

Energy Management

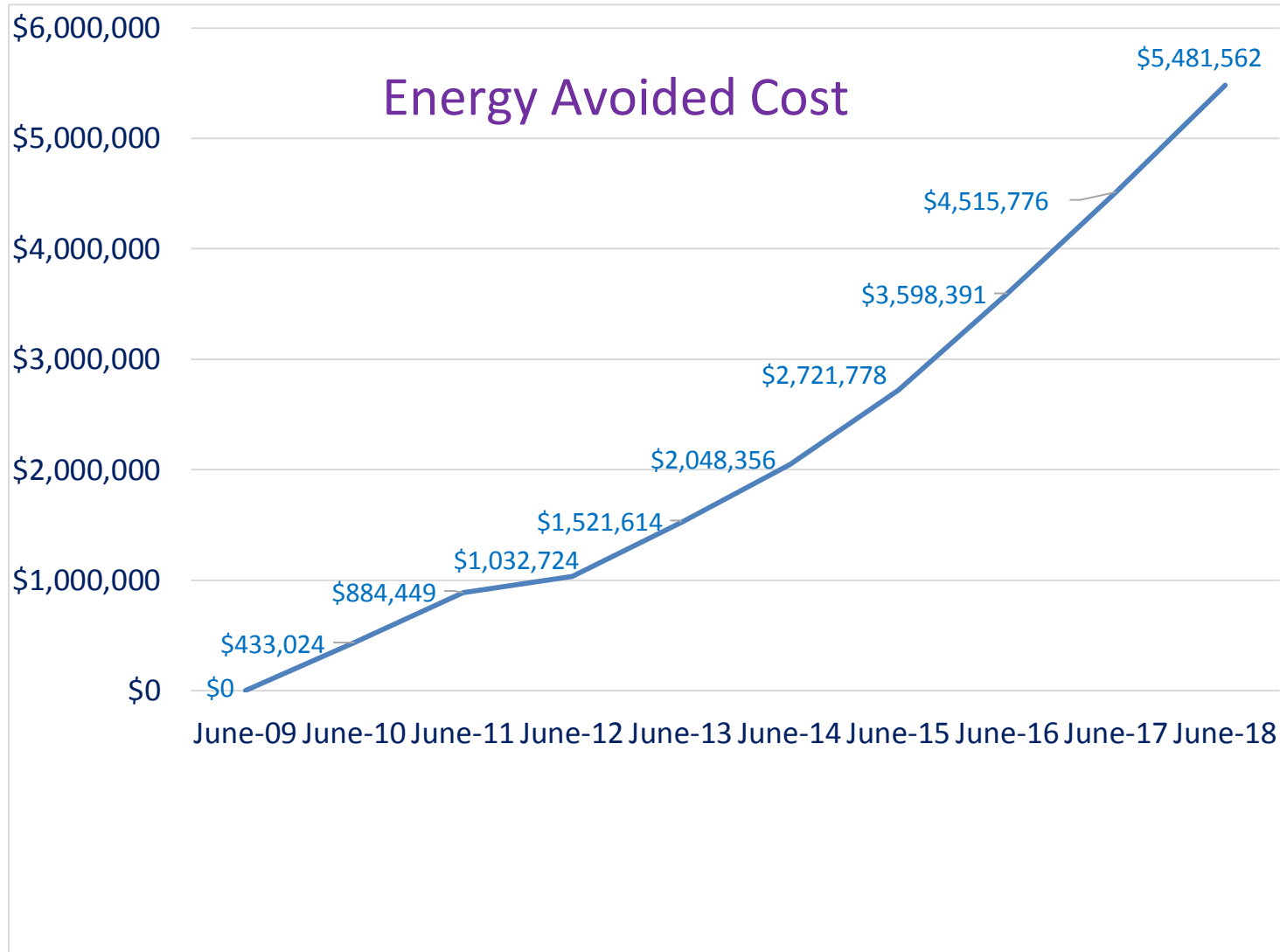
Scott County Schools
2017 – 2018 Review

Agenda

- Latest Energy Management Report
- Energy Star Portfolio Manager Ratings
- Energy Reduction Award Winners
- Energy Star Status
- Energy Management Project Status
- Funds Received from Kentucky Utilities in FY18
- Commercial Demand Conservation Program Status
- Energy Management Goals Status
- Scott County Schools State Ranking

Energy Management Avoided Costs Summary

Project Description	Refunds/Rebates Received	Avoided Costs	Total Avoided Costs
Rate Change Savings Prior Years	\$142,420 (Refunds)	\$1,418,828	\$1,561,248
Rate Change Savings Current Year		\$256,732	\$256,732
Consumption Savings Prior Years		\$2,806,664	\$2,806,664
Consumption Savings Current Year		\$664,183	\$664,183
Energy Projects Prior Years	\$147,555 (Rebates, Credits & Refunds)		\$147,555
Energy Projects Current Year	\$45,180 (Rebates, Credits & Refunds)		\$45,180
Total	\$335,155	\$5,146,407	\$5,481,562



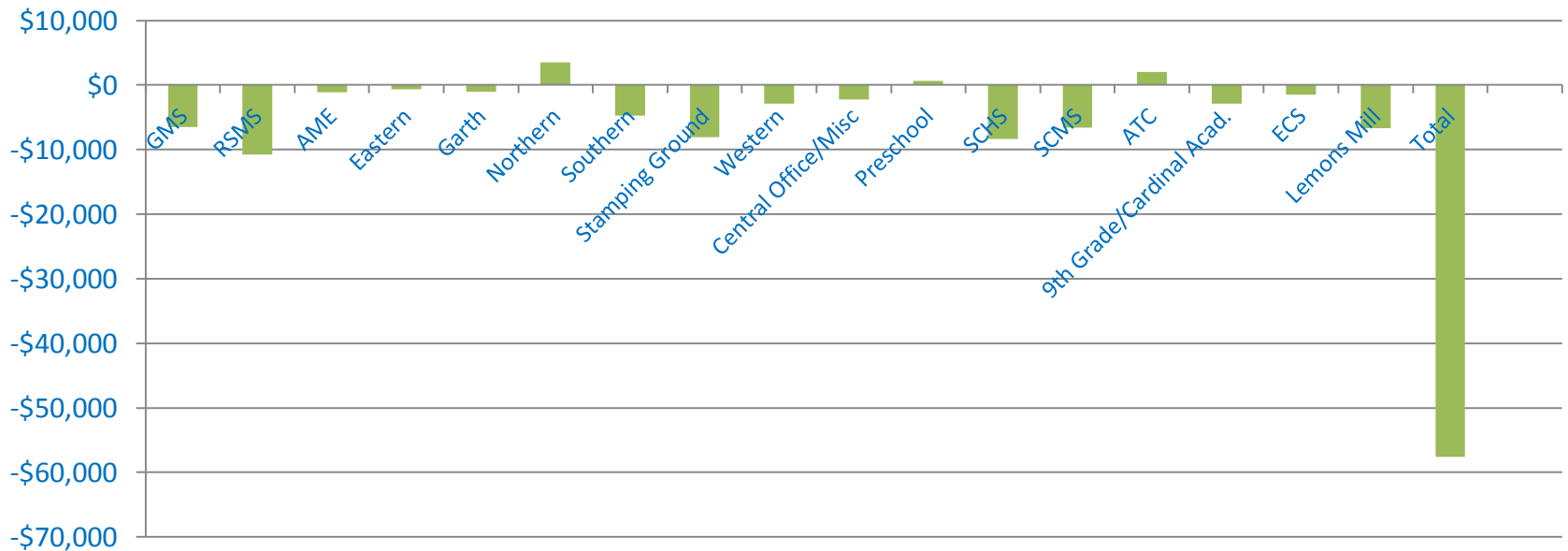


Energy Management Report

June 2018

Preliminary June						2017 - 2018 YTD Results				
School Facility	2017 Actual Kwh	2018 Actual Kwh	% Reduction	Position	\$ Cost Change	2016-17 Actual Kwh	2017-18 Actual Kwh	% Reduction	Overall Position	YTD \$ Cost Change
GMS	54,440	40,040	26.5%	1	-\$1,399	976,440	906,000	7.2%	4	-\$6,534
RSMS	61,880	54,420	12.1%	5	-\$725	1,277,400	1,161,420	9.1%	2	-\$10,759
AME	42,189	40,989	2.8%	9	-\$117	854,664	843,050	1.4%	14	-\$1,077
Eastern	20,547	19,107	7.0%	8	-\$140	466,860	459,849	1.5%	13	-\$650
Garth	40,177	47,176	-17.4%	13	\$680	523,863	512,789	2.1%	12	-\$1,027
Northern	33,200	41,419	-24.8%	15	\$798	485,600	523,948	-7.9%	16	\$3,557
Southern	40,960	36,160	11.7%	6	-\$466	724,480	672,960	7.1%	5	-\$4,779
Stamping Ground	26,720	24,800	7.2%	7	-\$187	488,080	400,560	17.9%	1	-\$8,119
Western	54,800	48,000	12.4%	4	-\$661	881,600	850,800	3.5%	10	-\$2,857
Central Office/Misc	51,605	50,726	1.7%	10	-\$85	656,315	632,747	3.6%	9	-\$2,186
Preschool	17,190	20,230	-17.7%	14	\$295	270,643	277,924	-2.7%	15	\$675
SCHS	161,415	169,348	-4.9%	11	\$771	2,483,012	2,393,473	3.6%	8	-\$8,306
SCMS	64,720	53,520	17.3%	3	-\$1,088	1,050,560	979,760	6.7%	6	-\$6,568
ATC	4,575	6,210	-35.7%	16	\$159	136,260	158,352	-16.2%	17	\$2,049
9th Grade/Cardinal Acad.	32,400	36,960	-14.1%	12	\$443	614,040	583,320	5.0%	7	-\$2,850
ECS	40,400	32,800	18.8%	2	-\$738	569,600	553,600	2.8%	11	-\$1,484
Lemons Mill	26,157	46,019	-75.9%	17	\$1,930	914,819	843,133	7.8%	3	-\$6,650
Total	773,375	767,924	0.7%		-\$530	13,374,236	12,753,685	4.6%		-\$57,565

Electrical Energy Cost Comparison to Last Year July 2017 - June 2018 \$ Cost Change

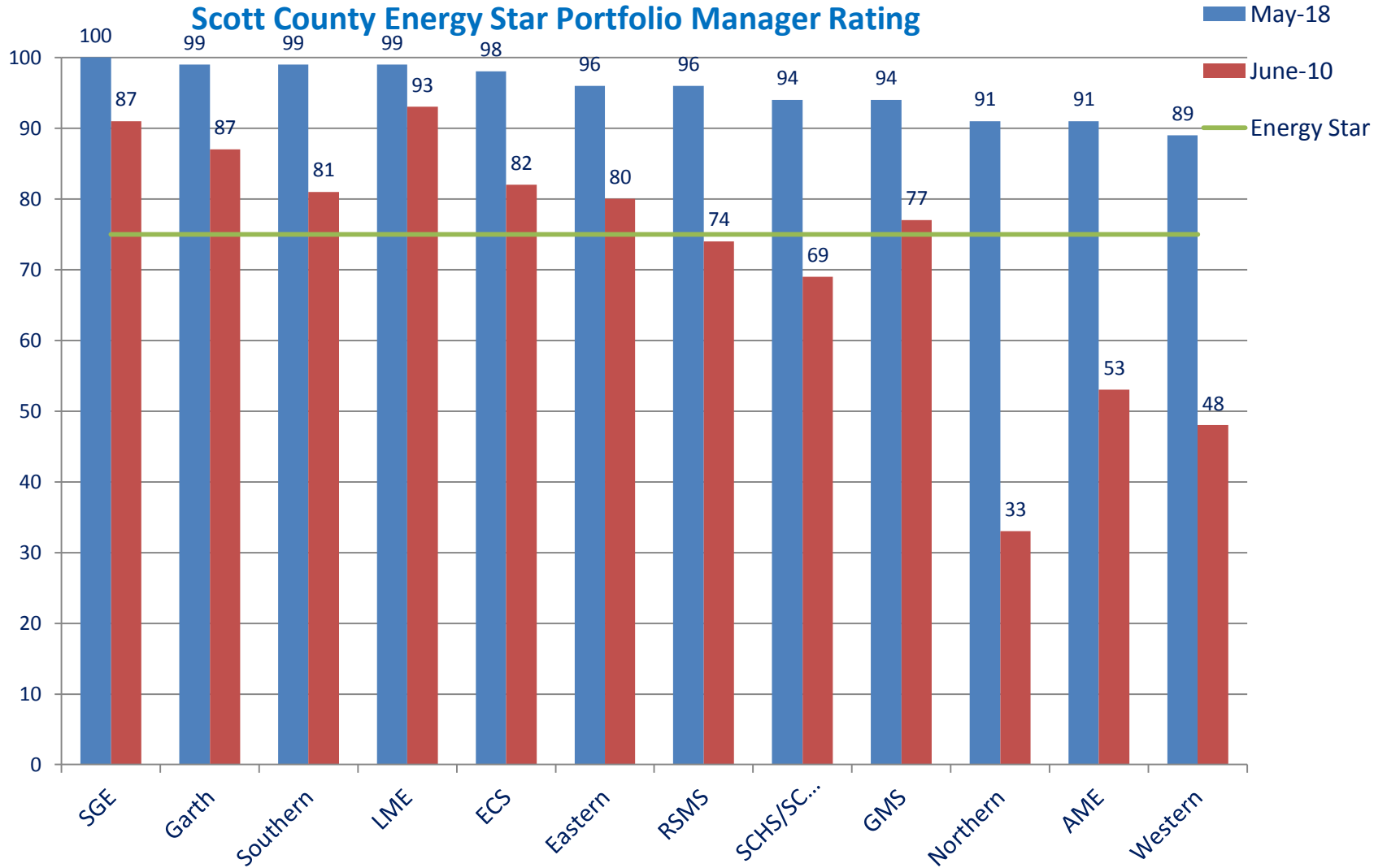


Note: The Schools with the Lowest Bars are doing the Best Job in Reducing Costs

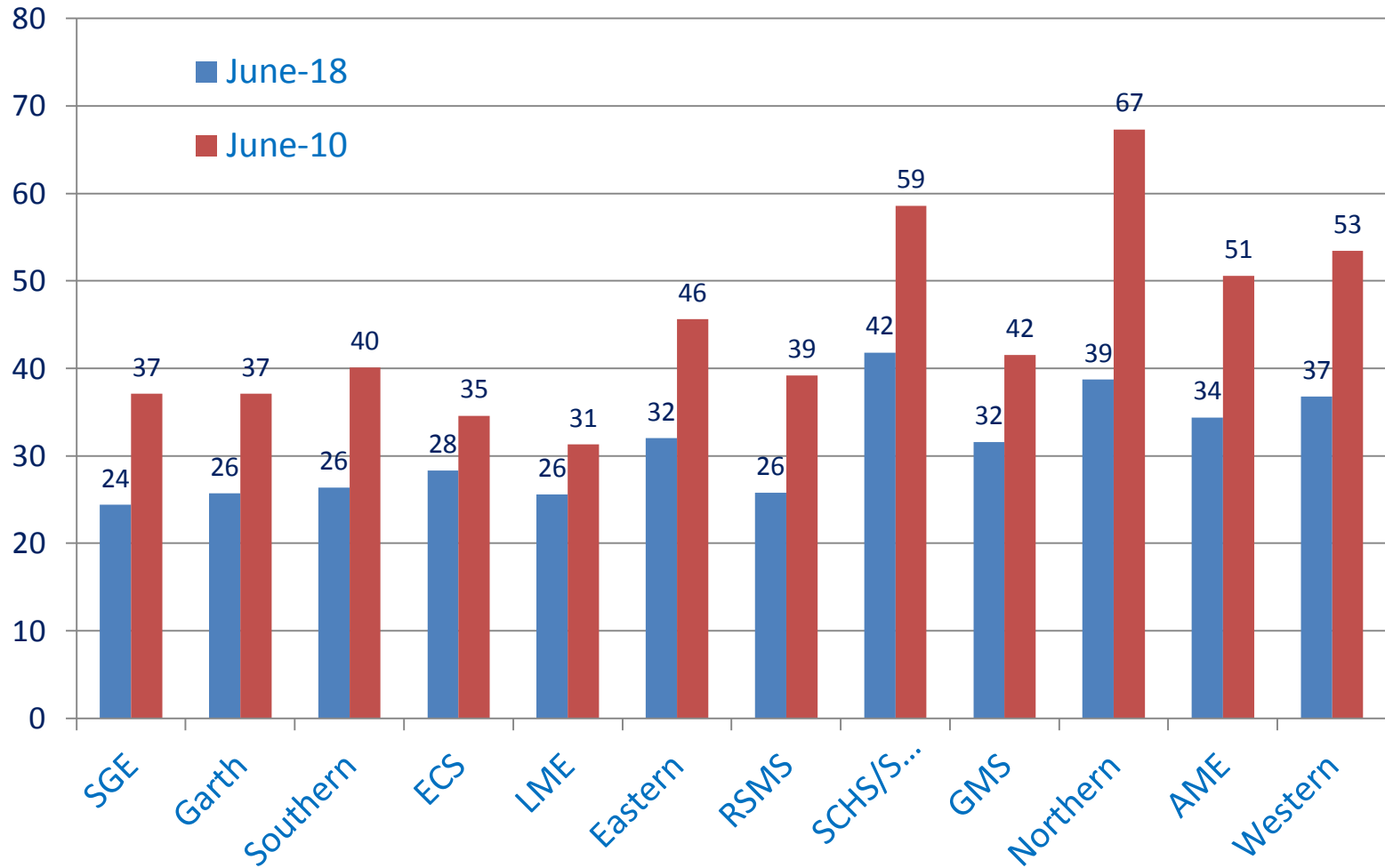
Scott County Energy Star Portfolio Manager Ratings

Facility Name	Rating (1-100) May-18	Rating (1-100) June-10	Change From June-10	Energy Use kbtu/sq ft June-18	Energy Star
Stamping Ground Elementary	100	91	-34.2%	24.4	Yes
Garth Elementary	99	87	-34.2%	25.7	Yes
Southern Elementary	99	81	-34.2%	26.4	Yes
Lemons Mill Elementary	99	93	-18.2%	25.6	Yes
Elkhorn Crossing School	98	82	-18.2%	28.3	Yes
Eastern Elementary	96	80	-29.8%	32.0	Yes
Royal Spring Middle School	96	74	-34.2%	25.8	Yes
SCHS/9th Grade/SCMS Campus	94	69	-28.7%	41.8	Yes
Georgetown Middle School	94	77	-23.9%	31.6	Yes
Northern Elementary	91	33	-42.5%	38.7	Yes
Anne Mason Elementary	91	53	-32.0%	34.4	Yes
Western Elementary	89	48	-31.1%	36.8	Yes
Preschool	N/A	N/A	-24.6%	36.7	N/A
Central Office/Misc	N/A	N/A	-8.2%	76.4	N/A
Group Total	96	71	-27.7%	35.1	

Scott County Energy Star Portfolio Manager Rating



Scott County EUI (kbtu/sq.ft/)



Energy Star Awards

- Stamping Ground – 2008/2011/2012/2013/2014/2015/2016/2017/2018
- Southern – 2009/2011/2012/2013/2014/2015/2016/2017/2018
- Eastern – 2009/2011/2012/2013/2014/2015/2016/2017/2018
- RSMS – 2009/2011/2012/2013/2014/2015/2016/2017/2018
- Garth – 2010/2011/2012/2013/2014/2015/2016/2017/2018
- GMS – 2011/2012/2013/2014/2015/2016/2017/2018
- ECS – 2011/2012/2013/2014/2015/2016/2017/2018
- Northern – 2012/2013/2014/2015/2016/2017/2018
- AME – 2012/2013/2014/2015/2016/2017/2018
- SCHS/SCMS/9th Grade/Cardinal Acad. – 2012/2013/2014/2015/2016/2017/2018
- Western – 2014/2015/2016/2017/2018
- Lemons Mill – 2014/2015/2016/2017/2018
- Energy Star Partner of the Year Sustained Excellence– 2013/2015/2016/2018
- GMS – Green Ribbon School Award – 2012
- Northern – Green Ribbon School Award – 2013
- RSMS – Green Ribbon School Award – 2015
- Eastern Elementary – Green Ribbon School Award – 2016
- Stamping Ground Elementary – Green Ribbon School (Kentucky) – 2017
- Garth Elementary – Green Ribbon School (Kentucky) - 2018

Energy Star Awards and Ratings

<u>School</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
AME					76	80	75	80	84	85	91
Eastern		76	*	82	92	91	91	95	94	94	96
ECS (New)				79	87	93	94	94	95	95	98
Garth			91	87	90	87	83	92	98	98	99
GMS				76	88	90	84	85	92	90	94
LME (New)							94	96	96	97	99
Northern					77	84	78	85	91	89	92
RSMS		79	*	80	83	92	94	92	94	94	96
SCHS Campus					75	80	85	88	91	93	94
Southern		82	*	80	83	88	93	94	95	97	99
SGE	75	*	*	90	94	94	94	95	96	98	100
Western							78	80	78	82	89
* Did Not Apply for Energy Star Award											

2017 - 2018 Energy Reduction Award Winners

- Stamping Ground Elementary = August, October, November, February & April
- Lemons Mill Elementary = September
- Scott County Middle = July
- Western Elementary = December
- Georgetown Middle School = January & May
- Southern Elementary = March

Energy Reduction Award Winners

- Summary of Winners Since November 2009
 - Northern – 19 Times
 - SCMS – 10 Times
 - SCHS – 9 Times
 - RSMS/Southern – 8 Times
 - AME/Garth/Stamping Ground – 7 Times
 - Eastern & GMS – 6 Times
 - Western/Lemons Mill – 4 Times
 - ECS – 3 Times
 - ATC/Preschool – 2 Times
 - Ninth Grade – 1 Time

Summary of Rebates

<u>Description</u>	<u>Date</u>	<u>Amount</u>
Rebates from Last Year		\$33,452.82
Western Parking Lights/Wall Packs	6/27/2017	\$310.00
Northern LED Wall Packs	6/30/2017	\$280.00
Central Office Lights	6/30/2017	\$25.00
SCMS LED Outside Lights	7/18/2017	\$80.00
Rebates from Preschool Parking Lot	9/6/2017	\$354.65
Rebates from LED Tubes (SCHS)	9/25/2017	\$6,000.00
Rebates from AME Gym	11/1/2017	\$843.00
Rebates from SGE Gym	11/1/2017	\$843.00
Rebates from Eastern Parking Lot	11/3/2017	\$562.32
Demand Reduction Payment	11/29/2017	\$18,750.00
SCHS HVAC	12/22/2017	\$960.00
SGE HVAC	12/22/2017	\$300.00
Garth HVAC	1/29/2018	\$220.00
SGE LED Tubes & Corn Bulbs	1/29/2018	\$3,610.00
Eastern Rebate LED Tubes	2/6/2018	\$774.47
Central Office LED Tubes	3/13/2018	\$2,000.00
Southern LED tubes	3/13/2018	\$1,000.00
SCMS LED Tubes/High Bay LEDs	3/13/2018	\$1,021.00
Northern HVAC	4/23/2018	\$100.00
KU Grant Round 2 from KSBA	5/14/2018	\$5,000.00
RSMS 24/7 LED Strips	6/5/2018	\$5,124.60
LME 24/7 LED Strips	6/5/2018	\$525.60
SCHS LED Outside Lights	6/5/2018	\$420.00
AME LED Outside Lights	6/5/2018	\$141.00
Total Received This Year		\$49,244.64
Grand Total		\$82,697.46

Status of Kentucky Utilities Grant

- Submitted projects totaling \$82,912 for 50% grant
- Received \$41,000 as we completed projects > \$82,000
- Three major categories:
 - Outside Parking Lot Lights at 7 schools (AME, Northern, SGE, Southern, Western, GMS & RSMS)
 - Replace T8's with LED for lights that stay on 24/7 at 4 schools (AME, SGE, Northern & Western)
 - Replace CFL lamps with LED at Western
- Round 2 – LED Lights for ECS
 - Approved for \$5,000 additional funding

List of Energy Conservation Measures (ECM) for Scott County Schools

<u>School</u>	<u>ECM's</u>	<u>#</u>	<u>Material Cost</u>	<u>Rebates</u>	<u>Net Cost</u>	<u>Annual Savings</u>	<u>Payback (Years)</u>
	Project using KU Grant						
Western	Convert CFL Down Lights to LED	187	\$5,178	\$0	\$5,178	\$1,840	2.8
Northern	Install LED Retro Strips on 24/7 Lights	6	\$520	\$0	\$520	\$132	3.9
AME	Install LED Retro Strips on 24/7 Lights	92	\$7,969	\$0	\$7,969	\$2,023	3.9
SGE	Install LED Retro Strips on 24/7 Lights	69	\$5,977	\$0	\$5,977	\$1,518	3.9
Western	Install LED Retro Strips on 24/7 Lights	20	\$1,732	\$0	\$1,732	\$440	3.9
Northern	Install LED Lights on Parking Lot Poles	14	\$6,638	\$0	\$6,638	\$1,557	4.3
SGE	Install LED Lights on Parking Lot Poles	15	\$7,112	\$0	\$7,112	\$2,327	3.1
RSMS Front Road	Install LED Lights on Parking Lot Poles	1	\$495	\$0	\$495	\$154	3.2
RSMS Back Road	Install LED Lights on Parking Lot Poles	6	\$2,970	\$0	\$2,970	\$921	3.2
GMS	Install LED Lights on Parking Lot Poles	17	\$8,061	\$0	\$8,061	\$2,611	3.1
AME	Install LED Lights on Parking Lot Poles	21	\$9,957	\$0	\$9,957	\$3,225	3.1
RSMS	Install LED Lights on Parking Lot Poles	17	\$8,061	\$0	\$8,061	\$2,611	3.1
Southern	Install LED Lights on Parking Lot Poles	12	\$5,690	\$0	\$5,690	\$1,381	4.1
Western	Install LED Lights on Parking Lot Poles	25	\$11,854	\$0	\$11,854	\$2,781	4.3
	Sub-Total KU Grant						
			\$82,213	\$0	\$82,213	\$23,521	3.5
	Projects using Maintenance Funds						
Western	Install LED Lights on Parking Lot Poles	6	\$2,845	\$180	\$2,665	\$667	4.0
Western	Convert Metal Halide Wall Packs to LED	10	\$1,450	\$100	\$1,350	\$343	3.9
SCHS	Install LED T8 Tubes in Classrooms	1100	\$18,150	\$11,000	\$7,150	\$18,613	0.4
SCMS	Install LED Corn Bulb in Parking Lot Light	1	\$85	\$30	\$55	\$117	0.5
Central Office	Install LED Corn Bulb in Parking Lot Lights	2	\$130	\$0	\$130	\$63	2.1
	Sub-Total Maintenance Funds						
			\$22,660	\$11,310	\$11,350	\$19,803	0.6
	Projects Funded by Rebate Budget						
SCHS	Install LED T8 Tubes in Classrooms	500	\$8,250	\$5,000	\$3,250	\$8,460	0.4
SGE	Replace Metal Halide Gym Light with LEDs	24	\$8,934	\$833	\$8,101	\$1,806	4.5
AME	Replace Metal Halide Gym Light with LEDs	24	\$9,631	\$847	\$8,784	\$2,095	4.2
Eastern	Install New LED Lights on Parking Light Poles	8	\$3,793	\$573	\$3,221	\$823	3.9
Preschool	Install New LED Lights on Parking Light Poles	5	\$2,371	\$358	\$2,013	\$596	3.4
Eastern	Install LED T8 Tubes on 24/7 Lights	25	\$385	\$138	\$246	\$418	0.6
Southern	Install T-8 LED Tubes in 24/7 Lights	60	\$1,200	\$600	\$600	\$1,144	0.5
LED Tubes	Replace T-8 Lamps with T-8 LED Tubes	1000	\$7,690	\$5,000	\$2,690	\$1,477	1.8
SCMS	Install T-8 LED Tubes in 24/7 Lights	15	\$240	\$150	\$90	\$389	0.2
SCMS	Replace M. H. in Old Gym Lights with LEDs	4	\$300	\$87	\$213	\$645	0.3
Preschool	Install LED Tubes in T8 24/7 Lights	3	\$50	\$33	\$16	\$100	0.2
Preschool	Install LED B/C Tubes in T5 24/7 Lights	18	\$504	\$165	\$339	\$498	0.7
9th Grade/C.A.	Install LED B/C Tubes in T5 24/7 Lights	41	\$1,148	\$410	\$738	\$1,232	0.6
RSMS	Install LED Strips in T5 24/7 Lights	200	\$7,400	\$3,416	\$3,984	\$9,217	0.4
GMS	Install LED Strips in T5 24/7 Lights	150	\$6,000	\$645	\$5,355	\$4,729	1.1
ECS	Install LED Strips in T5 24/7 Lights	59	\$2,360	\$177	\$2,183	\$1,298	1.7
Eastern	Install T-8 LED Tubes in Gym Lights	12	\$594	\$199	\$395	\$203	1.9
SCMS	Install LED Lights in 8' T12 Fixtures	43	\$1,806	\$430	\$1,376	\$886	1.6
ECS	Install LED Lights on Parking Lot Poles	21	\$9,957	\$630	\$9,327	\$2,174	4.3
Southern	Replace CFL Sportlite in Gym with LEDs	30	\$11,167	\$536	\$10,631	\$2,160	4.9
	Sub-Total Rebate Budget						
			\$83,779	\$20,228	\$63,551	\$40,350	1.6
	Other Projects						
SCMS	Replace CFL Sportlite in Gym with LEDs	48	\$17,867	\$857	\$17,010	\$3,812	4.5
RSMS	Replace CFL Sportlite in Gym with LEDs	49	\$18,239	\$790	\$17,449	\$3,119	5.6
GMS	Replace CFL Sportlite in Gym with LEDs	30	\$11,167	\$484	\$10,683	\$1,910	5.6
	Sub-Total Future Projects						
			\$47,273	\$2,131	\$45,142	\$8,841	5.1
Total			\$235,924	\$33,669	\$202,256	\$92,515	2.2

Project Status for Approved Energy Conservation Measures (ECMs)

- New Windows at Central Office – Complete
- KU Grant - Parking Lot Lights to LED – Complete
- KU Grant - LED Lights for 24/7 Operations for Schools Western/AME/SGE/Northern – Complete
- KU Grant – Replace Western CFL lamps w/LED – Comp
- LED T8 Tubes for SCHS Classrooms – Complete
- LED Lights for AME Gym - Complete
- LED Lights for SGE Gym - Complete
- LED Tubes Eastern/Southern 24/7 Lights – Complete
- LED Strips for RSMS/ECS/LME 24/7 Lights – Complete
- LED Lights for Southern Gym – Complete

Commercial Demand Conservation Program

- Managed by ENERNOC for Kentucky Utilities
- Received \$8,490 in Dec 2015 & \$15,984 in Dec 2016 and \$18,750 in November 2017
- Impacts June – September after students leave
- Manage demand using HVAC control system
- Free real time meters have been installed free
- Demand reduction called on the following dates:
 - 2015 - June 11 & 24, July 17, 28 & 29 & September 3 & 8
 - 2016 – June 16, July 21, August 25 & September 7
 - 2017 – July 13, 1 time in 2017, 4 in 2016 & 7 in 2015
-

Status of Energy Management Goals for 2017-18

- Achieve 3% Reduction from Last Year – YTD = 4.6%
- Achieve \$4.5 M Cumulative Avoided Costs – OK \$5.4M
- All Schools Receive Energy Star for 2017 & 2018 – OK
- Have one school to apply for and receive Green Ribbons School Award for 2017-2018
 - Garth Elementary School applied and won at State level
- Received Energy Star Partner of the Year – Sustained Excellence in 2018
- Recognized for one of the Top 5 Districts in the State

EUI Ranking for Kentucky School Districts

Year	EUI	State Ranking
2010	53.3	25
2011	48.9	14
2012	42.2	10
2013	42.1	8
2014	42.7	5
2015	39.3	4
2016	35.9	4
2017	35.5	5
2018 YTD	35.1	?