

# Let's Save Energy



## School Energy Managers Project



December 2013

## Energy Management Report for Fiscal Year 2012-13

On December 2, a report compiled by KSBA-SEMP was given to the Legislative Research Commission and the Energy and Environment Cabinet to fulfill the annual reporting requirements of KRS160.325.

With staffing and funding changes which have occurred at the Kentucky Energy Efficiency Program for Schools (KEEPS), this year's energy management report was collated and analyzed by the School Energy Management Project at the Kentucky School Boards Association.

This year's process was initiated by a letter from Energy and Environment Cabinet Secretary, Dr. Len Peter's, to school superintendents on August 30, 2013 requesting districts to submit their fiscal year 2012-13 Energy Management Report. The form asked for district specific information of square footage of conditioned buildings, and a compilation of energy usage and costs by energy sources.

The key indicator for measuring performance is called the Energy Use Intensity, EUI. It is calculated by dividing the total energy, measured in kilo British thermal units (kBtu), by the total square foot area (sf). The statewide EUI has fallen from 64.2 kBtu/sf/yr in the base year (2009-10) to 58.6 kBtu/sf/yr in the most recent completed fiscal year of 2012-13. The corresponding cumulative avoided cost for the same time period from consumption

reduction, rate corrections, rebates, refunds, and utility case intervention is nearly \$32 million.

Overall observations and conclusions for the reporting districts:

- The conditioned square footage has increased 3.6%.
- The total energy use has decreased 7.2%. This decrease can be attributed to better, new, and renovated spaces

*(Continued on page 2)*

### Butler County School District Top Energy Performer. . . AGAIN



*BCSD Energy Manager Jim Arnold devotes time each day to monitoring the districts building automation systems. Also being the Chief Information Officer, this requires a balance of responsibilities, however he continues to reduce energy consumption and assist his district in being the top energy performer in Kentucky.*

(continued from page 1) using efficient energy design as envisioned by KRS157.455 along with overall better building energy management as envisioned by KRS160.325.

- The overall cost of energy has remained relatively flat, only increasing 0.1%. This can be attributed to several factors including: selection of advantageous

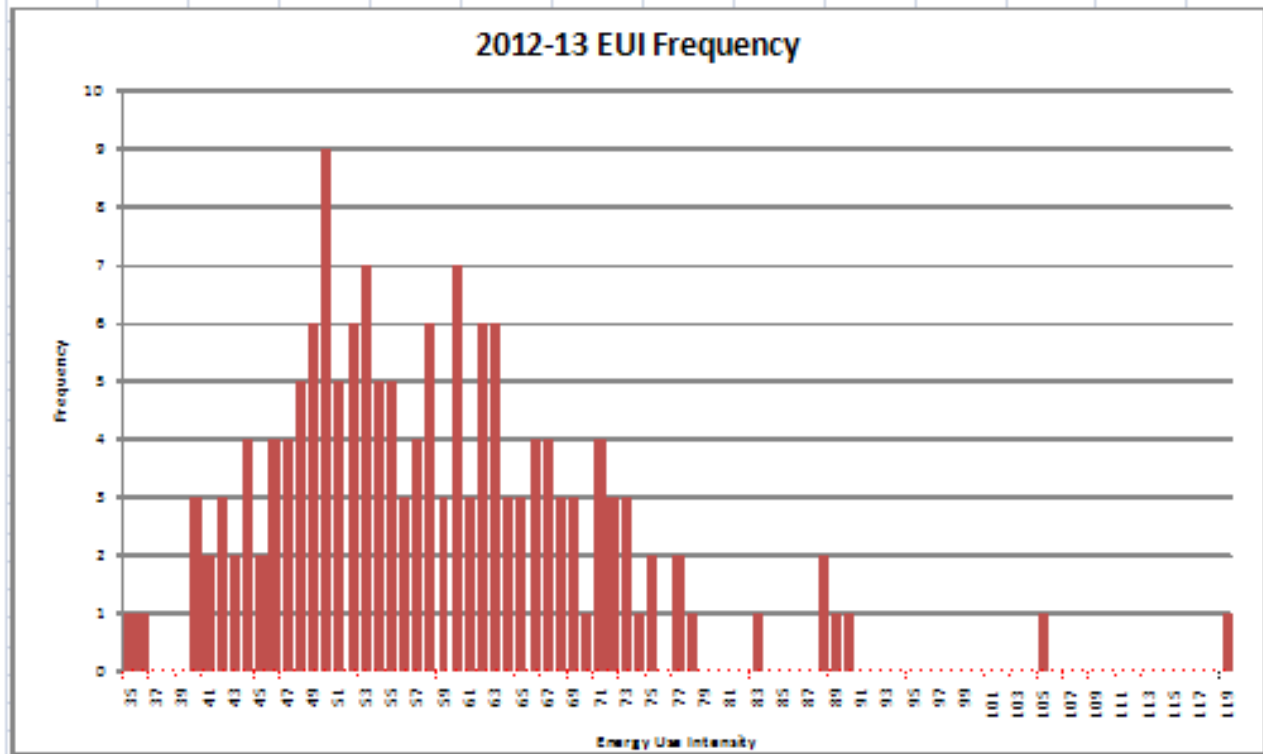
rate structures; aggregated natural gas purchasing; all the while rising electric costs being partially offset by falling natural gas costs.

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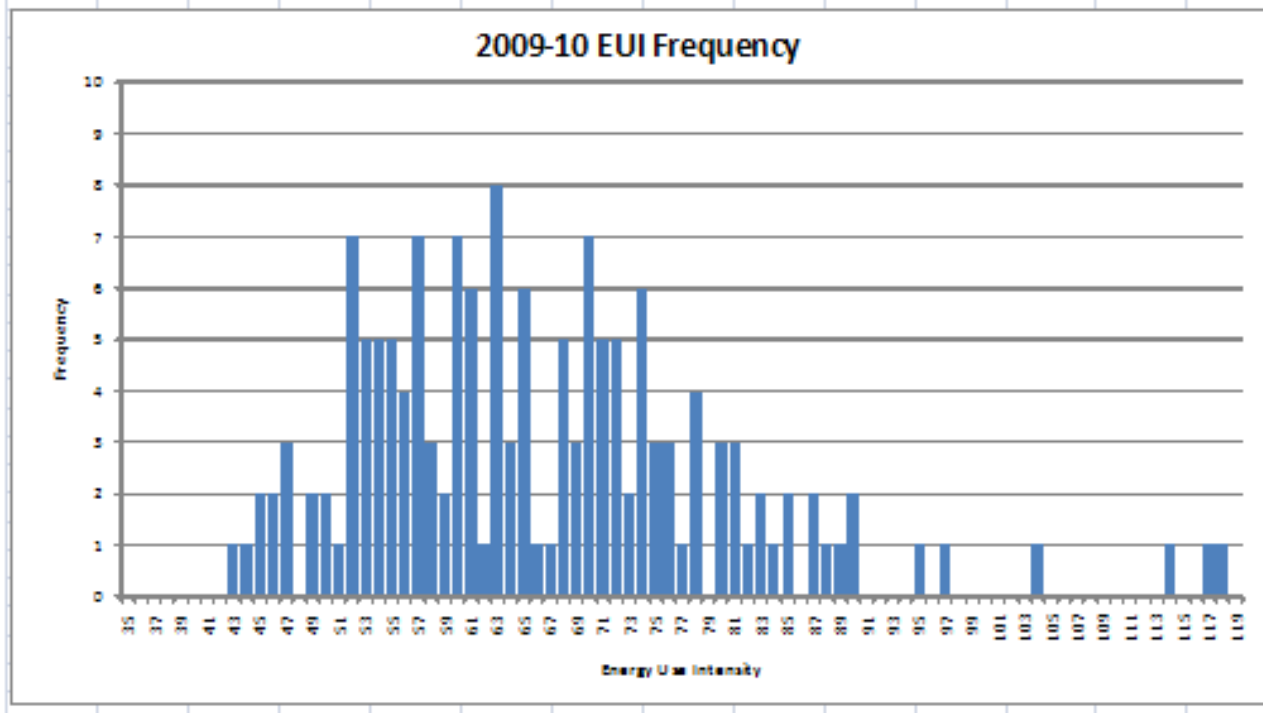
**Table 1 shows the statewide energy costs, energy usage and square footage** for both the base year and the recent fiscal year. It also summarizes the energy usage and costs for each energy source as well as the statewide average price and price range. The above data is from 160 districts reporting for FY2012-13. For districts not reporting in the base year (FY2009-10) the base and current reporting years were assumed to be the same. The data has not been weather normalized.

<b>TABLE 1</b>						
<b>Comparisons</b>	<b>FY 2012-13</b>	<b>FY2009-10 (base)</b>				
<b>Energy Usage &amp; Costs</b>						
Total Statewide Energy Cost, \$	\$ 125,080,228	\$ 125,010,576				
Total Statewide Energy Usage, MMBTU	5,954,123	6,414,709				
<b>Square Footage</b>						
Average Energy Use Intensity (EUI), kBtu/sq ft	58.56	64.16				
EUI Standard Deviation	12.26	14.3				
Operating Cost, \$/sq ft	\$ 1.24	\$ 1.29				
Electricity Usage Statewide, kwh	1,195,313,485	1,256,737,035				
Electricity Cost Statewide, \$	\$ 110,231,823	\$ 106,367,453				
Electricity Rate Statewide Average, \$/kwh	\$ 0.092	\$ 0.085				
Electricity Rate Statewide Low, \$/kwh	\$ 0.04	\$ 0.03				
Electricity Rate Statewide High, \$/kwh	\$ 0.14	\$ 0.12				
Natural Gas Usage Statewide, ccf	17,314,799	19,497,158				
Natural Gas Cost Statewide, \$	\$ 13,344,220	\$ 16,991,610				
Natural Gas Rate Statewide Average, \$/ccf	\$ 0.77	\$ 0.87				
Natural Gas Rate Statewide Low, \$/ccf	\$ 0.59	\$ 0.68				
Natural Gas Rate Statewide High, \$/ccf	\$ 2.21	\$ 2.12				
Propane Usage Statewide, gal	547,610	537,505				
Propane Cost Statewide, \$	\$ 871,059	\$ 812,942				
Propane Rate Statewide Average, \$/gal	\$ 1.59	\$ 1.51				
Propane Rate Statewide Low, \$/gal	\$ 1.17	\$ 0.98				
Propane Rate Statewide High, \$/gal	\$ 2.90	\$ 3.64				
Fuel Oil Usage Statewide, gal	154,006	288,948				
Fuel Oil Cost Statewide, \$	\$ 514,351	\$ 670,407				
Fuel Oil Rate Statewide Average, \$/gal	\$ 3.34	\$ 2.32				
Fuel Oil Rate Statewide Low, \$/gal	\$ 2.87	\$ 2.05				
Fuel Oil Rate Statewide High, \$/gal	\$ 3.69	\$ 2.48				
Coal Usage Statewide, tons	896	1,241				
Coal Cost Statewide, \$	\$ 118,775	\$ 168,164				
Coal Rate Statewide Average, \$/ton	\$ 142.11	\$ 135.54				
Coal Rate Statewide Low, \$/ton	\$ 129.55	\$ 130.56				
Coal Rate Statewide High, \$/ton	\$ 159.00	\$ 145.01				

**FIGURE 1**



**FIGURE 2**



**Figures 1 and 2 show the distribution of district EUI values compared between the base fiscal year 2009-10 and the most recent fiscal year 2012-13. Comparisons of these figures show a lowering of the overall average and a tightening of the distribution.**

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

Rank	District	2010 EUI	2013 EUI	Rank	District	2010 EUI	2013 EUI	Rank	District	2010 EUI	2013 EUI	Rank	District	2010 EUI	2013 EUI
1	Butler	42.8	35.2	41	Newport	44.5	49.9	81	Calloway	56.2	56.4	121	Letcher	62.9	64.9
2	Corbin	51.6	36.3	42	Carlisle	46.9	49.9	82	Rockcastle	59.9	56.7	122	Johnson	78.2	65.5
3	Walton-Verona	44.6	39.7	43	Allen	57.1	50.0	83	Boyle	65.9	57.1	123	Caverna	84.2	65.9
4	Robertson	114.5	40.2	44	Magoffin	64.0	50.1	84	Raceland-Worthington	67.0	57.3	124	Ballard	80.1	66.3
5	Casey	49.5	40.3	45	Barren	49.8	50.1	85	Rowan	72.3	57.3	125	Washington	83.5	66.4
6	Anderson	52.3	40.8	46	Trigg	60.2	50.2	86	Pineville	54.7	57.4	126	Marshall	70.9	66.5
7	Owen	62.5	41.3	47	Russellville	52.5	50.3	87	Woodford	63.5	57.5	127	Hickman	67.6	67.0
8	Scott	53.3	42.1	48	Southgate	47.2	50.6	88	Madison	56.4	57.9	128	Laurel	DNR	67.0
9	Murray	47.2	42.2	49	Glasgow	62.6	50.7	89	Cloverport	72.7	58.0	129	Carroll	82.9	67.2
10	Oldham	45.7	42.3	50	Estill	53.4	51.1	90	Clark	74.7	58.3	130	Union	69.1	67.2
11	Monticello	58.0	43.0	51	Paintsville	53.3	51.1	91	Monroe	48.6	58.3	131	Boone	74.0	67.3
12	Hardin	54.3	43.7	52	Russell	70.3	51.1	92	Webster	75.5	58.6	132	Montgomery	70.2	67.7
13	Bullitt	53.7	43.7	53	Augusta	55.6	51.5	93	Harrison	61.9	59.1	133	Berea	75.7	67.8
14	Warren	50.7	44.0	54	Frankfort	80.7	51.5	94	Clay	65.4	59.2	134	Campbell	70.2	67.9
15	Burgin	60.5	44.5	55	Garrard	51.5	51.8	95	Elliott	DNR	59.6	135	Bell	104.3	68.5
16	Grayson	60.0	44.6	56	Lawrence	68.6	52.0	96	Menifee	90.4	60.0	136	Danville	64.6	68.8
17	Nicholas	80.7	45.0	57	Paris	59.6	52.3	97	Jenkins	0.0	60.1	137	Muhlenberg	68.5	68.9
18	Taylor	64.7	45.5	58	Pulaski	52.4	52.4	98	Owensboro	70.1	60.4	138	McCracken	62.7	69.4
19	Wolfe	DNR	45.6	59	Spencer	DNR	52.5	99	Henry	67.7	60.4	139	Morgan	116.8	69.9
20	Jessamine	50.3	45.9	60	Marion	60.3	52.5	100	Mercer	78.3	60.5	140	Pikeville	81.9	70.6
21	Gallatin	60.0	46.1	61	Boyd	81.2	52.5	101	West Point	DNR	60.5	141	Simpson	73.6	71.4
22	Trimble	52.3	46.2	62	Campbellsville	76.4	52.6	102	Hazard	87.2	60.6	142	Anchorage	73.8	71.5
23	Dawson Springs	61.0	46.7	63	Caldwell	60.7	52.8	103	Breckinridge	71.2	60.8	143	Hopkins	71.7	71.8
24	Clinton	53.5	46.8	64	Metcalfe	60.9	52.8	104	Bardstown	62.8	60.9	144	Bellevue	68.4	72.0
25	Fleming	69.8	47.0	65	Nelson	53.0	53.0	105	LaRue	55.1	61.7	145	Henderson	74.1	72.2
26	Wayne	64.2	47.1	66	Bracken	55.0	53.1	106	Bourbon	65.0	61.8	146	Covington Ind.	80.5	72.5
27	Erlanger	56.9	47.1	67	Edmonson	58.7	53.3	107	Bowling Green	73.6	61.8	147	Beechwood	62.6	73.2
28	Science Hill	56.5	48.1	68	Russell	80.5	53.4	108	Franklin	87.3	62.3	148	Hart	73.5	73.2
29	Jackson Co	57.4	48.3	69	Cumberland	71.1	53.5	109	Grant	70.7	62.3	149	Fayette	78.2	73.9
30	McLean	45.9	48.4	70	Whitley	57.7	53.6	110	Mason	57.9	62.5	150	Barbourville	76.8	74.7
31	Crittenden	57.1	48.5	71	Lee	78.3	53.8	111	Ashland	75.1	62.6	151	Bath	71.8	74.9
32	Williamstown	63.3	48.6	72	Kenton	64.9	54.2	112	Jefferson	68.2	62.6	152	Middlesboro	DNR	76.7
33	Lyon	53.7	48.6	73	Livingston	56.9	54.2	113	Dayton	67.4	62.8	153	Somerset	89.8	77.1
34	Meade	48.7	48.9	74	Williamsburg	54.9	54.5	114	Mayfield	60.9	62.9	154	Ft. Thomas	72.2	77.7
35	Martin	DNR	49.1	75	Silver Grove	69.2	54.6	115	Eminence	85.3	63.2	155	Breathitt	64.0	79.6
36	Floyd	52.0	49.1	76	Lincoln	70.7	55.0	116	Lewis	60.7	63.3	156	Powell	97.0	82.8
37	Pendleton	55.9	49.2	77	Carter	59.3	55.2	117	Knott	DNR	64.0	157	Green	88.2	87.6
38	Shelby	71.6	49.2	78	Logan	54.5	55.2	118	Graves	DNR	64.2	158	McCreary	94.8	89.0
39	Hancock	57.8	49.5	79	Christian	70.1	55.4	119	Elizabethtown	72.9	64.3	159	East Bernstadt	DNR	89.7
40	Daviess	53.9	49.5	80	Knox	57.0	55.8	120	Adair	71.1	64.7	160	Jackson Ind	117.6	118.6