (was Supplemental ES Form 2.31 CAIR and  
19          Supplemental ES Form 2.31 CSAPR).
- 20          • Supplemental ES Form 2.31 CAIR was renamed ES Form 2.31 – Inventory  
21          of CAIR Emission Allowances (SO<sub>2</sub>) - Current Vintage Year.
- 22          • Supplemental ES Form 2.31 CSAPR was renamed ES Form 2.32 -  
23          Inventory of CSAPR Emission Allowances (SO<sub>2</sub>) - Current Vintage Year.

- 1 • ES Form 2.32 was renamed ES Form 2.33 - Inventory of Emission  
2 Allowances (NOx) - Ozone Season Allowance Allocation.
- 3 • ES Form 2.33 was renamed ES Form 2.34 - Inventory of Emission  
4 Allowances (NOx) - Annual Allowance Allocation.
- 5 • ES Form 2.40 was modified to separate Pre-2016 Plans and 2016 Plan O&M  
6 expenses.
- 7 • ES Form 2.50 was expanded to include the O&M expenses associated with Project  
8 38.
- 9 • ES Form 3.00 was modified to change the name of column (4) from “Fuel Clause  
10 Revenues,” to “Fuel Clause Revenues Including Off-System Sales Tracker.”  
11 Similarly, ES Form 3.10 Item (2) “Fuel Adjustment Clause” is being renamed “Fuel  
12 Adjustment Clause including Off System Sales Tracker.” These changes reflect  
13 the settlement agreement in KU’s 2014 base-rate case (Case No. 2014-00371)  
14 which implemented the off-system sales adjustment clause factor as a credit to  
15 customers through the Fuel Adjustment Clause.

16 **Q. Are there any changes or adjustments in Rate Base from the originally filed**  
17 **expense months?**

18 A. Yes. During the period under review, ES Form 2.61 contained values needing  
19 corrected for the expense month of June 2016 and there were minor corrections to Rate  
20 Base from the originally filed billing months as summarized in KU’s response to the  
21 Commission Staff’s Request for Information, Question No. 1. The rate base for June  
22 2016 through August 2016 increased \$25 per month as a result of the correction.  
23 Billing factors were unchanged as a result of the correction.

1 **Q. Are there any changes necessary to the jurisdictional revenue requirement**  
2 **(E(m))?**

3 A. Yes. Adjustments to E(m) are necessary for compliance with the Commission's Order  
4 in Case No. 2000-00439 to reflect the actual changes in the overall rate of return on  
5 capitalization that is used in the determination of the return on environmental rate base.

6 Pursuant to the terms of the Settlement Agreement approving the 2011 ECR  
7 Plan, KU calculated the short- and long-term debt rate using average daily balances  
8 and daily interest rates in the calculation of the overall rate of return true-up adjustment  
9 for the six-month expense period ending August 31, 2016. For the expense months of  
10 March 2016 through August 2016, the weighted average cost of capital was based on  
11 the balances as of August 31, 2016 and the 10.00% return on equity for pre-2016 Plan  
12 projects.

13 Pursuant to the terms of the Settlement Agreement approving the 2016 ECR  
14 Plan, KU calculated the short- and long-term debt rate using average daily balances  
15 and daily interest rates in the calculation of the overall rate of return true-up adjustment  
16 for the six-month expense period ending August 31, 2016. For the expense months of  
17 July 2016 and August 2016, the weighted average cost of capital was based on the  
18 balances as of August 31, 2016 and the 9.80% return on equity for 2016 Plan projects.

19 The details of and support for these calculations are shown in KU's response to  
20 Question No. 1 of the Commission Staff's Request for Information.

21 **Q. Are there corrections to information provided in the monthly filings during the**  
22 **billing period under review?**

1 A. Yes. As previously mentioned, ES Form 2.61 for the June 2016 expense month  
2 contained incorrect data. Since the error impacted the determination of working capital  
3 allowance on ES Form 2.40, which uses a rolling twelve months of O&M expenses,  
4 the expense months of July 2016 and August 2016 were also impacted. Billing factors  
5 were unchanged as a result of the correction. Revised forms for June 2016 through  
6 August 2016 are provided in response to the Commission Staff's First Request for  
7 Information to Appendix B, Question No. 7.

8 **Q. As a result of the operation of the environmental surcharge during the billing  
9 period under review, is an adjustment to the revenue requirement necessary?**

10 A. Yes. KU experienced an over-recovery of \$110,995 for the billing period ending  
11 October 31, 2016. KU's response to Question No. 2 of the Commission Staff's Request  
12 for Information shows the calculation of the over-recovery. An adjustment to the  
13 revenue requirement is necessary to reconcile the collection of past surcharge revenues  
14 with actual costs for the billing period under review.

15 **Q. Has KU identified the causes of the over-recovery during the billing period under  
16 review?**

17 A. Yes. KU has identified the components that make up the over-recovery during the  
18 billing period under review. The components are: (1) changes in overall rate of return  
19 as previously discussed, and (2) the use of 12-month average revenues to determine the  
20 billing factor. The details and support of the components that make up the over-  
21 recovery during the billing period under review are shown in KU's response to  
22 Question No. 2 of the Commission Staff's Request for Information.



1 **Q. Please explain how the function of the ECR mechanism contributes to the**  
2 **recovery position in the billing period under review.**

3 A. The use of 12-month average revenues to calculate the monthly billing factors and then  
4 applying those same billing factors to the actual monthly revenues will result in an  
5 over- or under-collection of ECR revenues. The table below shows a comparison of  
6 the 12-month average revenues used in the monthly filings to determine the ECR billing  
7 factors and the actual revenues to which the ECR billing factors were applied in the  
8 billing month.

Expense Month	12-Month Average Revenues	Billing Month	Actual Revenues Subject to ECR Billing Factors
March 2016	\$ 92,044,537	May 2016	\$ 80,860,819
April 2016	92,818,611	June 2016	96,033,127
May 2016	93,467,300	July 2016	107,003,500
June 2016	94,324,960	August 2016	113,569,504
July 2016	94,983,412	September 2016	113,600,984
August 2016	96,138,148	October 2016	88,177,435

\*The 12-month average revenues and the Actual Revenues subject to ECR Billing Factors reflect net revenues for Group 2.

9

10 Generally, an under-recovery will occur when actual revenues for the billing month are  
11 less than the 12-month average revenues used for the expense month. Likewise, an  
12 over-recovery will usually occur when actual revenues for the billing month are greater  
13 than the 12-month average revenues used for the expense month.

14 **Q. What kind of adjustment is KU proposing in this case as a result of the operation**  
15 **of the environmental surcharge during the billing period?**

16 A. KU is proposing that the over-recovery be distributed in one month following the  
17 Commission's Order in this proceeding. Specifically, KU recommends that the

1 Commission approve a decrease to the Environmental Surcharge Revenue  
2 Requirement of \$110,995 for one month, to occur in the second full billing month  
3 following the Commission's Order in this proceeding. This method is consistent with  
4 the method of implementing previous over- or under- recovery positions in prior ECR  
5 review cases.

6 **Q. What is the bill impact on a residential customer for the proposed distribution of**  
7 **the over-recovery?**

8 A. The inclusion of the distribution reflecting the over-recovery position in the  
9 determination of the ECR billing factor will decrease the billing factor by  
10 approximately 0.10% for one month. For a residential customer using an average of  
11 1,090 kWh per month, the impact of the adjusted ECR billing factor would be a  
12 decrease of approximately \$0.11 for one month (using rates and adjustment clause  
13 factors in effect for the December 2016 billing month).

14 **Q. What rate of return is KU proposing to use for its ECR Plans upon the**  
15 **Commission's Order in this proceeding?**

16 A. KU is recommending an overall rate of return on capital of 10.62%, including the  
17 currently approved 10.00% return on equity and adjusted capitalization, to be used to  
18 calculate the environmental surcharge for all pre-2016 Plans. This is based on  
19 capitalization as of August 31, 2016 and the Commission's Order on October 25, 2016  
20 in Case No. 2016-00214 and use of the 2016 gross-up revenue factor that excludes the  
21 §199 manufacturing tax deduction.

22 KU is recommending an overall rate of return on capital of 10.44%, including  
23 the currently approved 9.80% return on equity and adjusted capitalization, to be used

1 to calculate the environmental surcharge for all 2016 Plan projects. This is based on  
2 capitalization as of August 31, 2016 and the Commission's Order of August 8, 2016 in  
3 Case No. 2016-00026 and use of the 2016 gross-up revenue factor that excludes the  
4 \$199 manufacturing tax deduction.

5 Please see the response and attachments to Commission Staff's Request for  
6 Information Question No. 5 following this testimony.

7 **Q. What is your recommendation to the Commission in this case?**

8 A. KU makes the following recommendations to the Commission in this case:

9 a) The Commission should approve the proposed decrease to the Environmental  
10 Surcharge Revenue Requirement of \$110,995 for one month to occur in the  
11 second full billing month following the Commission's Order in this proceeding;

12 b) The Commission should determine the environmental surcharge amount for the  
13 six-month billing period ending October 31, 2016 to be just and reasonable;

14 c) The Commission should approve the use of an overall rate of return on capital  
15 of 10.62% for all pre-2016 Plan projects, using a return on equity of 10.00%,  
16 beginning in the second full billing month following the Commission's Order  
17 in this proceeding.

18 d) The Commission should approve the use of an overall rate of return on capital  
19 of 10.44% for all 2016 Plan projects, using a return on equity of 9.80%,  
20 beginning in the second full billing month following the Commission's Order  
21 in this proceeding.

22 **Q. Does this conclude your testimony?**

23 A. Yes.

VERIFICATION

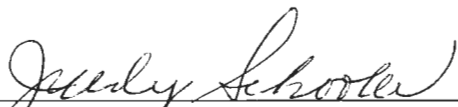
COMMONWEALTH OF KENTUCKY )  
 ) SS:  
COUNTY OF JEFFERSON )

The undersigned, **Derek A. Rahn**, being duly sworn, deposes and says that he is Manager - Revenue Requirement for LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.



**Derek A. Rahn**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 24th day of January 2017.



(SEAL)  
Notary Public

My Commission Expires:  
**JUDY SCHOOLER**  
**Notary Public, State at Large, KY**  
**My commission expires July 11, 2018**  
**Notary ID # 512743**

## APPENDIX A

### **Derek A. Rahn**

Manager, Revenue Requirement  
LG&E and KU Services Company  
220 West Main Street  
Louisville, Kentucky 40202  
(502) 627-4127

### Education

Masters of Business Administration,  
Bellarmine University, July 2010.  
Bachelor of Science in Electrical Engineering,  
University of Kentucky, December 2003.

Training: Managing People & Processes (2014), IUS Leadership Program (2007-2008), Professional Development Program (2007-2008), Global Leadership Summit (2013 & 2015), Mentoring Program (2008, 2014, & 2015), Project Management (2006), Microsoft Project (2005), Advanced Operator (2008), Basic Shaft Alignment (2006).

### Previous Positions

Manager, Transmission Policy & Tariffs	Sep 2010 – Oct 2015
Group Leader, Transmission Operations Engineering	Dec 2008 – Sep 2010
Supervisor, Operations (Ghent Power Station)	Dec 2007 – Dec 2008
Electrical Engineer II (Ghent Power Station)	Jul 2005 – Dec 2007
Project Engineer (TubeMaster, Inc.)	Dec 2003 – Jul 2005