

LET'S SAVE ENERGY

School Energy Efficiency News

KSBA-SEMP ... Cultivating energy efficiency, best practices in Kentucky school districts



January 2017

Managing energy load leads to district savings

Utility energy-saving programs continue to evolve. Most utility companies have rebate programs to encourage high efficiency to be part of the equipment purchasing decisions. Some utility companies also have demand conservation programs, which means that a school district will be paid for reducing demand at peak times, called "events."

On the graph below, notice that the demand is not constant but rather fluctuates as the temperature changes throughout the year. Most of these changes are driven by customer desire for more warmth or cooling during extreme temperatures. During these peak times, power plants must either be "called on-line" to generate more electricity OR customers "called on" to reduce their electric consumption, thus lowering the instantaneous demand on the system. For those commercial customers who have the capability to respond and reduce demand during an event, the financial reward can be significant.

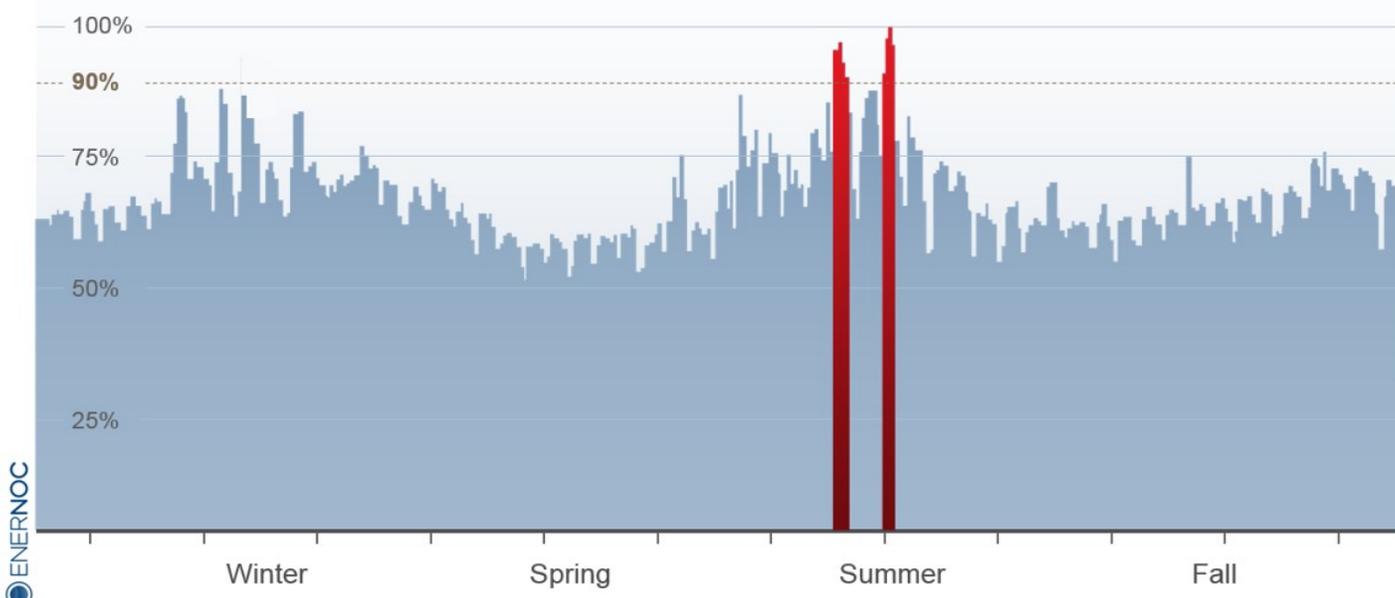
One such program is the Commercial Demand Conservation Program from Louisville Gas & Electric and Kentucky Utilities through a partnership with EnerNOC – a provider of energy intelligence software and demand response solutions.

In Scott County Schools, 13 of its 14 schools are served by KU. All 13 participate in KU's Commercial Demand Conservation Program. The district not only has been a leader in reducing energy consumption, but also a leader in reducing electric demand during peak time events.

"Success in participating in this program is a two-step process," says the district's energy manager, Jim McClanahan. "First, having an HVAC control system is a must – this allows us to automatically setback our equipment to meet the electric load reduction requested. Second, we communicate to faculty and staff that we are going to 'unoccupied mode' a little earlier than normal."

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Annual Electricity Demand As a Percent of Available Capacity





ENERGY STAR Recognitions

With the cumulative avoided energy cost for Kentucky schools now totaling over \$123 million, and the state energy utilization index dropping to 52 kBtu/sq. ft., the number of ENERGY STAR schools in the state continues to reflect that progress. As of January 4, 2017, that number is 375.

District efforts to make wise decisions on building and operating schools, and eliminating wasteful energy practices, should be recognized. ENERGY STAR is a recognized brand that provides an excellent recognition.

During December, a number of school districts across Kentucky were recognized with the Governor's Certificate for this achievement.



(L-R): Energy Manager Bruce Sauer, Caldwell County Schools Superintendent Carrell Boyd, Facilities Director Sam Haulk, and Energy and Environment Cabinet representative Eileen Hardy.



(L-R): Superintendent Taylora Schlosser, West Marion Elementary Principal Robby Peterson, S Charles Middle Principal Buffy Mann, Marion County High Principal Tom Brown, Lebanon Middle Principal Millie Blandford, Lebanon Elementary Principal Donna Royse, Glasscock Elementary Principal Angie Akers, Calvary Elementary Principal Sara Brady, and District Transportation/Maintenance Director Scott Spalding.



(L-R): Consulting engineer Baccus Oliver, Energy and Environment Cabinet representative Eileen Hardy, McCracken County High School Principal Michael Ceglinski, and Energy Manager David Dobbins.



Muhlenberg County School students celebrate having their first ENERGY STAR Schools. Greenville Elementary, Central City Elementary and Muhlenberg High School-East Campus became ENERGY STAR-certified in December 2016.



Photo at left are Muhlenberg County Superintendent Randy McCarty and Energy and Environment Cabinet representative Kenya Stump.



L/R: Todd County Schools Superintendent Wayne Benningfield, KSBA representative Martha Casher, Maintenance Supervisor Troy Winders and Facilities Director Ed Oyler.



(L-R): KSBA representative Martha Casher, Livermore Elementary Principal Carrie Ellis, McLean County High School Vice Principal John Gray, Board Chairman Bill Lovell, Board Member Otis Griffin, Calhoun Elementary School Principal Amy Bell, Superintendent Terry Hayes, Energy and Environment Cabinet representative Eileen Hardy, Sacramento Elementary Principal John Farley, Board member Joyce Sutton, Board Vice Chairman Wendell Miller, Board member Kelly Baird



Standing with the Bourbon Central Elementary Energy Team are L/R: State Sen. Stephen West, Principal Keith Madill, Bourbon County Judge-Executive Mike Williams, Bourbon Fiscal Court Magistrate Don McCarty, and State Rep. Sannie Overly.

Consider this project . . .



Crittenden County Elementary School students recently learned from Facilities Director Greg Binkley that replacing 60 T8 fixtures with 60 LED retrofit kits could save the school over 14,000 kilowatt hours annually, with a \$1,400 savings. That is a four-year “payback” on this project. This is just one of the many energy projects that districts are choosing to implement.

Special Energy Project Funding was made available to 79 districts in the LG&E and KU service territories; of those, 59 districts submitted proposals. Energy projects were submitted and approved to be implemented during 2016-17 for 316 schools in those districts.

Those districts together will save an estimated \$500,000 annually based on projected consumption savings of nearly 5 million kWh and energy savings of 1.7 MW per month.

Managing energy load *(continued from page 1)*

“KU will call early in a week when they see an extreme weather event coming, so we can ensure our control systems are all working properly,” adds McClanahan. “They will then call an hour before we need to implement unoccupied temperatures, thus reducing our load for brief periods of time.”

Because the response is called during June, July, August and September, and typically from 2 p.m. through late afternoon, the impact on the school day has been minimal. The financial return to the Scott County Schools, however, has been nearly \$16,000 for 2016, with four called events from KU. In addition to the financial return, participants also gain access to EnerNOC’s Energy Intelligence Software platform, which provides real-time visibility

into how much energy and demand they are using. This insight helps participants optimize their performance during events and identify opportunities to run more efficiently throughout the year.

LG&E and KU offer the Commercial Demand Conservation Program at no additional cost to large commercial customers that have the ability to reduce electric load when requested. This generally requires school districts to have the ability to set-back HVAC when requested.

Over the past year, 97 schools in 17 school districts have participated in LG&E and KU’s Commercial Demand Conservation Program. As districts continued to understand how the program works, success similar to that experienced by Scott County Schools is possible.