

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Application of Duke Energy Kentucky, Inc.)
for: 1) An Adjustment of the Electric Rates;)
2) Approval of an Environmental Compliance)
Plan and Surcharge Mechanism; 3) Approval)
of New Tariffs; Approval of Accounting)
Practices to Establish Regulatory Assets and)
Liabilities; and 5) All Other Required)
approvals and Relief.)

Case No. 2017-000321

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

FILED: December 29, 2017

INTRODUCTION

1
2
3 **Q. Please state your name and business address.**

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

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

8 A. I am employed by the Kentucky School Boards Association as Director of the School
9 Energy Managers Project. The Kentucky School Boards Association (KSBA) is a
10 nonprofit corporation of school boards from each public school district in Kentucky. The
11 association, founded in 1936, now has over 75 years of serving school board members
12 and school districts in such areas as governmental relations, board member and team
13 development, risk management, facility planning, energy management, legal services,
14 policy services, publications and community relations. It is governed by a 27-member
15 board of directors made up of representatives elected as regional chairpersons or as
16 directors-at-large. With nearly 900 school board members, KSBA is the largest
17 organization of elected officials in Kentucky.
18

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

20
21 A. In December 2001 I retired from LG&E Energy Services. Among my responsibilities
22 during my career were the development of integrated resource plans, comprehensive
23 analysis of energy management alternatives, tariff design and administration, sales and
24 revenue forecasts and market research. During my tenure at the Companies I testified
25 before this and other commissions on numerous rate and regulatory matters. In March
26 2010 I was employed by KSBA to develop and direct the School Energy Managers
27 Project (SEMP). From 1989 to 1998 I served on the Scott County Board of Education,
28 the last six years as its chairman, and since 2009 have served on their Energy Committee.
29 I graduated from the University of Kentucky in 1969 earning a B.S. in Electrical
30 Engineering.
31

32 **Q. Please describe Kentucky's public schools and the role of boards of education.**

33
34 A. Kentucky has some 1233 P-12 public schools serving 670,000 students that are overseen
35 per statute by 173 local school boards pursuant to KRS 160.290:

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

1 *school system, appoint the superintendent of schools, and fix the*
2 *compensation of employees.”*
3

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

5
6 A. I will address the following; 1) impact of the proposed increase on schools, 2), Rate DS
7 demand minimum, 3) schools are distinguishable from commercial and industrial
8 customers, 4) Rate P – 12 Schools, 5) Rate EH Optional Rate for Electric Space Heating,
9 6) Rate SP Seasonal Sports Service, and 7) school energy management initiatives.
10

11 **IMPACT ON SCHOOL**

12
13 **Q. How will the requested increase impact schools?**

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

19 Schools are served primarily on Rates DS, DT, SP and EH which the Company is
20 requesting to increase by an average of 14.3 13.7, 11.5 and 14.2 percent respectively.
21 While schools understand the Company is faced with challenges the revenue increase as
22 proposed would be extremely unfair to schools and their students. Public school districts
23 continue to be disadvantaged as schools are required to take service under rate schedules
24 along with commercial and industrial customers. I will address options for the
25 Commission to mitigate the impact on public schools.
26

27 **Rate DS Minimum**

28
29 **Q. Please describe the Rate DS Minimum Ratchet.**

30
31 A. Rate DS has what is commonly known as a demand ratchet where a customer pursuant to
32 the Company’s tariff is billed for the higher of 1) actual monthly metered kw demand or
33 2) 85 percent of the highest metered kw demand recorded (established) in the **summer**
34 **period**, June through September **revenue months**, in the next eleven (11) succeeding
35 months. This means a customer’s highest metered kw from the first billing cycle in June,
36 which can cover usage from May 2 through June 1, until the last revenue cycle in
37 September can be determinative of monthly demand charges under Rate DS for the next
38 eleven monthly bills.

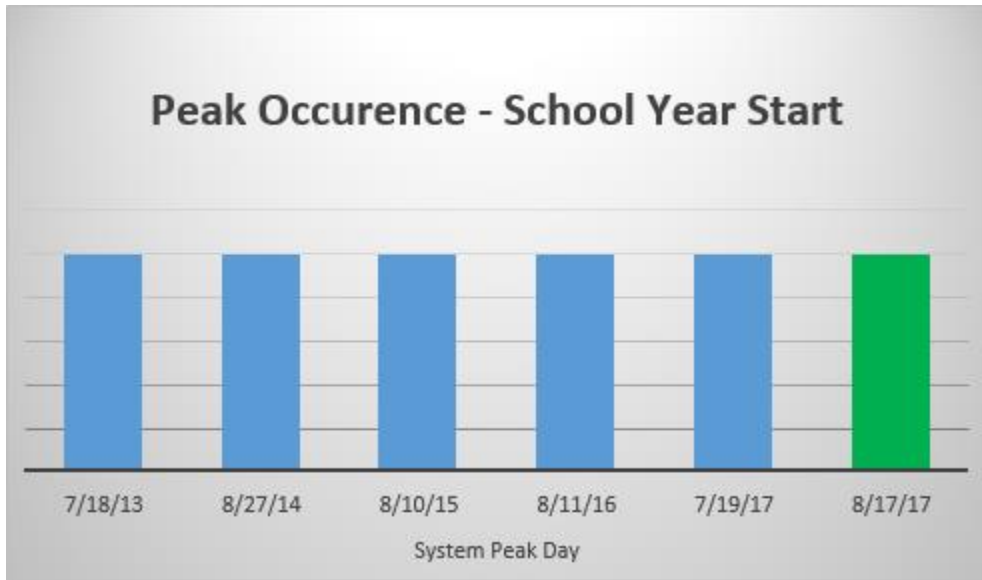
39 **Q. What is the purpose of the DS demand ratchet?**

40 A. The demand ratchet is to provide for recovery of fixed costs imposed by customers in an
41 equitable manner consistent with the utility cost to serve. Because some customer loads
42 are seasonal, demand ratchets serve the purpose of cost recovery from those customers.
43

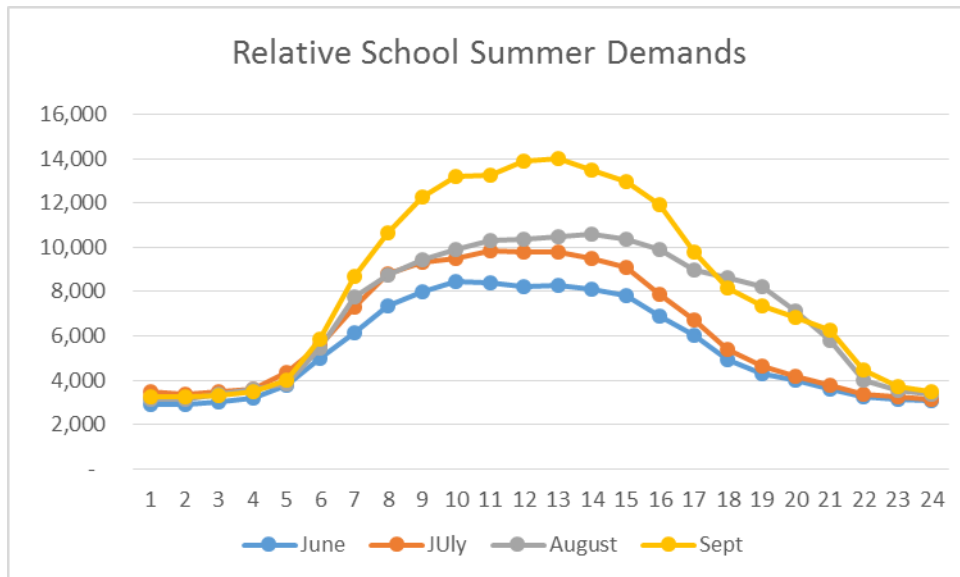
1 **Q. Why is the demand ratchet unfair to schools?**

2 A. Duke is clearly a summer peaking utility and as such production and transmission
3 capacity planning and construction is primarily driven by experienced and expected
4 system load occurring in mid to late afternoon during July or August. As shown in the
5 below charts schools are not typically in session during the Company's peak period with
6 most class dates beginning mid to late August and school load at system peak time is 70
7 to 75 percent of their maximum system coincident load which occurs in September. As a
8 result, School's September billing demand becomes the basis for demand billing in many
9 of the non-summer revenue months.

10



11



12

13

1 **Q. Have you estimated the impact of the demand ratchet on schools?**

2 A. I have calculated the impact to be \$260,000 for the test period using billing data provided
3 by the school districts.
4
5

6 **P - 12 SCHOOLS ARE DISTINGUISHABLE**

7
8 **Q. In what ways do public schools differ from other customers served on rate DS?**

9
10 A. Public schools differ from other DS customers in several primary ways:
11

- 12 1. Public schools are required to develop energy management plans by
13 KRS160.325 and Board Policy.
- 14 2. Public schools operating hours differ significantly from commercial and
15 industrial customers.
- 16 3. Public school load and usage characteristics differ significantly from
17 commercial and industrial customers.
- 18 4. Public schools provide less risk to serve than other customers served on Tariff
19 L.G.S.
20

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

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

34 **05.23 Energy Management**

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

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

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

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

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

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

14
15 **Q. Please explain how public schools operate different than commercial and industrial**
16 **customers.**

17
18 A. While schools, commercial and industrial customers operate on a defined schedule, those
19 schedules are drastically different. Many industries operate 2nd, 3rd and weekend shifts
20 while stores operate extended hours into the evening year round seven days per week.
21 Schools typically are fully occupied from 7:30 am until 3:00 pm weekdays only nine to
22 ten months of the year with numerous recess periods for breaks throughout the school
23 year. Schools are not in session from mid-June to mid-August. Schools continue open
24 beyond instructional periods for extra-curricular activities, but by this time automations
25 systems and set back procedures have adjusted temperatures for unoccupied space.
26 School load build up typically begins around 7 am, peaks by lunch time, then declines at
27 a significant pace until and after the instructional day ends in early-afternoon. RLW
28 Exhibit 1 shows graphically the typical school relationship of fully occupied to
29 unoccupied operation hours. RLW Exhibit 2 shows comparative 24-hour load profiles for
30 schools, the DS class and system for July, August and September system peak days.

31
32 **Q. What is the mix of customers served on Tariff DS?**

33 A. The Company was unable to provide an accurate list by SIC code of the makeup of the
34 DS rate class. However, since Rate DS is available to customers with average monthly
35 demands up to 500 kw there is a wide range of non-school commercial and industrial
36 business customers receiving service under rate DS. These customers will typically
37 include such businesses as: construction, manufacturing, finance and insurance, hotels,
38 health services, and retail and wholesale trade whose operating hours are typically
39 different than schools and pose more uncertainty with regard to consistency of load
40 imposing greater risk for the Company in facility planning and financial stability.

41
42 **Q. Have you quantified the difference in the cost to serve schools versus other**
43 **customers served on Rate DS?**

44
45 A. Yes. Using the COSS submitted by the Company and school load and usage data
46 provided in data responses I modified the Company's COSS to include a K – 12 School
47 Class. The different load and usage characteristics of public schools result in cost

1 causation factors different than commercial and industrial customers as is demonstrated
2 in the study.

3
4 **Q. Please explain how your developed Cost of Service Study?**

5
6 A. I developed the Cost of Service Study using the Company’s Excel spreadsheet (Response
7 to STAFF-DR-02-088_Attachment Error re Ref) to include a “P – 12 School Class”
8 comprised of school accounts with annual maximum demands of 100 kw or greater as
9 follows:

- 10
11 1. Assembled customer, revenue, energy and billing demand data for school accounts
12 with maximum demands greater than 100 kw currently served on rates DS-
13 Secondary.
14
15 2. Developed School Class Coincident (CP), Non-Coincident Class Peak (NCP) and
16 Non-Coincident Class Maximum Demand (NCD) allocators from data provided by
17 the Company’s Response to:

18
19 KSBA-DR-02-001_Supplemental_1A_1B (Ref_ID)
20 KSBA-DR-02-001_Supplemental_1C_1D_part_A(Ref_ID)
21 KSBA-DR-02-001_Supplemental_1C_1D_part_B_(Ref_ID)
22

- 23 3. Used the “Other” column in the Company’s study for a School Class.
24
25 4. Inserted the school data in the School column cells and similarly subtracted the data
26 from DS Class.
27

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

29
30 A. As shown in the below table the ROR for a P – 12 School Class is clearly subsidizing
31 other customers on the DS Secondary Class.
32

Rate Class	Rate of Return on Rate Base	
	As Filed	RLW COSS
Rate DS	5.57	5.41
School P- 12	X	6.33
Total All Classes	2.83	2.83

33
34 The below shows the revenue increase amount for the P - 12 School Class at various
35 ROR’s calculated using the Company’s COSS Tab “WR FR – 16(7)(v) Rate Incr”. The
36 “DS” and “Overall” ROR columns show the increase for the P – 12 School Class at the

1 proposed DS and Overall ROR as calculated using the Company's study. Note these
 2 increases are in addition to other increases to be experience by ancillary school accounts
 3 and those accounts served on Rates DT, EH and SP.
 4

5 **P – 12 School Class Revenue Increase Summary**

	RLW COSS		
	<u>School</u>	<u>@ DS ROR</u>	<u>@ Overall ROR</u>
Proposed ROR	10.228%	9.395%	7.077%
Capitalization	\$11,371,280	\$11,371,280	\$11,371,280
Proposed NOI	\$1,163,003	\$1,068,338	\$804,781
Present NOI	\$720,097	\$720,097	\$720,097
NOI Increase	\$442,906	\$348,241	\$84,684
Revenue Increase	\$719,873	\$566,010	\$137,641
Present Revenues	\$4,820,629	\$4,820,629	\$4,820,629
Percent Increase	14.9%	11.7%	2.9%
<i>Tax Complement</i>	61.5256%		

6
7
8 **RATE P - 12 PUBLIC SCHOOL**
9

10 **Q. What is your recommendation for recognizing the unique characteristics of schools**
 11 **and eliminating the intra-class subsidization being currently provided by schools?**

12
 13 A. As is clearly evident from the above table P – 12 Schools are being severely penalized by
 14 being served on rate DS. In order to correct this situation a new P - 12 School Tariff
 15 should be established to eliminate both the DS intra-class subsidization and penalty
 16 discussed earlier in my testimony imposed by the current DS demand ratchet on schools.
 17 The P – 12 School Tariff charges should be set such as to produce a ROR no greater than
 18 the Company overall approved in this proceeding. RLW Exhibit 3 is the suggested form
 19 of proposed P – 12 School Tariff.
 20

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

22
 23 A. Similar to the Kentucky Power, Louisville Gas and Electric and Kentucky Utilities K –
 24 12 School Tariff service would be available to all K – 12 schools, public and private.
 25 Service under the Duke P – 12 School Tariff will be available to school accounts with
 26 average monthly demands greater than 50 kW.
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Rate EH

Q. Please describe Rate EH.

A. Rate EH is an optional rate for space heating available to schools and churches where the wiring facilitates a single point of service separately from all other facility load. According to the Company’s filing Schedule M - 2.1 there were 502 test year billings representing approximately 63 customers of which 10 are school accounts.

Q. What increase is the Company proposing for Rate EH?

A. The Company is proposing to increase Rate EH by 14.2 percent.

Q. Do you believe the Company’s cost of service study correctly reflects the cost to serve the 41 customers?

A. The load research data is questionable as to its application to schools as it appears to be representative of churches, not schools. The class kwh for February appears incorrect as it is over 2.5 times greater than the kwh in both January and February. The study also shows there to be 156 customers, yet Schedule M – 2.1 shows 63 customers.

Q. What is your recommendation regarding the proposed increase for Rate EH?

A. Rate EH should be increased by no greater than the percentage increase for Rate DS.

Sport Field Service

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

A. As a non-profit customer, school sport fields in existence on June 25, 1981 were grandfathered for service on Rate SP. Subsequent new sport fields are served on Rate DS and are faced with paying a demand charge and minimum payments based on off-peak night-time load in the months they are not in full operation. Sports fields clearly are not similar to other commercial and industrial loads served on Rate Schedule DS.

Q. How can the Company rectify this problem?

A. The Commission should order the Company to reopen Rate SP and establish the charges to produce a class ROR no greater than that produced by Rate DS.

Public School District Energy Management Initiatives

Q. What are schools doing to manage energy costs?

A. As described above the General Assembly via House Bill 2, which became law on July 15, 2008 as KRS 160.325, directed and encouraged public schools to focus on making intelligent energy choices. In addition, on July 15, 2010 KRS 157.455 became law stating

1 that the Kentucky Department of Education and all school districts undertaking the
2 construction of new school buildings or the major renovation of existing school buildings
3 are strongly encouraged to:

- 4 a) Meet or exceed efficient school design standards in planning and designing all
5 new buildings and major renovation projects;
- 6 b) Use life-cycle cost analysis to evaluate different design proposals; and
- 7 c) Consider the possibility that each new school building or major renovation of a
8 building could be a net zero building, either during the construction or renovation,
9 or at a later date as resources become available.

10
11 **Q. What actions have been taken by boards of education?**

- 12
13 A. In addition to all 173 public school boards of education having adopted an Energy
14 Management Policy, most districts have established an energy committee and have
15 developed and implemented an energy management plan under the leadership and
16 assistance by their energy manager. Recognizing that students are the future home and
17 community energy managers, school energy managers working in conjunction with the
18 Kentucky National Energy Education Development Project (NEED) and the Kentucky
19 Green and Healthy School Program (KGHS) are actively involved with teachers in
20 curriculum modifications that are being implemented to foster energy awareness. The
21 energy managers work closely with the Company's demand-side management staff to
22 benefit from energy audits and capture rebates from the Company's program as they
23 install energy conservation measures such as efficient lighting.

24
25 **Q. Please explain how Kentucky's public school utilization of energy compares to**
26 **schools across the nation.**

- 27
28 A. Kentucky's public schools had not been ignoring energy efficiency, but KRS160.325 and
29 SEMP have successfully facilitated an acceleration and more comprehensive focus. A
30 common metric is the energy utilization index or "EUI" (kBtu per square foot). The
31 national average for K-12 schools is 73, while the Kentucky school district average in
32 FY2017 was 49.7, down from 65.5 in FY2010, the first year of the program. Kentucky's
33 ENERGY STAR schools have increased from 12 in 2008 to 430, placing Kentucky third
34 in the nation as a percent of K-12 eligible buildings and trailing only California, Texas,
35 Virginia and Michigan in total ENERGY STAR schools

36
37 **Q. Please describe the School Energy Managers Project (SEMP).**

- 38
39 A. In 2010, Kentucky School Boards Association ("KSBA") created and implemented the
40 School Energy Managers Project ("SEMP")¹, a state-wide school energy management
41 infrastructure that assists public school districts with compliance with statutory and board

¹ KSBA-SEMP management staff assists district/partnerships in the employment, coaching, monitoring and evaluation of energy managers; procures supporting funding; provides analytical and engineering support; coordinates and provides professional development opportunities for energy managers; utilizes its outreach capacities to timely communicate success stories to board members, superintendents, governmental officials and the general public; fosters best practice implementation; monitors and coordinates utility activities and relations; and develops and submits annually a Kentucky School Energy Management Report to the Energy and Environment Cabinet and General Assembly.

1 policy requirements that direct local boards of education to focus on rising energy costs.
2 SEMP, initially funded by a \$5 million federal economic stimulus grant during FY2011 –
3 FY2012, helped place 35 energy managers to serve 130 school districts and support
4 existing energy managers in 14 additional districts. By fostering intelligent energy
5 choices in new and existing buildings through implementation of energy efficiency
6 projects Kentucky school districts since July 1, 2010 have captured more than \$170
7 million in savings/cost avoidance. Kentucky is 3rd in the nation as a percentage of its K-
8 12 schools, with 35 percent having achieved the ENERGY STAR certification.
9 Statewide ninety-seven districts have at least one ENERGY STAR school and twenty
10 districts have all their schools ENERGY STAR certified. In 2014 and 2015 KSBA-SEMP
11 was recognized nationally as an ENERGY STAR Partner of the Year for Energy
12 Efficiency Program Delivery for its support and partnering with public school districts. In
13 2016 and 2017, the program received further recognition as ENERGY STAR Partner of
14 the Year – Sustained Excellence Award.

15 Following expiration of the stimulus funding, \$2.5 million in funding from Kentucky’s
16 Energy and Environment Cabinet, LGE/ KU and Kentucky Power enabled SEMP to
17 continue assisting Kentucky’s 173 public school districts through FY2016. An additional
18 \$2.45 million of funding from LGE and KU approved in Case No. 2015-00398 enabled
19 extending the program through FY2018 to provide support to 84 LGE/KU served districts
20 to provide matching salary funds; analytical and technical support; and funding for
21 energy efficient projects such as modern highly efficient LED lighting in classrooms,
22 gyms, hallways and parking lots. LGE/KU in Case No. 2017-00441 have requested
23 approval to extend SEMP funding through FY2020. KPC in Case No. 00179 have under
24 consideration a Settlement Agreement that includes a commitment to also request
25 Commission approval to extend SEMP funding through FY2020. The funding from
26 LGE/KU and KPC will support energy managers and efficiency initiatives in 109 districts
27 in the LGE/KU and KPC service territories through FY2020.

28 **Q. How are districts able to construct these very efficient schools?**

29
30 A. Districts utilize the expertise of skilled architects well versed in energy efficiency
31 methods in the design of construction projects. In addition, the Facilities Branch of the
32 Kentucky Department of Education reviews and approves all construction projects. Use
33 of modern wall and roof construction technologies, geothermal and variable refrigerant
34 flow space conditioning technologies, efficient LED lighting, day-lighting and building
35 automation control systems are primary factors contributing to highly efficient projects.
36 However, it takes a skilled solid energy management plan lead by a skilled energy
37 manager for facilities to daily maintain design potential.
38

39 **Q. What has been the Companies’ response to supporting the School Energy
40 Management Program?**

41
42 A. The Company has chosen not to participate to date, but indicated in 2014 the possibility
43 for inclusion in a future DSM Rider filing with the Commission.
44

1

2

Recommendation Summary

3

4 **Q. Please summarize your recommendations.**

5

6 A. The Company should:

7

8 1. Establish a new P – 12 School Tariff with charges set such as to produce a ROR
9 no greater than the Company overall approved in this proceeding.

10

11 2. Not include a demand ratchet in the P – 12 School Tariff.

12

13 3. Increase Rate EH by no greater than the percentage increase for Rate DS.

14

15 4. Unfreeze Rate SP.

16

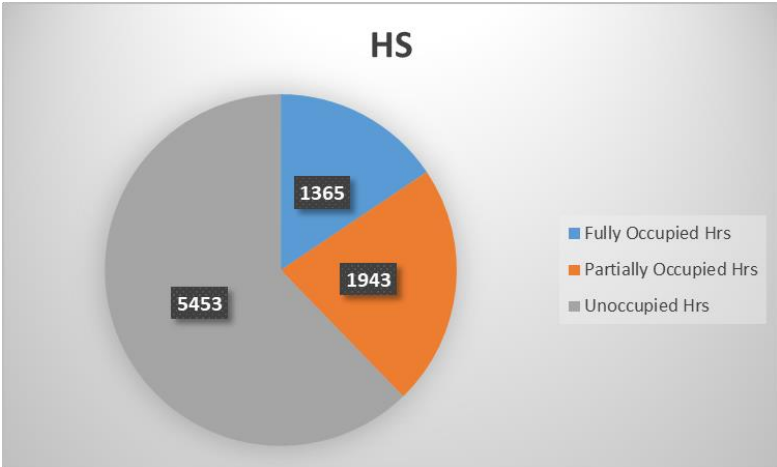
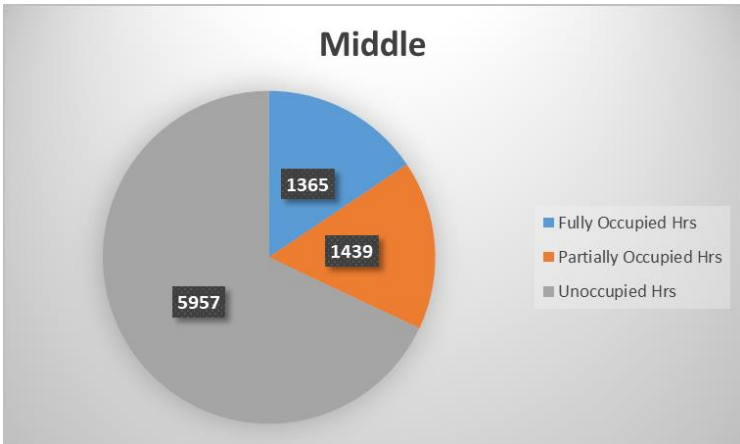
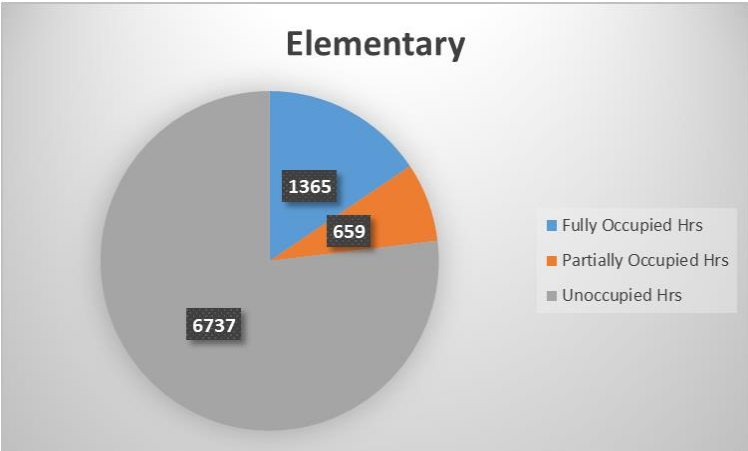
17 5. Include the School Energy Managers Project in their DSM Program Portfolio.

18

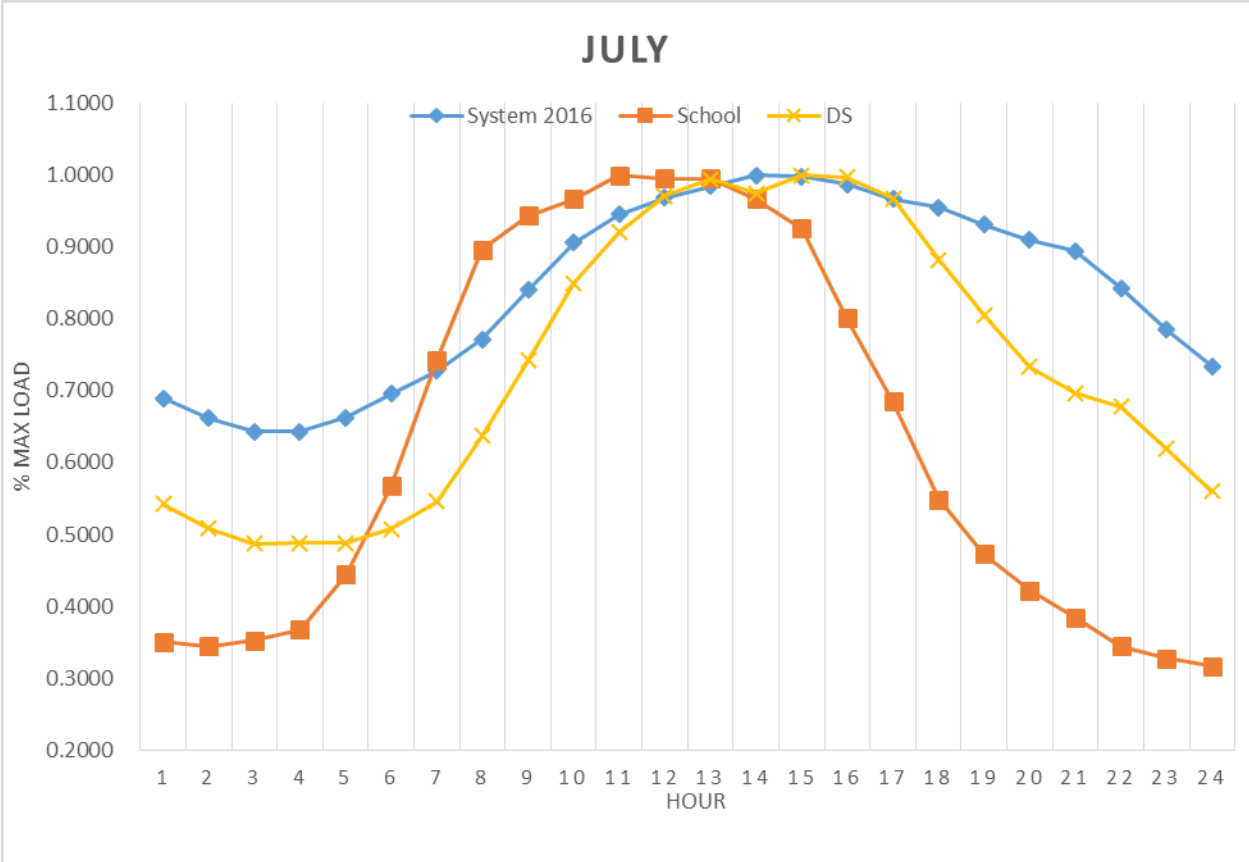
19 **Q. Does this conclude your testimony?**

20 A. Yes.

Typical School Occupied vs Unoccupied Hours

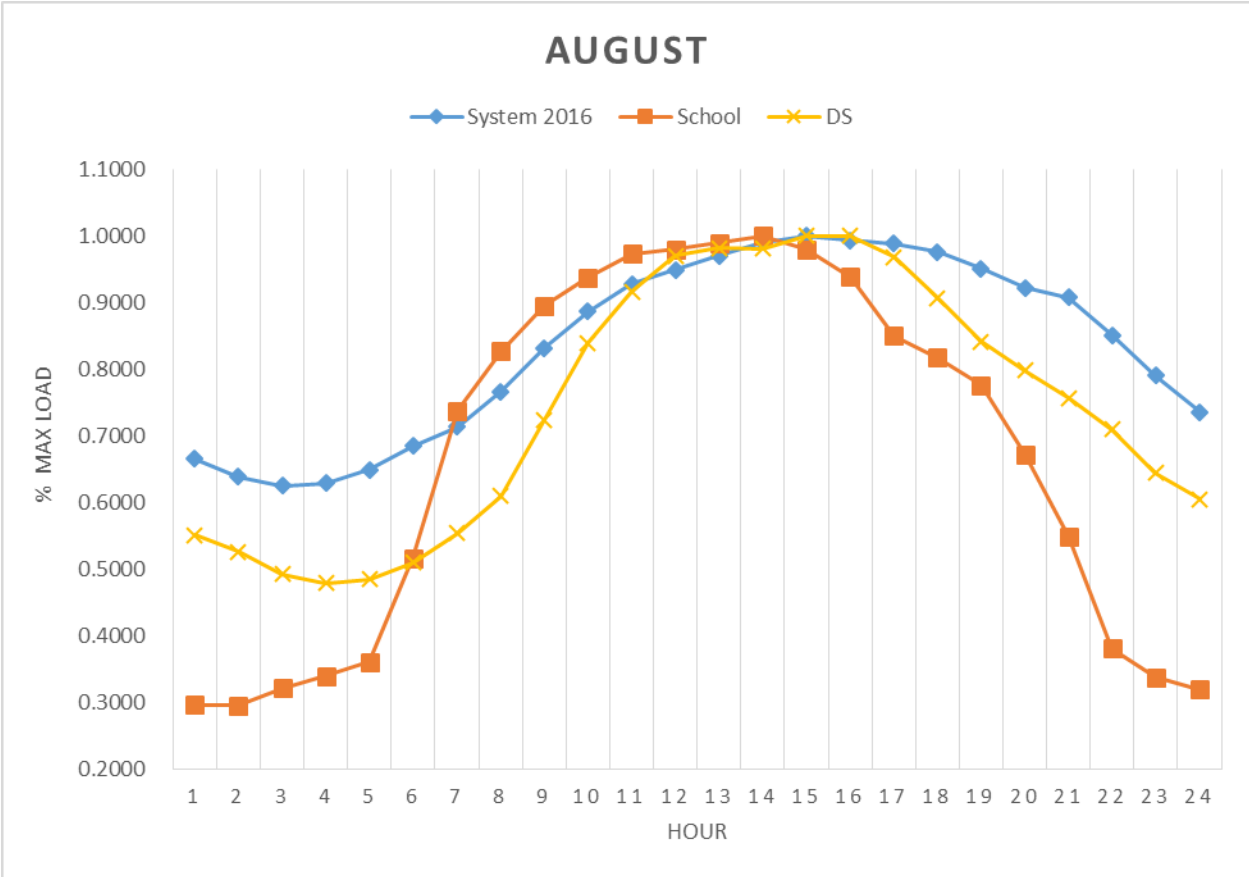


School – DS - System Peak Day Load Profiles



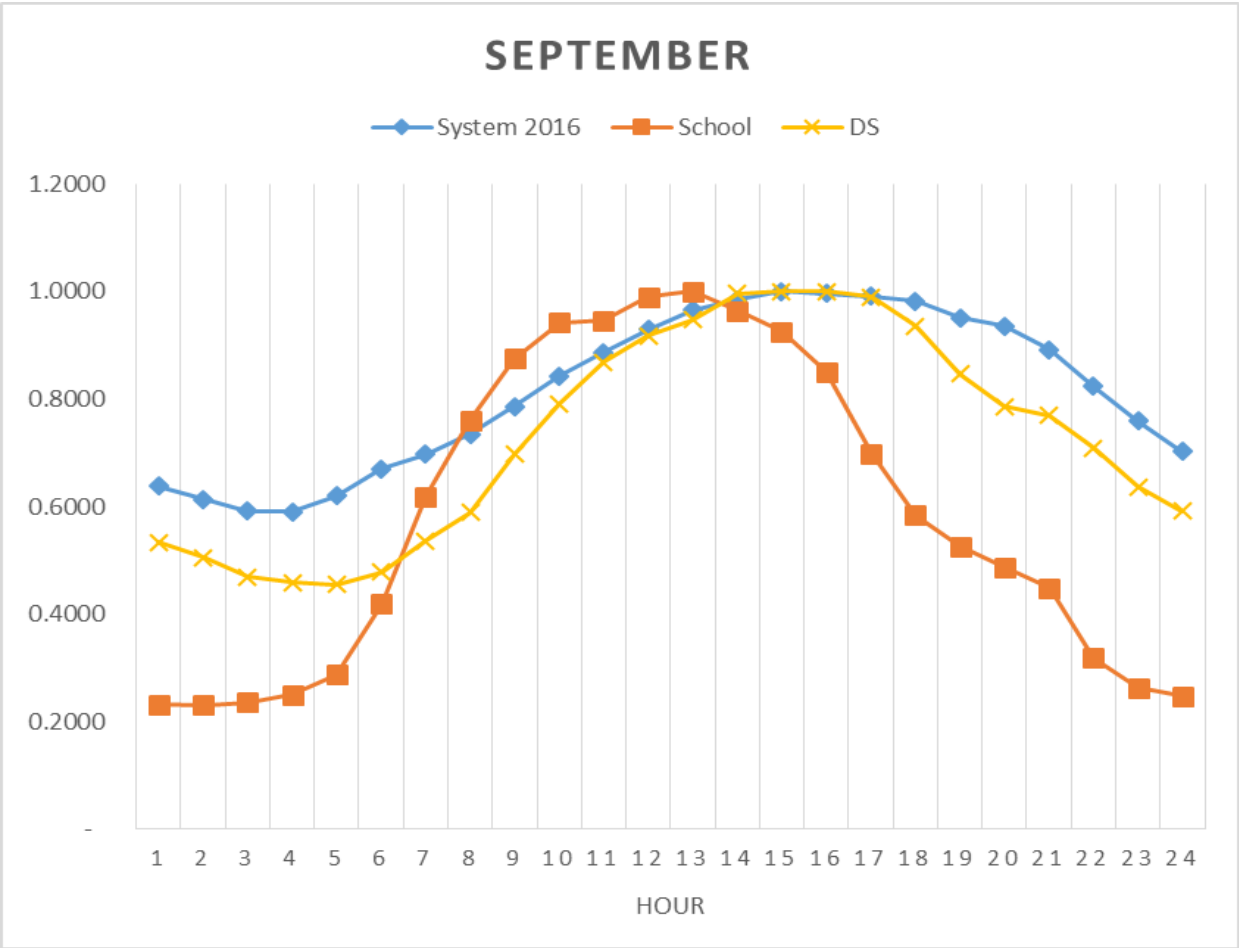
KSBA-DR-01-007 Attachment Observed Group
KSBA-DR-01-009 Attachment System peaks
KSBA-DR-01-006_Exhibit_07 July

School – DS - System Peak Day Load Profiles



KSBA-DR-01-007 Attachment Observed Group
KSBA-DR-01-009 Attachment System peaks
KSBA-DR-01-006_Exhibit_08 August

School – DS - System Peak Day Load Profiles



KSBA-DR-01-007 Attachment Observed Group
KSBA-DR-01-009 Attachment System peaks
KSBA-DR-01-006_Exhibit_09 September

Duke Energy Kentucky, Inc.
4580 Olympic Blvd.
Erlanger, Kentucky 41018

KY.P.S.C. Electric No. 2
Eighth Revised Sheet No. ___
Cancels and Supersedes
Seventh Revised Sheet No. ___
Page 1 of 3

RATE P - 12 School

SERVICE AT SECONDARY DISTRIBUTION VOLTAGE

APPLICABILITY

Applicable to electric service for usual customer load requirements where the Company specifies service at the standard secondary system voltage and the Company determines that facilities of adequate capacity are available adjacent to the premises to be served, and the customer's average monthly demand is determined by the Company to be greater than 50 kilowatts. Electric service must be supplied at one point of delivery and is not applicable for resale service.

TYPE OF SERVICE

Alternating current 60 Hz three phase at the Company's standard distribution voltage of 34,500 volts or lower.

NET MONTHLY BILL

Computed in accordance with the following charges:

1. Base Rate

(a) Customer Charge per month	\$ xx.xx per month
(b) Demand Charge	
First 15 kilowatts	\$ 0.00 per kW
Additional kilowatts	\$ x.xx per kW
(c) Energy Charge	
First 6,000 kWh	\$0.xxxxxx per kWh
Next 300 kWh/kW	\$0.xxxxxx per kWh
Additional kWh	\$0.xxxxxx per kWh

2. Applicable Riders

The following riders are applicable pursuant to the specific terms contained within each rider:

- Sheet No. 76, Rider ESM, Environmental Surcharge Mechanism Rider (N)
- Sheet No. 78, Rider DSMR, Demand Side Management Rider
- Sheet No. 80, Rider FAC, Fuel Adjustment Clause
- Sheet No. 82, Rider PSM, Profit Sharing Mechanism
- Sheet No. 125, Rider DCI, Distribution Capital Investment Rider (N)
- Sheet No. 126, Rider FTR, FERC Transmission Cost Reconciliation Rider (N)

The minimum charge shall be the Customer Charge shown above.

Issued by authority of an Order of the Kentucky Public Service
Commission dated __, 2017 in Case No. 2017-00321.

Issued: September 1, 2017

Effective: October 1, 2017

Issued by James P. Henning, President

Duke Energy Kentucky, Inc.
4580 Olympic Blvd.
Erlanger, Kentucky 41018

KY.P.S.C. Electric No. 2
Eighth Revised Sheet No. ___
Cancels and Supersedes
Seventh Revised Sheet No. ___
Page 2 of 3

NET MONTHLY BILL (Cont'd)

hour plus all applicable riders.

When both single and three phase secondary voltage services are required by a customer, the monthly kilowatt-hour usage and kilowatt demands shall be the respective arithmetical sums of both services.

METERING

The Company may meter at secondary or primary voltage as circumstances warrant. If the Company elects to meter at primary voltage, the kilowatt-hours registered on the Company's meter will be reduced one and one-half percent (1.5%) for billing purposes.

DEMAND

The demand shall be the kilowatts derived from the Company's demand meter for the fifteen-minute period of customer's greatest use during the billing period, as determined by the Company, adjusted for power factor, as provided herein. At its option, the Company may not install a demand meter if the nature of the load clearly indicates the load will have a constant demand, in which case the demand will be the calculated demand.

If a customer requests reconnection of an account within twelve (12) months of a disconnection order, the customer's demand record for the period of disconnection will be re-established for purposes of billing and administration of the preceding clause.

POWER FACTOR ADJUSTMENT

The power factor to be maintained shall be not less than 90% lagging. If the Company determines customer's power factor to be less than 90%, the billing demand will be the number of kilowatts equal to the kilovolt amperes multiplied by 0.90.

At the Company's option, power factor may be determined by the following methods:

a. Continuous measurement the power factor, as determined during the interval in which the maximum kW demand is established, will be used for billing purposes; or

b. Testing

the power factor, as determined during a period in which the customer's measured kW demand is not less than 90% of the measured maximum kW demand of the preceding billing period, will be used for billing purposes until superseded by a power factor determined by a subsequent test made at the direction of Company or request of customer.

Issued by authority of an Order of the Kentucky Public Service
Commission dated , 2017 in Case No. 2017-00321.

Issued: September 1, 2017
Effective: October 1, 2017
Issued by James P. Henning, President

Duke Energy Kentucky, Inc.
4580 Olympic Blvd.
Erlanger, Kentucky 41018

KY.P.S.C. Electric No. 2
Eighth Revised Sheet No. __
Cancels and Supersedes
Seventh Revised Sheet No. __
Page 3 of 3

LATE PAYMENT CHARGE

Payment of the Net Monthly Bill must be received in the Company's office within twenty-one (21) days from the date the bill is mailed by the Company. When not so paid, the Gross Monthly Bill, which is the Net Monthly Bill plus 5%, is due and payable.

TERMS AND CONDITIONS

The initial term of contract shall be for a minimum period of three (3) years terminable thereafter by a minimum notice of either the customer or the Company as prescribed by the Company's Service Regulations.

The Company is not obligated to extend, expand or rearrange its transmission system voltage if it determines that existing distribution and/or transmission facilities are of adequate capacity to serve the customer's load.

If the Company offers to provide the necessary facilities for transmission service, in accordance with its Service Regulations, an annual facilities charge, applicable to such additional facilities, is established at twenty (20) percent of actual cost. The annual facilities charge shall be billed in twelve monthly installments to be added to the demand charge.

For purposes of administration of this rate, the Company will determine the customer's average monthly demand based upon the twelve months ending December of each year after the applicable term of service has been fulfilled by the customer. If the customer's monthly demand exceeds 500 kilowatts and the Company expects the customer's demand to remain in excess of 500 kilowatts, then the Company will notify the customer prior to May of the succeeding year that the provisions of Rate DT, Time-of-Day Rate for Distribution Service shall be applicable beginning with the June revenue month billing and shall continue until the term of service of that rate has been fulfilled. In the case where a customer's average demand is estimated by the Company to be significantly less than 500 kilowatts, the Company may, at its discretion, waive the twelve month demand history requirement in the determination of the applicability of this rate.

The supplying of, and billing for, service and all conditions applying thereto, are subject to the jurisdiction of the Kentucky Public Service Commission, and to the Company's Service Regulations currently in effect, as filed with the Kentucky Public Service Commission, as provided by law.

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