

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

**APPLICATION OF KENTUCKY)
UTILITIES COMPANY FOR AN)
ADJUSTMENT IN ITS ELECTRIC RATES)
AND FOR CERTIFICATES OF PUBLIC)
CONVENIENCE AND NECESSITY)**

CASE NO. 2016-00370

TESTIMONY OF
RONALD L. WILLHITE
SCHOOL ENERGY MANAGER PROJECT DIRECTOR
KENTUCKY SCHOOL BOARDS ASSOCIATION

FILED: March 3, 2017

1 INTRODUCTION
2

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

4 A. My name is Ronald L. Willhite and business address is 260 Democrat Drive, Frankfort,
5 KY 40601.

6 **Q. By who are you employed?**

7 A. I am employed by the Kentucky School Boards Association as Director of the School
8 Energy Managers Project. The Kentucky School Boards Association (KSBA) is a
9 nonprofit corporation of school boards from each public school district in Kentucky. The
10 association, founded in 1936, now has over 75 years of serving school board members
11 and school districts in such areas as governmental relations, board member and team
12 development, risk management, facility planning, energy management, legal services,
13 policy services, publications and community relations. It is governed by a 27-member
14 board of directors made up of representatives elected as regional chairpersons or as
15 directors-at-large. With nearly 900 school board members, KSBA is the largest
16 organization of elected officials in Kentucky.
17

18 **Q. Please describe your regulatory and public school experience.**

19
20 A. In December 2001 I retired from LG&E Energy Services. During my tenure at the
21 Companies I testified before this and other commissions on numerous rate and regulatory
22 matters. In March 2010 I was employed by KSBA to develop and direct the School
23 Energy Managers Project (SEMP). From 1989 to 1998 I served on the Scott County
24 Board of Education, the last six years as its chairman, and since 2009 have served on
25 their Energy Committee. I graduated from the University of Kentucky in 1969 earning a
26 B.S. in Electrical Engineering.
27

28 **Q. Please describe Kentucky’s public schools and the role of boards of education.**

29
30 A. Kentucky has some 1233 P-12 public schools serving 670,000 students that are overseen
31 per statute by 173 local school boards pursuant to KRS 160.290:

32 *“Each board of education shall have general control and management*
33 *of the public schools in its district and may establish schools and provide*
34 *for courses and other services as it deems necessary for the promotion of*
35 *education and the general health and welfare of pupils, consistent with*
36 *the administrative regulations of the Kentucky Board of Education.*
37 *Each board shall have control and management of all school funds and*
38 *all public school property of its district and may use its funds and*
39 *property to promote public education. Each board shall exercise*
40 *generally all powers prescribed by law in the administration of its public*
41 *school system, appoint the superintendent of schools, and fix the*
42 *compensation of employees.”*
43

1

2 **Q. What specific issues are you addressing?**

3

4 A. I will address the following; 1) impact of the proposed increase on public schools, 2) how
5 public schools are distinguishable from commercial and industrial customers, 3) propose
6 Rate P – 12 Public Schools, 4) all-electric school service, 5) sports field lighting, 6)
7 school energy management initiatives, and 7) the Company’s proposed AMS program.

8

9 **Q. How will the requested increase impact schools?**

10 A. Kentucky’s public schools continue to be severely impacted by today’s economic
11 conditions. After personnel, energy is the second highest cost for schools. Unlike
12 businesses that can increase sales or prices to offset cost increases, public schools must
13 either cut programs or attempt to raise taxes. Public schools cannot refuse service to a
14 student or limit their enrollment.

15 While schools understand the Company is faced with significant challenges the revenue
16 increase as proposed would be extremely unfair to schools and their students. Public
17 school districts continue to be disadvantaged as many of their schools are required to take
18 service under rate schedules along with commercial and industrial customers. I will
19 address options for the Commission to mitigate the impact on public schools.

20 **Q. Why does the proposed increase result in such excessive impacts for public school
21 accounts?**

22

23 A. The Company has purposed recovering most, if not all, of the increase allocated to Rates
24 PS-Sec and TODS through increased demand charges. This further exacerbates the
25 subsidization by schools for others served on those rates. Such an approach is
26 unreasonable and needs correcting.

27

28 **PUBLIC SCHOOLS ARE DISTINGUISHABLE**

29

30 **Q. In what ways do public schools differ from other customers?**

31

32 A. Public schools differ from other customers in three primary ways:

33

- 34 1. Public schools are required to develop energy management plans by
35 KRS160.325 and Board Policy.
- 36 2. Public schools operating hours differ significantly from commercial and
37 industrial customers.

1 3. Public school load and usage characteristics differ significantly from
2 commercial and industrial customers.

3 **Q. Please explain KRS160.325 and how the statute distinguishes public schools from**
4 **other customers.**

5 **A.** Local school boards of education are the only entity in Kentucky that are required by
6 statute to develop and implement energy management plans. *“In an effort to reduce*
7 *rising energy costs that are straining school budgets”* the General Assembly in 2008
8 passed House Bill 2, which became law on July 15, 2008 as KRS 160.325. To implement
9 the mandate of the statute boards of education adopted Energy Management Policies as
10 shown below and began mandated reporting annually through the Kentucky Pollution
11 Prevention Center (“KPPC”) to the Department for Energy Development and
12 Independence (“DEDI”) and the Legislative Research Commission (“LRC”) on the status
13 of the development of energy management plans by those boards of education and the
14 anticipated savings to be obtained from those plans. In 2014 Boards began reporting
15 through KSBA to the LRC and DEDI.

16 **05.23 Energy Management**

17 *It is the intent of the Board that the District use energy resources in a safe*
18 *and efficient manner with an on-going focus on identifying and*
19 *implementing cost saving measures and developing staff and student*
20 *commitment to identified energy management practices.*

21 *To promote this effort, the Superintendent/designee shall direct the*
22 *development of an energy management plan (EMP) for Board approval and*
23 *oversee the implementation and maintenance of that plan, which shall*
24 *address the following components:*

25 *1. A District level committee shall be appointed by the*
26 *Superintendent/designee to develop and implement the energy management*
27 *plan (EMP).*

28 *2. The District level committee shall track and monitor the EMP to*
29 *determine progress toward managing and reducing energy costs.*

30 *3. Effective with the 2011-2012 school year, the Superintendent/designee*
31 *shall report the EMP results for each fiscal year, including annual District*
32 *energy usage, costs and anticipated savings to KPPC - the Kentucky*
33 *Pollution Prevention Center – by October 1st annually through the Kentucky*
34 *Energy Efficiency Program for Schools (KEEPS).*

35 *A status report on implementation of the plan in Board-owned and Board-*
36 *operated facilities shall be provided to the Board following the end of each*
37 *fiscal year*

38
39 **Q. Please explain how public schools operate different than commercial and industrial**
40 **customers.**
41

1 A. While schools, commercial and industrial customers operate on a defined schedule, those
2 schedules are drastically different. Many industries operate 2nd, 3rd and weekend shifts
3 while stores operate extended hours into the evening year round seven days per week.
4 Schools typically are fully occupied from 7:30 am until 2:30 pm weekdays only nine to
5 ten months of the year with numerous shut down periods for breaks throughout the year.
6 Schools continue open beyond instructional periods for extra-curricular activities, but by
7 this time automation systems and set back procedures have begun adjusting temperatures
8 for unoccupied space. In a nutshell school load build up typically begins around 7 am,
9 peaks by lunch time in the warmer months and declines at a significant pace until and
10 after the instructional day ends in early-afternoon. In the colder months schools tend to
11 peak across the morning hours and similar to the warm periods usage/peak decline after
12 lunch.

13

14 **Q. Please explain how public have different load and usage characteristics differ from**
15 **commercial and industrial customers.**

16

17 A. The different load and usage characteristics of public schools result in cost causation
18 factors different than commercial and industrial customers as is demonstrated in
19 examination of KU's LOLP Class Cost of Service Study.

20

21 KU has offered two studies with differing production cost allocators, Modified BIP and
22 LOLP (Loss of Load Probability). The LOLP Study is a more reasonable assessment of
23 the relative rate of returns ("ROR") for each rate class "the LOLP methodology more
24 closely reflects how KU and LGE's generation resources have been planned over the past
25 30 years..." as stated by Witness Seelye. Additionally, assigning production costs using
26 LOLP appropriately reflects how resources are constructed and used to meet customer
27 needs for reliable least cost service. The LOLP Study clearly shows the ROR for Rates
28 AES, PS-sec and TODS under which public schools receive service are in excess of the
29 overall Company ROR. In fact, as I will demonstrate, schools significantly contribute to
30 the excessive returns. As a result, schools are subsidizing other members of those rate
31 classes.

32

33 **Q. Please explain how you determined that schools are subsidizing other rate payers?**

34

35 A. I developed a "School Class" Cost of Service Study using the Company's Excel
36 spreadsheet provided in response to PSC 1 – 53 as follows:

37

38 1. Assembled customer, revenue, energy and billing demand data for public school
39 accounts currently served on rates PS-Secondary and TODS.

40

41 2. Identified the School Class Sum of Individual Demands (SIDS) from the assembled
42 School data.

43

44 3. Calculated the School Class Non-coincident Class Peak (NCP) using the coincidence
45 (1/1.18758) and loss factors (1.0934) for KU's Rate AES from the attachment to the
46 KU's Response to PSC 1-97 (PSC_DR2_KU_Attach_to_Q97) times the School Class
47 SIDS.

48

- 1 4. Calculated the School Class Summer Coincident Peak (CP) using from
2 (PSC_DR2_KU_Attach_to_Q97) the ratio (.59729) of the Summer AES CP to Summer
3 NCP times the School Class NCP as summer period usage by schools is similar.
4
- 5 5. Calculated the School Class LOLP allocator by multiplying the Rate AES LOLP
6 Allocator of 321 by the ratio of the School to summer AES Class CP's as the LOLP
7 allocation factor is dominated by the summer period.
8
- 9 6. Inserted a "School" line in the "Billing Det", "Meters" and "Services" tabs of the Cost of
10 Service Study to facilitate input of the school data.
11
- 12 7. Used column "I" in the "Allocation Proforma" tab that was otherwise hidden and
13 unused for a "School Class" column.
14
- 15 8. Inserted the school data in the School column cells and similarly subtracted the data
16 from PS Secondary and TOD Secondary cells in the appropriate tabs.
17

18 **Q. Please explain the results of your study.**

- 19
- 20 A. As shown in the below table the ROR for the School Class is significantly greater for the
21 PS Secondary and TODS Classes clearly indicating an unreasonable subsidization by
22 schools of other customers on those classes. Benchmarked against the Company overall
23 ROR, the excessive annual revenues approach \$3,200,000. Benchmarked against KU's
24 Rate AES, whose ROR exceeds to Company overall ROR, the excessive annual revenues
25 exceed \$2,550,000.
26

Rate Class	Rate of Return on Rate Base			
	As Filed	Schools at Present Rate	With School Rate @ AES ROR	
All Electric Schools	6.77 %	6.77%	6.77%	
Public School P- 12	n/a	11.32%	6.77%	
Power Service - Secondary	9.26%	9.11%	9.11%	
Time-of-Day Secondary Service	5.56%	5.53%	5.63%	
Total All Classes	5.56%	5.56%	5.52%	

27
28

RATE P - 12 PUBLIC SCHOOL

1
2
3 **Q. What is your recommendation for eliminating the intra-class subsidization being**
4 **currently provided by public schools?**

5
6 A. In order to eliminate the intra class subsidization by public schools currently served on
7 Rates PS-secondary and TODS a new Rate P - 12 Public School (RLW Exhibit 2) should
8 be established. I have developed such a rate incorporating time of day principles at the
9 current ROR on KU’s Rate AES. Since time of day metering is not installed on all PS
10 accounts I also developed a Rate P - 12 Public School (Interim) Power Service (RLW
11 Exhibit 3) until the metering is installed and public school accounts can be migrated to
12 the Rate P – 12 Public School. Once there is a final determination in this proceeding that
13 rate can be adjusted using the Company’s proposed class revenue allocation approach
14 described by Mr. Seelye.

15
16 **Q. What customers would the Rate P – 12 Public School be available to?**

17
18 A. Similar to Kentucky Power’s Tariff K – 12 School (Public School) the rate would be
19 available to P – 12 schools subject to KRS160.325 with normal maximum demands
20 greater than 50 kW. Schools would migrate to the school rate at their option. RLW
21 Exhibit 4 shows the computation of the proposed rates.

All-Electric School Service - Rate Schedule AES

22
23
24
25
26 **Q. Please explain KU’s Rate Schedule AES?**

27
28 A. Service on KU’s Rate AES is to school facilities that use only electric energy for other
29 than incidental instructional and miscellaneous purposes. The opportunity for all-electric
30 schools to be constructed presents a win-win situation for KU, schools, other customers,
31 taxpayers and most importantly K-12 students for a number of reasons. First, Rate AES
32 provides for increased system efficiency. Schools must use electric energy for lighting,
33 cooling, ventilation, refrigeration, computer labs and other uses. However, all electric
34 schools allow LGE/KU to use their same capacity during the winter season to produce
35 more units of output and increase efficiency. This is entirely consistent with Mr.
36 Conroy’s Rebuttal at page 5 in Case No. 2012 – 00221 where he states: “efficiency
37 relates to the extent to which the capacity is fully utilized . . .” and “greater utilization of
38 a fixed asset corresponds to greater efficiency” (Conroy Rebuttal page 5), Second, all-
39 electric schools are more likely over time to provide a more consistent use of otherwise
40 under- utilized winter capacity compared to off-system sales. Third, Rate AES does not
41 disadvantage other customers as shown by the Company’s LOLP Class Cost of Service
42 Study. Finally, recognition of the benefits of all-electric schools enhances compliance
43 with the Governor’s Energy Strategy and statutes governing school construction as
44 Kentucky schools are directed by law to construct and operate efficiently. All-electric
45 schools are highly efficient users of energy through by year round use of geothermal and
46 VFR systems to heat and cool buildings, efficient lighting and efficient building
47 envelopes.

1 **Q. What is your recommendation regarding Rate AES?**

2
3 A. The Commission should approve unfreezing Rate AES and by doing so schools will be
4 afforded an additional option to evaluate when constructing new and remodeling existing
5 schools that capitalize on implementing energy efficiency initiatives which will benefit
6 the public and, most importantly, Kentucky's K-12 students. In Case No. 2010-00204
7 KU agreed to maintain Rate AES as long as it is supported by Cost of Service Studies.
8 That justification is certainly provided by KU in this case and gives conclusive support
9 for the Commission to reopen the rate to all total electric school facilities.

10
11
12 **Sport Field Lighting**

13
14 **Q. On what Rate Schedule are school sport fields served?**

15 A. Today, new sport fields will typically be served on Rate GS or PS. Some existing sport
16 fields as of February 9, 2009 were grandfathered on Rate GS and later pursuant to PSC
17 Order in Case Nos. 2009-00548 and 2010-00221 were permitted to switch to Rate AES.
18 New sport fields of load greater than 50 kw are served on Rate PS and faced with paying
19 a demand charge and minimum payments based on off-peak night-time load in the
20 months they are not in operation. Sports fields clearly are not similar to other commercial
21 and industrial loads served on Rate Schedule PS.

22 **Q. What is the predominate end use at a sports field?**

23 A. Field lighting is the predominate use with lesser usage in some instances from a
24 concession stand, locker room or ticket office on the same meter.

25 **Q. How can the Company rectify this problem?**

26 A. There are a couple of options. The Company, similar to Kentucky Power, could add a
27 sports field rate rider to Rate Schedule PS or the proposed Rate P – 12 Public School with
28 the charges reflective of the cost to serve such facilities, including an appropriate
29 recognition of any concession stand load, locker room or ticket office that may exist and
30 be contributing to system peak demand. Alternatively, the Company could modify the
31 Availability Clause of Rates AES and GS to permit service to sports fields. One benefit
32 of the latter would be consistency of rate application to all sports fields including those
33 previously grandfathered on Rates GS and AES.

34

35

1 **Public School District Energy Management Initiatives**

2
3 **Q. What actions have been taken by boards of education?**

4
5 A. All 173 public school boards of education have adopted an Energy Management Policy and most
6 now have an energy manager. Districts have established an energy committee and have
7 developed and implemented an energy management plan under the leadership and
8 assistance by their energy manager. Recognizing that students are the future home and
9 community energy managers, school energy managers working in conjunction with the
10 Kentucky National Energy Education Development Project (NEED) and the Kentucky
11 Green and Healthy School Program (KGHS) are actively involved with teachers in
12 curriculum modifications that are being implemented to foster energy awareness as
13 envisioned by the Governor’s comprehensive energy plan for Kentucky, “Intelligent
14 Energy Choices for Kentucky’s Future.” The energy managers work closely with the
15 Company’s demand-side management staff to benefit from energy audits and capture
16 rebates from the Company’s program as they install energy conservation measures such
17 as efficient lighting.

18
19 **Q. Please describe the School Energy Managers Project (SEMP).**

20
21 A. In 2010, Kentucky School Boards Association (“KSBA”) created and implemented the
22 School Energy Managers Project (“SEMP”), a state-wide school energy management
23 infrastructure that assists public school districts with compliance with statutory and board
24 policy requirements that direct local boards of education to focus on rising energy costs.
25 SEMP, initially funded by a \$5 million dollar federal economic stimulus grant during
26 FY2011 – FY2012, helped place 35 energy managers to serve 130 school districts and
27 support existing energy managers in 14 additional districts. By fostering intelligent
28 energy choices in new and existing buildings through implementation of energy
29 efficiency projects Kentucky school districts since July 1, 2010 have captured more than
30 \$123 million in savings/cost avoidance. Kentucky is 3rd in the nation as a percentage of
31 its K-12 schools, with over 30 percent having achieved the ENERGY STAR certification.
32 Eighty-one districts have at least one ENERGY STAR school and sixteen districts have
33 all their schools certified. In 2014 and 2015 KSBA-SEMP was recognized nationally as
34 an ENERGY STAR Partner of the Year for Energy Efficiency Program Delivery for its
35 support and partnering with public school districts. In 2016, the program received further
36 recognition as ENERGY STAR Partner of the Year – Sustained Excellence Award.

37 Following expiration of the stimulus funding, \$2.5 million in funding from Kentucky’s
38 Energy and Environment Cabinet, LGE/ KU and Kentucky Power enabled SEMP to
39 continue assisting Kentucky’s 173 public school districts through FY2016. An additional
40 \$1.45 million of funding from LGE and KU approved in Case No. 2015-00398 enabled
41 extending the program through FY2018 to provide support to 84 LGE/KU served districts
42 including matching salary funds for 38 energy managers serving 61 districts to identify
43 for Board approval and implementation best energy management practices. In addition to

1 energy manager funding, \$1 million received from Kentucky Utilities and Louisville Gas
2 and Electric is being used by districts in their service territory to provide matching dollars
3 for energy projects by installing modern highly efficient LED lighting in classrooms,
4 gyms, hallways and parking lots. (Funding from Kentucky’s Energy and Environment
5 Cabinet, Kentucky Power and KSBA has facilitated continued service to remaining
6 districts including matching salary funds for 12 energy managers serving 17 districts in
7 the KPC service territory.)

8 KSBA-SEMP management staff assists district/partnerships in the employment,
9 coaching, monitoring and evaluation of energy managers; procures supporting funding;
10 provides analytical and engineering support; coordinates and provides professional
11 development opportunities for energy managers; utilizes its outreach capacities to timely
12 communicate success stories to board members, superintendents, governmental officials
13 and the general public; fosters best practice implementation; monitors and coordinates
14 utility activities and relations; and develops and submits annually a Kentucky School
15 Energy Management Report to the Cabinet and General Assembly.

16 Funding from the utilities is used for energy managers serving only schools receiving
17 service from the particular utility. I will describe latter the results the LGE-KU School
18 Energy Program.
19

20 **Q. Please explain how Kentucky public school utilization of energy compares to schools**
21 **across the nation.**

22
23 A. Kentucky’s public schools had not been ignoring energy efficiency, but SEMP has
24 successfully facilitated an acceleration and more comprehensive focus. A common metric
25 is the energy utilization index or “EUI” (kBtu per square foot). The national average for
26 K-12 schools is 73, while the Kentucky school district average in FY2016 was 52, down
27 from 65 in FY2010, the first year of the program. Kentucky’s ENERGY STAR schools
28 have increased from 12 in 2008 to 375, placing Kentucky third in the nation as a percent
29 of K-12 eligible buildings and trailing only California, Texas, Virginia and Michigan in
30 total ENERGY STAR schools
31

32 **Q. What is the status of the LGE/KU School Energy Management Program approved**
33 **by the Commission in Case No. 2015-00397?**

34
35 A. The Program is in the second year of the extended two-year period that will otherwise
36 end on June 30, 2018 unless extended. The third Annual Program Report for the initial
37 program presented to LGE/KU on August 15, 2016. Below is the Executive Summary.
38
39
40
41

Executive Summary

The application in Case No. 2013-00067 identified the primary goal of the Energy Management Program for Schools to “support school districts in utilizing energy more “wisely” with the overall objective for each school district to reduce consumption over time by an annual rate of 2.5% and achieve energy utilization indices (“EUI”) of fifty or lower. The participation goal was for all districts served by LG&E or KU to retain or employ an energy manager through at least FY2015 to maximize district response to KRS160.325. The dollars remaining from the original KU/LG&E grant covering FY2014 and FY2015 were approved in Case Nos. 2014–00371 and 2014-00372 to extend the energy manager funding through FY2016.

Fayette County is separately reported as they continue a renovation strategy by which they renovate approximately 10% of their buildings each year using “best practice” energy efficient equipment. A part of this renovation strategy involved making a winter fuel mix change from natural gas to electric (geothermal and VRF). While this lowered the overall EUI and the summer demand of the district, it adds to the winter demand.

From the FY2010 baseline, the KU districts (without FCPS) and FCPS achieved the following:

August Demand Reduction (17.8%) (FCPS 6.5%)

January Demand Reduction (13.4%) (FCPS -15.6%)

Summer Energy Reduction (27.8%) (FCPS 2.2%)

Winter Energy Reduction (14.4%) (FCPS 2.4%)

The August reduction is particularly significant as LG&E-KU is a summer peaking utility. 54 Districts receiving KU electric service participated in the program and 15 have district-wide EUI’s less than 50.

The partnership established between LG&E-KU and KSBA provides a means for the School Energy Management Project (SEMP) to maintain a major presence within schools in Kentucky. During FY2016 four school districts within the LG&E service territory and 54 within the KU service area have benefitted financially and technically from this work.

The School Energy Managers serving these school districts benefit from continuity of employment, technical training and improved skills due to the funding which was provided. They and their schools benefit from the knowledge that has been gained

1 by positioning them on a continuous improvement path. Knowing that an
2 expectation of 2.5% annual reduction provides leverage for energy and demand
3 conservation measures which may not otherwise be undertaken. Future results and
4 further technological upgrades will be impacted.

5 **Q. What are the plans for extending the LGE/KU Program beyond June 30, 2018?**

6
7 A. We are hopeful that the program can be continued and believe it should as long as it can
8 be shown to be viable program beneficial to all stakeholders. If not continued there will
9 be a loss of momentum in capturing demand and energy savings beneficial to the
10 Company and all ratepayers and the loss of energy managers to serve schools in statutory
11 compliance and implementation of the Commonwealth's energy efficiency initiatives.
12 Many districts may not retain and/or rehire a non-teaching position such as an energy
13 manager without that position being part of its operating budget which must be approved
14 by May.

15
16 **Q. What is the status of the Companies commitment in Case Nos. 2014-00371 and**
17 **00372 to provide \$1 million for grants to schools to fund school energy - efficiency**
18 **projects?**

19
20 A. In Case No. 2015 – 00398 the Commission approved the SEMP extension and associated
21 changes in the Company's DM rates and tariff. With regard to the energy-efficiency
22 grants SEMP initiated an energy project funding program to make available the grants to
23 school districts. A three – tier participation option approach was offered to districts: 1)
24 Base – no match, 2) Match – 50/50 match and 3) Residual – 50/50 match for any leftover
25 funds not requested by other districts. Seventy-five percent of eligible districts chose to
26 participate. Eight chose the Base, nineteen the Match and thirty-two the Residual. In total
27 \$2,035,000 in energy efficiency measures are being installed that will produce nearly
28 \$500,000 annual savings from 5 million kwh and 1.7 megawatt reductions.

29
30 **AMS Program**

31
32 **Q. Please comment on the Company's request for approval for deployment of**
33 **Advanced Metering Systems (AMS).**

34
35 A. AMS is key piece in facilitating efficient management of energy usage. Large users for
36 years have had access to real time usage through purchase of meter pulses to synchronize
37 with building energy automation systems. As a result of compliance with KRS160.325
38 Kentucky's public schools are well positioned to now benefit from the AMS meters by
39 being "empowered through more information and control over their energy usage and
40 cost" (Malloy Direct page 6).

41
42 **Q. Does this conclude your testimony?**

43 A. Yes.

44

Kentucky Utilities Company
Summary of Rates of Return by Class w/Proposed School Rate

	Revenue	Operating Expenses	Operating Margin	Rate Base	ROR
Residential Rate RS	\$ 577,570,432	\$ 505,978,207	\$ 71,592,225	\$ 1,638,616,006	4.37%
General Service Rate GS	199,344,357	159,895,805	39,448,552	428,806,061	9.20%
School	16,721,212	13,073,634	3,647,578	32,155,120	11.34%
All Electric Schools Rate AES	11,997,616	10,248,251	1,749,365	25,837,385	6.77%
Power Service Secondary Rate PS	166,882,434	136,561,787	30,320,647	332,398,214	9.12%
Power Service Primary Rate PS	13,885,810	11,109,781	2,776,030	25,951,319	10.70%
Time of Day Secondary Rate TODS	106,338,061	93,116,554	13,221,508	233,801,066	5.66%
Time of Day Primary Rate TODP	250,289,815	227,066,766	23,223,049	572,762,734	4.05%
Retail Transmission Service Rate RTS	86,274,141	78,043,242	8,230,899	182,841,244	4.50%
Fluctuating Load Service Rate FLS	29,712,411	28,731,221	981,190	79,332,427	1.24%
Lighting	26,311,151	18,991,654	7,319,497	86,578,183	8.45%
Lighting Rate ST & POL	26,125,159	18,842,688	7,282,471	86,271,866	8.44%
Lighting Rate LE	29,630	23,769	5,861	31,538	18.58%
Lighting Rate TLE	156,362	125,197	31,165	274,779	11.34%
	1,485,327,440	1,282,816,901	202,510,539	3,639,079,759	5.56%

Summary of Rates of Return by Class w/Proposed School Rate @RATE AES ROR

	Revenue	Operating Expenses	Operating Margin	Rate Base	ROR
Residential Rate RS	\$ 577,570,396	\$ 505,974,264	\$ 71,596,132	\$ 1,638,574,450	4.37%
General Service Rate GS	199,344,350	159,895,089	39,449,261	428,798,510	9.20%
School	15,272,688	12,945,580	2,327,108	34,388,895	6.77%
All Electric Schools Rate AES	11,997,616	10,248,204	1,749,412	25,836,888	6.77%
Power Service Secondary Rate PS	166,383,897	136,187,026	30,196,871	331,401,363	9.11%
Power Service Primary Rate PS	13,885,812	11,109,781	2,776,031	25,951,318	10.70%
Time of Day Secondary Rate TOD	105,735,126	92,640,882	13,094,244	232,614,158	5.63%
Time of Day Primary Lines Rate TOD	250,289,848	227,066,780	23,223,068	572,762,732	4.05%
Retail Transmission Service Rate RTS	86,274,145	78,043,243	8,230,902	182,841,242	4.50%
Fluctuating Load Service Rate FLS	29,712,411	28,731,221	981,190	79,332,427	1.24%
Lighting	26,311,151	18,991,615	7,319,535	86,577,775	8.45%
Lighting Rate ST & POL	26,125,158	18,842,650	7,282,509	86,271,462	8.44%
Lighting Rate LE	29,630	23,769	5,861	31,537	18.59%
Lighting Rate TLE	156,362	125,197	31,165	274,776	11.34%
	1,482,777,440	1,281,833,685	200,943,755	3,639,079,759	5.52%

Kentucky Utilities Company

P.S.C. No. xx, Original Sheet No. xx

Standard Rate

**RATE P-12 PUBLIC SCHOOL
Time of Day Public School Service**

APPLICABLE

In all territory served.

AVAILABILITY OF SERVICE

This schedule is available for secondary and primary service.

Service under this schedule will be limited to customers to P-12 schools subject to KRS 160.325 whose 12-month-average monthly minimum loads exceed 50 kW and whose 12month-average monthly maximum loads do not exceed 2,000 kW.

RATE

	<u>Secondary</u>	<u>Primary</u>
Basic Service Charge per month:	\$200.00	\$300.00
Plus an Energy Charge per kWh of:	\$ 0.03527	\$ 0.03527
Plus a Maximum Load Charge per kW of:		
Peak Demand Period	\$ 4.90	
Intermediate Demand Period	\$ 3.30	
Base Demand Period	\$ 3.97	
Plus a Maximum Load Charge per kVA of:		
Peak Demand Period		\$ 3.96
Intermediate Demand Period		\$ 2.52
Base Demand Period		\$ 2.57

Where:

the monthly billing demand for the Peak and Intermediate Demand Periods is the greater of:

- a) the maximum measured load in the current billing period, or
- b) a minimum of 50% of the highest billing demand in the preceding eleven (11) monthly billing periods, and

the monthly billing demand for the Base Demand Period is the greater of:

- a) the maximum measured load in the current billing period but not less than 50 kW secondary or 50 kVA primary, or
- b) a minimum of 75% of the highest billing demand in the preceding eleven (11) monthly billing periods, or
- c) a minimum of 75% of the contract capacity based on the maximum load expected on the system or on facilities specified by Customer.

Kentucky Utilities Company

P.S.C. No. xx, Original Sheet No. xx

Standard Rate

**RATE P-12 PUBLIC SCHOOL
Time of Day Public School Service**

ADJUSTMENT CLAUSES

The bill amount computed at the charges specified above shall be increased or decreased in accordance with the following:

Fuel Adjustment Clause	Sheet No. 85
Off-System Sales Adjustment Clause	Sheet No. 88
Demand-Side Management Cost Recovery Mechanism	Sheet No. 86
Environmental Cost Recovery Surcharge	Sheet No. 87
Franchise Fee Rider	Sheet No. 90
School Tax	Sheet No. 91

DETERMINATION OF MAXIMUM LOAD

The load will be measured and will be the average kW demand delivered to the customer during the 15-minute period of maximum use during the appropriate rating period each month. Company reserves the right to place a kVA meter and base the billing demand on the measured kVA. The charge will be computed based on the measured kVA times 90 percent, at the applicable kW charge.

In lieu of placing a kVA meter, Company may adjust the measured maximum load for billing purposes when the power factor is less than 90 percent in accordance with the following formula: (BASED ON POWER FACTOR MEASURED AT THE TIME OF MAXIMUM LOAD)

$$\text{Adjusted Maximum kW Load for Billing Purposes} = \frac{\text{Maximum kW Load Measured} \times 90\%}{\text{Power Factor (in percent)}}$$

RATING PERIODS

The rating periods applicable to the Maximum Load charges are established in Eastern Standard Time year round by season for weekdays and weekends, throughout Company's service area, and shall be as follows:

Summer peak months of May through September

	<u>Base</u>	<u>Intermediate</u>	<u>Peak</u>
Weekdays	All Hours	10 A.M. – 10 P.M.	1 P.M. – 7 P.M.
Weekends	All Hours		

All other months of October continuously through April

	<u>Base</u>	<u>Intermediate</u>	<u>Peak</u>
Weekdays	All Hours	6 A.M. – 10 P.M.	6 A.M. – 12 Noon
Weekends	All Hours		

Kentucky Utilities Company

P.S.C. No. xx, Original Sheet No. xx

Standard Rate

RATE P-12 PUBLIC SCHOOL Time of Day Service

DUE DATE OF BILL

Customer's payment will be due within sixteen (16) business days (no less than twenty-two (22) calendar days) from the date of the bill.

LATE PAYMENT CHARGE

If full payment is not received by the due date of the bill, a 1% late payment charge will be assessed on the current month's charges

TERM OF CONTRACT

Service will be furnished under this schedule only under contract for a fixed term of not less than one (1) year, and for yearly periods thereafter until terminated by either party giving written notice to the other party 90 days prior to termination. Company, however, may require a longer fixed term of contract and termination notice because of conditions associated with the customer's requirements for service.

TERMS AND CONDITIONS

Service will be furnished under Company's Terms and Conditions applicable hereto.

Kentucky Utilities Company

P.S.C. No. xx, Original Sheet No. xx

Standard Rate

**RATE P-12 PUBLIC SCHOOL (Interim)
Power Service**

APPLICABLE

In all territory served.

AVAILABILITY OF SERVICE

This rate schedule is available for secondary or primary service.

Service under this schedule will be limited to customers to P-12 schools subject to KRS 160.325 whose 12-month-average monthly minimum loads exceed 50 kW and whose 12month-average monthly maximum loads do not exceed 2000 kW. Secondary or primary customers receiving service under PSC 13, Fourth Revision of Original Sheet No. 20, Large Power Service, or Fourth Revision of Original Sheet No. 30, Mine Power Service, as of February 6, 2009, with loads not meeting these criteria will continue to be served under this rate at their option. If Customer is taking service under this rate schedule and subsequently elects to take service under another rate schedule, Customer may not again take service under this rate schedule unless and until Customer meets the Availability requirements that would apply to a new customer.

RATE

	Secondary	Primary
Basic Service Charge per month:	\$90.00	\$200.00
Plus an Energy Charge per kWh of:	\$ 0.03572	\$ 0.03446
Plus a Demand Charge per kW of:		
Summer Rate:		
(Five Billing Periods of May through September)	\$ 15.07	\$ 14.47
Winter Rate:		
(All other months)	\$ 12.97	\$ 12.47

- Where the monthly billing demand is the greater of:
- a) the maximum measured load in the current billing period but not less than 50 kW for secondary service or 25 kW for primary service, or
 - b) a minimum of 50% of the highest billing demand in the preceding eleven (11) monthly billing periods, or
 - c) a minimum of 60% of the contract capacity based on the maximum expected load on the system or on facilities specified by Customer.

Kentucky Utilities Company

P.S.C. No. xx, Original Sheet No. xx

Standard Rate

RATE P-12 PUBLIC SCHOOL (Interim) Power Service

ADJUSTMENT CLAUSES

The bill amount computed at the charges specified above shall be increased or decreased in accordance with the following:

Fuel Adjustment Clause	Sheet No. 85
Off-System Sales Adjustment Clause	Sheet No. 88
Demand-Side Management Cost Recovery Mechanism	Sheet No. 86
Environmental Cost Recovery Surcharge	Sheet No. 87
Franchise Fee Rider	Sheet No. 90
School Tax	Sheet No. 91

DETERMINATION OF MAXIMUM LOAD

The load will be measured and will be the average kW demand delivered to the customer during the 15-minute period of maximum use during the appropriate rating period each month. Company reserves the right to place a kVA meter and base the billing demand on the measured kVA. The charge will be computed based on the measured kVA times 90 percent, at the applicable kW charge. In lieu of placing a kVA meter, Company may adjust the measured maximum load for billing purposes when the power factor is less than 90 percent in accordance with the following formula: (BASED ON POWER FACTOR MEASURED AT THE TIME OF MAXIMUM LOAD)

$$\text{Adjusted Maximum kW Load for Billing Purposes} = \frac{\text{Maximum kW Load Measured} \times 90\%}{\text{Power Factor (in percent)}}$$

DUE DATE OF BILL

Customer's payment will be due within sixteen (16) business days (no less than twenty-two (22) calendar days) from the date of the bill.

LATE PAYMENT CHARGE

If full payment is not received by the due date of the bill, a 1% late payment charge will be assessed on the current month's charges

TERM OF CONTRACT

Service will be furnished under this schedule only under contract for a fixed term of not less than one (1) year, and for yearly periods thereafter until terminated by either party giving written notice to the other party 90 days prior to termination. Company, however, may require a longer fixed term of contract and termination notice because of conditions associated with the customer's requirements for service.

TERMS AND CONDITIONS

Service will be furnished under Company's Terms and Conditions applicable hereto.

RATE P-12 PUBLIC SCHOOL (INTERIM)
POWER SERVICE
Secondary

	Bills	Kw	KWh	Present Rates		Proposed Rates	
Basic Service	1,476			\$90.00	\$132,840	\$90.00	\$132,840
Energy			71,429,693	\$0.03572	\$2,551,469	\$0.03572	\$2,551,469
Summer kW		106,291		\$19.05	\$2,024,844	\$15.07	\$1,601,319
Min Incr		2,090		\$19.05	\$39,823	\$15.07	\$31,494
					\$0		\$0
Winter kW		149,093		\$16.95	\$2,527,122	\$12.97	\$1,933,050
Min Incr		769		\$16.95	\$13,030	\$12.97	\$9,967
Total					\$7,289,128		\$6,260,138

RATE P-12 PUBLIC SCHOOL SERVICE
TIME of DAY SERVICE
Secondary

	Bills	Kw	KWh	Present Rates		Proposed Rates	
Basic Service	996			\$200.00	\$199,200	\$200.00	\$199,200
Energy			120,872,157	\$0.03527	\$4,263,161	\$0.03527	\$4,263,161
Base kW		382,412		\$5.20	\$1,988,545	\$3.97	\$1,518,308
Min Incr Old		15,918		\$5.20	\$82,772	\$3.97	\$63,198
Min Incr New		96,949		\$5.20		\$3.97	
Inter kW		381,585		\$4.53	\$1,728,582	\$3.30	\$1,259,362
Min Incr		2,174		\$4.53	\$9,848	\$3.30	\$7,175
							\$0
Peak kW		379,561		\$6.13	\$2,326,709	\$4.90	\$1,859,979
Min Incr		2,163		\$6.13	\$13,256	\$4.90	\$10,597
Total					\$10,612,074		\$9,180,981

Respectfully submitted,

/s/Matt Malone

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Counsel for the Petitioner,
KENTUCKY SCHOOL BOARDS ASSOCIATION

CERTIFICATE OF SERVICE

It is hereby certified, this the 3rd day of March, 2017, that the attached Testimony of KSBA is a true and correct copy of the document being filed in paper medium; that the electronic filing has been transmitted to the Commission on March 3, 2017; that there are currently no parties that have been excused from participation by electronic service; that an original and six copies of this document are being hand-delivered to the Commission for filing on March 3, 2017; and that an electronic notification of the electronic filing will be provided to all counsel listed on the Commission's service list in this proceeding.

/s/Matt Malone

ATTORNEY FOR KSBA