

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY POWER)
COMPANY FOR (1) A GENERAL ADJUSTMENT OF)
ITS RATES FOR ELECTRIC SERVICE; (2) AN ORDER)
APPROVING ITS 2017 ENVIRONMENTAL)
COMPLIANCE PLAN; (3) AN ORDER APPROVING ITS)
TARIFFS AND RIDERS; (4) AN ORDER APPROVING)
ACCOUNTING PRACTICES TO ESTABLISH)
REGULATORY ASSETS AND LIABILITIES; AND (5))
AN ORDER GRANTING ALL OTHER REQUIRED)
APPROVALS AND RELIEF)

CASE NO.
2017-00179

Direct Testimony of Kevin C. Higgins

on behalf of

Kentucky Commercial Utility Customers

October 3, 2017

1 **DIRECT TESTIMONY OF KEVIN C. HIGGINS**

2
3 **Introduction**

4 **Q. Please state your name and business address.**

5 A. Kevin C. Higgins, 215 South State Street, Suite 200, Salt Lake City, Utah,
6 84111.

7 **Q. By whom are you employed and in what capacity?**

8 A. I am a Principal in the firm of Energy Strategies, LLC. Energy Strategies
9 is a private consulting firm specializing in economic and policy analysis
10 applicable to energy production, transportation, and consumption.

11 **Q. On whose behalf are you testifying in this proceeding?**

12 A. I am testifying on behalf of the Kentucky Commercial Utility Customers
13 (“KCUC”), an association of commercial customers taking service from Kentucky
14 Power Company (“KPCo” or the “Company”). The KCUC members
15 participating in this case are Appalachian Regional Healthcare, Inc. and BPM
16 Lumber, LLC.

17 **Q. Please describe your professional experience and qualifications.**

18 A. My academic background is in economics, and I have completed all
19 coursework and field examinations toward a Ph.D. in Economics at the University
20 of Utah. In addition, I have served on the adjunct faculties of both the University
21 of Utah and Westminster College, where I taught undergraduate and graduate
22 courses in economics. I joined Energy Strategies in 1995, where I assist private

1 and public sector clients in the areas of energy-related economic and policy
2 analysis, including evaluation of electric and gas utility rate matters.

3 Prior to joining Energy Strategies, I held policy positions in state and local
4 government. From 1983 to 1990, I was economist, then assistant director, for the
5 Utah Energy Office, where I helped develop and implement state energy policy.
6 From 1991 to 1994, I was chief of staff to the chairman of the Salt Lake County
7 Commission, where I was responsible for development and implementation of a
8 broad spectrum of public policy at the local government level.

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

10 A. Yes. I testified in the Columbia Gas of Kentucky, Inc. general rate case in
11 2016,¹ the Kentucky Utilities/Louisville Gas & Electric general rate cases in
12 2012² and 2008,³ the East Kentucky Power Cooperative general rate case, in
13 2007-08,⁴ and the Duke Energy Kentucky (Union Light, Heat and Power
14 Company) general rate case in 2006.⁵

15 I also testified in Duke Energy Kentucky's energy efficiency rider
16 proceeding in 2009⁶ and in the Commission's Investigation of the Energy and
17 Regulatory Issues in Kentucky's 2007 Energy Act in 2008.⁷

18 **Q. Have you testified previously before any other state utility regulatory**
19 **commissions?**

¹ Case No. 2016-00162.

² Case No. 2012-00221.

³ Case Nos. 2008-00251 and 2008-00252.

⁴ Case No. 2006-00472.

⁵ Case No. 2006-00172.

⁶ Case No. 2008-00495.

⁷ Administrative Case No. 2007-00477.

1 A. Yes. I have testified in approximately 200 proceedings on the subjects of
2 utility rates and regulatory policy before state utility regulators in Alaska,
3 Arizona, Arkansas, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas, Michigan,
4 Minnesota, Missouri, Montana, Nevada, New Mexico, New York, North
5 Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah,
6 Virginia, Washington, West Virginia, and Wyoming.

7

8 **Overview and Conclusions**

9 **Q. What is the purpose of your testimony in this proceeding?**

10 A. My testimony addresses the topics of class cost allocation and the
11 appropriate revenue allocation among classes.

12 **Q. What are your primary conclusions and recommendations?**

13 A. I offer the following conclusions and recommendations:

14 (1) I present the results of two class cost-of-service studies utilizing
15 production demand cost allocation methods that differ from KPCo's 12 coincident
16 peak (CP) method for the Commission's consideration. The results of both the
17 Winter 3CP and Summer/Winter CP approaches confirm that the Residential class
18 is currently significantly subsidized by all other classes.

19 (2) I recommend that the current Residential subsidy, according to the
20 Company's 12CP cost-of-service study, be reduced by 50% in this case. I
21 recommend concomitant reductions to KPCo's proposed increases for all other
22 classes. Compared to KPCo's proposed revenue allocation, my recommendation
23 will more closely align the rates for all classes with cost of service, while

1 mitigating the impact to residential customers that could result from a more
2 significant movement towards cost at this time.

3

4 **KPCo's Requested Revenue Requirement**

5 **Q. What revenue requirement increase does KPCo propose in this case?**

6 A. In its original direct filing, KPCo requested a base revenue increase of
7 \$65,387,987, along with an additional \$3,903,056 increase in annual
8 environmental surcharge revenues, and a \$284,891 increase in surcharge
9 revenues, for a total revenue increase of \$69,575,934.⁸ However, the Company
10 reduced its proposed revenue requirement in its August 7, 2017 supplemental
11 filing to reflect its June 2017 debt refinancing. According to the Supplemental
12 Direct Testimony of Alex E. Vaughan, KPCo's June 2017 financing activity
13 lowered the Company's cost of long term debt, which reduces the proposed
14 annual revenues by \$6.26 million, and reduces the proposed base revenue increase
15 by \$4.99 million relative to KPCo's direct filing.⁹

16

17 **Class Cost Allocation**

18 **Q. Have you reviewed the cost-of-service studies prepared by KPCo?**

19 A. Yes, I have. The jurisdictional cost-of-service study is described in the
20 Direct Testimony of Katharine I. Walsh, while the class cost-of-service study is
21 described in the Direct Testimony of Douglas R. Buck. On August 28, 2017,
22 KPCo provided an updated version of its class cost-of-service study reflecting its

⁸ Direct Testimony of Matthew J. Satterwhite, p. 11-12.

⁹ Supplemental Direct Testimony of Alex E. Vaughan, p. 2.

1 reduced revenue requirement request as a result of its June 2017 financing
2 activity.¹⁰ My discussion of KPCo’s class cost-of-service study results is
3 premised on this updated study and KPCo’s updated proposed base revenue
4 increase of \$60,397,438.¹¹

5 **Q. What allocation method is used by KPCo for production plant and demand-**
6 **related production O&M expenses?**

7 A. Ms. Walsh explains that KPCo utilizes a production demand allocation
8 factor based on the twelve monthly internal peak demands for the test year to
9 allocate production plant and demand-related production O&M expenses between
10 its retail and wholesale jurisdictions.¹² Mr. Buck explains that the twelve
11 coincident peak (12CP) method is also used to allocate production plant and
12 demand-related production O&M expenses among KPCo’s retail classes.¹³

13 **Q. Did you notice any anomalies in the class 12CP data used in KPCo’s study?**

14 A. Yes. The CP demand presented for the Large General Service (“LGS”)
15 Transmission class is abnormally high in March 2016 relative to all other months
16 of the test year.¹⁴ The March 2016 CP demand for this class is over 12 times the
17 average CP demand for the other 11 months of the test year. It is not clear to me
18 what caused this anomaly. Since the LGS Transmission class is relatively small
19 compared to LGS in total, correction of this anomaly would not have a major

¹⁰ KPCO_SR_KPSC_1_73_Attachment97, provided in KPCo’s August 28, 2017 supplemental response to data request KPSC 1-73.

¹¹ Supplemental Direct Testimony of Alex E. Vaughan, p. 3.

¹² Direct Testimony of Katharine I. Walsh, pp. 7-10.

¹³ Direct Testimony of Douglas R. Buck, pp. 10, 14.

¹⁴ See KPCO_R_KPSC_1_73_Attachment54_CPDEM, “Tran Peaks” tab, provided in KPCo’s response to data request KPSC 1-73.

1 impact on LGS’s total demand cost allocation. However, I recommend that this
2 anomaly be addressed by the Company.

3 **Q. Please describe the results of KPCo’s class cost-of-service study.**

4 A. According to KPCo’s study, current rates of return on rate base vary
5 greatly among customer classes, ranging from 0.82% for Residential to 15.37%
6 for Street Lighting. Under present rates, all classes except for Residential have
7 rates of return above the current average rate of return of 3.66% for the retail
8 jurisdiction. KPCo’s study indicates that the current Residential subsidy is \$30.5
9 million. That is, the Residential class would require an increase of \$30.5 million
10 to achieve the current average rate of return of 3.66%.¹⁵ Table KCH-1, below,
11 summarizes the current rates of return, relative rates of return, and current subsidy
12 by class, according to KPCo’s study.

13 **Table KCH-1**
14 **Current Customer Class ROR and Relative ROR¹⁶**

Current Class	Current ROR %	Relative ROR	Current Subsidy
Residential	0.82	0.22	\$30,457,775
Small General Service	10.26	2.80	(\$4,068,230)
Medium General Service	7.98	2.18	(\$8,161,470)
Large General Service	7.99	2.18	(\$7,221,447)
Industrial General Service	5.20	1.42	(\$6,082,510)
Public Schools	5.89	1.61	(\$971,331)
Municipal Waterworks	10.89	2.98	(\$40,141)
Outdoor Lighting	14.78	4.04	(\$3,443,536)
Street Lighting	15.37	4.20	(\$469,110)
Total Retail Jurisdiction	3.66	1.00	\$0

15 **Q. Have you prepared any alternative class cost-of-service studies for the**
16 **Commission’s consideration?**

¹⁵ KPCO_SR_KPSC_1_73_Attachment97, “Curr Equal” tab.

¹⁶ *Id.*

1 A. Yes. While my revenue allocation recommendation is guided by the
2 results of the Company’s cost-of-service study, I will also present class cost-of-
3 service study results using two alternative approaches to KPCo’s 12CP method
4 for allocating production plant and demand-related production O&M expenses.¹⁷

5 My first alternative production demand allocation method is a 3CP
6 approach, using the CPs for the winter months January, February, and December
7 (“Winter 3CP”). KPCo is a winter-peaking utility, and I selected the months
8 January, February and December because they represent the highest three
9 monthly peaks in the test year, as well as the 2016 calendar year on an actual and
10 weather-normalized basis.

11 My second alternative production demand allocation method averages the
12 summer CP (August) and winter CP (January) (“Summer/Winter CP”). KPCo is
13 a member of PJM Interconnection, which uses a summer 5CP method for peak
14 load allocation. I selected the month of August because both PJM and KPCo
15 experienced their highest 2016 summer CP in August.¹⁸ The Summer/Winter CP
16 method recognizes the significance of the summer peak as well as KPCo’s annual
17 peak, which occurred in January.

18 **Q. Are there any general guidelines that can be used to determine whether a**
19 **12CP method or a method using fewer CPs is appropriate?**

20 A. Yes. The Federal Energy Regulatory Commission (“FERC”) has
21 historically considered three tests in determining whether a system’s demands are

¹⁷ While I did not incorporate the impact of a change to jurisdictional production demand allocation using Winter 3CP or Summer/Winter CP into my modified class cost-of-service studies, I estimate that the impact of such a jurisdictional change would be minimal.

¹⁸ See KPCO_R_KIUC_1_6_Attachment1 (provided in KPCo’s response to data request KIUC 1-6) and KPCO_R_KPSC_1_73_Attachment3_Section_V, “Sch. 9” tab (provided in KPCo’s response to data request KPSC 1-73).

1 characteristic of a 12CP system or if an allocation method using fewer CPs would
2 be appropriate. The first test is the On and Off Peak test, where the average of
3 the system peaks during the purported peak period, as a percentage of the annual
4 peak, is compared to the average of the system peaks during the off-peak months,
5 as a percentage of the annual peak. A difference of 19 percent or less indicates
6 that a 12CP allocation method is appropriate. The second test, the Low to Annual
7 Peak test, is based on the lowest monthly peak as a percentage of the annual peak,
8 with 66 percent or higher indicating a 12CP system. The third test, the Average
9 to Annual Peak test, is based on the average of the twelve monthly peaks as a
10 percentage of the annual peak, with 81 percent or higher indicating a 12CP
11 system.¹⁹

12 These three tests are not strict rules for determining whether a 12CP
13 method is appropriate, and the FERC also considers “[t]he full range of a
14 company’s operating realities including, in addition to system demand, scheduled
15 maintenance, unscheduled outages, diversity, reserve requirements, and off-
16 system sales commitments.”²⁰ However, the FERC’s peak tests provide a useful
17 framework for examining whether a demand allocation method using fewer than
18 12 CPs should be considered for KPCo’s system.

19 **Q. What ratios resulted from applying the peak tests to KPCo’s system**
20 **demands?**

¹⁹ As explained in FERC Opinion No. 501 (April 21, 2008), Docket Nos. EL05-19-002 and ER05-168-001, at 34, available at <https://www.ferc.gov/whats-new/comm-meet/2008/041708/E-7.pdf>.

²⁰ *Carolina Power & Light Co.*, Opinion No. 19, 4 FERC ¶ 61,107, at 61,230 (1978); *Illinois Power*, 11 FERC ¶ 63,040 at 65,247-48, as cited in FERC Opinion No. 501 (April 21, 2008), Docket Nos. EL05-19-002 and ER05-168-001, at 33.

1 A. I applied the peak tests to KPCo’s actual and weather-normalized monthly
 2 peak internal demands for both 2015 and 2016 provided in KPCo’s Annual
 3 Resource Assessments,²¹ as well as the twelve months ended February 28, 2017
 4 (the test year). For purposes of the On and Off Peak test, I considered the months
 5 January, February, and December to be the peak period. The results of the peak
 6 tests are provided in Exhibit KCH-1, and are summarized in Table KCH-2, below.

7 **Table KCH-2**
 8 **Peak Test Results for KPCo’s Peak Internal Demands**
 9 **2015, 2016, and Test Year**

	On-Peak- Off-Peak	Low to Annual Peak	Average to Annual Peak
FERC Range for 12CP	19% or Less	66% or higher	81% or higher
2015 - Actual Peak	21.6%	53.7%	68.3%
2015 - Normalized Peak	22.5%	51.8%	74.6%
2016 - Actual Peak	20.3%	58.3%	76.9%
2016 - Normalized Peak	23.6%	50.4%	74.6%
Test Year	16.8%	64.5%	83.6%

10 As shown in Table KCH-2, according to all three tests, both the actual
 11 peaks and the weather-normalized peaks for 2015 and 2016 demonstrate that an
 12 allocation method using fewer than 12 CPs should be considered for KPCo.
 13 However, when applied to the test year internal peaks, the On and Off Peak and
 14 Average to Annual Peak tests indicate that a 12CP method may be appropriate.²²
 15 It appears that the primary reason for these results is that the test year winter
 16 peaks reflect milder-than-average weather. The January and February 2017 peaks
 17 were substantially lower than the actual and weather-normalized peaks in January

²¹ Administrative Case No. 387, Calendar Year 2015 Annual Resource Assessment, Item No. 1, Attachment 1, p. 1; Calendar Year 2016 Annual Resource Assessment, KPSC 1-1 Attachment 1, p. 1.

²² KPCO_R_KPSC_1_73_Attachment3_Section_V, “Sch. 9” tab. My analysis uses the Kentucky Peaks - Max. Load (MW), prior to the adjustments for system sales and Kentucky Electric Steel load.

1 and February 2015 and 2016. Indeed, KPCo's largest monthly weather
2 normalization adjustments in this case were applied to January and February
3 2017.²³ Thus, it appears that the 2015 and 2016 winter peaks are a better
4 representation of KPCo's expected system demands than the twelve months ended
5 February 28, 2017.

6 **Q. Are you recommending that KPCo's 12CP production demand allocation**
7 **method be rejected by the Commission?**

8 A. No, not at this time. However, I am providing the results of my alternative
9 production demand cost allocation approaches to inform the Commission's
10 determination of the proper revenue allocation among classes, alongside KPCo's
11 12CP results. I am concerned that over-reliance on the 12CP method without
12 considering KPCo's seasonal peaks may result in unwarranted rate impacts on
13 classes whose demands are relatively consistent throughout the year.

14 **Q. How do the results of your Winter 3CP and Summer/Winter CP approaches**
15 **compare to KPCo's 12CP approach?**

16 A. The class cost-of-service results are summarized in Exhibit KCH-2 for the
17 Winter 3CP approach and Exhibit KCH-3 for the Summer/Winter CP approach.
18 The largest dollar impacts of the Winter 3CP and Summer/Winter CP approaches
19 compared to the 12CP approach occur for the Residential, Industrial General
20 Service ("IGS"), and LGS classes. In Table KCH-3, below, the current subsidy
21 and the revenue change required to achieve an equalized rate of return at KPCo's

²³ See KPCO_R_KPSC_1_73_Attachment80_AEVWP10, provided in KPCo's response to data request KPSC 1-73.

1 requested revenue requirement for each class are compared under the Winter 3CP,
 2 Summer/Winter CP, and 12CP production demand cost allocation methods.

3 **Table KCH-3**
 4 **Current Subsidies and Revenue Change at Equalized ROR**
 5 **Under Winter 3CP, Summer/Winter CP, and 12CP Methods**

Current Class	Current Subsidy Received/(Paid)			Revenue Increase/(Decrease) at Equalized ROR		
	Winter 3CP	Sum/Win CP	12CP ²⁴	Winter 3CP	Sum/Win CP	12CP
Residential	\$45,876,504	\$39,715,646	\$30,457,775	\$81,424,994	\$74,238,207	\$63,438,682
Small General Service	(\$4,268,468)	(\$3,891,180)	(\$4,068,230)	(\$2,405,590)	(\$1,965,477)	(\$2,172,009)
Medium General Service	(\$10,848,970)	(\$9,008,355)	(\$8,161,470)	(\$5,485,078)	(\$3,337,957)	(\$2,350,046)
Large General Service	(\$10,702,078)	(\$8,139,399)	(\$7,221,447)	(\$6,158,120)	(\$3,168,694)	(\$2,097,883)
Industrial General Service	(\$14,761,986)	(\$13,463,259)	(\$6,082,510)	(\$4,050,409)	(\$2,535,411)	\$6,074,409
Public Schools	(\$1,335,997)	(\$1,253,485)	(\$971,331)	(\$60,844)	\$35,408	\$364,547
Municipal Waterworks	(\$46,359)	(\$47,322)	(\$40,141)	(\$30,316)	(\$31,440)	(\$23,063)
Outdoor Lighting	(\$3,443,536)	(\$3,443,536)	(\$3,443,536)	(\$2,491,278)	(\$2,491,278)	(\$2,491,278)
Street Lighting	(\$469,110)	(\$469,110)	(\$469,110)	(\$345,922)	(\$345,922)	(\$345,922)
Total Retail Jurisdiction ²⁵	\$0	\$0	\$0	\$60,397,437	\$60,397,436	\$60,397,437

6 **Q. What do you conclude from your comparison of the results of these three**
 7 **methods for production demand cost allocation?**

8 A. It is clear that the Residential class is substantially subsidized under
 9 current rates, with the Winter 3CP and Summer/Winter CP methods indicating an
 10 even larger current Residential subsidy than the 12CP method. The current
 11 Residential subsidy is \$45.9 million according to the Winter 3CP study and \$39.7
 12 million according to the Summer/Winter CP study, compared to \$30.5 million
 13 under KPCo's 12CP study. To achieve an equalized rate of return at KPCO's
 14 requested revenue requirement, the Residential class would require an increase of

²⁴ KPCO_SR_KPSC_1_73_Attachment97.

²⁵ Minor variances between the total base revenue increase in Table KCH-3 and KPCo's proposed increase of \$60,397,438 occur due to rounding.

1 \$81.4 million using the Winter 3CP method, \$74.2 million using the
2 Summer/Winter CP method, and \$63.4 million using the 12CP method.

3 According to the Winter 3CP and Summer/Winter CP studies, the current
4 subsidies paid by the IGS and LGS classes are even greater than the 12CP method
5 indicates. The IGS class is currently subsidizing the Residential class by \$14.8
6 million using the Winter 3CP method and \$13.5 million using the Summer/Winter
7 CP method, over twice the subsidy of \$6.1 million indicated by the 12CP method.
8 In order to achieve an equalized rate of return at KPCo's requested revenue
9 requirement, the IGS class would require a \$4.1 million decrease under the Winter
10 3CP method, a \$2.5 million decrease under the Summer/Winter CP method, and a
11 \$6.1 million increase under the 12CP method.

12 The impact to the LGS class is directionally similar to that of the IGS
13 class. The LGS class is currently subsidizing the Residential class by \$10.7
14 million using the Winter 3CP method and \$8.1 million using the Summer/Winter
15 CP method, compared to \$7.2 million using the 12CP method.

16 The current subsidies paid by the current Medium General Service
17 ("MGS"), Public Schools ("PS") and Municipal Waterworks ("MW") classes are
18 moderately greater under the Winter 3CP and Summer/Winter CP methods
19 relative to the 12CP method, and the impact is minimal to the current Small
20 General Service ("SGS") class.²⁶ The returns of the lighting classes are not
21 impacted by the Winter 3CP and Summer/Winter CP methods relative to the

²⁶ The current subsidy paid by SGS is approximately \$200K greater under the Winter 3CP method and \$177K lower under the Summer/Winter 3CP method relative to the 12CP method, so the average impact of the two alternative methods is nearly neutral.

1 12CP method. Taken together, the results of these three studies can guide the
2 appropriate spread of the revenue increase among rate classes.

3

4 **Revenue Allocation**

5 **Q. What general guidelines should be employed in spreading any change in**
6 **rates?**

7 A. In determining revenue allocation, it is important to align rates with cost
8 causation to the greatest extent practicable. Properly aligning rates with the costs
9 caused by each customer group is essential for ensuring fairness, as it minimizes
10 cross subsidies among customers. It also sends proper price signals, which
11 improves efficiency in resource utilization.

12 At the same time, it can be appropriate to mitigate the impact of moving
13 immediately to cost-based rates for customer groups that would experience
14 significant rate increases from doing so. This principle of ratemaking is known as
15 “gradualism.” When employing this principle, it is important to adopt a long-term
16 strategy of moving in the direction of cost causation, and to avoid schemes that
17 result in permanent cross-subsidies from other customers.

18 **Q. What has KPCo proposed regarding revenue allocation?**

19 A. According to the Direct Testimony of Douglas R. Buck, the Company’s
20 recommended revenue allocation maintains 95% of each class’s current subsidy.²⁷
21 That is, only 5% of the current Residential class subsidy under the 12CP method,
22 or \$1.5 million out of \$30.5 million, is eliminated in the Company’s proposal.²⁸

²⁷ Direct Testimony of Douglas R. Buck, pp. 21-22.

²⁸ KPCO_SR_KPSC_1_73_Attachment97, “Curr Equal” and “Prop Equal” tabs.

1 Despite the wide disparities in relative rates of return among customer classes at
 2 present rates, KPCo proposes revenue increases within a relatively narrow range.

3 Table KCH-4, below, summarizes the base revenue changes required to
 4 bring each class to an equalized rate of return at KPCo’s proposed revenue
 5 requirement according to the Company’s cost-of-service study, alongside KPCo’s
 6 proposed increases and the resulting rates of return.

7 **Table KCH-4**
 8 **Base Revenue Changes at Equalized ROR**
 9 **Under KPCo’s 12CP Study**
 10 **Compared to KPCo’s Proposed Increases²⁹**

Current Class	Revenue Change at Equalized ROR (12CP)	Percent Change at Equalized ROR (12CP)	KPCo Proposed Revenue Increase	KPCo Proposed Percent Increase	ROR at KPCo Proposed Increase (12CP)
Residential	\$63,438,682	29.40%	\$34,503,794	15.99%	4.03%
Small General Service	(\$2,172,009)	-11.69%	\$1,692,810	9.11%	13.00%
Medium General Service	(\$2,350,046)	-4.41%	\$5,403,351	10.13%	10.84%
Large General Service	(\$2,097,883)	-4.08%	\$4,762,492	9.27%	10.85%
Industrial General Service	\$6,074,409	4.38%	\$11,852,794	8.54%	8.19%
Public Schools	\$364,547	3.17%	\$1,287,311	11.19%	8.86%
Municipal Waterworks	(\$23,063)	-11.87%	\$15,071	7.75%	13.60%
Outdoor Lighting	(\$2,491,278)	-30.26%	\$780,081	9.48%	17.30%
Street Lighting	(\$345,922)	-24.58%	\$99,733	7.09%	17.86%
Total Retail Jurisdiction	\$60,397,437	12.10%	\$60,397,437	12.10%	6.73%

11 As shown in Table KCH-4, some classes would require significant rate
 12 decreases in order to achieve an equalized rate of return under the 12CP method,
 13 but KPCo proposes that all classes receive a rate increase. The percentage
 14 changes in base revenues proposed by KPCo range from 3.9% above to 5.0%
 15 below the average increase of 12.1%.

16 **Q. What is your assessment of KPCo’s proposed revenue allocation?**

²⁹ KPCO_SR_KPSC_1_73_Attachment97, “Proposed” and “Prop Equal” tabs.

1 A. Despite KPCo’s acknowledgment that a key objective of ratemaking is to
2 design rates that reflect as nearly as possible the actual costs of serving the
3 customer,³⁰ the Company’s proposed revenue allocation makes less than a token
4 attempt at meeting this objective. The Company’s proposed revenue allocation
5 would result in the Residential rate class paying rates 10.4% below cost based on
6 KPCo’s cost-of-service study. To fund this subsidy, amounting to \$28.9 million,
7 all other classes would see their base rates distorted well above cost.³¹ For
8 example, the LGS class, which warrants a base rate decrease of 4.08% based on
9 KPCo’s cost-of-service study, would receive a base rate increase of 9.27% under
10 the Company’s proposal. Such a result is fundamentally unreasonable.

11 **Q. Do you recommend any changes to KPCo’s proposed revenue allocation?**

12 A. Yes. I recommend that the current Residential subsidy, according to the
13 Company’s 12CP cost-of-service study, be reduced by 50% in this case. This
14 50% reduction in the Residential subsidy represents a meaningful step in aligning
15 customer class rates with cost causation, while at the same time mitigating the
16 impact to residential customers that could result from a more significant
17 movement towards cost at this time. At KPCo’s proposed revenue requirement,
18 this subsidy reduction will result in a base revenue increase of 22.35% for the
19 Residential class, compared to KPCo’s proposed increase of 15.99%.³²

20 I recommend reductions to KPCo’s proposed increases for all other
21 classes. Besides the Residential class, the dollar impact of the Winter 3CP and

³⁰ Direct Testimony of Douglas R. Buck, p. 20.
³¹ KPCO_SR_KPSC_1_73_Attachment97, “Prop Equal” tab.
³² Notwithstanding my primary recommendation to reduce the Residential subsidy by 50% in this case, if the Commission determines that a more gradual phase-in of the Residential subsidy reduction is appropriate, it is my understanding that KCUC would not object to implementing such a plan that reduces the subsidy in significant increments to reach the 50% reduction before KPCo’s next rate case.

1 Summer/Winter CP methods relative to the 12CP method is greatest for the IGS
2 class. I recommend that these results be taken into consideration when
3 determining the appropriate revenue increase for the IGS class. Although the
4 Winter 3CP and Summer/Winter CP methods indicate that a rate decrease for the
5 IGS class would be warranted, I conservatively recommend that the IGS class
6 revenue be set at full cost of service under the 12CP method. At KPCo's
7 proposed revenue requirement, this will result in an increase of 4.38% for the IGS
8 class, compared to KPCo's proposed 8.54% increase.

9 I recommend proportionate reductions to KPCo's proposed revenues for
10 the current SGS, MGS, LGS, and PS classes. KPCo proposes to combine the
11 current SGS and MGS tariffs into a single General Service ("GS") tariff, which
12 would include a demand charge applicable only to monthly billing demand
13 greater than 10 kW.³³ KPCo also proposes to discontinue the PS tariff and serve
14 those customers under the LGS tariff.³⁴ For purposes of my revenue allocation, I
15 assumed that current SGS and MGS customers would be served under the GS
16 tariff, and that current PS customers would be served under the LGS tariff. I
17 apportioned my proposed revenues between the current SGS, MGS, LGS, and PS
18 customer groups based on KPCo's proposed rate design revenues for each group,
19 resulting in proportionate reductions to KPCo's proposed revenues for each
20 current class.³⁵

³³ Direct Testimony of Alex E. Vaughan, pp. 20-22.

³⁴ *Id.*, pp. 22-24.

³⁵ KPCo's proposed rate design revenues are based on KPCO_R_KPSC_1_73_Attachment72_AEVWP2, which differ slightly from KPCo's proposed revenues as originally presented in Exhibit DRB-2, page 1 for some classes.

1 The MW, Outdoor Lighting (“OL”) and Street Lighting (“SL”) classes
 2 have the highest rates of return under all three production demand allocation
 3 methods I examined, and would require the greatest percentage decreases to
 4 achieve equalized rates of return at KPCo’s proposed revenue requirement.
 5 Accordingly, I recommend that these three classes receive no rate increase.

6 My recommended revenue allocation at KPCo’s proposed revenue
 7 requirement is presented in Exhibit KCH-4, and is summarized in Table KCH-5,
 8 below.

9 **Table KCH-5**
 10 **KCUC Recommended Revenue Allocation**
 11 **At KPCo Requested Revenue Requirement**

Current Class	Current Revenue	Current ROR (12CP)	Revenue Increase	Percent Increase	Proposed Sales Revenue	Proposed ROR (12CP)
Residential	\$215,744,788	0.82%	\$48,209,792	22.35%	\$263,954,580	5.31%
Small General Service	\$18,576,461	10.26%	\$727,532	3.92%	\$19,303,993	11.44%
Medium General Service	\$53,330,702	7.98%	\$2,629,557	4.93%	\$55,960,259	9.37%
Large General Service	\$51,375,193	7.99%	\$1,741,127	3.39%	\$53,116,320	9.04%
Industrial General Service	\$138,769,640	5.20%	\$6,074,409	4.38%	\$144,844,049	6.73%
Public Schools	\$11,504,476	5.89%	\$1,015,019	8.82%	\$12,519,495	8.23%
Municipal Waterworks	\$194,343	10.89%	\$0	0.00%	\$194,343	10.89%
Outdoor Lighting	\$8,231,794	14.78%	\$0	0.00%	\$8,231,794	14.78%
Street Lighting	\$1,407,108	15.37%	\$0	0.00%	\$1,407,108	15.37%
Total Retail Jurisdiction	\$499,134,505	3.66%	\$60,397,437	12.10%	\$559,531,942	6.73%

12 **Q. Your proposed revenue allocation is calculated at KPCo’s proposed revenue**
 13 **requirement. What do you recommend if the approved revenue requirement**
 14 **is less than the amount being requested by the Company?**

15 **A.** If the revenue requirement approved by the Commission in this case turns
 16 out to be less than the amount being requested by the Company, that will create an

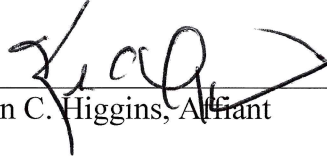
1 opportunity for KPCo to achieve greater movement towards an equalized rate of
2 return among its rate classes while mitigating rate impacts. I recommend that any
3 reduced revenue requirement should be distributed among the classes that are
4 receiving increases according to Table KCH-5, with the percentage reduction (as
5 applied to the Proposed Sales Revenues shown in Table KCH-5) being greater for
6 those classes that are significant subsidy payers.

7 **Q. Does this conclude your direct testimony?**

8 A. Yes, it does.

AFFIDAVIT

The undersigned, Kevin C. Higgins, being duly sworn, deposes and says that he is a Principal of Energy Strategies L.L.C., and is authorized to submit this testimony on behalf of Kentucky Commercial Utility Customers, Inc., in Case No. 2017-00179, and that the information contained in the testimony is true and accurate to the best of his knowledge, information and belief, after reasonable inquiry, and as to those matters that are based on information provided to him, he believes to be true and correct.



Kevin C. Higgins, Affiant

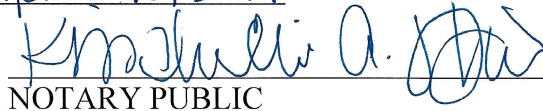
NOTARY CERTIFICATE

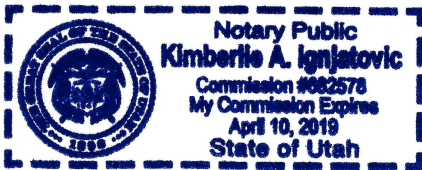
STATE OF UTAH

COUNTY OF SALT LAKE

Subscribed, acknowledged and sworn to before me by Kevin C. Higgins on this 3RD day of October, 2017.

My commission expires: April 10, 2019.


NOTARY PUBLIC



Peak Tests Applied to KPCo Internal Peak Demands (MW)

2015 ¹		
Month	Weather-Norm.	Actual Peak
Jan-15	1,471	1,535
Feb-15	1,317	1,666
Mar-15	1,187	1,400
Apr-15	882	905
May-15	935	988
Jun-15	1,077	1,066
Jul-15	1,133	1,097
Aug-15	1,095	982
Sep-15	990	1,019
Oct-15	762	894
Nov-15	1,073	1,075
Dec-15	1,248	1,022
Low/Annual	51.8%	53.7%
Average/Annual	74.6%	68.3%
On-Peak/Annual	91.5%	84.5%
Off-Peak/Annual	69.0%	62.9%
On-Off/Annual Diff.	22.5%	21.6%

2016 ²		
Month	Weather-Norm.	Actual Peak
Jan-16	1,399	1,342
Feb-16	1,265	1,198
Mar-16	1,158	1,018
Apr-16	843	894
May-16	843	892
Jun-16	988	995
Jul-16	1,054	1,037
Aug-16	1,043	1,044
Sep-16	938	983
Oct-16	705	783
Nov-16	1,083	1,030
Dec-16	1,212	1,170
Low/Annual	50.4%	58.3%
Average/Annual	74.6%	76.9%
On-Peak/Annual	92.4%	92.2%
Off-Peak/Annual	68.7%	71.8%
On-Off/Annual Diff.	23.6%	20.3%

Test Year ³	
Month	Internal Peak
3-Mar-2016	1,018
10-Apr-2016	894
31-May-2016	892
16-Jun-2016	995
25-Jul-2016	1,037
9-Aug-2016	1,044
8-Sep-2016	983
19-Oct-2016	783
22-Nov-2016	1,030
16-Dec-2016	1,160
9-Jan-2017	1,214
4-Feb-2017	1,131
Low/Annual	64.5%
Average/Annual	83.6%
On-Peak/Annual	96.2%
Off-Peak/Annual	79.4%
On-Off/Annual Diff.	16.8%

Data Sources:

1. Administrative Case No. 387, Calendar Year 2015 Annual Resource Assessment, Item No. 1, Attachment 1, p. 1.
2. Administrative Case No. 387, Calendar Year 2016 Annual Resource Assessment, KPSC 1-1 Attachment 1, p. 1.
3. KPCO_R_KPSC_1_73_Attachment3_Section_V, "Sch. 9" tab.

**Summary of Class Cost-of-Service Results
 At KPCo's Proposed Revenue Requirement
 Winter 3CP Production Demand Cost Allocation**

Line No.	Current Class	Current Revenue	Rate Base	Current Income	Current ROR %	Current Subsidy	Equalized Rate of Return - KPCo Proposed Revenue Requirement					
							Percent Increase	Revenue Increase	Income Increase	Income	ROR %	Sales Revenue
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1	RS	\$215,744,788	\$703,282,710	(\$2,202,856)	-0.31	\$45,876,504	37.74	\$81,424,994	\$49,551,168	\$47,348,312	6.73	\$297,169,782
2	SGS	\$18,576,461	\$36,854,703	\$3,945,154	10.70	(\$4,268,468)	-12.95	(\$2,405,590)	(\$1,463,921)	\$2,481,233	6.73	\$16,170,871
3	MGS	\$53,330,702	\$106,117,950	\$10,482,304	9.88	(\$10,848,970)	-10.29	(\$5,485,078)	(\$3,337,943)	\$7,144,361	6.73	\$47,845,624
4	LGS	\$51,375,193	\$89,896,541	\$9,799,783	10.90	(\$10,702,078)	-11.99	(\$6,158,120)	(\$3,747,523)	\$6,052,260	6.73	\$45,217,073
5	IGS	\$138,769,640	\$211,915,282	\$16,732,013	7.90	(\$14,761,986)	-2.92	(\$4,050,409)	(\$2,464,876)	\$14,267,137	6.73	\$134,719,231
6	PS	\$11,504,476	\$25,227,311	\$1,735,449	6.88	(\$1,335,997)	-0.53	(\$60,844)	(\$37,027)	\$1,698,422	6.73	\$11,443,632
7	MW	\$194,343	\$317,398	\$39,818	12.55	(\$46,359)	-15.60	(\$30,316)	(\$18,449)	\$21,369	6.73	\$164,027
8	OL	\$8,231,794	\$18,839,282	\$2,784,416	14.78	(\$3,443,536)	-30.26	(\$2,491,278)	(\$1,516,067)	\$1,268,349	6.73	\$5,740,516
9	SL	\$1,407,108	\$2,437,114	\$374,589	15.37	(\$469,110)	-24.58	(\$345,922)	(\$210,511)	\$164,078	6.73	\$1,061,186
10	Total	\$499,134,505	\$1,194,888,292	\$43,690,670	3.66	\$0	12.10	\$60,397,437	\$36,754,851	\$80,445,521	6.73	\$559,531,942

Data Source:

KPCO_SR_KPSC_1_73_Attachment97, with production demand allocator modified to Winter 3CP using data from KPCO_R_KPSC_1_73_Attachment54_CPDEM.

**Summary of Class Cost-of-Service Results
At KPCo's Proposed Revenue Requirement
Summer/Winter CP Production Demand Cost Allocation**

Line No.	Current Class	Current Revenue	Rate Base	Current Income	Current ROR %	Current Subsidy	Equalized Rate of Return - KPCo Proposed Revenue Requirement					
							Percent Increase	Revenue Increase	Income Increase	Income	ROR %	Sales Revenue
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1	RS	\$215,744,788	\$682,985,960	\$804,190	0.12	\$39,715,646	34.41	\$74,238,207	\$45,177,649	\$45,981,839	6.73	\$289,982,995
2	SGS	\$18,576,461	\$38,097,662	\$3,761,005	9.87	(\$3,891,180)	-10.58	(\$1,965,477)	(\$1,196,091)	\$2,564,914	6.73	\$16,610,984
3	MGS	\$53,330,702	\$112,181,795	\$9,583,921	8.54	(\$9,008,355)	-6.26	(\$3,337,957)	(\$2,031,313)	\$7,552,608	6.73	\$49,992,745
4	LGS	\$51,375,193	\$98,339,205	\$8,548,968	8.69	(\$8,139,399)	-6.17	(\$3,168,694)	(\$1,928,308)	\$6,620,660	6.73	\$48,206,499
5	IGS	\$138,769,640	\$216,193,901	\$16,098,118	7.45	(\$13,463,259)	-1.83	(\$2,535,411)	(\$1,542,924)	\$14,555,194	6.73	\$136,234,229
6	PS	\$11,504,476	\$25,499,147	\$1,695,175	6.65	(\$1,253,485)	0.31	\$35,408	\$21,548	\$1,716,723	6.73	\$11,539,884
7	MW	\$194,343	\$314,227	\$40,288	12.82	(\$47,322)	-16.18	(\$31,440)	(\$19,133)	\$21,155	6.73	\$162,903
8	OL	\$8,231,794	\$18,839,282	\$2,784,416	14.78	(\$3,443,536)	-30.26	(\$2,491,278)	(\$1,516,067)	\$1,268,349	6.73	\$5,740,516
9	SL	\$1,407,108	\$2,437,114	\$374,589	15.37	(\$469,110)	-24.58	(\$345,922)	(\$210,511)	\$164,078	6.73	\$1,061,186
10	Total	\$499,134,505	\$1,194,888,292	\$43,690,670	3.66	\$0	12.10	\$60,397,436	\$36,754,850	\$80,445,520	6.73	\$559,531,941

Data Source:

KPCO_SR_KPSC_1_73_Attachment97, with production demand allocator modified to Summer/Winter CP using data from KPCO_R_KPSC_1_73_Attachment54_CPDEM.

**KCUC Recommended Revenue Allocation
 At KPCo Requested Revenue Requirement**

Line No.	Current Class	Current Revenue	Rate Base (12CP)	Current Income (12CP)	Current ROR % (12CP)	KCUC Proposed Revenue Allocation					
						Income Increase	Income (12CP)	ROR % (12CP)	Revenue Increase	Sales Revenue	Percent Increase
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	RS	\$215,744,788	\$652,486,197	\$5,322,853	0.82	\$29,338,061	\$34,660,914	5.31	\$48,209,792	\$263,954,580	22.35
2	SGS	\$18,576,461	\$37,514,380	\$3,847,421	10.26	\$442,740	\$4,290,160	11.44	\$727,532	\$19,303,993	3.92
3	MGS	\$53,330,702	\$114,971,831	\$9,170,566	7.98	\$1,600,217	\$10,770,783	9.37	\$2,629,557	\$55,960,259	4.93
4	LGS	\$51,375,193	\$101,363,367	\$8,100,926	7.99	\$1,059,563	\$9,160,489	9.04	\$1,741,127	\$53,116,320	3.39
5	IGS	\$138,769,640	\$240,509,541	\$12,495,658	5.20	\$3,696,581	\$16,192,238	6.73	\$6,074,409	\$144,844,049	4.38
6	PS	\$11,504,476	\$26,428,694	\$1,557,459	5.89	\$617,690	\$2,175,149	8.23	\$1,015,019	\$12,519,495	8.82
7	MW	\$194,343	\$337,885	\$36,783	10.89	\$0	\$36,783	10.89	\$0	\$194,343	0.00
8	OL	\$8,231,794	\$18,839,282	\$2,784,416	14.78	\$0	\$2,784,416	14.78	\$0	\$8,231,794	0.00
9	SL	\$1,407,108	\$2,437,114	\$374,589	15.37	\$0	\$374,589	15.37	\$0	\$1,407,108	0.00
10	Total	\$499,134,505	\$1,194,888,292	\$43,690,670	3.66	\$36,754,851	\$80,445,521	6.73	\$60,397,437	\$559,531,942	12.10

Data Sources:

Current class revenue, rate base, income and returns based on KPCO_SR_KPSC_1_73_Attachment97.

SGS, MGS, LGS, and PS proposed revenues apportioned based on KPCo's proposed rate design revenues per KPCO_R_KPSC_1_73_Attachment72_AEVWP2.