

LET'S SAVE ENERGY

School Energy Efficiency News

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



November 2015

Successful setbacks:

A major opportunity to save during holiday breaks

The use of setback procedures is relatively simple, but so important. "Thousands of dollars a month for each school building can be saved during school breaks by ensuring setback procedures are being implemented properly," Certified Energy Manger Scott Caslow said.

Caslow's 20-plus years as an electronic engineer in the building control industry, gives him a huge advantage in working with his five school districts and their maintenance personnel. He offers a few pointers for board members or district administrators to consider when reviewing setback procedures:

What are the district "setback procedures?"

Energy Management Plans (EMP) required by Board Policy 05.23 should already be approved in your district. Typically included in the EMP are general guidelines for temperature settings for heating and cooling, building resource management, lighting, etc. "Setback procedures include detailed implementation steps such as Board approved winter setback temperatures," Caslow says. (See example of typical setback procedures on page 3)

How much energy is used on a monthly basis?

Board members and district administrators should be aware of how much energy is being used on a monthly basis and understand the basic factors that influence the usage. To have more "energy champions" in a district, communicate this information by location so others understand the impact on the budget of setback procedures during breaks.

What temperatures are recommended for winter setbacks?

"I can't emphasize enough to know your heating system," Caslow cautions. "I usually setback to 55 degrees for savings and safety from freezing. With older heat pumps in our schools, a higher temperature of 60 degrees or 65 degrees offers the better option for one of my districts."

(continued on page two)



The chart at right is from Salem Elementary School in Russell County (51,599 sq.ft) where two-thirds of the school is controlled by manually set timers. During the two week holiday break, energy use was reduced by an average of 1250 kWh per day, even with the decreased temperature. Using \$0.09/kWh this equates to over \$1,000 in savings for the 10 days. Data provided by South Kentucky RECC.

Kentucky Gas Aggregation Program provides recommendations

The Kentucky Gas Aggregation Program (KGAP) has been available to school districts in the Columbia Gas of Kentucky and DUKE Energy service territories to competitively secure natural gas supply contracts since 2011. This program is managed by Fellon-McCord, an energy consulting firm based in Louisville.

In late 2013, KGAP made a purchase recommendation to all eligible districts. The districts that participated were able to avoid major price volatility that resulted from the 'Polar Vortex' of 2014. These market extremes otherwise led to high natural gas prices throughout 2014 for any customer that did not have a fixed priced contract.

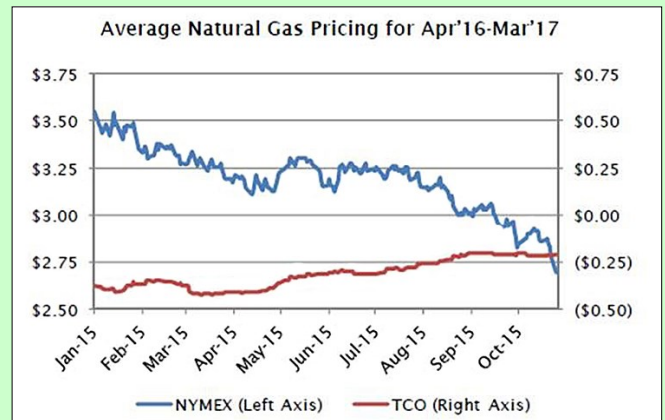
2015 has been a rebalancing year. Record natural gas production and moderate to unseasonably low temperatures have led to decreased domestic demand and an oversupply of the market. Forward pricing reached a new low the week of October 26th as updated forecasts called for a warm winter.

As a result of their ongoing monitoring of these trends, Fellon-McCord, working with KSBA, will issue a purchase recommendation for all districts that are currently participating in KGAP and those interested in participating with natural gas accounts in Columbia Gas of Kentucky and Duke Energy Kentucky.

Over the next week, Fellon-McCord will be confirming

participating school districts and then will issue a formal, competitive RFP to qualified natural gas suppliers to establish the low-cost supplier for schools districts in this low-cost environment. School districts in the program will benefit from aggregate purchase power, expert negotiation and flexible options.

Below is a chart that outlines the 2015 price trend of wholesale financial and physical natural gas pricing. The blue line in the chart highlights the significance of the current opportunity and a 25% drop in pricing of a 12-month term beginning in April 2016, upon the expiration of current district contracts.



NYMEX, represented in blue, is a division of the New York Mercantile Exchange, where energy futures are traded. TCO, represented in red, is the total cost of ownership of all direct and indirect costs for gas during the time indicated.

Successful setbacks: (continued from page one)

What controls, if any, are currently being used?

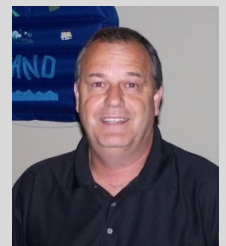
Know what type of control systems are in your district. Are they manual or programmable? Is there a building automation system (BAS)? No matter what type of controls you have, or don't have, setback procedures should be implemented.

For manual controls, it is critical to educate those in each building on the setback temperatures. Because this is the step that could mean thousands of dollars a month in savings, consider double-checking thermostat settings to ensure changes are made. For programmable thermostats, change the schedule to reflect the holiday break. BAS controls can provide an easier and more efficient process for implementing setback procedures; however, attention is required to ensure the system is working and scheduled properly.

What benefits do building automation systems provide?

Building automation systems in the past were cumbersome and required maintenance personnel to have more computer knowledge than they need for systems today. The newer systems do not require an engineer or computer genius to operate and schedule events. "They are much more user friendly with graphics and common-sense type programming that almost anyone can handle," says Caslow. "If you can set your DVR to record a TV show then you can more than likely schedule events in a BAS."

Caslow points out that while all staff in a district are important to energy management efforts, maintenance and custodial staff are likely the personnel who would double-check that all systems are working properly. "Ensure they have the knowledge to make that determination, as it can mean thousands of dollars wasted," he says.



CEM Scott Caslow

**EXAMPLE OF A SCHOOL DISTRICT
WINTER SETBACK CHECKLIST**

Name _____ School _____

Date _____ Time _____

SETBACK ACTION		COMPLETED/NOTES
1.	Turn off electronic whiteboards, projection systems, computer monitors, printers, scanners, etc. Confirm with district IT regarding turning off computers	
2.	Turn off and unplug TVs, DVD players, coffee pots, and any other non-essential classroom/office electronic equipment	
3.	Clean out and unplug personal refrigerators. Leave the door open	
4.	Turn off all classroom lights. Turnoff AND unplug any personal lamps	
5.	Never hang items from ceiling where lighting sensors may be located	
6.	Turn off nonessential exhaust fans	
7.	Set exterior lights to turn off during daylight hours (this should be done at every day, but would be good to confirm)	
8.	Turn off all display case lighting	
9.	Reset controls OR thermostats to recommended setback temperatures	
10.	Unplug chilled-water fountains, except in occupied areas. Check and report any leakage of water fixtures	
11.	If temperatures fall below 20 degrees, plan on inspecting buildings on days when no one is working in the building to ensure proper operation	
NOTES/OBSERVATIONS		



News Notes



“Battle” Watch

Kentucky’s Battle of the School Buildings will begin in 60 days! Schools from across the state will measure and track their monthly energy use for calendar year 2016 using ENERGY STAR’s Portfolio Manager. Comparisons will be made with the schools’ 2015 energy use. KSBA



-SEMP will recognize the Top Kentucky School Building, determined by the greatest percentage-based reduction in energy use achieved from 2015 to 2016 and the schools that reduce energy use by 20 percent or more from 2015 to 2016. An introductory webinar is scheduled for December 9; however, for those who want to quick start their school’s competition, [click here!](#)



KSPMA Annual Conference

The Kentucky School Plant Management Association’s Annual Conference was held in late October. While programming for the overall agenda focused on all facility needs, several energy-related sessions were held. Of particular interest were topics on “creating school energy champions” and internal district energy/facility manager “selling state-of-the art lighting” to district decision-makers. Copies of the presentations are available on the KSBA-SEMP website at www.ksba.org/semp.aspx.

Preliminary EMR Info

All 173 Kentucky School Districts have submitted their Energy Management Report (EMR) for FY2015. The data is being analyzed in preparation for the annual statewide reporting to the Energy and Environment Cabinet and Legislative Research Commission on December 1 pursuant to KRS160.325. A summary of the report will be included in the December issue of Let’s Save Energy and will be available at KSBA’s Winter Symposium. Board members who want to hear more about the energy impacts and trends for Kentucky’s schools should attend “Forewarned is Forearmed” at KSBA’s Winter Symposium.

	2010	2015
National	73	73
Kentucky	65	TBD
ENERGY STAR	50	50
KY'S Best District	43	TBD
Net-Zero Ready	18	18