

Agenda



- Energy Management Where are we now?
- The latest on Utility Rate Issues and Funding Opportunities
- Industry Update: David Huff <u>LGE-KU</u>
- Is Power Factor correction a problem?
  - Moving from the Energy Management Plan to Budgeted Actions
    - 1. Why do an Energy Audit?
    - 2. Best Practices & Pitfalls (KEEMA Committee Presentations)
      - Lighting
      - Operations best-practices
      - Building Occupant best-practices
    - 3. Justification of Implementing Best Practices
- Noon Lunch Thank you to our sponsor *Perfection Group* 
  - 4. Funding of Best Practices
- Industry Update: Michel Pahutski <u>DUKE</u>
- Roundtable Discussion-address expressed concerns
- Wrap-Up



DOLLARS

**STUDENTS** 

ENERGY

## Jim Gardner, Vice-Chairman Kentucky Public Service Commission

"With the Kentucky energy outlook so volatile, it is critical that energy efficiency is a significant part of the decision making. Emerging demand-side management programs should help to encourage this to happen."



# Energy Management Where are we now?

### District Ranking by 2013 Energy Utilization Index (EUI)

		2010	2013			2010	2013			2010	2013			2010	2013
Rank	District	EUI	EUI	Rank	District	EUI	EUI	Rank	District	EUI	EUI	Rank	District	EUI	EUI
1	Butler	42.8	35.2	42	Carlisle	46.9	49.9	83	Boyle	65.9	57.1	124	Letcher	62.9	64.9
2	Corbin	E1 6	26.2	/12	Allen	571	50.0	9/	Raceland- Worthington	67.0	572	175	Pike County	516	65.2
2		51.0	20.7	45	Magoffin	57.1	50.0	04 95	Powan	07.0	57.5	125	Johnson	70 2	65.2
3	Robertson	44.0	39.7	44	Barron	10.7	50.1	86	Dinovillo	72.5	57.5	120	Caverna	70.Z	65.0
4	Casov	114.5	40.2	45	Triga	49.0	50.1	00 97	Woodford	54./	57.4	12/	Rollard	04.2	66.2
5	Anderson	49.5	40.5	40	Pussellville	52 E	50.2	99	Madison	65.5 E6.4	57.5	120	Washington	00.1 02 E	66.4
7	Owen	62.5	40.8	47	Southgate	17.2	50.5	200	Cloverport	72.7	57.5	120	Marshall	70.0	66.5
, 8	Scott	52.2	41.5	40	Glasgow	62.6	50.0	90	Clark	74.7	58.0	130	Hickman	61.9	67.0
9	Murray	47.2	42.1	50	Estill	53.4	51.1	91	Monroe	48.6	58.3	132	Laurel	64.0	67.0
10	Oldham	45.7	42.2	51	Paintsville	53.4	51.1	92	Webster	75.5	58.6	132	Carroll	82.9	67.2
11	Monticello	58.0	43.0	52	Russell	70.3	51.1	93	Harrison	75.5	59.0	134	Union	69.1	67.2
12	Hardin	54.3	43.7	53		55.6	51.5	94	Clav	65.4	59.2	135	Boone	74.0	67.3
13	Bullitt	53.7	43.7	54	Frankfort	80.7	51.5	95	Flliott	48.8	59.6	136	Montgomery	70.2	67.7
14	Warren	50.7	44.0	55	Garrard	51 5	51.8	96	Perry	67.0	59.9	137	Berea	75.7	67.8
15	Burgin	60.5	44.5	56	Lawrence	68.6	52.0	97	Menifee	90.4	60.0	138	Campbell	70.2	67.9
16	Gravson	60.0	44.6	57	Paris	59.6	52.3	98	lenkins	67.6	60.1	139	Bell	104.3	68.5
17	Nicholas	44.5	45.0	58	Pulaski	52.4	52.4	99	Owenshoro	70.1	60.4	140	Danville	64.6	68.8
18	Taylor	64.7	45.5	59	Spencer	63.1	52.5	100	Henry	67.7	60.4	141	Muhlenberg	68.5	68.9
19	Wolfe	36.3	45.6	60	Marion	60.3	52.5	101	Mercer	78.3	60.5	142	McCracken	62.7	69.4
20	Jessamine	50.3	45.9	61	Boyd	81.2	52.5	102	West Point	DNR	60.5	143	Morgan	116.8	69.9
21	Gallatin	60.0	46.1	62	Campbellsville	76.4	52.6	103	Hazard	87.2	60.6	144	Pikeville	81.9	70.6
22	Trimble	52.3	46.2	63	Caldwell	60.7	52.8	104	Breckinridge	71.2	60.8	145	Simpson	73.6	71.4
23	Dawson Springs	61.0	46.7	64	Metcalfe	60.9	52.8	105	Bardstown	62.8	60.9	146	Anchorage	73.8	71.5
24	Clinton	53.5	46.8	65	Nelson	53.0	53.0	106	Fulton Co.	63.7	61.1	147	Hopkins	71.7	71.8
25	Fleming	69.8	47.0	66	Bracken	55.0	53.1	107	LaRue	55.1	61.7	148	Bellevue	68.4	72.0
26	Wayne	64.2	47.1	67	Edmonson	58.7	53.3	108	Bourbon	65.0	61.8	149	Henderson	74.1	72.2
27	, Erlanger	56.9	47.1	68	Russell	80.5	53.4	109	<b>Bowling Green</b>	73.6	61.8	150	Covington Ind.	80.5	72.5
28	Science Hill	56.5	48.1	69	Cumberland	71.1	53.5	110	Franklin	87.3	62.3	151	Beechwood	62.6	73.2
29	Jackson Co	57.4	48.3	70	Whitley	57.7	53.6	111	Grant	70.7	62.3	152	Hart	73.5	73.2
30	McLean	45.9	48.4	71	Lee	78.3	53.8	112	Mason	57.9	62.5	153	Fayette	78.2	73.9
31	Crittenden	57.1	48.5	72	Kenton	64.9	54.2	113	Ashland	75.1	62.6	154	Barbourville	76.8	74.7
32	Williamstown	63.3	48.6	73	Livingston	56.9	54.2	114	Jefferson	68.2	62.6	155	Bath	87.8	74.9
33	Lyon	53.7	48.6	74	Williamsburg	54.9	54.5	115	Dayton	67.4	62.8	156	Middlesboro	60.9	76.7
34	Meade	48.7	48.9	75	Silver Grove	69.2	54.6	116	Mayfield	43.6	62.9	157	Somerset	89.8	77.1
35	Martin	64.0	49.1	76	Lincoln	70.7	55.0	117	Eminence	85.3	63.2	158	Ft. Thomas	72.2	77.7
36	Floyd	52.0	49.1	77	Carter	59.3	55.2	118	Lewis	70.4	63.3	159	Breathitt	64.0	79.6
37	Pendleton	55.9	49.2	78	Logan	54.5	55.2	119	Knott	DNR	64.0	160	Powell	97.0	82.8
38	Shelby	71.6	49.2	79	Christian	70.1	55.4	120	Graves	60.2	64.2	161	Green	88.2	87.6
39	Hancock	57.8	49.5	80	Кпох	64.8	55.8	121	Elizabethtown	72.9	64.3	162	McCreary	94.8	89.0
40	Daviess	53.9	49.5	81	Calloway	56.2	56.4	122	Adair	71.1	64.7	163	East Bernstadt	88.7	89.7
41	Newport	76.1	49.9	82	Rockcastle	59.9	56.7	123	Ludlow	107.9	64.9	164	Jackson Ind	117.6	118.6



# **Cumulative Monetary Savings**

#### **SAVINGS TO DATE**



Cumulative Savings To Date							
Actions Taken	FY2012-13	Cumulative FY2010-13					
Consumption	\$ 12,900,000	\$ 25,500,000					
Rate Correction	\$ 1,480,000	\$ 4,230,000					
Utility Case Intervention	\$ 350,000	\$ 1,680,000					
Rebates & Refunds		\$ 1,420,000					
Total	\$ 14,730,000	\$ 32,830,000					

# **Utility Rate Update**

# Utility Rate Update

- Tariff Access
- DUKE Rate EH
- LGE-KU Grandfathered
   Service
- Minimum Bills

# Access to Rates psc.ky.gov







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				Duke Energy Kentucky			
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				Fleming-Mason RECC			
				Grayson RECC			
-				Inter-County RECC			
				Jackson Energy Coop. Corp			
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# DUKE Rate EH Optional Space Heating Rate

- Schools with one point of delivery
- Permanently connected service
- Primary source of heating or heating and cooling

# DUKE DS vs EH Loads < 500 KW

Service Charge	\$15
Energy: 1 <sup>st</sup> 6,000 Kwh	\$.085274
Energy: Next 300 Kwh/kw	\$.053748
Demand KW	\$7.75

DS

Service Charge	\$7.50
Energy Kwh	\$.0065153

EH

For service October thru May

## LGE-KU Grandfathered Service

• Customers @ February 6, 2009

• Rates AES, GS, PS & TOD

# KU PS vs TODS Loads > 250 KW

PS
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#### TODS

Service Charge	\$90
Energy Kwh	\$.03564
Summer KW	\$15.30
Winter KW	\$13.20

Service Charge	\$200
Energy Kwh	\$.03773
Peak KW	\$4.55
Intermediate KW	\$2.94
Base KW	\$3.62

# LGE PS vs TODS Loads > 250 KW

PS
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#### TODS

Service Charge	\$90
Energy Kwh	\$.04060
Summer KW	\$16.40
Winter KW	\$14.01

Service Charge	\$200
Energy Kwh	\$.03990
Peak KW	\$6.11
Intermediate KW	\$4.51
Base KW	\$4.00

# Bluegrass

	0 - 100 Kw	<100 Kw TOD	101-500 Kw	>500 Kw
Schedule	SC-1	SC-2	LP-1	LP-2
Customer	\$27.79	\$35.00	\$55.57	\$111.14
Energy	\$.08384		\$.05608	\$.04994
On-Peak		\$.12650		
Off-Peak		\$.07000		
Demand	\$7.78		\$8.34	\$8.34

# Clark

	1 Ø < 50 Kw Public	<50 Kw	>50 - <500 Kw	>500 Kw
	E	С	L	Р
Customer	\$16.257	\$50.14	\$63.81	\$86.88
Energy	\$.09937	\$.09885	\$.07132	\$.06116
Demand			\$6.47	\$6.21

# Fleming Mason

	<25 Kva	30-112.5 Kva	>112.5 Kva	All Electric
Schedule	RSP	SGS	LGS	AES
Customer	\$15.00	\$49.23	\$65.51	\$64.88
Energy		\$.06516	\$.05381	\$.08286
<u>&lt;</u> 300	\$.06681			
301-500	\$.07681			
>500	\$.10681			
Demand		\$7.41	\$6.93	

# Inter-County

	<50 Kw	>50 Kw	AES
	2	4	5
Customer	\$6.28	\$12.54	
Energy	\$.08938	\$.07534	\$.07793
Demand	\$4.54	\$4.54	

## Owen

	<50 Kw	<50 Kw TOD	> 50 Kw	>50 Kw TOD	>500 Kw
Schedule	I	1-C	П	2-A	LP-2
Customer	\$21.12	\$24.51	\$21.31	\$61.33	\$111.14
Energy	\$.08846		\$.06498		\$.04994
On-Peak		\$.10413		\$.10345	
Off-Peak		\$.06026		\$.06002	
Demand			\$6.13	\$8.34	\$8.34

# Shelby

	<50 Kw	>50 Kw	TODS >200 Kw
	11	2	22
Customer	\$33.88	\$52.18	\$45.92
Energy	\$.09020	\$.06435	
1 <sup>st</sup> 100 Kwh per Kw			\$.07322
Next 100 Kwh per Kw			\$.06682
> 200 Kwh per Kw			\$.06044
Demand		\$5.17	\$5.17

# Minimum Bill Charges

# **Typical Bill**

Service Charge	\$90 per month
Energy Charge	\$.04060 per Kwh
Demand Charge	\$16.40 per KW
DSM	@ \$.0003 per Kwh
Environmental Surcharge	@ 7.1 %
Fuel Adjustment	@\$.0035 per Kwh
School Tax	@ 3 %
Franchise	@.55 %

# Minimum Charges

- DUKE Rate DS & DT billing demand > 85 % of highest monthly KW prior 11 months
- LGE/KU Billing Demand (KW)

PS		TODS	5	
	Peak	Inter	Base	
<u>Greater of:</u>	<u>Greater of:</u>		<u>of:</u>	
50 KW	n/a	n/a	250 KW	
50 % Prior 11 Months			75 % Prior 11 Months	
60 % Contract Capacity	n/a	n/a	75 % Contract Capacity	

# Minimum Charges

- BLUEGRASS
  - As specified in service contract
- CLARK
  - \$.75 per KVA of transformer capacity
  - As specified in service contract
- SHELBY
  - \$1.00 per KVA of transformer capacity
  - As specified in service contract

#### ELECTRIC CHARGES

Cont	tract 195708	
Rate	Type: Time-c	of-Day Secondary Service
\$	200.00	Basic Service Charge
\$	3,264.40	Energy Charge (\$0.03773 x 86,520 kWh)
\$	785.40	Peak Demand Charge (\$4.25 x 184.8 kW)
\$	19.13	87.85% Peak PF Adjusted to 90.00% (\$4.25 x 4.5 kW)
\$	496.08	Intermediate Demand Charge (x 187.2 kW)
\$	11.93	87.88% Intermed PF Adjusto 90.00% (\$2.65 x 4.5 kW)
\$	830.00	Base Demand Minimum Applied (\$3.32 x 250.0 kW)
\$	41.53	Electric DSM (\$0.00048 x 86,520 kWh)
\$	231.57	Environmental Surcharge (7.36% x (\$5,648.47 - \$2,502.16))
\$	244.85	Fuel Adjustment (\$0.00283 x 86,520 kWh)
\$	183.75	Rate Increase For School Tax (3.00% x \$6,124.89)
\$	33.69	Franchise Fee-Carrollton (0.55% x \$6,124.89)
\$	6,342.33	Total Charges Contract 195708

# **Rate Comparison Model**

## **Rate Comparison**

RATE COMPARISON TEMPLATE Rates current as of 12/31/2013

Energy 0.0 Off Pea 90.00 90.00 90.00 90.00 90.00 90.00 90.00 90.00 90.00 90.00 90.00 TOTAL July August September October November December January February March April May June \$90.0 \$1,080. \$90. \$90 \$90.0 \$90. \$90.0 COMPARISON \$2,400. Base Charge General Service Single-Phase Service Charge Energy Charge \$20.00 \$0.09225 \$20.00 \$0.00 \$20.00 \$0.00 \$20.00 \$0.00 \$20.00 \$20.00 \$0.00 \$20.00 \$20.00 \$0.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$0.00 \$20.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 TOTAL \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 General Service Three-Phase Service Charge Energy Charge \$35.00 \$0.09225 \$35.00 \$35.00 \$35.00 \$35.00 \$25.00 \$25.00 \$25.00 \$35.00 \$35.00 \$25.00 \$35.00 \$35.00 \$0.00 \$0.00 \$35.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$35.00 \$0.00 \$0.00 \$0.00 \$0.00 \$420.00 TOTAL \$25.00 \$25.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$25.00 All Electric Schoo Single-Phase \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 Service Charge \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 Energy Charge \$0.07400 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$240.00 TOTAL \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 \$20.00 All Electric Schoo Three-Phase \$35.00 \$0.07400 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 Service Charge \$35.00 \$35.00 \$420.00 Energy Charge \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$420.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 \$35.00 TOTAL Power Service Primary Service Charge \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$2,040.00 Energy Charge \$0.0356 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Demand Charge (May through September \$15.2 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Demand Charge (October through April) \$13.18 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 PE Penalty \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 TOTAL \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 \$170.00 Power Service Secondary Service Charge \$90.00 \$0.03564 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$1,080.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 Energy Charge \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Demand Charge (May through September) \$15.30 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Demand Charge (October through April) \$13.20 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 . PF Penalty \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.080.00 TOTAL: \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 \$90.00 Time of Day Service Primary \$300.00 \$0.03765 \$4.26 \$2.76 \$1.71 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$3,600.00 Service Charge \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 Energy Charge Peak Demand \$0.00 Intermediate Demand \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Base Demand \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 PF Penalty \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$3.600.00 TOTAL: \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 \$300.00 Time of Day Service \$200.00 \$0.03773 \$4.55 \$2.95 \$3.62 Service Charge \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$2,400.00 \$0.00000 Energy Charge \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00000 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Peak Demand \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ntermediate De \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Base Demand \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 PF Penalty \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 TOTAL \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00 \$200.00

# **Power Factor**

# Power Components

- **Real power** (kW) the work-producing power that is used to actually run the equipment
- Reactive power (kVAr) the non-work producing power that is required to magnetize and start up equipment
- Apparent power (kVA) the combination of real power and reactive power

## **Power Triangle**



# **Three Basic Circuits or Loads**

- Resistive
- Inductive
- Capacitive
- Or any combination
  - -Resistive Inductive
  - -Inductive Capacitive
  - -Resistive Capacitive
  - -Resistive Inductive Capacitive

# Load Examples

• Resistive: Incandescent Lamp - Resistance heat

Inductive: Motors –Contactor Coils –Relays (coils)
 Ballasts

• Capacitive: Start & Run Capacitors – Power Factor Correction Capacitors

## **Power Factor**

**Unity Power Factor** 

#### **Less Than Unity Power Factor**





# Why Utility Power Factor Penalty

#### Low power factor increases cost to serve



 Extra generation & transmission capacity



#### - Distribution Capacitors



# **Power Factor Penalty**

- Power factor > to 90% <u>No Penalty</u>
- Less than 90%: Billing demand in KW = KVA times 0.90.
- Power factor Determination:
  - a. Continuous measurement
  - b. Testing

# Benefits Of Improving Power Factor

- Your utility bill will be smaller
   No PF (reactive power) penalty
- Your circuit capacity increases
  - Reduce power losses
  - Reduce overheating and premature failure of motors and other inductive equipment.

# Power Factor Penalty Example

- Real Power = 500 kW
- Apparent Power = 625 kVA
- **Power Factor** = 500 kW/625 kVA = 0.80 = **80%**
- Billable kW @ 90 % = 90/90 X \$14 X 500kW = \$7,000
- <u>Billable kW @ 80 %= 90/80 X \$14 X 500 kW = \$7,875</u>
- Reactive Power charge = \$7,875 X \$7,000 = **\$875**

#### ELECTRIC CHARGES

Con	tract 195708	
Rate	Type: Time-o	of-Day Secondary Service
\$	200.00	Basic Service Charge
\$	3,264.40	Energy Char
\$	785.40	Peak nd Charge (\$4.25 x 184.8 kW)
\$	19.13	87.85% Peak PF Adjusted to 90.00% (\$4.25 x 4.5 kW)
\$	496.08	Intermediate Demand Charge (\$2.65 x 187.2 kW)
\$	11.93	87.88% Intermed PF Adjusted to 90.00% (\$2.65 x 4.5 kW)
\$	830.00	Base Demand Minimum Applied (\$3.32 x 250.0 kW)
\$	41.53	Electric DSM (\$0.00048 x 86,520 kWh)
\$	231.57	Environmental Surcharge (7.36% x (\$5,648.47 - \$2,502.16))
\$	244.85	Fuel Adjustment (\$0.00283 x 86,520 kWh)
\$	183.75	Rate Increase For School Tax (3.00% x \$6,124.89)
\$	33.69	Franchise Fee-Carrollton (0.55% x \$6,124.89)
\$	6,342.33	Total Charges Contract 195708

# **Power Factor Expenditure Analysis**

- Consult KDE Facility Branch
- Confirm existing PF consistently  $\leq$  90 percent
- Third-party engineering/financial analysis
  - Power losses for each facility
  - Claimed power loss savings
  - Payback period.
- Require detail proof and support for claimed savings
- Require detail example of post installation performance calculations

#### **Natural Gas Pricing**



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# CURRENT FUNDING FY 2014 - FY 2016

- > \$700,000 State (TVA Mitigation) Grant
  - FY2014 & FY2015: 50% Salary Match
- > \$1,450,000 LGE-KU Program
  - FY2014: 50 % Salary Match
  - FY2015: 25 % Salary Match
- Pending \$400,000 AEP-KP Program
  - FY2015: 50 % Salary Match
  - FY2016: 50 % Salary Match





## Dr. Len Peters, Secretary Energy and Environment Cabinet

![](_page_46_Picture_1.jpeg)

-School district administrators have been faced with increasingly tough challenges! Among the most serious is how to deliver quality education with reduces budgets. In the past few years, school energy managers have proven to be a valuable resource to school districts across the Commonwealth. They have shown how energy efficiency is an effective tool to save precious dollars that can be returned to the classroom."

# STATUTORY REQUIREMENTS

### KRS 160.325 – School Energy Management

- Develop & Implement Energy Management Plan
- Annual Report to Board & Legislative Research Commission

### **KRS 157.455 – Highly Efficient Buildings**

- Meet or Exceed Efficiency Standards
- Use Life-Cycle Analysis in Proposal Evaluation
- Consider Net-Zero Construction

# BOARD POLICY 05.23

## > District Level Committee

- Develop & Implement Energy Management
   Plan
- Track & Monitor Progress Managing & Reducing Costs

### Superintendent Annually Reports to DEDI & LRC

### Year-end Report to Board

# **Energy Management Process**

![](_page_49_Figure_1.jpeg)